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The Development of Tactical Leadership Exercises for SIMCAT

Richard E. O'Brien
Human Resources Research Organization

for

Contracting Officer's Representative
Donald M. Kristiansen

ARI Field Unit at Fort Knox, Kentucky
Donald F. Haggard, Chief

TRAINING RESEARCH LABORATORY
Jack H. Hiller, Director

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Technical review by

Donald R. Lampton
Milton E. Koger
Donald M. Kristiansen

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↳ Tactical leadership exercises developed for implementation on SIMCAT, a low-cost platoon-level battle simulation, provide a means by which 19E and 19K BNCOC students can perform procedural tasks and command and control skills without the attendant high costs of equipment, fuel, ammunition, and training areas.

The Single Tank Tactical Exercises are designed to provide tank commanders with the opportunity to perform procedural tasks and command and control, while moving their tanks over prescribed routes.

The Tank Section Tactical Exercises are designed to provide tank section leaders (platoon leader and platoon sergeant), the opportunity to perform procedural tasks and command and control, while moving their sections over prescribed routes. These exercises also provide wingmen with the opportunity to perform section formations, and section fire command responses.

The Tank Platoon Tactical Exercises are designed to provide tank platoon leaders the (OVER)

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19. Abstract (continued)

opportunity to perform procedural tasks and command and control while moving their platoons over prescribed routes. These exercises also provide wingmen with the opportunity to perform in platoon formations, and responf to platoon fire commands.

The Tank Company Tactical Exercise is designed to provide the tank commanders with the opportunity to perform command and control while moving their companies over prescribed routes. This exercise also provides platoon leaders with the opportunity to participate in company level tactical exercises.

The exercises provide a means by which small armor unit leaders can perform tasks and command and control relating to the fundamental armor operational areas: SHOOT-MOVE-COMMUNICATE.

THE DEVELOPMENT OF TACTICAL LEADERSHIP EXERCISES FOR SIMCAT

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THE DEVELOPMENT OF TACTICAL LEADERSHIP EXERCISES FOR SIMCAT

INTRODUCTION

This document contains instructions for developing tactical training exercises for the 19E/K Basic Noncommissioned Officer Course (BNCOC) which can be implemented on SIMCAT, a combined arms tactical simulation. The document also contains instructions for conducting tactical exercises for tank sections, tank platoons, and tank companies.

SIMCAT is a computer based battle simulation which can provide BNCOC training managers and instructors with the capability to enhance the walk phase of the crawl-walk-run training philosophy presently advocated by the U.S. Army Armor Center. BNCOC students currently learn individual tasks in a classroom environment, practice the performance of these tasks outside the classroom in a nontactical environment, and then repeat the practice of the tasks in the field in a limited tactical environment. SIMCAT provides an alternate means by which BNCOC students can practice tasks relating to the fundamental armor operational areas--MOVE-SHOOT-COMMUNICATE--without the attendant high costs of equipment, fuel, ammunition, and training areas.

To implement the tactical exercises contained in this document, participants must be familiar with the performance of appropriate procedural and nonprocedural tasks, small armor unit tactics, and tactical communications. They also must become proficient in the operation of system components, scenario writing, inputting initial conditions into the system, exercise direction, and performance evaluation. The participants and their required pre-exercise knowledges and skills are:

- Students: Application of procedural and nonprocedural tasks, appropriate level small armor unit tactics, tactical communications, and the operation of system components.

- Student Evaluators: Application of procedural and nonprocedural tasks, small armor unit tactics, tactical communications, system functions and operations, and performance evaluation.

- Instructor (OPFOR Controller): Application of procedural and non-procedural tasks, small armor-unit tactics (to include OPFOR), tactical communications, system functions and operations, exercise direction, and performance evaluation.

- Instructor (Controller): Application of procedural and nonprocedural tasks, small armor-unit tactics, tactical communications, system functions and operations, exercise direction, and performance evaluation.

- Training Manager. Application of procedural and nonprocedural tasks, small armor unit tactics, tactical communications, system functions and operations, and scenario writing and inputting initial conditions into the system.

Technical information pertaining to SIMCAT functions and operations, and pertinent to the training manager and controllers, is contained in the following sources:

- Guide to the Operation of SIMCAT (Drucker, 1986a)

- Simulation in Combined Arms Training (Drucker, 1986b)

- Text files, DOC1.TXT, DOC2.TXT, etc., stored on SIMCAT's hard disk and available in printed form as SIMCAT documentation

SYSTEM COMPONENTS

SIMCAT is a battle simulation that can be used by tank commanders, tank section leaders, tank platoon leaders, and tank company commanders to practice command, control, and communications skills which cannot be practiced realistically in the classroom or economically in the field. Combining microcomputer and videodisc technology, SIMCAT enables armor junior leaders to conduct simulated tactical operations with moving and shooting tanks against a moving and shooting threat across a terrain display. The conduct of an exercise is facilitated by a simulated communications system which links the participants.

System Configuration

SIMCAT consists of seven stations: four student stations, a controller station, an OPFOR controller station, and a fileserver station.

Student Station

Each student station (shown in Figure 1) consists of a personal computer, color monitor, videodisc player, keypad (touch panel), a keyboard, CVC helmet, intercommunications control box, and a 1:50,000 scale tactical map.

Personal Computer. The personal computer is an IBM PC with a 640K memory. Within the computer are a graphics board, a voice board, a network board, an 8087 coprocessor chip, a 360K diskette drive, and a 1.2M diskette drive.

- Graphics Board. The graphics board provides the computer with the capability to create images of M1 tanks, T72 tanks, BMPs, destroyed vehicles, arm and hand signals, direct and indirect fire impacts, and tracer and missile flight paths. These images are superimposed on the terrain display of the color monitor.
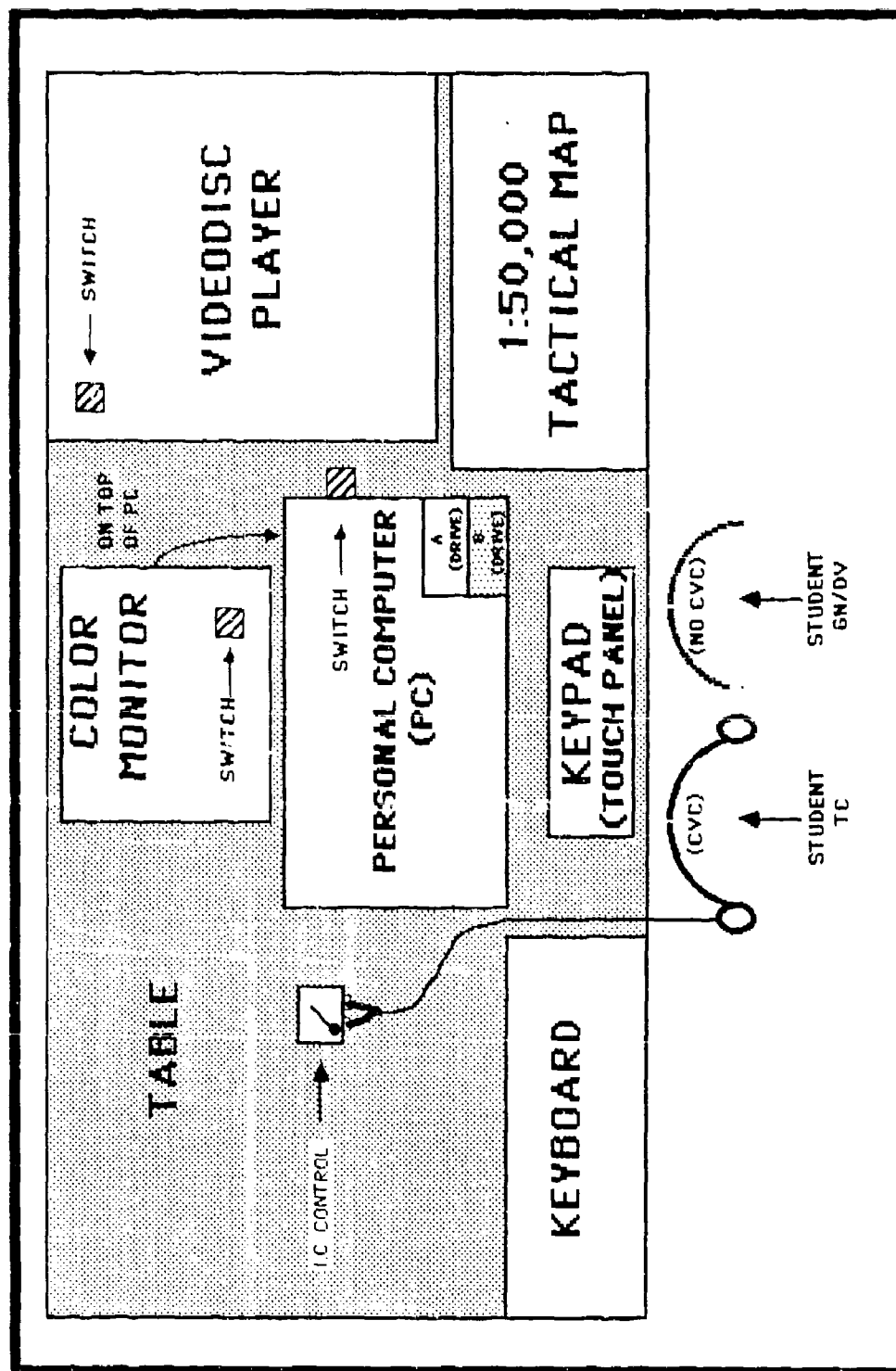
Figure 1. SIMCAT student station.

- Voice Board. The voice board provides the system capability to control movement of simulated tanks and the firing of the main gun and the coaxial machineguns through the issuance of voice commands by the student. It also provides the capability for the simulated gunner and loader to respond, when doctrinally appropriate, to gunnery commands.

- Network Board. The network board provides the capability for the system to send information to all other stations. Thus, when a student moves his tank, the movement will be displayed at all other student stations, the controller station, and the OPFOR controller station if line of sight exists with the vehicle that is moving and if the terrain display is shown on the monitor. The network board also provides the capability for the computer at each station to access files stored on the hard disk drive at the fileserver station.

- 8087 Coprocessor Chip. This chip provides high speed mathematical processing capabilities.

- 360K Disc Drive. This drive contains a diskette on which certain essential files are stored. These include files for keypad operation, networking, graphics, and the operation of the 1.2M Disk Drive.

- 1.2M Disc Drive. This drive contains the diskette on which other essential files are stored. These include hit/kill probabilities which determine the outcome of gunnery engagements initiated from that station, line of sight which determines if the simulated tank has line of sight with each of the other vehicles, terrain data that will affect movement and line of sight, and voice enrollment files for the student at each station.

Color Monitor. This monitor is used to display terrain views and graphics (e.g., firing signatures, round bursts, arm and hand signals) during a simulation. In addition, the speed of the student's vehicle is shown on the bottom right corner of the screen. If a student requests a status report, this information appears on the bottom of the screen. Other messages may also appear on the screen (e.g., an announcement of the destruction of the student's tank). The monitor is also used during voice enrollment to present the words that must be spoken during enrollment.

Videodisc Player. Terrain views that appear on the color monitor are maps that have been photographed and then transferred to a videodisc. The videodisc player accesses the frame on which the required terrain display is stored, decodes the terrain images which are stored digitally on the videodisc, and transmits the resulting signals to the color monitor for display.

Keypad (Touch Panel). The keypad is similar to a computer keyboard except that it has a flat surface instead of keys. The keypad is programmed so that pressing a particular area on its surface will be the equivalent to one or more keystrokes on a computer keyboard. By labeling these areas with words or pictures, the user can reproduce effects that

would otherwise have to be done on a keyboard using several keystrokes and without having the benefit of words or pictures.

There are two types of keypads that can be used at a student station: the Tank Commander's Control Panel (TCCP), and the Gunner/Driver Optional Control Panel (G/DOCP).

- Tank Commander's Control Panel (TCCP). The TCCP is used during a simulation when voice recognition technology is used to cause the tank to move and its guns to fire. The TCCP, shown in Figure 2, is used by the student to turn the turret, request a status report, initiate arm and hand signals, select from among three different terrain views (close range, mid range, long range), and turn the tank engine on and off.

  - Turret Movement Controls. During gunnery, the system will be able to identify a target only when the main gun is aligned to within 20 degrees of the target. There are two turret movement controls on the TCCP for aligning the main gun with a target: the TURRET CONTROL and the SMALL TURRET TURNS control. The TURRET CONTROL consists of eight arrows with each arrow pointing in a different direction. Pressing one of the arrows will cause the gun tube to turn in the direction of the arrow. For example, pressing the top center arrow will cause the gun tube to point toward the top of the monitor regardless of the direction in which the tank is oriented. When the gun tube stops turning, a line trace will be emitted from the gun tube and will move across the screen in the direction that the gun is pointing. Since the arrows point in directions that are 45 degrees apart, the gun tube can usually be aligned to within 20 degrees of the target by pressing a single arrow. If finer adjustments are needed, the SMALL TURRET TURNS control can be used. The student will be able to turn the gun in five degree increments by pressing either the TURN RIGHT or TURN LEFT control. If the gun tube is aligned to within 20 degrees of the target when a fire command is given, the system will indicate that it has identified the target by announcing IDENTIFIED. If the gun tube is not aligned to within 20 degrees of the target when the fire command is given, the system will indicate that it has not identified the target by announcing CANNOT IDENTIFY.

  - Status Report. To determine the current operational status of the tank and to obtain detailed information about the terrain over which the tank is operating the student presses the SHOW TANK STATUS label. A message will appear on the color monitor describing the general condition of the tank (e.g., fully operational, degraded firepower, degraded mobility) and the type of terrain over which the tank is moving (e.g., heavy woods, hilly terrain).

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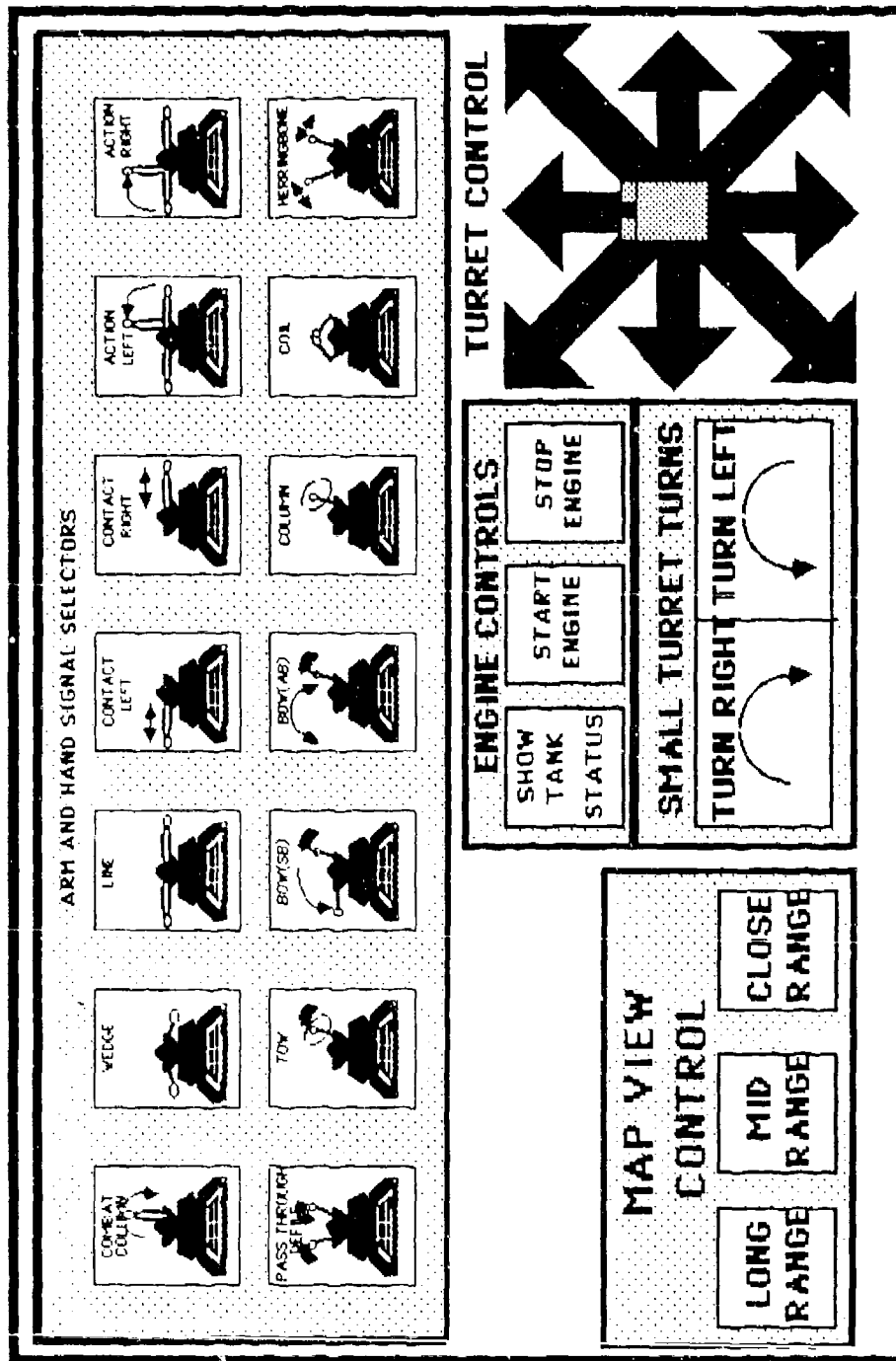
Figure 2. SIMCAT Tank Commander Control Panel (TCCP) (touch panel).

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- Arm and Hand Signals. There are fourteen arm and hand signal selectors on the TCCP.

Combat Column	Pass Through Defile
Combat Wedge	Conduct Traveling Overwatch
Line	Conduct Bounding Overwatch (SB)
Contact Left	Conduct Bounding Overwatch (AB)
Contact Right	Column
Action Left	Coil
Action Right	Herringbone

To give an arm and hand signal the student presses the appropriate ARM AND HAND SIGNAL SELECTOR on the TCCP. A graphic representation of the selected arm and hand signal will appear above the student's tank on the color monitor and remain on the screen for three seconds.

- Terrain Displays. The terrain available in the system is an area approximately 20 km x 6 km located just west of the Fort Knox, Kentucky military reservation. The terrain displays were made by photographing a portion of a 1:24,000 scale map. All map features except grid lines and grid line numbers appear on the display. By touching the appropriate MAP VIEW CONTROL label (i.e., LONG RANGE, MID RANGE, or CLOSE RANGE) on the TCCP, the TC can bring up on the color monitor any one of these three ranges. The CLOSE RANGE displays an area that is 600 x 450 meters, the MID RANGE displays an area that is 3,000 x 2,250 meters, while the LONG RANGE displays an area that is 6,600 x 4,950 meters. Figure 3 shows the relative area of the display at each of the three ranges.

- Start Engine/Stop Engine. To start the tank engine, the student presses the START ENGINE label on the TCCP. To stop the tank engine, the student presses the STOP ENGINE label on the TCCP.

● Gunner/Driver Optional Control Panel (G/DOCP). The G/DOCP is used instead of the TCCP whenever the training manager wants to increase the number of students participating in a simulation or whenever voice recognition problems seriously impact on performance. When this option is used one student performs the duties of the tank commander while a second student performs the duties of the gunner and the driver. The G/DOCP shown in Figure 4 is a modified TCCP (see Figure 2). The G/DOCP has the same capabilities as the TCCP, with the added capabilities of movement and gunnery command labels. When using the G/DOCP, the student tank commander issues general driving orders and specific gunnery commands by "clear voice," without the aid of the intercommunications system. The gunner/driver student responds to the orders and commands by pressing the appropriate movement, turret control, or fire command labels or symbols. The student tank commander uses the G/DOCP for sending arm and hand signals, showing tank status, and for changing map views.
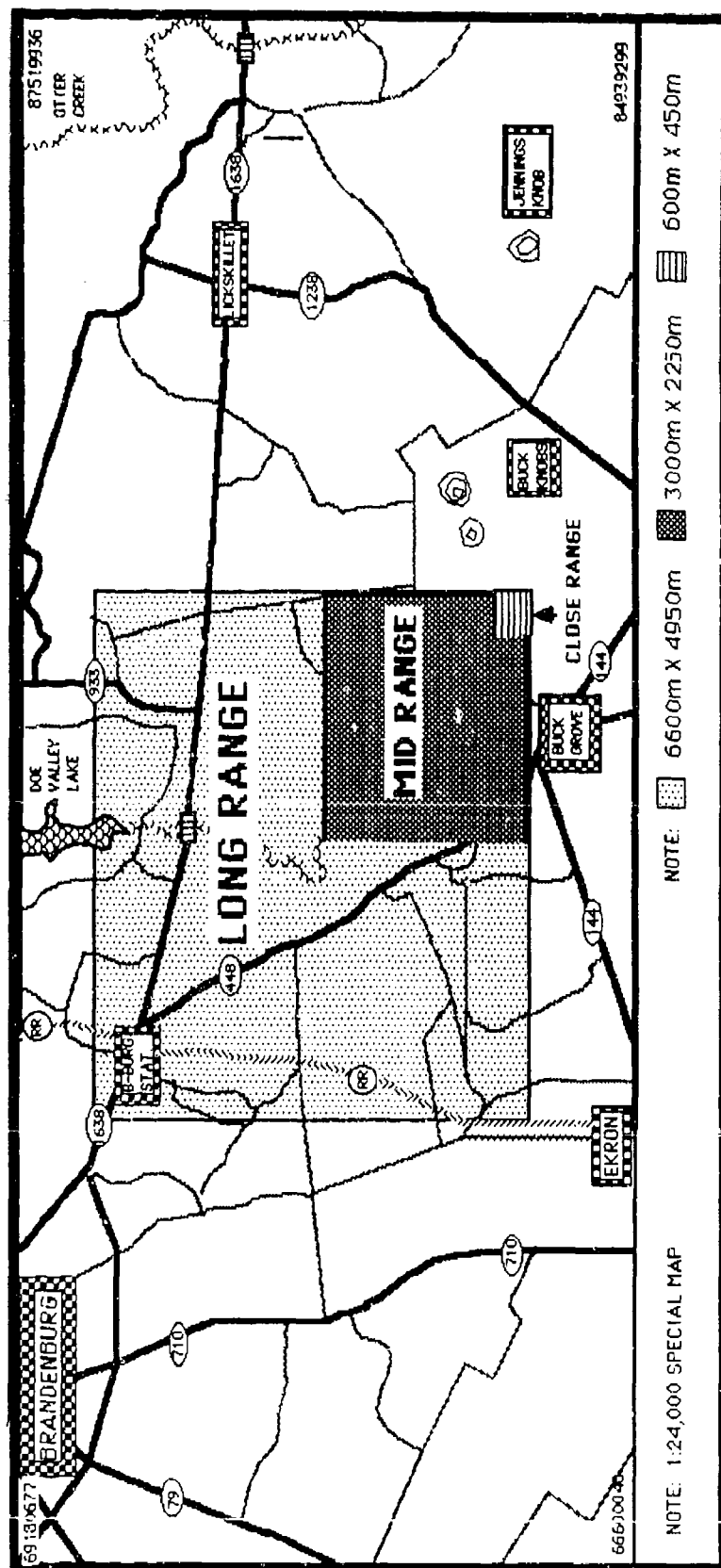
Figure 3. SIMCAT terrain displays.
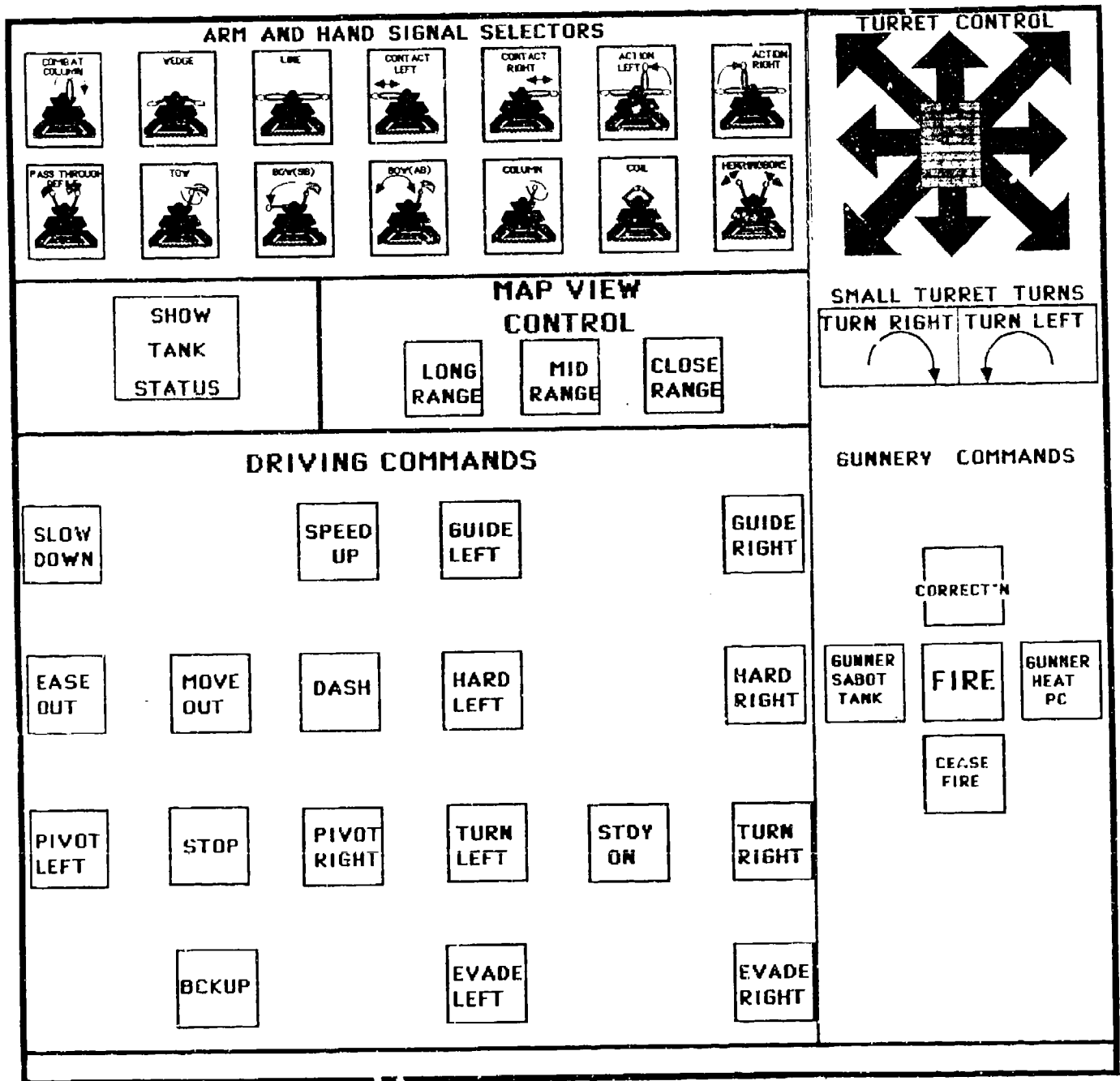
Figure 4. SIMCAT GN/DR Optional Control Panel (G/DOCP) (touch panel).

Keyboard. The keyboard is not used by students.

Communications. The communications system, shown in Figure 5, provides for a company command net (controller, student platoon leader, and a student platoon sergeant), a platoon net (controller, student platoon leader, student platoon sergeant, and two student tank commander wingmen), and a net linking the controller and the OPFOR controller.

Each student tank commander has a CVC helmet connected to an intercommunications control box (see Figure 6). However, whenever a gunner/ driver student is included in a simulation, communications between the tank commander and the gunner/driver is by "clear voice." The gunner/driver will not have a CVC helmet.

Tactical Map. The tactical map is 1:50,000 scale, EKRON--Kentucky edition 6--DMATC, series V753, sheet 3759, with ten meter contour intervals. The map covers the terrain displays which appear on the color monitor.

Controller Station

The controller station consists of a personal computer, a monochrome monitor, a color monitor, a videodisc player, a keyboard, a headset, a communications control console, and a 1:50,000 scale tactical map.

Personal Computer. The personal computer is an IBM PC with a 640K memory. Within the computer are a graphics board, a network board, an 8087 coprocessor chip, a 360K diskette drive, and a 1.2M diskette drive. The first three components listed serve functions similar to those described at the student station. The remaining two components are described below.

- 360K Diskette Drive. There are two sets of floppy diskettes that can be used in this drive. The first set consists of a pair of diskettes--a diskette that is used during the conduct of a simulation and a diskette that contains utility programs that can be used to manipulate SIMCAT files. The diskette used during the conduct of a simulation contains the files that provide access to programs essential to the operation of the simulation. Included are files that affect the operation of the 1.2M disk drive, networking and graphics, and a file that accesses files stored in the 1.2M disk drive and on the hard disc at the fileserver station. The second diskette in the set contains files that affect networking and that provide access to utility programs stored on the hard disk drive at the fileserver station. The second set actually consists of a single diskette prepared by ARI that provides menu-driven access to the files contained in the fileserver.

- 1.2M Disk Drive. The floppy diskette contained in this drive is used to store hit/kill probabilities, line of sight data, and terrain data that are operational at the student and OPFOR controller stations. It also contains the file that controls the operation of the controller station.

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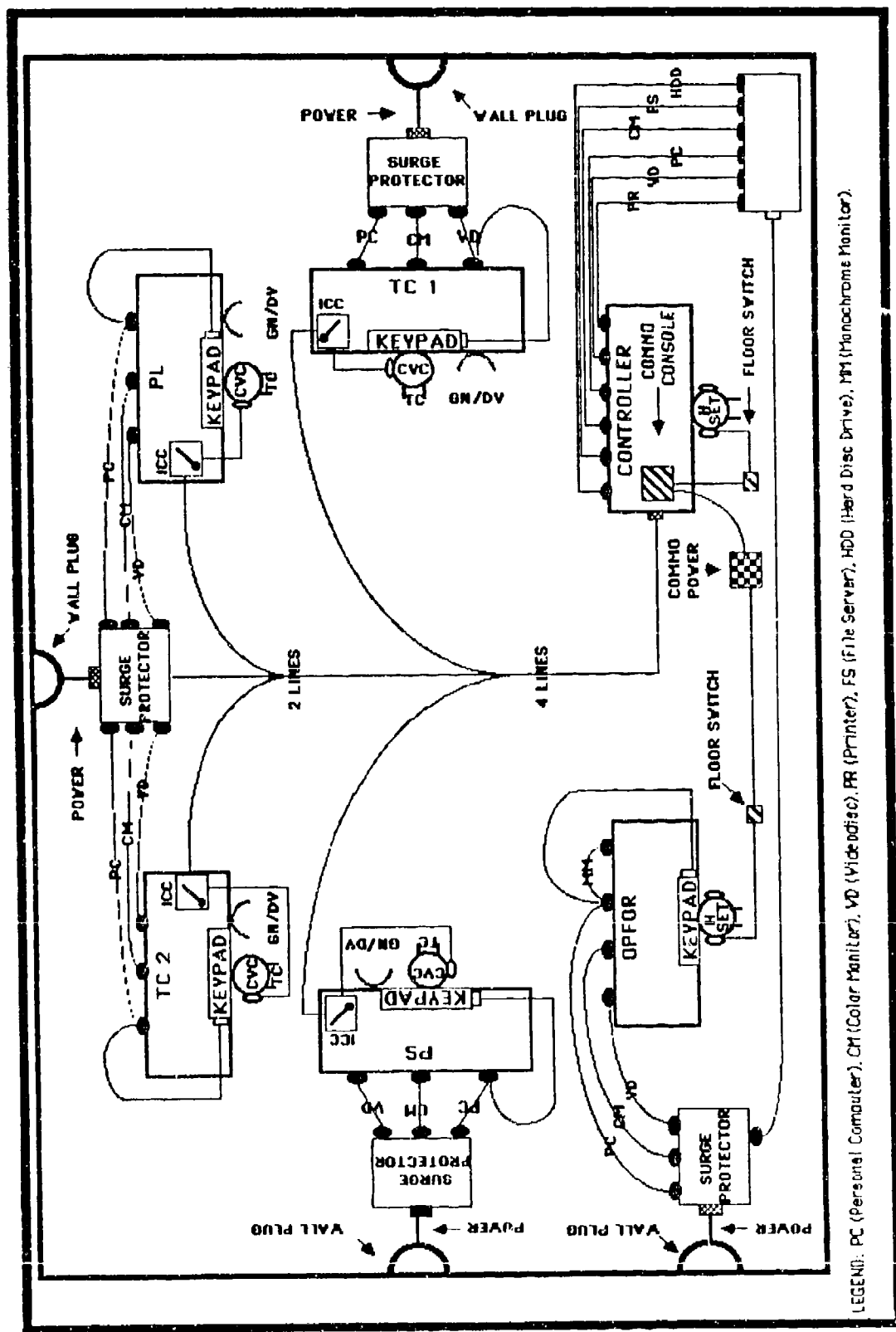
Figure 5. SIMCAT communications and power.

LEGEND: PC (Personal Computer), CM (Color Monitor), VD (Videodisc), PR (Printer), FS (File Server), HDD (Hard Disc Drive), MM (Monochrome Monitor).

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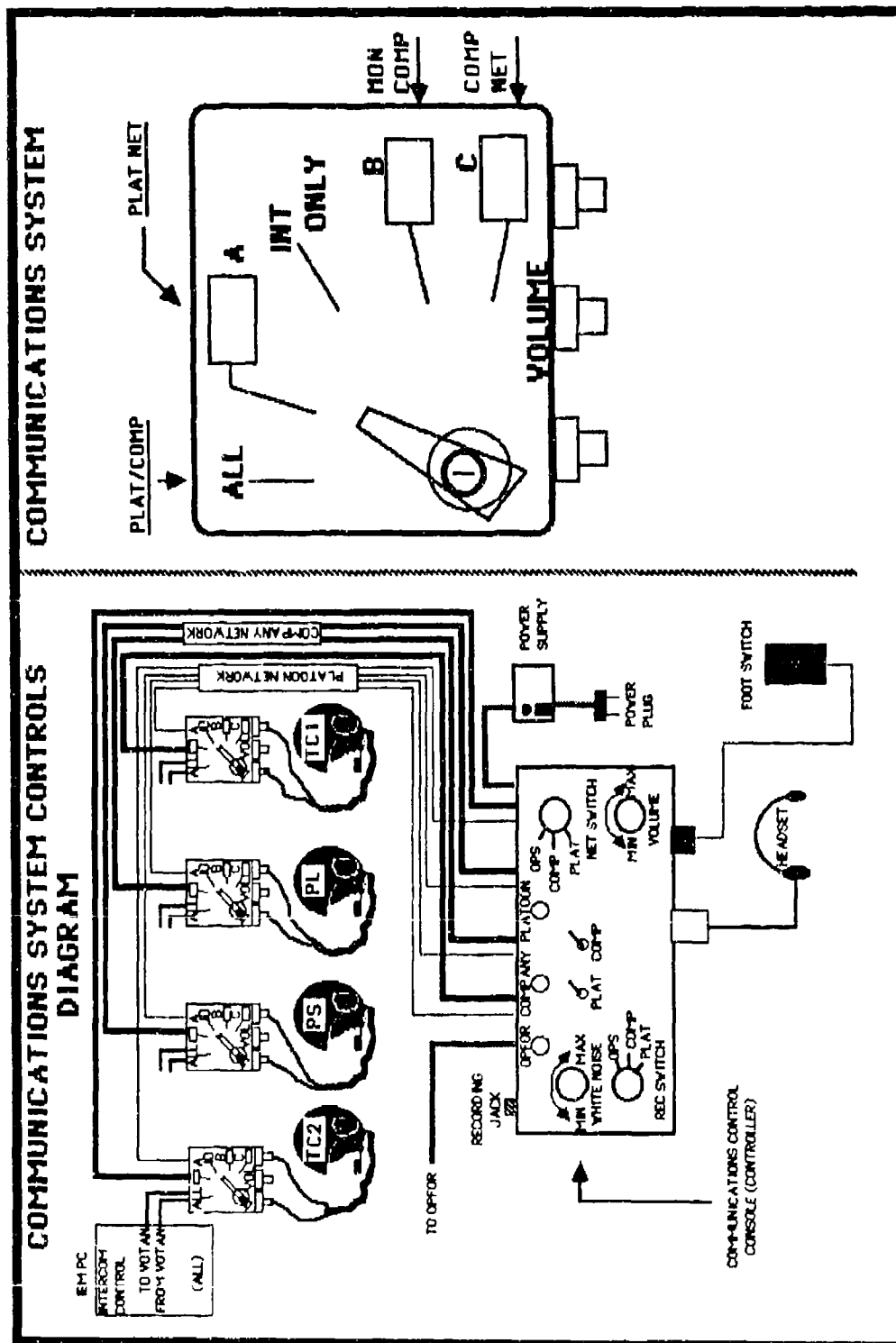
Figure 6. SIMCAT crew communications.

Monochrome Monitor. The menus and messages involved in starting up and controlling a simulation appear on the monochrome monitor. In addition, the monochrome monitor is used when setting up the starting con- ditions for a new scenario and when modifying certain files such as hit/ kill probabilities.

Color Monitor. During a simulation the controller can observe the display being presented at any one of the student stations or the display associated with any one of the OPFOR vehicles. Whichever display is selected will appear on the color monitor. In addition, the controller has the option of selecting a long range view where all vehicles within the deployed area will appear regardless of line of sight. While it is possi- ble on the optional display to differentiate between friendly and OPFOR vehicles, it is not possible to determine in which direction the vehicles are oriented, or to differentiate between T72 tanks and BMPs. In addition, neither firing signatures nor impact bursts are shown.

Videodisc Player. The videodisc player serves the same function that the videodisc player serves at the student and OPFOR controller stations.

Keyboard. The keyboard is used to input scenarios into the system prior to a simulation, bringing up menus involved in starting and conducting a simulation (e.g., selecting a specific scenario, selecting a station to monitor) and inputting indirect fire data.

Headset and Communications Control Console. The controller is equipped with a headset which is connected to the communications control console. The console provides the capability for the controller to trans- mit in or to monitor the company command and platoon nets. In addition he can inject "white noise" for ECM simulation in either net and can control the volume of the noise. The controller initiates communications from his station by pressing a foot switch.

Tactical Map. The tactical map is the same as the tactical map at student stations.

OPFOR Controller Station

The OPFOR controller station consists of a personal computer, a mono- chrome monitor, a color monitor, a videodisc player, a keypad (touch panel), a keyboard, a headset, and a 1:50,000 scale tactical map.

Personal Computer. The personal computer is an IBM PC with a 640K memory. Within the computer are a graphics board, a network board, an 8087 coprocessor chip, a 360K diskette drive, and a 1.2M diskette drive. These components serve functions similar to those described for the components of the computer at the student stations. However, there is no voice board in the computer and there are no voice files stored on either of the two disc drives. A file in the 1.2M drive controls the operation of the OPFOR station.

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<u>Monochrome Monitor</u>. Status reports, when requested, are presented on the monochrome monitor. The data includes the location of all vehicles in grid coordinates, functional losses experienced by any of the vehicles (i.e., none, movement, engagement, all) the amount of remaining ammunition for each vehicle, and the vehicle that was being controlled by the OPFOR controller at the time the request for a status report was made.

<u>Color Monitor</u>. The color monitor serves the same function that the color monitor serves at student stations, except the display will be determined by the particular vehicle that the OPFOR controller has selected to control.

<u>Videodisc Player</u>. The videodisc player serves the same function that the videodisc player serves at student stations.

<u>Keypad (Touch Panel)</u>. The operation of the keypad is the same as the operation of the keypad at student stations. However, the OPFOR controller keypad has different labels and words. The keypad, shown in Figure 7, is used to select the vehicle that the OPFOR controller will control and which will be displayed on the color monitor, to program a movement route for a vehicle and to initiate movement along that route, to select targets and weapon systems for direct fire engagements and to initiate a direct fire engagement, to designate a target area for indirect fire and to initiate indirect fire, to select one of three map views, and to request a status report.

- Direct Unit Selection. By pressing a number on the DIRECT UNIT SELECTION panel corresponding to an OPFOR vehicle, the OPFOR controller can control that vehicle during a simulation.

- Forecast Movement. By pressing the appropriate labels on the FORECAST MOVEMENT panel, the OPFOR controller can designate a movement path before initiating movement for a vehicle. The procedure is as follows:

  1. Select a vehicle to be controlled by pressing the vehicle number on the DIRECT UNIT SELECTION control panel.

  2. Press FORECAST ROUTE on the FORECAST MOVEMENT control panel.

  3. Move cursor cross along the desired movement route by pressing the directional arrow symbol on the OCCP. Press MARK before making any changes in the direction of movement.

  4. Press MARK on the directional arrow when the cursor cross is at the final destination.

  5. Press ACCEPT on the FORECAST MOVEMENT panel.

  6. Press MOVE OUT on the DIRECT UNIT MOVEMENT panel.

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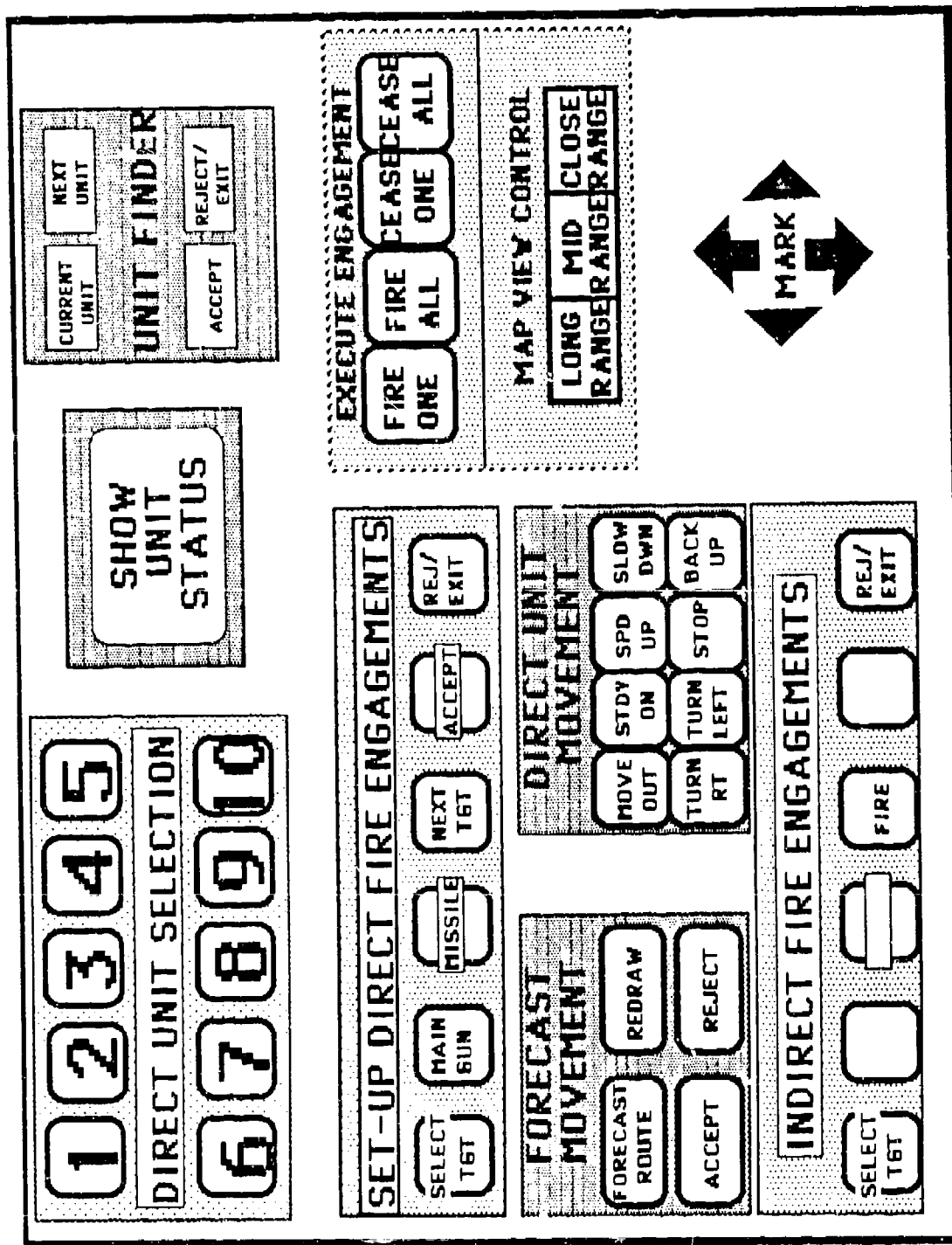
Figure 7. SIMCAT OPFOR control panel.

- Direct Unit Movement. By pressing the appropriate word or words on the DIRECT UNIT MOVEMENT panel, the OPFOR controller can cause a selected vehicle to MOVE OUT, STEADY ON, SPEED UP, SLOW DOWN, TURN LEFT, TURN RIGHT, STOP, or BACK UP.

- Set-Up Direct Fire Engagement. To conduct a direct fire engagement the following steps are required:

  1. Select Firing Vehicle. To select the firing vehicle, press one of the ten keys on the panel of the OCCP labeled DIRECT UNIT SELECTION. (If the OPFOR controller is not sure that the correct vehicle has been selected a second method for selecting the firing vehicle can be used. The second method requires the use of the panel on the OCCP called the UNIT FINDER. The OPFOR controller must first press the key on the UNIT FINDER labeled CURRENT UNIT. When the key is pressed, a green X will appear on the vehicle that is being currently controlled at the OPFOR station. If this is the vehicle that the OPFOR controller wants to fire, he must then press either the REJECT/EXIT key or the ACCEPT key. If it is not the vehicle that he wants to fire, he must press the key labeled NEXT UNIT. The green X will either appear on another OPFOR vehicle or disappear from the screen. The OPFOR controller must continue to press the NEXT UNIT key until the green X appears on the vehicle that he wishes to fire. Then he must press the ACCEPT key.)

  2. Select Weapon. To select the weapon to fire, the OPFOR controller must first press the SELECT TGT key on the panel of the OCCP labeled SET-UP DIRECT FIRE ENGAGEMENT. If the OPFOR controller has chosen a T72 tank as the firing vehicle, the main gun is the only weapon that can be fired and it will be chosen automatically. If he has chosen a BMP, he must select either the main gun or the SAGGER missile as the weapon system that will be fired. A prompt on the screen will direct him to select the weapon system. The selection is made by pressing either the key labeled MAIN GUN or the one labeled MISSILE on the SET-UP DIRECT FIRE ENGAGEMENT panel of the OCCP.

  3. Select Target. Once the OPFOR controller has pressed the SELECT TARGET key (and has pressed the MAIN GUN or MISSILE key if the firing vehicle is a BMP), a green X will be superimposed on the target vehicle (i.e., an M1 tank). If the green X appears on the intended target, the OPFOR controller must press the ACCEPT key on the SET-UP DIRECT FIRE ENGAGEMENTS panel of the OCCP. If the green X appears on another vehicle, he must press the NEXT TGT key until the green X appears on the correct vehicle. When the OPFOR controller presses the ACCEPT key, the green tube of the firing vehicle will automatically orient on the target vehicle.

- Execute Engagement. To fire at a target and to cease firing on a target the following steps are required:

  1. Firing at a Target. Once a target has been selected, the OPFOR controller can fire at the target at any time by pressing the FIRE ONE key on the EXECUTE ENGAGEMENT panel of the OCCP. If targets have been selected for more than one firing vehicle, but the weapons have not yet been fired, all weapon systems can be fired at once by pressing the FIRE ALL key on the EXECUTE ENGAGEMENT panel.

  2. Cease Fire. To stop the main gun from firing, the OPFOR controller presses the CEASE ONE key on the EXECUTE ENGAGEMENT panel of the OCCP. (If the main gun on either the T72 tank or the BMP fires, the system will continue to fire until one of the following occurs: (a) the target vehicle has been destroyed, (b) the OPFOR controller presses the CEASE ONE or CEASE ALL key, (c) line of sight with the target vehicle is lost, or (d) four rounds of ammunition or one missile round have been fired.) If two or more targets were engaged simultaneously by two or more firing vehicles, the OPFOR controller can stop all firing by pressing the CEASE ALL key on the EXECUTE ENGAGEMENT panel.

- Indirect Fire Engagements. The INDIRECT FIRE ENGAGEMENTS label is used to place indirect fire on point and area targets. The OPFOR controller places indirect fire on targets by following the procedure below:

  1. Press SELECT TARGET on the INDIRECT FIRE ENGAGEMENT panel.

  2. Move cursor cross onto the target by manipulating the directional arrow symbol.

  3. Press MARK on the directional arrow symbol when the cursor is on the target.

  4. Press FIRE on the INDIRECT FIRE ENGAGEMENTS control panel.

  After a preset interval, six indirect fire burst fonts will appear on the color monitor at the location selected by the OPFOR controller.

- Map View Control. The MAP VIEW CONTROL panel on the OCCP serves the same purpose as the MAP VIEW CONTROL panel on the TCCP or G/DOCP.

- Show Unit Status. To get a status reading of OPFOR vehicles, the OPFOR controller presses the SHOW UNIT STATUS panel on the OCCP. A message will appear on the color monitor showing information about the current operating vehicle. A status message will also appear on the monochrome monitor showing the status of all OPFOR vehicles in the simulation.

- Unit Finder. The UNIT FINDER panel is used to rapidly locate the current operating vehicle among several vehicles that might be on the color monitor. By pressing CURRENT UNIT on the UNIT FINDER control panel, a crosshair will appear over the vehicle that is currently being controlled. After CURRENT UNIT has been pressed, the subsequent pressing of NEXT UNIT on the UNIT FINDER panel will cause the crosshair to move to the next OPFOR vehicle in terms of vehicle number. If 4 is the current operating vehicle, and CURRENT UNIT is pressed, the crosshair will come up on vehicle 4. When NEXT UNIT is pressed, the crosshair will move to vehicle 5, etc. (Vehicles must be on the color monitor screen for the UNIT FINDER to function.)

Tactical Map. The tactical map is the same as the tactical map at student stations.

Fileserver Station

The fileserver station consists of a personal computer, a monochrome monitor, and a hard disk drive. The hard disk drive contains files that are shared by the other stations. The fileserver relays data (i.e., vehicle movement, firing) from one station to another station over the computer network.

SYSTEM CAPABILITIES

When considering SIMCAT as a training asset the training manager must look at it in its total perspective--the SIMCAT environment. Although the system consists of a grouping of microcomputers and videodisc players, the environment also includes a communications system and a tactical map. Thus, there are three components of the SIMCAT environment which provides the means for students to practice command and control skills which relate to small armor units.

Functional Capabilities

SIMCAT provides six functional capabilities: communications, vehicle movement, vehicle firing, turret control, map views, and combat support (Figure 8).

Communications. The communications system allows each student (TC) to communicate with a simulated gunner (GN), a simulated loader (LD), other students and the controller/company commander. Communication nets include: intercom between tank commanders and their crews (simulated), a platoon net which links all students (PL, PS, TC1, and TC2) and the controller/company commander, and a company command net which links the student platoon leader and platoon sergeant with the controller (company commander). In addition, each student can send and receive arm and hand signals. The controller and the OPFOR are linked separately by radio.

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COMMUNICATIONS

RADIO

PS

IC (TC-SYSTEM)
PLAT. NET (PL-PS-TC1-TC2)
CO. CMD. NET (CO-PL-PS)
CONTROL (CTLR-OPFOR CTLR)

ARM & HAND SIGNALS (TP)

ACTION RIGHT

COMBAT COLUMN
COMBAT WEDGE
LINE
CONTACT LEFT
CONTACT RIGHT
ACTION LEFT
ACTION RIGHT
PASS THROUGH DEFILE
CONDUCT TOW
CONDUCT BOW(SB)
CONDUCT BOW(AB)
COLUMN
COIL
HERRINGBONE

VEHICLE MOVEMENT

FRIENDLY (V OR TP)

M1

STOP	STEADY ON	TURN LEFT
SLOW DOWN	GUIDE LEFT	PIVOT RIGHT
SPEED UP	GUIDE RIGHT	PIVOT LEFT
DASH	HARD RIGHT	EVADE RIGHT
MOVE OUT	HARD LEFT	EVADE LEFT
EASE OUT	TURN RIGHT	BACKUP

OPFOR (TP)

T72   BMP

MOVE OUT	TURN RIGHT
STEADY ON	TURN LEFT
SPEED UP	STOP
SLOW DOWN	BACK UP

VEHICLE FIRING

FRIENDLY (V OR TP)

SABOT   HEAT   COAX

OPFOR (TP)

SABOT

HEAT   MISSILE

LEGEND V=voice, TP=touch panel

TURRET CONTROLS

TURRET CONTROL (TP)

TOP CENTER ARROW ORIENTED TO TOP OF COLOR MONITOR

SMALL TURRET TURNS (TP)

TURN RIGHT   TURN LEFT

MAP VIEW

LONG RANGE
6600m x 4950m
(COLOR MONITOR)

MID RANGE
3000m x 2250m
(COLOR MONITOR)

CLOSE RANGE
600m x 450m
(COLOR MONITOR)

LONG RANGE (TP)

MID RANGE (TP)

CLOSE RANGE (TP)

COMBAT SUPPORT

INDIRECT FIRE   MINEFIELDS
(EXERCISE PROGRAM)

(FRIENDLY-PC,
OPFOR-TP)

Figure 8.   SIMCAT functional capabilities.

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Vehicle Movement. All vehicles will move in response to the appropriate student command or action, or in response to the appropriate OPFOR controller action.

- Friendly Vehicle. A friendly vehicle will move whenever a student issues a movement command (system recognizes the command and moves the vehicle) or when the student tank commander gives a "clear voice" movement command to the student GN/DV and the GN/DV presses the appropriate movement label on the G/DOCP. There are eighteen vehicle movement commands.

- OPFOR Vehicle. An OPFOR vehicle will move whenever the OPFOR controller selects a specific vehicle by pressing the DIRECT UNIT SELECTION label on the OCCP and then presses the appropriate movement command label on the DIRECT UNIT MOVEMENT panel of the OCCP. There are eight vehicle movement commands.

Vehicle Firing. All vehicles can conduct target engagements in response to appropriate and accurate firing commands if the engaging vehicle has line of sight with the target vehicle.

- Friendly Vehicles. All friendly vehicles are M1 tanks capable of engaging threat vehicles with main gun SABOT or HEAT ammunition or with the coaxial machinegun. To engage a threat vehicle the student lays the main gun onto the target vehicle by manipulating the TURRET CONTROL symbol on the TCCP, makes a final lay by manipulating the SMALL TURRET TURNS symbol on the TCCP, and issuing a fire command. The system responds to the fire command by voice recognition and the tank fires at the target. If a student GN/LD is participating in the exercise, he relays the student tank commander's fire command by pressing the appropriate labels on the G/DOCP and the system responds by firing at the target.

- OPFOR Vehicle. OPFOR vehicles may be either T72 tanks or BMPs. The T72 tank can engage target vehicles with main gun SABOT ammunition, whereas BMPs can engage target vehicles with main gun HEAT ammunition or SAGGER missiles. To engage a target from a T72 tank, the OPFOR controller places a cursor cross onto the target by pressing SELECT TARGET or NEXT TARGET, until the cursor cross is on the target, pressing MARK on the directional arrow symbol, pressing ACCEPT label on the same panel, and then pressing FIRE ONE on the EXECUTE ENGAGEMENT panel on the OCCP. To engage a target from a BMP the OPFOR controller must select the weapon to be fired by pressing either MAIN GUN or MISSILE after pressing SELECT TARGET.

Turret Controls. There are two controls which permit the student tank commander or the student gunner/driver to manipulate the main gun onto a target vehicle:

- Turret Control. The TURRET CONTROL on the TCCP or the G/DOCP is used to lay the main gun onto a target. By manipulating the multi-arrowed symbol the student can cause the main gun to orient toward the target. When the student presses the arrow that is

oriented toward the target the turret will move, stop on that orientation, and a line trace will emit from the main gun in the direction that main gun is oriented.

- Small Turret Turns. The SMALL TURRET TURNS panel on the TCCP or the G/DOCP is used to make a "final lay" onto a target. If the initial lay or any subsequent lay is off of the target by more than 20 degrees, the system will not respond to a fire command. When the student presses the appropriate SMALL TURRET TURNS symbol (TURN RIGHT or TURN LEFT), the main gun will move in five degree increments toward the target.

Map Views. The map view seen on color monitors is a 1:24,000 scale. There are three map views: LONG RANGE (6600m x 4950m), MID RANGE (3000m x 2250m), and CLOSE RANGE (600m x 450m). To bring up on the color monitor a specific map view, the student presses the LONG RANGE, or MID RANGE, or CLOSE RANGE symbol on the MAP VIEW CONTROL panel on the TCCP or the G/DOCP. The OPFOR controller presses the desired map view symbol on the MAP VIEW CONTROL panel on the OCCP.

- Long Range. This view is used by training managers when developing scenarios, by controllers to monitor total force participation in a scenario, and by students to determine the general topography of the scenario operational area.

- Mid Range. This range presents the best view for students during an opposing force exercise. It usually prevents surprise engagements by the opposing force. (If a student is viewing on CLOSE RANGE (600m x 450m) and the OPFOR is viewing on MID RANGE (3000m x 2250m) the OPFOR can acquire the student vehicle without the student seeing the OPFOR vehicle.)

- Close Range. This view is used when a student or the OPFOR moves a vehicle over difficult terrain. It provides detailed terrain graphics.

Combat Support Capabilities. Combat support for friendly and OPFOR units consists of indirect fire and minefields.

- Indirect Fires. The capability of SIMCAT to provide indirect fires gives students the opportunities to practice the task-request and adjust indirect fires. It also provides the OPFOR the opportunity to add tactical fidelity to exercises.

  - Friendly Forces. When a student requires indirect fires, he issues a "call for fire" request to the controller (FIST) over the company command net. The controller enters the target coordinates into the computer by using the computer keypad. After a preset interval, a six font burst of artillery fire will appear on the student and the OPFOR controller color monitors.

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- OPFOR Indirect Fire. When the OPFOR controller wants to deliver indirect fire, he presses SELECT TARGET on the INDIRECT FIRE ENGAGEMENTS panel, he places the cursor cross over the target by manipulating the arrow symbol on the OCCP, presses MARK on the arrow symbol, and then presses FIRE on the INDIRECT FIRE ENGAGEMENTS panel. After a preset interval, a six font burst of artillery fire will appear on the student and OPFOR controller color monitors.

- Minefields. While SIMCAT has the capability for providing minefields, the minefields must be preprogrammed at specific locations in order to be functional. Once the minefields are preprogrammed, they can be deactivated.

Task Performance Capabilities

Forty-six procedural tasks, essential to single tank, tank section, and tank platoon operations, can be practiced on SIMCAT. The number of tasks by system and leaders are as follows:

SYSTEM	LEADERS		
SIMCAT technical components	TC (10)	PS (13)	PL (14)
SIMCAT communications	TC (7)	PS (6)	PL (9)
SIMCAT tactical map	TC (9)	PS (9)	PL (9)
SIMCAT environment	TC (2)	PS (3)	PL (17)
	28	31	49

(Three land navigation tasks can be performed from the tactical map or the color monitor.)

Tasks that can be practiced on SIMCAT are listed in Table 1.

Other Capabilities

When conducting SIMCAT exercises, students also can become familiar with and practice standard operating and troop leading procedures.

SYSTEM LIMITATIONS

SIMCAT is not a panacea training device. It is only one of a number of different devices on which leaders of small armor units can practice command and control skills. The system has limitations and the more apparent ones pertain to vehicle movement, gunnery, combat support, slow system response time, and performance evaluation.

Table 1

Tasks Taught/Practiced on SIMCAT

TASK	PL	PS	TC	COMPONENT
1. Communicate Using Visual Signaling Techniques	X	X	X	STC
2. Identify Terrain Features (Natural and Man-made) on a Map	X	X	X	STC, SM
3. Select a Movement Route Using a Map	X	X	X	STC, SM
4. Evade Enemy Antitank Guided Missile (ATGM)	X	X	X	STC
5. Call for and Adjust Indirect Fire	X	X	X	STC
6. Direct Platoon Fires	X	X		STC
7. Issue a Frag Order	X	X		STC
8. Direct Consolidation and Reorganization on the Objective	X	X		STC
9. Analyze Terrain Using the Five Military Aspects of Terrain	X	X	X	STC
10. Collect/Report Information of Potential Intelligence Value	X	X	X	SE
11. React to Indirect Fire	X	X	X	STC
12. Direct Main Gun Engagements on an M1 Tank	X	X	X	STC
13. Direct Machinegun Engagements on an M1 Tank	X	X	X	STC
14. Issue a Fire Command	X	X	X	STC
15. Conduct a Tactical Road March	X			STC
16. Enter or Leave a Radio Net	X	X	X	SC
17. Establish a Radio Net	X			SC
18. Send a Radio Message	X	X	X	SC
19. Recognize Electronics Countermeasures (ECCM) and Implement Electronics Counter-Counter Measures	X	X	X	SC
20. Perform Functions of a Radio Net Control Station	X			SC
21. Use the KTC 1400D Numerical Cipher/ Authentication System	X	X	X	SC
22. Encode and Decode Messages Using KTC 600D Tactical Operations Code	X	X	X	SC
23. Use Automated Communications-Electronics Operation Instructions (CEOI)	X	X	X	SC
24. Enforce Communications Security	X			SC
25. Determine Grid Coordinates of a Point on a Military Map Using Military Grid Reference System	X	X	X	SM
26. Locate an Unknown Point on a Map or on the Ground by Intersection	X	X	X	SM
27. Locate an Unknown Point on a Map or on the Ground by Resection	X	X	X	SM
28. Determine Azimuth Using a Protractor and Compute Back Azimuth	X	X	X	SM

TASK	PL	PS	TC	COMPONENT
29. Determine Elevation of a Point on the Ground Using a Map	X	X	X	SM
30. Measure Distance on a Map	X	X	X	SM
31. Prepare and Submit Interference Reports (MIJI)	X	X	X	SE
32. Prepare and Submit a SITREP	X	X	X	SE
33. Prepare a Platoon Fire Plan	X			SE
34. Assign Fields of Fire	X			SE
35. Prepare and Issue an Oral Operation Order	X			SE
36. Conduct Troop Leading Procedures	X			SE
37. Plan Observation Post for Tactical Operation	X			SE
38. Plan and Direct Withdrawal Under Pressure at Platoon Level	X			SE
39. Plan and Direct Withdrawal Not Under Pressure at Platoon Level	X			SE
40. Plan and Direct Deliberate Attack at Platoon Level	X			SE
41. Plan and Direct Hasty Attack at Platoon Level	X			SE
42. Plan and Direct a Movement to Contact at Platoon Level	X			SE
43. Coordinate a Passage of Lines	X			SE
44. Develop a Plan for a Passage of Lines	X			SE
45. Plan and Direct Fire and Maneuver at Platoon Level	X			SE
46. Prepare a Status Report (STAREP)	X			SE
TOTALS	46	28	25	

STC = SIMCAT TECHNICAL COMPONENTS
SC = SIMCAT COMMUNICATIONS
SM = SIMCAT MAP
SE = SIMCAT ENVIRONMENT

In addition to these procedural tasks that were taken from the 19K10-40 and Armor Officer 01-02 master task lists, students can practice many nonprocedural tasks during tactical exercises, e.g., consider the best of several routes (problem solving), decide which target to engage first (decision making), and the execution of decisions (ACTION RIGHT, orders to change movement formations, orders at a defile, etc.).

Functional Limitations

Vehicle Movement. The lack of intra-platoon vehicle identification, the loss of visual contact when operating in heavy woods, and inadequate arm and hand signals degrade student performance.

- **Intra-Platoon Vehicle Identification.** Each student can identify his own tank by a green icon on top of the tank turret. He can also see his vehicle move whenever he or the GN/DV gives a movement command. However, when he can see another friendly tank, he cannot determine from the display which student is controlling that tank. This problem creates confusion and excess radio traffic during platoon movement.

- **Loss of Vehicle Contact Between TCs When Operating in Heavy Woods.** When tanks enter heavy woods the system degrades the speed of vehicle movement. However, if a tank is separated from another tank by more than 60 meters, the students of the two tanks cannot see each other's vehicle. This results in a loss of section and platoon control during movement through the woods and scattered and random egress from the woods.

- **Inadequate Arm and Hand Signals.** The current system displays arm and hand signals on the student color monitor whenever a student presses a symbol on the ARM AND HAND SIGNAL SELECTORS panel of the TCCP or the G/DOCP. However, the displays are too small to be distinguishable and they remain on the screen for only three seconds.

Gunnery. Although SIMCAT is not a gunnery trainer, gunnery engagements were incorporated into the system to enhance exercise realism. The following functional limitations negatively impact on exercise fidelity.

- **Main Gun Misses Not Accurately Displayed.** At the present time, an explosion font appears on a target when the main gun is fired whether or not the target is actually hit. This may cause a TC to think that a target has been hit when in fact it has not been hit.

- **Firing Vehicles Can Engage Only Other Operating Vehicles.** This limitation precludes the student from conducting reconnaissance by fire, suppressing opposing forces on an objective, neutralizing specific areas, firing at other objects, and reengaging destroyed vehicles.

- **Inadequate Flight Signature of Sagger Missile.** The flight signature is an arrow which is displayed on the OPFOR controller and target vehicle color monitors (as well as other student monitors when line of sight exists), moving from the firing font of the firing BMP across the screen toward the target vehicle. Sometimes the missile signature does not appear on the screen and when it does its small size makes it difficult to acquire. Also, the short flight time and the slow system update resulting from an evade (PIVOT LEFT or PIVOT RIGHT) student command prevents the target vehicle from evading the missile.

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Combat Support. There are three combat support requirements in which the present system provides inadequate performance or cannot perform at all. These functional deficiencies degrade tactical realism and preclude the student from practicing associated skills.

- Lack of Indirect Fire Single Round Registration. At the present time the student, acting as a forward observer, submits a "call for fire" request to the controller (FIST) who enters the target coordinates into the computer. These actions result in a six font burst impact display appearing on the student and OPFOR controller color monitors in 60 seconds. The system cannot display a single round burst for registration.

- Lack of Screening Smoke Visuals. There are no smoke visuals in the system. This shortcoming is undesirable because it prevents a "call for fire" smoke mission and the execution of the task-fire smoke grenade launchers.

- Lack of a Chemical Cloud or a Chemically Contaminated Area. There are no chemical warfare visuals in the system. However, there are several ways in which cues pertaining to chemical contamination can be injected into an exercise. For example, contaminated areas can be shown on the TC's map, the TC can receive an NBC-1 report, or the TC can be given a 3x5 card indicating M8 paper reaction.

- Lack of Vehicle Turret or Hull Defilade Display. Vehicles are displayed in either complete defilade (vehicles of opposing forces cannot be seen by the other force) or in no defilade (vehicles of opposing forces can be seen by the other force). This shortcoming is undesirable because it does not reflect battlefield conditions.

Slow System Response Time. The system constantly monitors and updates the actions of all vehicles in a scenario and transmits this information to the other stations. However, the update time of actions at individual stations is slow. This creates confusion and exasperation among players and results in poor student performance, difficult exercise control and evaluation, and reduction of exercise fidelity.

Performance Evaluation. The system does not provide a "hard copy" printout of student performance. The burden of evaluating student performance was initially placed on the controller, with limited input from the OPFOR controller. Experience has shown that this approach is not practical because during a tactical exercise the controller is too involved with system operations and scenario direction. A partial solution to the problem is the addition of one dedicated evaluator for every two student stations. However, the evaluators are not provided with headsets and may therefore miss many exchanges between students and the controller.

Task Performance Limitations

Individual Procedural Tasks. The following tasks cannot be performed on the system:

- Engage Targets with the Main Gun from the Commander's Weapon Station (CWS)

- Engage Targets with the Coaxial Machinegun from the Commander's Weapon Station (CWS)

- Engage Targets with a Caliber .50 Machinegun

- Fire the M239 or the M250 Grenade Launcher

Other Tasks. The following tasks cannot be performed on the system:

- Suppress Suspected Enemy Position with Direct Fire

- Conduct Night Operations

SIMCAT PLAYER PREPARATIONS

Prior to the start of the first SIMCAT exercise all players (students, station evaluators, controller, OPFOR controller, and the training manager) must become thoroughly familiar with system functions pertaining to their position and with the correct application of procedural and nonprocedural tasks. It is assumed that the controller, OPFOR controller, and station evaluators are familiar with small armor unit tactics and the correct execution of procedural and nonprocedural tasks. It is also assumed that students will possess the requisite skills and knowledges to execute these tasks.

Attempting to learn system functions during an exercise is counterproductive and wastes training time.

A detailed explanation of player preparations is contained in Annex A of this report.

REFERENCES

Drucker, E. H. (1986a). Guide to the operation of SIMCAT (ARI Research Product 86-29). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Drucker. E. H. (1986b). Simulation in combined arms training (SIMCAT) (HumRRO Final Report FR-PRD-86-15). Alexandria, VA: Human Resources Research Organization.

ANNEX A

PARTICIPANT PRE-EXERCISE PREPARATIONS

Richard E. O'Brien

HumRRO, Fort Knox, Kentucky

March 1987

ANNEX A   PARTICIPANT PRE-EXERCISE PREPARATION

CONTENTS

CONTENTS (Continued)

LIST OF FIGURES

ANNEX A
PARTICIPANT PRE-EXERCISE PREPARATIONS

This annex describes the preparations that SIMCAT participants must complete before exercises can be conducted on the system. These preparations include requirements for the training manager, controller, OPFOR controller, station evaluators, and students.

TRAINING MANAGER

The training manager is responsible for developing training exercises that can be conducted on SIMCAT. The training exercises are derived from tactical scenarios which are verbal/graphic presentations of a series of opposing force actions and counter-actions which normally occur during the conduct of a unit mission.

To develop viable scenarios the training manager must be thoroughly familiar with the SIMCAT system, tasks that can be trained on SIMCAT, tasks that are to be trained on SIMCAT, and cues that stimulate task performance. A sequenced procedure for developing tactical scenarios is illustrated in Figure A-1.

System Familiarization (Step 1)

This step includes familiarization with system functions, capabilities, and limitations. This step is accomplished by an in depth study of the appropriate sections of this report, viewing a system site demonstration, and hands-on experience with the system.

Identify Tasks To Be Trained (Step 2)

Tasks required to be trained in each course are listed in course curricula. Tasks that can be trained on the system are listed in Table 1 of this document.

Identify Task Performance Cues (Step 3)

In this step, cues which stimulate task performance are identified. Within the SIMCAT environment there are two types of cues--environmental cues and leader/controller cues.

Environmental Cues. These cues are manifested by displays on player monitors. They include the location and movement of vehicles, the traversing of tank turrets, opposing force direct fire engagements, indirect artillery fire, and terrain views.
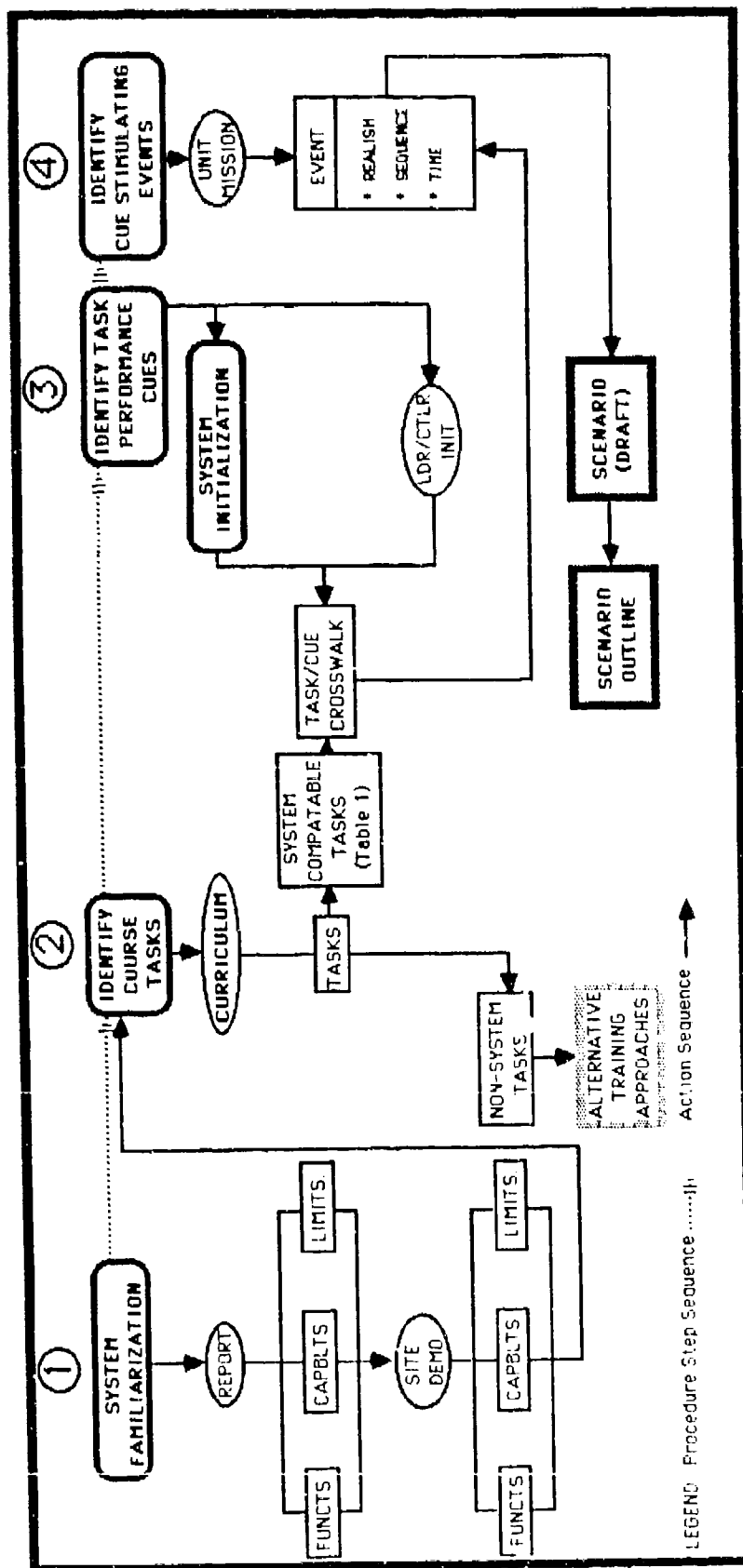
Figure A-1. SIMCAT scenario development procedures.

Leader/Controller Cues. These are audio cues that are injected into exercises over the communications system in the form of directives, orders, requests, and information.

Identify Cue Eliciting Events (Step 4)

Cue eliciting events are cameo segments of the battlefield environment which initiate task performance by students. The training manager must identify and match events with task stimulating cues, and the tasks that are stimulated. An example of this procedure is shown in Figure A-2.

When identifying cue eliciting events, the training manager must consider if the event is applicable in regards to the unit mission battlefield realism, and sequence within the scenario. In addition he must estimate the amount of time that will be required to complete the event. By recording the time required to complete each event in a scenario, the training manager can determine the total time required to complete an exercise.

Mission. Is it reasonable that the event would occur during the mission?

Battlefield Realism. Is it reasonable that OPFOR would engage the friendly tank? Or that the required student tasks would be performed?

```
                          MISSION
                     (Operating Stimulus)

           "Rejoin platoon after repairing broken track."


                          EVENT

ACTION (OPFOR)

      CUE:    An acquired friendly tank
      TASK:   Engage friendly tank


COUNTER-ACTION (Student)

      CUE:    OPFOR direct tank fire
      TASKS:  Direct driver move into defilade
              Engage OPFOR tank
              Submit SPOTREP
```
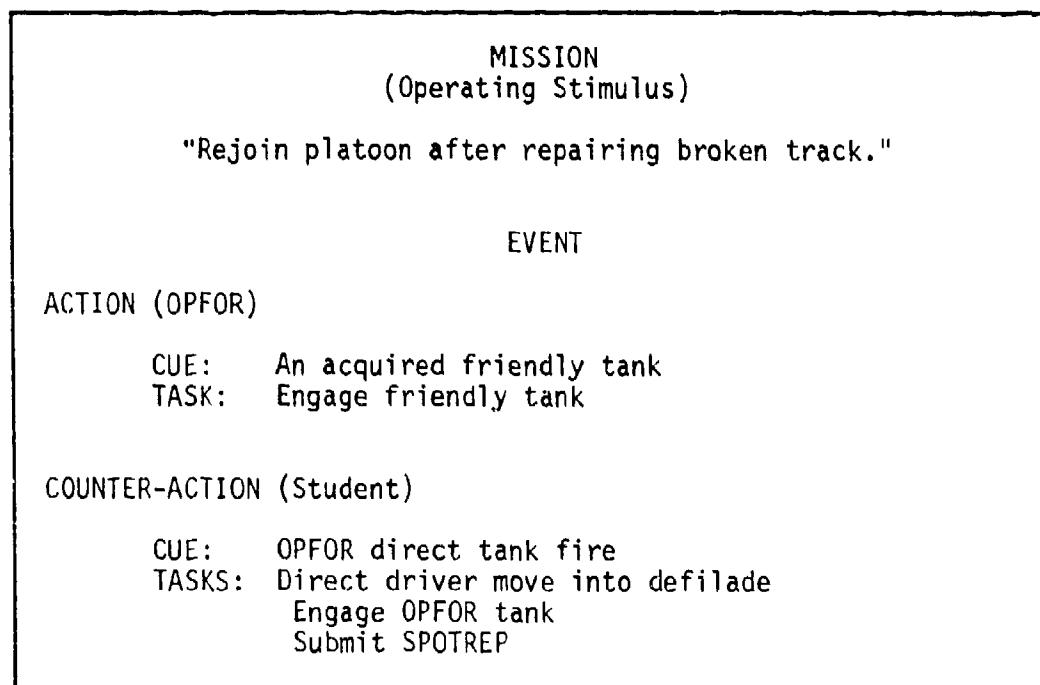
Figure A-2. SIMCAT scenario cue stimulating event example.

Sequence. Is the sequence with other events logical in light of the mission?

Time. As the training manager visualizes cue eliciting events, he estimates and records the time to complete opposing force actions and counter-actions for each event. This information will be used later to determine the entire len_th of the exercise.

Scenario Draft

At this point in scenario development the necessary information required to structure the scenario draft has been brought together. The following sequence of steps should be followed to complete the scenario draft.

1. Mark the corner coordinates (6918-0677, 6660-0040, 8751-9936, 8493-9929) of the system terrain display area on the 1:50,000 scale tactical map.

2. Connect the corner coordinates of the terrain display area. This provides an exercise area 20 km x 6 km.

3. Divide the terrain display area into sectors--four sectors for a single tank tactical exercise (STTX) and two sectors for a tank section tactical exercise (TSTX). Label the sectors A, B, C, etc.

4. Assign a tactical mission to the exercise consistent with the background and experience of the students.

5. Select and mark on the map the beginning point of the exercise (start point for STTXs and TSTXs; forward assembly area for tank platoon tactical exercises [TPTXs] and tank company tactical exercises [TCTXs]).

6. Select and mark on the map the ending point of the exercise (release point for STTXs and TSTXs; objective, limit of advance, battle position or rear assembly area for TPTXs and TCTXs).

7. Determine the appropriate route or likely direction of advance and connect the beginning point with the ending point along the route or direction of advance.

8. Select and mark on the map appropriate control measures (i.e., start, check, release, and passage points, phase lines, objectives, limit of advance, battle position).

9. Select and mark on the map initial locations of friendly vehicles and initial orientation of main guns.

10. Select and mark on the map cue eliciting event locations.

11. Select and mark on the map initial locations of OPFOR vehicles and initial orientation of main guns.

A-7

12. Select and mark on the map locations of minefields.

13. Select and mark on the map pre-planned OPFOR indirect fire locations.

14. Record grid coordinates of the initial locations of all vehicles, and locations of pre-planned OPFOR indirect fire and minefields.

15. Prepare a mission statement for STTXs and TSTXs or a mission order for TPTXs and TCTXs.

Repeat the above steps as appropriate for other sectors in STTXs and TSTXs.

Scenario Outline

Data from the scenario draft and system vehicle specifications (i.e., type and amount of ammunition on board each vehicle in SIMCAT) are used to prepare a scenario outline. This action is required before the scenario can be programmed into SIMCAT. Detailed instructions for preparing a scenario outline are contained in the Guide to the Operation of SIMCAT (Drucker, 1986a, pp. 29-46).

Scenario Programming

Information contained in the scenario outline is entered into SIMCAT in accordance with the procedures described in the Guide to the Operation of SIMCAT (Drucker, 1986a, pp. 47-51).

Scenario Verification

The accuracy of the scenario outline is verified when all participants, except students, preview the exercise. The initial locations of all vehicles, main gun orientations, and the locations of OPFOR pre-planned indirect fire, minefields, and control measures are checked for accuracy and realism. Inaccurate or inappropriate locations of these activities are reprogrammed at this time. During the verification process, the locations of OPFOR vehicles in STTX and TSTX scenarios are checked to ensure that OPFOR vehicles assigned to one sector cannot be acquired by a student player operating in another sector.

During verification time checks of cue eliciting events are recorded to determine total exercise time.

CONTROLLER

The controller's responsibilities include training students to use the system, directing tactical exercises, and evaluating student performance. To perform these responsibilities, the controller must be thoroughly familiar with the functions, capabilities, and limitations of the system,

small armor unit tactics, tasks required to perform small unit tactics, the exercise scenario, and student performance evaluation.

System Familiarization

There are two functions, not previously covered in this document, that the controller must perform during SIMCAT exercise training: (1) starting, stopping, and restarting the system, and (2) delivering indirect artillery fire when requested by students. The procedures for performing these functions are contained in Enclosures 1 and 2 to this annex.

Other system functions and its capabilities and limitations are addressed in other sections of this document.

Student Preparation

Student preparation includes a system overview, voice enrollment, and student station familiarization. A controller narrative for system overview and student station familiarization is at Enclosure 3 to this annex. Procedures for voice enrollment are described in DOC10.TXT, To Enroll a New Trainee.

Direction of Tactical Exercise

The direction of a tactical exercise includes several controller responsibilities, i.e., starting, stopping, and restarting the system as described in Enclosure 1; monitoring communications, injecting cues into the exercise, and providing friendly indirect fire as described in Enclosure 2; and monitoring OPFOR controller and station evaluator activities, and insuring exercise continuity.

Monitoring Communications. The controller should monitor the platoon net to obtain information on student performance. He also must monitor the platoon net to receive reports and requests from students. In addition, by monitoring communications the controller can determine if the exercise is progressing according to the exercise time table.

Injecting Cues into an Exercise. Controller initiated cues are introduced into a scenario during pre-exercise briefings, by operation or frag orders, or by spontaneous orders, directions, and reports during an exercise. The cues must be injected into an exercise at the appropriate time and place to ensure tactical realism and the performance of tasks selected for training.

Monitoring OPFOR Controller and Station Evaluators. Monitoring OPFOR controller and station evaluator activities is required to ensure exercise realism, control, and continuity.

- OPFOR Controller. Threat vehicle movement, target engagements, and indirect fire are initiated and controlled by the OPFOR controller. However, the controller must keep abreast of these activities to ensure that threat actions are consistent with the general scheme of the scenario and to provide appropriate cues to elicit task performance.

- Station Evaluators. Whenever the controller observes that a student is having a problem performing a task or a problem that jeopardizes exercise continuity, he must assure that a station evaluator assists the student.

Ensuring Exercise Continuity. Ensuring exercise continuity is the most important activity performed by the controller and station evaluators. It is achieved by having a thorough knowledge of the system and the scenario/exercise. If exercise continuity is not maintained, training goals will not be reached, students will become restless, and training time will be excessive.

OPFOR CONTROLLER

The OPFOR controller's responsibilities include moving threat vehicles, engaging student tanks, and placing indirect fire on student tanks in concert with scenario requirements. His overall responsibility is to coordinate these actions into a viable and logical visual presentation in response to friendly force operations. To fulfill these responsibilities the OPFOR controller must be familiar with the functions, capabilities, and limitations of the system, the scenario/exercise, and the functions of the following components of his station.

Keypad (Touch Panel)

The keypad (see Figure 11) is the focal point of OPFOR controller actions. The OPFOR controller uses the keypad to initiate vehicle movement, execute direct fire and indirect fire engagements, determine the status of OPFOR vehicles, and change map views.

Monochrome Monitor

The monochrome monitor is used to display the status of OPFOR vehicles when the OPFOR controller presses the SHOW UNIT STATUS label on the keypad.

Color Monitor

The color monitor is used to display terrain views and actions of student and OPFOR vehicles that are within the selected field of view. Different fields of view are selected when the OPFOR controller presses the appropriate MAP VIEW CONTROL label on the keypad.

Exercise Scenario

The integration of threat actions at appropriate times and places adds realism to the exercise. However, the injection of these actions must be consistent with the overall scheme of the scenario.

STATION EVALUATORS

Station evaluators are responsible for assisting students and evaluating their performance. To perform these duties, stations evaluators must be familiar with system functions, capabilities, and limitations, the exercise scenario, and the correct procedures for performing procedural and non-procedural tasks.

Student Performance Evaluation

During performance evaluation, evaluators must focus on the performance of required tasks by students. They must observe student actions in regards to tank movement, target engagement, transmitting reports, and responding to orders. The evaluators must be able to differentiate between poor task performance resulting from a lack of appropriate knowledge and skills and poor task performance resulting from an inability to master SIMCAT's operation. Since the former is a task performance problem, whereas the latter is a system familiarization problem, each type of problem would require a different solution. (Performance evaluation score sheets are included in the exercise packages, Annexes B, C, D, and E.)

Student Performance Assistance

When an evaluator determines that a student has a system operating problem, he should assist the student promptly to ensure exercise continuity. If the problem is serious enough as to jeopardize the continuity of the exercise the evaluator should alert the controller who must then decide whether or not to stop the exercise. If a student has a task performance problem, the evaluator should provide whatever instruction is required. The controller and evaluators must remember that SIMCAT is a training vehicle and that students are at the facility to learn.

STUDENTS

Student preparations for practicing procedural and non-procedural tasks on SIMCAT include an overview of the system, voice enrollment, and student station familiarization.

System Overview

The system overview, which is presented by the controller, familiarizes students with the layout of the facility, station functions, station component functions, and the duties of the controllers and evaluators. (See system overview narrative, Enclosure 3.)

Voice Enrollment

After the system overview has been completed, the controller will assign students to stations. The controllers and evaluators will then enroll student voices. (For voice enrollment procedures see DOC10.TXT, To Enroll a New Trainee.)

Station Familiarization

Station familiarization should be limited to only those components with which the student will interact. These include the keypad (touch panel), color monitor, communications system, and tactical map. (See student station familiarization, narrative, Enclosure 4.)

Enclosure 1 to Annex A

STARTING, STOPPING, AND RESTARTING THE SYSTEM

It is very important that the controller know how to start and stop the system; how to go back in time to a point in the scenario and restart the system; and what to do when there is a system failure. Knowledge of these procedures is essential to prevent system damage and to maximize available training time.

Powering-Up the System

Power-up the system by turning on the following components in the sequence indicated.

1. Turn ON the Surge Protectors and the Back-Up Power Supply. Then press the Reset Button on the Back-Up Power Supply.

2. Turn ON the Communications Power Supply.

3. Confirm that the diskette labelled "C Sys U" (or "Campbell's System Utilities") is in the A: drive (the higher of the two disk drives) at the controller's station. (If it is not, insert the diskette into the drive).

4. Turn ON the Computer, Videodisc Player and Color Monitor (in any order) at the controller's station.

5. Turn ON the Computer and the Hard Disk Drive (in that order) at the file server station.

6. Turn on the Computer, Videodisc Player and Color Monitor (in any order) at each of the following stations: TC1, TC2, PL, PS, and OPFOR (in any order).

At this time the system is powered-up. To proceed into an exercise the controller must follow the detailed instructions contained in the Guide to the Operation of SIMCAT (Drucker, 1986a, pp. 11-18).

Stopping the System

To stop or close down the system turn off the following components in the sequence indicated.

1. Turn OFF the Computer, Videodisc Player, and Color Monitor (in any order) at the following stations: TC1, TC2, PL, PS, and OPFOR (in any order).

2. Turn OFF the Hard Disk Drive and the Computer (in that order) at the file server station.

3. Turn OFF the Computer, Videodisc Player, and Color Monitor (in any order) at the controller's station.

4. Turn OFF the Communications Power Supply.

5. Turn OFF the Back-Up Power Supply and the Surge Protectors (in that order).

Restarting a Scenario at a Point Back in Time

There may be times during an exercise when the controller wants to stop the exercise to critique player performance. When the critique has been completed, the controller will need to restart the scenario to continue the exercise.

An exercise scenario can be stopped and restarted from the point at which it was stopped, from the point at which it was last started, or from any point in between.

A scenario can only be stopped and then restarted from the controller's station. To restart a scenario follow these steps:

1. If the Color Monitor at the controller's station has on display the World View, one of the four TC displays, or the OPFOR display, press the (Esc) key in order to return to an earlier menu on the Monochrome Monitor. (If none of these views is on display, skip this step.)

2. Each time a menu appears, press

   r

   until the following message appears on the screen

   CTRL + ENTER to Stop Current Initial Conditions

3. Simultaneously press the

   Ctrl Enter

   keys.

   NOTE: The Enter key is the key with the bent arrow.

4. The SIMCAT Scenario menu will appear on the screen. When it does, press

   2

   to restart the scenario.

5. The Restart menu will appear on the screen. When it does, press

1

to restart the scenario from the point at which it was last started, or press

2

to restart the scenario from the end point, or press

3

to start the scenario at a point in between.

6. If you pressed "3" you must indicate at what point in time the scenario should be restarted. The range from which you can choose will be specified on the screen. For example, if the duration of the scenario was 16 minutes, a message will inform you that you can restart the scenario at any point from 0 (the original starting point) to 15 (one minute prior to the ending point).

7. Decide at what point you want to restart the scenario. Then type the number corresponding to that point. Since the number must contain four digits, enter a "0" for each unused digit. Press the Enter key after the number has been completely typed. For example, if you want to go back to minute 3, type

0 0 0 3 and press Enter

If you want to go back to minute 12, type

0 0 1 2 and press Enter

NOTE: Use the keys on the top row of the keyboard when typing these numbers.

WARNING: Once a scenario is restarted, it can never be restarted again from an earlier point. For example, if the duration of the scenario was 16 minutes and the scenario was restarted at minute 12, the scenario can never be restarted from minutes 0 to 11.

8. The display will begin to appear on the color monitors in about 30 seconds. If a vehicle appears on a monitor, but the terrain display does not, press either the MID RANGE or FAR RANGE label on the TCCP or OCCP at each station where the terrain display is missing.

Enclosure 2 to Annex A

INDIRECT FIRE PROCEDURES

The controller is also the company fire control officer (FIST). In that capacity he responds to student call for fire requests by placing system delivered indirect fire in the target area. When delivering indirect fire, the controller has three tools which enhance the accuracy of his responses to a call for fire and which provide a hard copy record of student performance. These tools are described below.

Target, Grid Line, Color Monitor Orientator (TGLCMO)

The TGLCMO, which is shown in Figure A-3, is used to orient the tactical map grid lines with the color monitor. The vertical grid lines on the map are approximately 20 degrees to the left of the vertical plane of the color monitor. Therefore, when the controller responds to a student's round adjustment (made in reference to the observer target (OT) line) by "eye-balling" the location for the next adjustment round, this results in an excessive number of adjustments which is unsatisfactory. With the TGLCMO the controller can accurately orient the OT line with the color monitor.

To set-up the TGLCMO, follow the steps below in the sequence indicated.

1. Mark a T with a grease pencil on the color monitor protective glass at the location corresponding to the target coordinates.

2. Place the TGLCMO on the protective glass and manipulate it until the T on the TGLCMO is aligned with the T made with the grease pencil. Then align the top of the TGLCMO parallel with the top of the color monitor and the sides of the TGLCMO parallel with the sides of the color monitor.

3. Secure the TGLCMO to the color monitor with tape.

1:24,000 (MID RANGE) Coordinate Scale

The 1:24,000 coordinate scale, which is shown in Figure A-4, accommodates the 1:24,000 scale MID RANGE terrain display. (When requesting indirect fire students should have their color monitors on the MID RANGE view (3000 x 2250m). This view provides the best engagement perspective, the impact fonts are distinguishable, and target areas are easily identified.

A-16
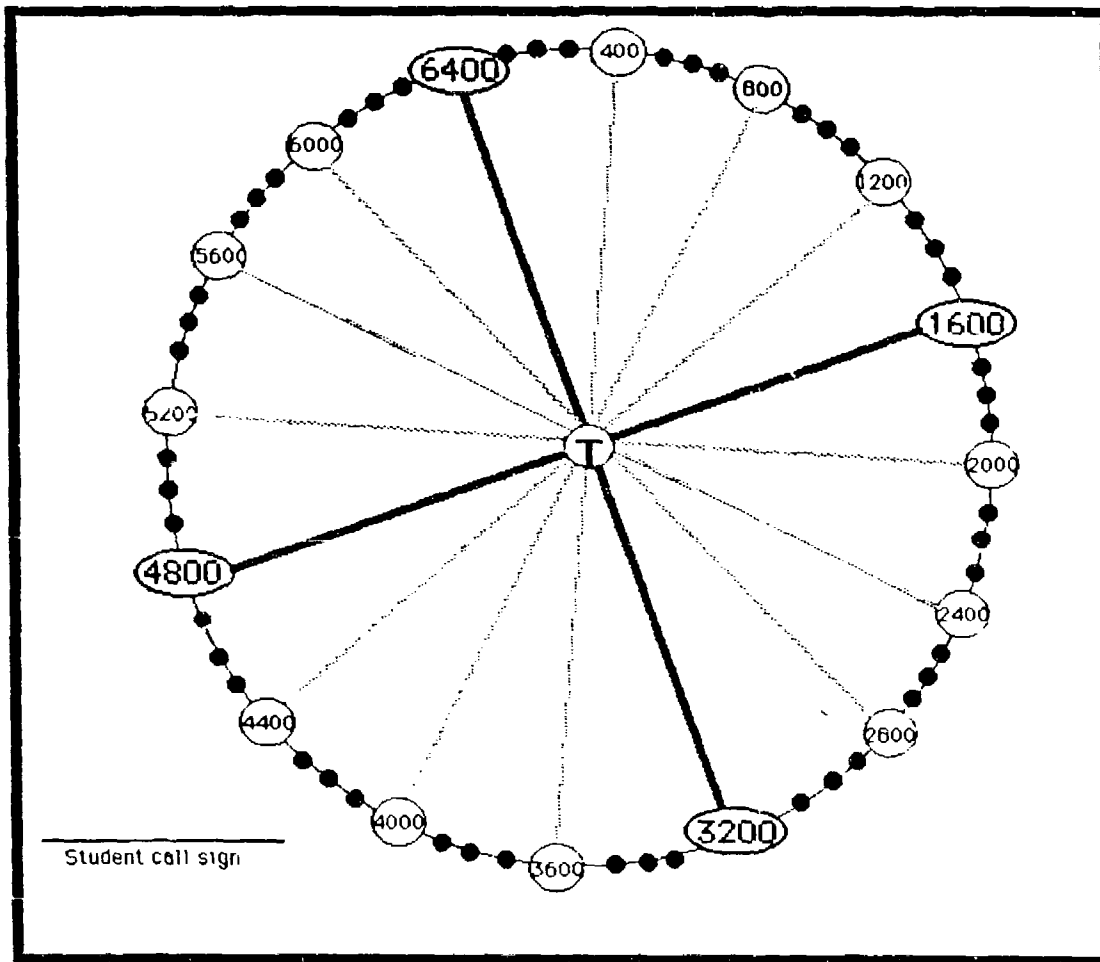
Figure A-3. SIMCAT - target, grid line, color monitor - orientator (MID RANGE DISPLAY).
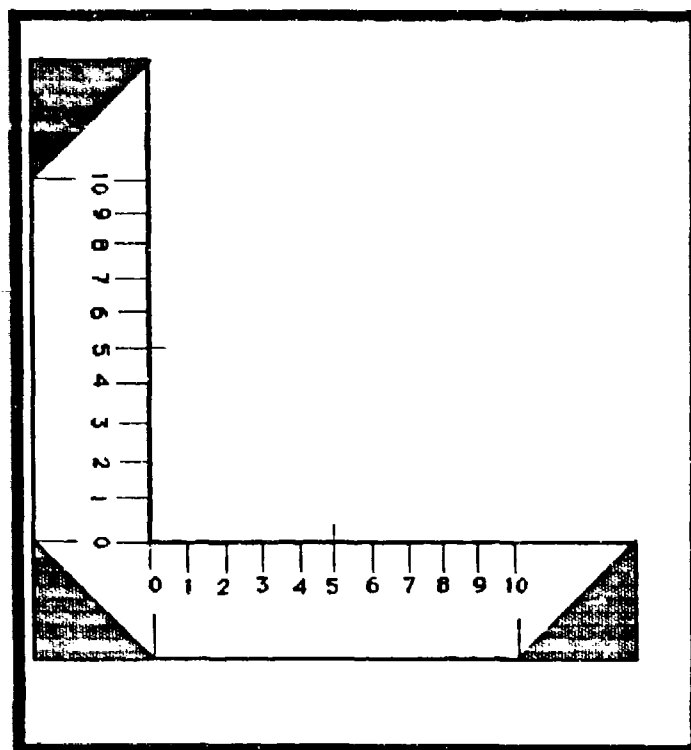
Figure A-4. SIMCAT 1:24,000 coordinate
scale (MID RANGE DISPLAY).

Fire Mission Work Sheet (FMWS)

The FMWS, which is shown in Figure A-5, provides space for the
controller to enter fire mission data. The worksheet accommodates four
fire missions and has an initial request section and an adjustment section.
The first section has space for the student's call sign (ADJUST FIRE),
target coordinates (GRID), target description (TARGET), authentication
challenge (AUTH CHALLENGE), authentication response (AUTH RESPONSE), firing
battery and rounds per gun (BTRY/ROUNDS), and direction from the observer
to the target (DIRECTION). The second section includes space for entering
1st, 2d, 3d, and 4th round adjustments for deflection and range changes and
adjustment coordinates. In addition, there is a space for target effects.

INITIAL REQUEST #

1. ADJUST FIRE _____
2. GRID _____
3. TARGET _____
4. AUTH CHALLANGE _____
5. AUTH RESPONSE _____
6. BTRY/ROUNDS _____
7. DIRECTION _____

ADJUSTMENT

	DEF	RNG	ADJ COORD
1ST	___	___	___
2ND	___	___	___
3D	___	___	___
4TH	___	___	___

TARGET EFFECTS

INITIAL REQUEST #

1. ADJUST FIRE _____
2. GRID _____
3. TARGET _____
4. AUTH CHALLANGE _____
5. AUTH RESPONSE _____
6. BTRY/ROUNDS _____
7. DIRECTION _____

ADJUSTMENT

	DEF	RNG	ADJ COORD
1ST	___	___	___
2ND	___	___	___
3D	___	___	___
4TH	___	___	___

TARGET EFFECTS

INITIAL REQUEST #

1. ADJUST FIRE _____
2. GRID _____
3. TARGET _____
4. AUTH CHALLANGE _____
5. AUTH RESPONSE _____
6. BTRY/ROUNDS _____
7. DIRECTION _____

ADJUSTMENT

	DEF	RNG	ADJ COORD
1ST	___	___	___
2ND	___	___	___
3D	___	___	___
4TH	___	___	___

TARGET EFFECTS

Figure A-5. SIMCAT fire mission work sheet.

Fire Mission Example

Figure A-6 illustrates an example of a fire mission during which the controller used the tools shown in Figures A-3, A-4, and A-5. The sequence of steps is shown below:

1. Change the color monitor display to the display being watched by the student requesting indirect fire.

2. Enter the student's call sign in the FMWS.

3. Enter the target coordinates in the FMWS.

4. Locate the target on the tactical map. Then place a T at that location on the color monitor protective glass.

5. Enter the target description in the FMWS.

6. Select the authentication challenge from CEOI, enter the challenge in the FMWS, and issue the challenge.

7. Enter the challenge response in the FMWS and verify the response in the CEOI. (If the response is incorrect, the controller announces, "Authentication incorrect" and issues a new challenge.)

8. Enter the battery to fire the mission and the rounds per gun to be fired in the FMWS and announce this information to the student.

9. Enter the student (observer) target direction (OT line) in the FMWS.

10. Enter the target coordinates into the computer.

11. Place the TGLCMO on the color monitor protective glass and manipulate it until the T is over the T on the protective glass and the top and sides of the TGLCMO are parallel with the top and sides of the color monitor.

12. Secure the TGLCMO to the color monitor with tape.

13. Draw a straight line through the T on the TGLCMO to the direction number on the rim of the TGLCMO. (This is the OT line.)

14. Announce SPLASH five seconds before impact. (Sixty seconds after the target coordinates are entered into the computer, impact fonts will appear on the student and controller color monitors.)

15. Mark "1" on the TGLCMO where the first set of impact fonts appear on the color monitor.

16. When the student sends his first adjustment, enter the numerical deflection and range in the FMWS.

17. Lay the inside edge of the 1:24 coordinate scale parallel to the OT line and move the scale along the line until the arm of the scale intersects the "1" at the student's numerical deflection and/or range correction.

18. Locate the deflection and/or range correction point on the tactical map and enter the coordinates of that point in the FMWS.

19. Enter the adjustment coordinates into the computer.

20. Announce SPLASH five seconds before impact.

21. Mark "2" on the TGLCMO where the second set of impact fonts appear on the color monitor.

22. When the student sends his second adjustment, enter numerical deflection and/or range in the FMWS.

23. Lay the inside edge of the 1:24,000 coordinate scale parallel to the OT line and move the scale along the line until the arm of the scale intersects the "2" at the student's numerical deflection and/or range correction.

24. Locate the deflection and/or range correction point on the tactical map and enter the coordinates of that point in the FMWS.

25. Enter the adjustment coordinates into the computer.

26. Announce SPLASH five seconds before impact.

27. Mark "3" on the TGLCMO where the third set of impact fonts appear on the color monitor.

28. When the student sends his third adjustment, enter numerical deflection and range in the FMWS.

29. Lay the inside edge of 1:24,000 coordinate scale parallel to the OT line and move the scale along the line until the arm of the scale intersects the "3" at the student's numerical deflection and/or range correction.

30. Locate the deflection and range correction point on the tactical map and enter the coordinates of that point in the FMWS.

31. Enter the adjustment coordinates into computer.

32. Announce SPLASH five seconds before impact.

33. Mark "4" on the TGLCMO where the fourth set of impact fonts appear on the color monitor.

34. When the student sends his fourth adjustment, enter the numerical deflection and/or range in the FMWS.

35. Lay the inside edge of the 1:24,000 coordinate scale parallel to the OT line and move the scale along the line until the arm of the scale intersects the "4" at the student's numerical deflection and/or range correction.

36. Locate the deflection and range correction point on the tactical map and enter the coordinates of that point in the FMWS.

37. Enter the adjustment coordinates into the computer.

38. Announce SPLASH five seconds before impact.

39. Mark "5" on the TGLCMO where the fifth set of impact fonts appear (fire for effect) on the color monitor.

NOTE: The controller must enter into the computer the adjustment coordinates, determined from the student's adjustments, even though the controller might believe that the student's adjustments were incorrect.

Fire Mission Procedure Example

Figure A-7 is an example of fire mission communications between the student (FO) and the controller (FIST).

INITIAL REQUEST

1. ADJUST FIRE 63H71
2. GRID 815/9950
3. TARGET TWO BMPS
4. AUTH.CHAL HOTEL GOLF
5. AUTH.RESP LIMA PAPA
6. BTRY/RDS BRAVO 2 RDS
7. DIRECTION 400

ADJUSTMENT   ADJ
DEF RNG   COORD

1ST L200 D400 8137991C
2ND R100 A200 8147993C
3D L50 D100 8142992C
4TH   A50 8142992C
         FFE
TARGET EFFECTS TWO
BMPS DESTROYED

1600 2000 2400 2800 3200 3600 4000 4400 4800 5200 5600 6000 6400 600 1200

① L200-D400
③ L50-D100
④ A50-FFE
⑤
② R100-A200

OT LINE

200
0
400
COORDINATE SCALE

Student call Sign

Figure A-6. SIMCAT - fire mission example using orientator, 1:24,000 coordinate scale, and fire mission work sheet.

TC(FO) | **CTLR(FIST)** | **TC(FO)** | **CTLR(FIST)**

1. A4257,THIS IS 63H71,ADJUST FIRE,OVER (FIST and TC(FO) Call Signs and Fire Mission Alert)

2. 63H71,THIS IS A4257,ADJUST FIRE OUT (Bring Up TC(FO) Station on Color Monitor)

3. GRID 81579950,OVER (Target Grid Coordinates from Tactical Map)

4. GRID 81579950 OUT (Enter Target Grid Location on Fire Mission Work Sheet, Enter Grids Into Computer(Don't Press Second ENTER),Locate Target(on Tactical Map, Mark "T" on Color Monitor Screen Glass Cover)

5. TWO BMPS IN OPEN,OVER (Target Description)

6. TWO BMPS IN OPEN, AUTHENTICATE ALPHA KILO OVER (Enter Target Description on Fire Mission Work Sheet, Submit Authentication Challenge)

7. I AUTHENTICATE HOTEL,OVER (TC(FO) Responds to Challenge)

8. BRAVO,2 ROUNDS,OVER (Battery and Number of Rounds Per Tube)

9. BRAVO,2 ROUNDS,OUT

11. DIRECTION 400,OVER (Observer-Target (OT) Direction(Line) in this)

11. DIRECTION 400,OUT (Enter Direction on Fire Mission Work Sheet and Draw Direction Line on TGLCM Orientator)

12. SHOT,OVER (Press Second ENTER on Computer, Rounds on the Way, Mark Impact Point ① on TGLCM Orientator)

13. SHOT,OUT

14. LEFT 200 DROP 400 OVER (Round Impacted Beyond and to Right of Target)

15. LEFT 200 DROP 400 OUT (Enter Corrections in Fire-Mission Work Sheet, Place Inside Vertical Line of Coordinate Scale on the OT Line of the TGC Orientator, Slide Coordinate Scale Along OT Line Until Horizontal Line of the Coordinate Scale Intersects the Impact Point, Mark the End Point of the Range Change with an "X", Locate the "X" Point on the Tactical Map, Determine and Enter Coordinates Into Computer)

16. SHOT OVER (Rounds on the Way, Mark Impact Point ② on TGLCM Orientator)

17. SHOT,OUT

18. RIGHT 100 ADD 200,OVER (Round Impacted Short and to Left of Target)

19. RIGHT 100 ADD 200,OUT (Enter Corrections on Fire Mission Work Sheet, Determine and Enter Coordinates Into Computer)

20. SHOT,OVER (Rounds on the Way, Mark Impact Point ③ on TGLCM Orientator)

21. SHOT,OUT

22. ADD 100,OVER (Round Impacted Short of Target)

23. ADD 100,OUT Enter Corrections on Fire Mission Work Sheet, (Determine and Enter Coordinates Into Computer)

24. SHOT,OVER (Rounds on the Way, Mark Impact Point ④ on TGLCM Orientator)

25. SHOT,OUT

26. DROP 50 FIRE FOR EFFECT,OVER (Round Impacted Beyond Target)

27. DROP 50,FIRE FOR EFFECT,OUT (Enter Corrections on Fire Mission Work Sheet, Determine and Enter Coordinates Into Computer)

28. SHOT,OVER (Rounds on the Way, Mark Impact Point ⑤ on TGLCM Orientator)

29. SHOT,OUT

30. ROUNDS COMPLETE,OVER

31. ROUNDS COMPLETE OUT (Rounds Impact on Target Area)

32. END OF MISSION,TWO BMPS DESTROYED,OVER

33. END OF MISSION,TWO BMPS DESTROYED,OUT

Figure A-7. SIMCAT fire mission procedures.

Enclosure 3 to Annex A

SYSTEM OVERVIEW NARRATIVE

INTRODUCTION

"Good morning (or afternoon) and welcome to SIMCAT. I am _____,
the OIC (or NCOIC) and during your training on the simulator I will be the
controller. This is _____, the OPFOR controller, and this is
_____ and _____, the station evaluators.

"SIMCAT, the acronym for simulation in combined arms training, is a
tactical training device which combines battle simulation techniques with
microcomputer and videodisc technology. The device is used for practicing
tank commander, tank section leader, and tank platoon leader command,
control, and communications skills learned in a non-tactical environment.
It also has a limited capability for use in practicing tank company
commander command and control skills."

"During your time with SIMCAT you will receive a system overview, have
your voices enrolled in the voice recognition system, become familiar with
the student station and student station operations, and practice procedural
and nonprocedural tasks within the context of a tactical exercise."

"SIMCAT consists of a controller station, an OPFOR controller station,
four student stations, and a fileserver station. Two student performance
evaluators will serve as my assistants. The components at the stations
allow students to participate in tactical exercises across different scaled
terrain displays with moving and shooting tanks against a moving and
shooting threat force. The controller acts as the higher unit commander
and provides command and control during exercises. The OPFOR controller
provides command and control of threat forces. One evaluator is assigned
for every two students. His duties are to monitor, record, and report
student performance and to provide task performance and system performance
assistance when required."

CONTROLLER STATION

"The controller station consists of a computer, keyboard monochrome
monitor, color monitor, communications console and headset, tactical map,
and videodisc player. (Point to each component.) During an exercise the
controller uses the components as follows:

- Computer Keyboard. By punching correct letters on the keyboard
  (demonstrate) various menus will appear on the monochrome monitor
  (point to) and terrain views can be switched to the same terrain
  views as seen by students or to the world terrain view. (Demon-
  strate and point to.) With the world view all friendly tanks and
  threat vehicles can be seen as can any minefield structured into
  the exercise. (Point to vehicles and minefields.) Also by
  punching in the correct letters on the keyboard, to bring up the

indirect fire menu, and then punching in the target coordinates on the keyboard (demonstrate) friendly indirect fire can be provided. (Point to.)

- Monochrome Monitor. This component shows on its screen information resulting from entries that were punched into the keyboard. (Demonstrate and point to information.)

- Color Monitor. The second monitor provides four different terrain views, 600m x 450m, 3000m x 2250m, 6600m x 4950m, and a world view. The various displays are brought up on the screen as explained in the computer keyboard section above. (Demonstrate and point to.)

- Communications Console and Headset. The communications system provides access to the company command net and the platoon net. It also provides white noise (radio jamming). (Point to and demonstrate.) A limited access communications link, activated by a foot switch, allows controllers to communicate to each other without student intercept. (Point to and demonstrate.)

- 1:50,000 Scale Tactical Map. This map (point to) is used for pre-exercise briefings and operation orders and during exercises for verifying coordinate locations included in student reports.

- Videodisc Player. This component stores terrain displays and on order accesses the frame from which the required terrain display is stored, decodes the images that are stored digitally, and transmits the resulting signals to the color monitor for display. The controller does not interact directly with this component (point to)."

OPFOR STATION

"The OPFOR station consists of a computer, monochrome monitor, color monitor, keypad (touch panel), headset, tactical map, and videodisc player. (Point to each component.) During an exercise the OPFOR controller uses the components as follows:

- Keypad (touch panel). The keypad provides many functions, i.e., show unit (vehicle) status, find a specific unit (vehicle), select a specific unit (vehicle), forecast vehicle movement routes, direct unit (vehicle) movement, set up direct fire engagements, execute direct fire engagements, execute indirect fire engagements, and selection of map views. (Point to each function label on the keypad.)

  - To determine the status of a vehicle the SHOW UNIT STATUS label is pressed and a message will appear on the color monitor showing the status of the vehicle currently being controlled. A message will also appear on the color monitor showing the status of all threat vehicles in the exercise. (Demonstrate and point to messages.)

- To select a specific vehicle to control, one or more numbers on the DIRECT UNIT SELECTION panel is pressed. (Demonstrate and point to panel.)

- When the current operating vehicle appears with several vehicles on the color monitor and it must be rapidly located, pressing the CURRENT UNIT label on the UNIT FINDER panel will cause a crosshair to appear over the current operating vehicle. (Demonstrate and point to the crosshair.)

- To move a vehicle a long distance while operating another vehicle the FORECAST ROUTE symbol on the FORECAST MOVEMENT panel is pressed. A cursor cross will appear on the color monitor. The cross is moved to the vehicle to be moved by manipulating the multi-arrow symbol on the keypad. When the cursor cross reaches the vehicle MARK on the multi-arrow symbol is pressed. Then the cursor cross is manipulated over the desired route to the desired location. Whenever a direction change is made MARK is pressed. At the destination MARK is pressed and then the ACCEPT label on the FORECAST MOVEMENT panel is pressed and the vehicle will move to its destination. (Demonstrate and point to labels, cursor cross, and vehicle moving to its destination.)

- To move or stop a vehicle the appropriate word or words on the DIRECT UNIT MOVEMENT panel is pressed. The movement commands are: MOVE OUT, STEADY ON, SPEED UP, SLOW DOWN, TURN LEFT, TURN RIGHT, STOP, and BACK UP. (Point to each movement word or words and demonstrate.)

- To set-up a direct fire engagement the cursor cross is moved onto the selected target by manipulating the multi-arrow symbol, then pressing MARK when the cursor cross is on the target. SELECT TARGET, then MAIN GUN or MISSILE, then ACCEPT are pressed on the SET-UP DIRECT FIRE ENGAGEMENTS panel. (Point to words and symbol and demonstrate.)

- A direct fire engagement is executed by pressing FIRE ONE on the EXECUTE ENGAGEMENT panel. The engagement is terminated by pressing CEASE ONE on the EXECUTE ENGAGEMENT panel. (Point to words and demonstrate.)

- To select a map view (600m x 450m, or 3000m x 2250m, or 6600m x 4950m), CLOSE RANGE, or MID RANGE, or LONG RANGE is pressed on the MAP VIEW CONTROL panel. (Point to words and demonstrate.)

- Computer. The OPFOR controller does not interact directly with the computer. (Point to.)

- Color Monitor. The color monitor serves the same purpose at the OPFOR controller station as it does at the controller station. (Point to.)

- Headset. The headset provides the communication link between the OPFOR controller and the controller. Transmissions are activated by a foot switch. (Point to.)

- 1:50,000 Scale Tactical Map. This map (point to) is used to provide orientation with the terrain displays on the color monitor.

- Videodisc Player. This component (point to) serves the same purpose at the OPFOR controller station as it does at the controller station. The OPFOR controller does not interact directly with the videodisc player."

FILESERVER STATION

"The fileserver station consists of a personal computer, a monochrome monitor, and a hard disc drive. (Point to components.) The hard disc drive contains files that are shared by other stations. The fileserver relays data, i.e., vehicle movement and firing, from one station to another station as part of the computer network. This station is unmanned."

STUDENT STATION

"This is the student station. Here we will cover station components, their functions, and system capabilities and limitations. _____ has his voice enrolled at this station and during the briefing he will demonstrate operations of the station."

"Each student station includes a keypad (touch panel), personal computer, keyboard, color monitor, videodisc player, communications, and a tactical map.

- Keypad (touch panel). The keypad provides five functions, i.e., engine controls, arm and hand signals, laying main gun for direction, making main gun final lay, and selection of map views. (Point to each function label on the keypad.)

  - To stop or restart the tank, the STOP ENGINE or the START ENGINE label on the ENGINE CONTROL panel is pressed. To determine the status of the tank, the SHOW TANK STATUS label on the ENGINE CONTROL panel is pressed. (Demonstrator presses SHOW TANK STATUS label and points out the status message on the color monitor.)

  - Arm and hand signals can be given by pressing the appropriate signal selectors (pictures) on the ARM AND HAND SIGNAL SELECTORS panel. When a signal selector is pressed, the image of that signal will appear over each tank and remain on the

color monitors for approximately three seconds. (Demonstrator points out signal selectors, presses a signal selector, and points out signal image on the color monitor.)

- The main gun is laid for direction by pressing the arrow, on the multi-arrow symbol, that is pointing toward the target. (Demonstrator selects a point on the terrain display, presses the appropriate arrow, and explains the line trace which is emitted from the main gun after the main gun has traversed to the desired direction.)

- To make a final lay, the appropriate TURN LEFT or TURN RIGHT symbol on the SMALL TURRET TURNS panel is pressed. (Demonstrator points out main gun initial lay, the left or right deviation of the main gun initial lay to the target, and how to make a final lay.)

- The procedure for selecting a map view is the same as described at the controller station. (Demonstrator points to map view symbols and changes map views.)

- Keypad (touch panel) (GN/DV option). A second student may be added to each station to serve as the gunner/driver. When this is done, the GN/DV option keypad is substituted for the regular keypad. The GN/DV option keypad provides the same functions as the regular keypad plus driving commands and gunnery commands functions.

  - To get the tank to move in various directions, to change speed, and to stop, the appropriate driving command label on the DRIVING COMMANDS panel is pressed. There are eighteen driving command labels. (Demonstrator presses various driving command labels and points out tank movement and rate of speed on the color monitor.)

  - To engage a target, once the main gun is laid on a target, the appropriate gunnery command label on the GUNNERY COMMAND panel is pressed. There are five gunnery command labels. (Demonstrator points out gunnery command labels, issues a fire command by pressing appropriate labels, and points out the results. The tank commander must issue a "clear voice" fire command before the GN/DV can press in a gunnery command label.)

- Personal Computer. The student does not interact directly with the personal computer. (Demonstrator points out personal computer.)

- Keyboard. The student does not interact directly with the keyboard. (Demonstrator points out keyboard.)

- Color Monitor. The color monitor serves the same purpose at the student station as it does at the controller and OPFOR controller stations. (Demonstrator points to the color monitor, changes map views, and points out terrain objects.)

- Videodisc Player. The student does not interact directly with the videodisc player. (Demonstrator points out the videodisc player.

- Communications. The communications system includes a CVC helmet and an intercommunications control box. These components are linked to a tactical radio net. The system provides for crew intercommunications, a platoon net, and a company command net. When the GN/DV option is in effect communications between the TC and GN/DV is by "clear voice," not intercom. (Demonstrator points to the communications components and transmits on the platoon net and the company command net.)

- 1:50,000 Scale Tactical Map. The map is used to maintain orientation with the map views on the color monitor and to determine coordinates for reports and requests for indirect fire. (Demonstrator points out tactical map.)

Are there any questions? Good. At this time we'll take a short break. Then you will be assigned to stations and enroll your voice in the voice recognition system. Take a break."

NOTE: After the break students are assigned to stations and the controller and the evaluator personnel will enroll the students in the voice recognition system in accordance with the procedures outlined in DOC10.TXT, To Enroll a New Trainee.

Enclosure 4 to Annex A

STATION FAMILIARIZATION NARRATIVE

INTRODUCTION

"Now that you have been given an overview of SIMCAT and have enrolled in the voice recognition system it is time for you to have an opportunity to use the system."

"By use of the entire SIMCAT system, i.e., the simulator, the communications system, and the tactical map, you can perform most of the tasks that are included in your course. However, there are some limitations I want to point out to you at this time."

SYSTEM LIMITATIONS

"There are two types of limitations you should be aware of; they are task limitations and system limitations.

- Task Limitations. The following tasks cannot be performed on the system:

    - Engage targets with the main gun from the commander's weapon station (CWS).

    - Engage targets with the coaxial machinegun from the commander's weapon station (CWS).

    - Fire the M239 or the M250 grenade launcher.

    - Suppress suspected enemy positions with direct fire.

    - Conduct night operations.

- System Limitations. The following system limitations will affect or prevent task performance:

    - You can identify only your own tank among friendly tanks.

    - When operating in heavy woods you cannot see adjacent vehicles if they are more than 60 meters away.

    - Arm and hand signals are hard to distinguish and remain on the color monitor screen for only a very short time.

    - Main gun misses are not shown. All rounds fired appear to hit the target.

    - Vehicles can engage only other operating vehicles (friendly or threat). You cannot engage terrain features.

- The flight signature of a Sagger missile (a series of arrows emitting from the firing BMP and moving across the screen toward the target) is difficult to acquire.

- All indirect fires are displayed by a six font burst. Single registration rounds are not possible.

- Screening smoke is not available.

- Chemical clouds are not available.

- Slow system response time to student actions is caused by the system recording and routing every action at every station to every station. When using the keypad (touch panel) give the system time to react to your command. When giving voice movement and gunnery commands speak slowly and clearly (the same as you did during voice enrollment) and give the system time to react."

- Vehicles cannot move into defilade positions. If a vehicle is in line of sight, and if it is located on the displayed terrain, it will appear on the monitor.

VEHICLE MOVEMENT

(The controller "brings up" on the system the BASIC-1 scenario outline.)

"At this time bring up the CLOSE RANGE, MID RANGE, and LONG RANGE views on the color monitor. Notice that there are four tanks in the center of the map views. Your tank has a green turret. Now bring up the MID RANGE view on the color monitor. You will now practice tank movement. Your operational areas are: TC1 lower left quadrant, TC2 lower right quadrant, TC3 (PL) upper left quadrant, and TC4 (PS) upper right quadrant.

On your table is the list of tank movement commands which you used during voice enrollment. Practice every command at least three times. Follow a road, move cross country, move through woods, move up and down hills, and move across water. As your tank moves, observe the speed indicator which appears in the lower right corner of your color monitor. Notice that changes in speed depend on the terrain on which the tank is moving. Observe speed changes between commands SPEED UP, SLOW DOWN, and DASH. Remember you can only execute PIVOT LEFT or PIVOT RIGHT when the tank is stopped. Are there any questions? OK, move your tanks out. Stay in your operational area." (When the GN/DV option is in effect, the GN/DV will practice tank movement by pressing the appropriate words on the DRIVING COMMANDS panel of the G/DOCP.)

TANK GUNNERY

"Now move your tank to the center of your operational area. Good. At this time practice laying the main gun for direction by using the TURRET CONTROL panel on the TCCP. Pick a terrain feature and lay the main gun on it. When you have mastered laying the main gun for direction, practice making a final lay by using the SMALL TURRET TURNS panel on the TCCP." (The controller directs OPFOR controller to move two threat vehicles to the edge of each student's operational area.)

"In a short time two threat targets will appear at the edge of your operational area. Remember threat vehicles are red (T72 tanks are rectangular and BMPs are diamond shaped) and friendly tanks are black. Don't engage friendly tanks. When you see a threat target, lay the main gun for direction, make a final lay, and issue a fire command. Two actions must be done correctly or your tank won't fire. The main gun must be laid within 20 degrees of the target and the fire command elements must be in the correct sequence. If you are laid on the target accurately and the fire command is GUNNER-SABOT (or HEAT) (system responds AMMO UP)-TANK (or ANTITANK) (system responds IDENTIFIED)-FIRE, your tank will fire and hit the threat target. Fire command sequence, pausing for system responses, and correct target identification are critical for target engagements. Any questions? Good. Proceed with target engagements." (When the GN/DV option is in effect the TC makes the initial lay, the GN/DV makes the final lay, and the TC issues a fire command and the GN/DV punches in the fire command elements on the GN/DV OCP.)

STATION COMMUNICATIONS

"Now that all threat targets have been destroyed and you have become familiar with main gun lay, fire commands, and tank movements, you will spend some time going over the communications system. You have a CVC helmet and an intercom control box. The platoon net is marked on the control box. During today's exercise we will operate only in the platoon net. At the start of each tactical exercise, the net will be opened in accordance with standard net operating procedures. You know how to do this so we won't practice this today. However, I want you to become familiar with the communications system and how the tactical map is used during an exercise. For this practice you will be RED ONE (TC1), RED TWO (TC2), RED THREE (TC3 or FS), RED FOUR (TC4 or PL), and the controller will be RED SIX. Now locate your present position and report it to the controller by eight digit coordinates. Good. Now locate a prominent terrain feature and request indirect fire on the terrain feature. Notice a six font impact in the vicinity of the terrain feature within five seconds of the controller (FIST) announcing SPLASH."

SUMMARY

"You can perform on SIMCAT many of the tasks that are in your course. However, you must remember system limitations.

- You cannot engage targets from the commander's weapon station (CWS), you must go through the gunner.

- You can only engage vehicles, you cannot engage terrain objects.

- You cannot conduct .50 caliber machinegun engagements.

- You cannot fire on board smoke grenades."

"You should also remember to operate the system most of the time with the MID RANGE view on. This will help prevent the threat from ambushing you. If you can see a threat vehicle, the threat vehicle can usually see you. Are there any questions? At this time take a break. The OPFOR controller and the evaluators are available to answer any specific questions you might have. I will be inputting a tactical exercise into the system which you will conduct after the break."

ANNEX B

SINGLE TANK TACTICAL EXERCISE

Richard E. O'Brien

HumRRO, Fort Knox, Kentucky

March 1987

ANNEX B   SINGLE TANK TACTICAL EXERCISE

CONTENTS

LIST OF FIGURES

CONTENTS (Continued)

ANNEX B
SINGLE TANK TACTICAL EXERCISE

This annex contains a pre-exercise training program, four single tank tactical exercises, an exercise schedule, and procedures for evaluating student performance.

Pre-Exercise Training

Although students will have received a system overview, will have had their voices enrolled in the voice recognition system, and will have been familiarized with their stations, they should complete the pre-exercise training program before conducting an exercise. Pre-exercise training is intended to enhance students' confidence in the system and improve their performance of armor tasks on SIMCAT.

During pre-exercise training students will practice tank movement, turret control, gunnery engagements, calling for indirect fire, and submitting CONTACT and SPOT reports (see Enclosure 1).

Single Tank Tactical Exercises (STTXs)

There are four STTXs and each can simultaneously accommodate four students (see Enclosure 2). (Each STTX can simultaneously accommodate eight students when the GN/DV student option is in effect.) Each STTX includes eight actions which require the performance of thirty-eight tasks. The sequence of actions varies among student sectors in each STTX. The only difference between the STTXs are:

STTX-1. The exercise begins with start points located in the south, follows designated routes, and ends at release points located in the north.

STTX-2. In this exercise the general direction of student tank movement is reversed so that vehicles will move from north to south.

STTX-3. This exercise begins with two start points located along the west side of the terrain display and two start points located along the east side of the terrain display, follows designated routes toward the center of the terrain display, and ends at release points located in the center of the terrain display.

STTX-4. In this exercise the general direction of student tank movement is reversed so that vehicles will move from the center of the terrain display toward the ends of the terrain display.

Exercise Schedule

The estimated time for students to complete system familiarization, voice enrollment, station practice, pre-exercise training, and two repetitions of an STTX is six hours. The total time for a class of sixteen students to complete the required familiarization and training on a single SIMCAT would be twenty-four hours (see Enclosure 3).

Student Performance Evaluation

The primary reason for evaluating student performance is to determine if students can perform course tasks. Evaluation is accomplished by in-process scoring of student performance by station evaluators, the controller, and the OPFOR controller.

Critique. After each exercise the controller will conduct a formal critique. The scope of the critique and the sequence of presentations are:

- Student comments on their own good and poor performance.

- Station evaluator comments on good and poor student performance.

- OPFOR controller comments on good and poor student performance.

- Controller comments on good and poor student performance.

Scoresheets. There are three different task performance scoresheets.

- The controller scoresheet is designed to allow the controller to focus on task performance related to communications and call for fire procedures, system mastery, and overall student performance.

- The OPFOR controller scoresheet is designed for comments on student reaction to indirect fire, gunnery engagements, and overall student performance.

- The station evaluator scoresheet lists all actions and tasks to be performed at each action. There are GO and NO GO columns, and the NO GO column is divided into TASK MASTERY and SYSTEM MASTERY sub-columns. The evaluator scoresheet is the primary source material for the critique of student performance.

PRE-EXERCISE TRAINING

This enclosure describes pre-exercise training. The program includes: tank movement, turret control, gunnery engagements, calling for indirect fire, and submitting CONTACT and SPOT reports. (The controller should "bring up" on the system the BASIC-1 scenario outline as shown in Figure B-1). The controller should direct the students to place their color monitors on the MID VIEW range, note the location of the assembly area and their own tank, and to orient themselves with the terrain display and the tactical map. The controller should then direct the students to move their tanks to the following assigned operational areas: TC1 - lower left quadrant, TC2 - lower right quadrant, TC3 (PL) - upper left quadrant, and TC4 (PS) - upper right quadrant.

Tank Movement

During tank movement, the students should practice all basic tank movements, direct their tanks along roads and trails, and move into and out of firing positions. (The controller should direct the students to move their tanks to the center of assigned areas and practice basic tank movements, movement along routes, and the occupation of firing positions. (Evaluators should critique tank movement performance.)

Turret Control

During turret control training, students should learn the procedures for making main gun initial lays and final lays. Then they should practice laying the main gun onto the targets.

Initial Lay Procedures. The main gun is laid for direction by pressing the TURRET CONTROL symbol on the TCCP or the G/DOCP. The TURRET CONTROL is a multi-arrow symbol in which the top center arrow is oriented with the top center of the color monitor, the right center arrow is oriented with the right center of the color monitor, etc. When the arrow that is pointing toward a target is pressed, the main gun will move in that direction, stop, and a line will emanate from the main gun and move across the screen toward the target. If the line trace is within twenty degrees of the target, the system will respond to a doctrinally correct fire command by announcing IDENTIFIED. When the tank commander announces FIRE, the main gun or coaxial machinegun will fire. The controller should demonstrate how to make initial lays and then allow the student an opportunity to practice the procedure.

Final Lay Procedures. When the initial lay has been completed, the system will respond to the fire command by announcing IDENTIFIED (if the initial lay moves the gun within twenty degrees of the target) or CANNOT IDENTIFY (if the initial lay moves the main gun beyond twenty degrees of the target). If the system responds CANNOT IDENTIFY, the appropriate TURN RIGHT or TURN LEFT symbol on the SMALL TURRET TURNS control panel on the TCCP or the G/DOCP is pressed. This action will cause the main gun to move five degrees

Figure B-1 is a rotated (landscape) data-entry form titled "SIMCAT pre-exercise (BASIC-1) scenario outline." The form is organized into FRIENDLY PLAYERS (TC2, PS, PL), OPFOR PLAYERS and OPFOR NON-PLAYERS (OPFOR1–OPFOR10), and a MISC. section on the right.

	TC2	PS	PL	OPFOR1	OPFOR2	OPFOR3	OPFOR4	OPFOR5	OPFOR6	OPFOR7	OPFOR8	OPFOR9	OPFOR10
Scenario Name	BASIC-1												
(Leave Blank)	2	3	4	5	6	7	8	9	10	11	12	13	14
ScenarioData	1	1	1	1	2	2	2	2	2	3	3	3	3
	790*	790*	790*	790*	772*	785*	786*	788*	790*	768*	795*	798*	779*
	983*	982*	981*	990*	990*	993*	993*	969*	969*	989*	997*	970*	967*
	15	15	15	15	15	15	15	15	15	15	15	15	15
	15	15	15	15	15	15	15	15	15	15	15	15	15
	0	0	0	180	180	180	180	45	45	225	180	45	
	0	0	180	180	180	180	180	45	45	225	180	45	
	0	0	180										
	0	0	180										
UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE
TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	TRUE	TRUE	TRUE										
	3	3	3	2	2	2	0	2	2	3	3	3	3
MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat
22	22	22	0	0	0	0	0	40	40	40	40	40	40
33	33												
3	3	3			3	3	3	3	3	3	3	3	3
MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot
33	33	33	33	40	40	40	40	40	40	0	0	0	0
3	3				3	3	3	3	3	0	0	0	0
										Sagger Missile	Sagger Missile	Sagger Missile	Sagger Missile
										4	4	4	4
										2	2	2	2
CoAx	CoAx	CoAx	CoAx										
CoAx	CoAx	CoAx	CoAx										
900	900	900	900										
30	3C	30	30										

MISC. (right-hand columns, "(Leave Blank)"):
- IndirectFireAllocation: 100 100 100 100
- (Leave Blank) ControlLines: 0000 0000 0000 0000 (repeated rows)
- (Leave Blank) Minefields: 999 999 999 999 (repeated rows)

NOTE: * Convert UTM coordinates to SIMCAT coordinates before entering into computer.

Figure B-1. SIMCAT pre-exercise (BASIC-1) scenario outline.

in the direction pressed. If this action brings the main gun to within twenty degrees of the target, the system will respond to a subsequent fire command by announcing IDENTIFIED. If the main gun still is not within twenty degrees of the target as a result of the action, repeat the procedure. The controller should demonstrate how to make final lays and then allow the student an opportunity to practice the procedure. Training emphasis should focus on student recognition and appreciation for a slow system upgrade time when laying the main gun onto a target.

After the students have practiced making initial and final lays, the OPFOR controller should move two threat vehicles into stationary positions in each student's area. The controller should then direct students to practice main gun lays by issuing a correct fire command and listening for the system to respond with IDENTIFIED or CANNOT IDENTIFY. The controller should caution students not to issue the command FIRE when the system announces IDENTIFIED since this command would cause the system to fire and destroy the target. Destroyed targets cannot be reengaged. When the students have completed making initial and final lays at stationary threat vehicles, the OPFOR controller should cause the threat vehicles to move. The students should then practice making main gun lays with moving targets. The training emphasis should focus on accurate initial main gun lays to reduce the number of final lays. The evaluators should assist students if necessary and critique their control performance.

Gunnery Engagement

During gunnery engagement training, the students will learn fire command procedures applicable to SIMCAT and then practice engaging various targets. Tank gunnery voice commands require consistent pronunciation, correct target designation, and the command FIRE be given only after the system has announced IDENTIFIED. The controller should demonstrate fire command procedures at one of the tank commander stations including the effects of both correct and incorrect fire commands on the system. Training emphasis should focus on consistent pronunciation of words, correct sequence of fire command elements, correct target identification, and announcing FIRE after the system has announced IDENTIFIED.

Stationary Tank-Stationary Target Engagement Practice. The OPFOR controller should move two threat vehicles into stationary positions in each student's assigned area. The controller should direct the students to acquire targets in their areas, move into firing positions, and engage threat targets. NOTE: When a student destroys the targets in his student area, that student should practice initial and final lays on destroyed targets. Training emphasis should focus on main gun lays and fire command procedures. The evaluators should assist the students if necessary and critique their engagement performance. Finally, the controller should revive any destroyed vehicles.

Stationary Tank-Moving Target Engagement Practice. The OPFOR controller should move two threat vehicles within each student's assigned area. The controller should direct the students to acquire threat vehicles moving in

their area, move into firing positions, and engage threat targets. NOTE:
When a student destroys the targets in his student area, that student should
practice initial and final lays on destroyed targets. Training emphasis
should focus on maintaining main gun lay leads and fire command procedures.
The evaluators should assist the students if necessary and critique their
engagement performance. The controller should revive any destroyed vehicles.

Calling for Indirect Fire

The controller role plays the friendly force fire support officer and in
that capacity he responds to student call for fire requests by entering
appropriate indirect fire information into the computer. This action causes
the system to display on student color monitors, fonts representing artillery
impact bursts, at the location the student provided in his call for fire
request. The controller should direct the students to submit call for fire
requests for placing indirect fire on destroyed threat vehicles. The
controller should direct the students to follow standard call for fire
procedures and submit requests in the following student sequence: TC1, TC2,
TC3 (PL), TC4 (PS), TC1, TC2, TC3 (PL), and TC4 (PS). NOTE: Since the system
cannot provide single round bursts for registration, registration will be made
using the six round bursts. Training emphasis will focus on call for fire
procedures and requesting "fire for effect" no later than the fifth
adjustment. The evaluators should assist students if necessary and critique
their call for fire performance.

CONTACT and SPOT Reports

The format of these reports provides for fast and accurate reporting of
enemy and terrain information.

CONTACT Report. The CONTACT report is used to report initial enemy
contact. The report is sent in conjunction with returning fire and deploy-
ment. The SPOT report is the preferred method of reporting enemy contact.
When time is critical, however, the CONTACT report will expedite getting the
information reported. The report contains four elements--identification of
the observer, the word CONTACT, the nature of the threat, and the cardinal
direction of the threat.

SPOT Report. The SPOT report is used when observing any known or
suspected enemy activity, when observing any characteristic of an area of
operations likely to affect accomplishment of the mission, and when required
by the operation order. The report contains three elements--identification of
the observer, what is being observed (S-A-L-U-T-E), and the observer's
actions/recommendations.

The controller should assemble the students and review the format of
CONTACT and SPOT reports as described in FC 17-15-3 (TANK PLATOON SOP), April
1985. Training emphasis should focus on fast but accurate reporting in
accordance with FC 17-15-3.

The controller should announce a break in the training. During the break
the controller should "bring up" on the system the first single tank tactical
exercise.

Enclosure 2 to Annex B

SINGLE TANK TACTICAL EXERCISES

Single Tank Tactical Exercises are designed to provide student tank commanders the opportunity to practice procedural tasks and command and control while moving their tanks over prescribed routes on the SIMCAT simulated battlefield.

Each exercise will accommodate four students simultaneously. During each exercise, student tank commanders will be confronted with eight action stations which will require students to perform thirty-eight procedural tasks and numerous non-procedural (command and control) tasks. The only differences between the four STTXs are movement route orientations and the sequence of the action stations.

This enclosure includes four STTXs, described in TABs A through D. Each exercise is self-contained and includes: (a) exercise scenario outline, (b) exercise schematic, (c) exercise evaluation sheets, and (d) guidelines for the controller, OPFOR controller, and station evaluators.

TAB A

Single Tank Tactical Exercise (STTX-1)

Scenario Outline

The scenario outline is shown in Figure B-2. The outline establishes the locations of lane boundaries and minefields, the initial locations of friendly and threat vehicles, provides friendly and threat force indirect fire capabilities, and configures ammunition capabilities for all vehicles in the exercise.

Schematic

The schematic (see Figure B-3) depicts student operational lanes, start points, routes of movement, release points, and the general locations where various actions take place. The schematic also includes columns indicating schematic symbols, action numbers and names, lane action sequence, and tasks by actions.

Evaluation Sheets

There are three suggested evaluation sheets (see Figures B-4 through B-6). A separate sheet and format is prescribed for the controller, the OPFOR controller, and the station evaluators.

Controller Evaluation Sheet. This evaluation sheet has three sections for comments--COMMUNICATIONS, CALL FOR FIRE, and SYSTEM MASTERY. The fourth section, OVERALL, provides blocks for a general rating of student performance (i.e., EXCELLENT, SATISFACTORY, or UNSATISFACTORY).

OPFOR Controller Evaluation Sheet. This evaluation sheet is similar to the controller's evaluation sheet. It has two sections for comments--REACTION TO INDIRECT FIRE and GUNNERY ENGAGEMENTS. The third section, OVERALL, is the same as the corresponding section in the controller's evaluation sheet.

Station Evaluator Evaluation Sheet. Down the left side of this evaluation sheet is a list of all action stations and the procedural tasks to be performed at each action station. Down the right side of the evaluation sheet are GO and NO GO columns for indicating student performance. The NO GO column is sub-divided into TASK MASTERY and SYSTEM MASTERY columns. The bottom section of the sheet has space for general comments. This space can be used to enter comments pertaining to non-procedural (command and control) tasks.

Guidelines

The following guidelines pertain to controller, OPFOR controller, and station evaluators' duties prior to, during, and after an exercise.

Controller

- Issues to each student an exercise overlay which includes: (a) lane boundaries, (b) start points, (c) movement routes, (d) release points, and (e) grid coordinates of suspected minefield.

- Directs students to place overlay data on their tactical maps.

- Brings up STTX-1 on the system.

- Directs students to locate their respective lane of operation, tank, start point, movement route, and release point.

- Reminds students to orient their general line of movement on the designated route.

- Tells students that they are attempting to catch up with their platoon after a delay in a rear assembly area caused by a broken track. They have communications with the platoon leader (controller).

- Tells students that the threat in the area consists of scattered units supported by artillery. The units are withdrawing north. The threat has used chemical munitions in the past.

- Announces exercise call signs (i.e., TC1 - RED ONE, TC2 - RED TWO, TC3 - RED THREE, TC4 - RED FOUR, PL (controller) - RED ONE ZERO, and FIST (controller) - SHORT ROUND FOUR SEVEN).

- Opens radio net.

- Directs indirect fire be placed on terrain feature (e.g., road junctions, bridges, in accordance with the scenario action sequence.

- Provides friendly indirect fire on request.

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on communications, indirect fire procedures, and reporting.

- Monitors OPFOR controller and station evaluator actions.

- Conducts the exercise critiques.

OPFOR Controller

- Verifies that threat vehicles are in correct locations.

- Provides threat indirect fire in accordance with the scenario action sequence.

- Initiates main gun engagements ten seconds <u>after</u> friendly tanks are acquired.

- Evaluates student performance with emphasis on reaction to indirect and direct fire.

- Limits threat actions to that prescribed in the scenario.

- Participates in the exercise critique.

Station Evaluators

- Ensures that students have the following necessary material for conducting the exercise.

  - MOPP Gear*   - Protractor

  - M256 Chemical Detector   - Coordinate Scale
    Kit*

  - CEOI   - Grease Pencil

  - Tactical Operations Code   - Lead Pencils

  - Straight Edge

- Ensures that the following student station components are functioning.

  - Communications   - Color monitor

  - Voice Recognition   - Keypad

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on procedural tasks and reporting.

- Participates in the exercise critiques.

---

* This equipment may be hard to acquire, and their use will lengthen and complicate the exercise.

Scenario Name: STTX-1

The following is a data-entry form. Columns are the player/OPFOR unit slots; rows are the scenario-data fields. (Values marked `*` denote SIMCAT-converted coordinates — see NOTES.)

Field	TC2	PS	PS	PL	OPFGR1	OPFOR2	OPFOR3	OPFOR4	OPFOR5	OPFOR6	OPFOR7	OPFOR8	OPFOR9	OPFOR10
ScenarioData	1	1	1	1	2	2	2	2	3	3	3	3	2	2
Coord 1	753*	770*	795*	722*	739*	765*	787*	802*	728*	757*	798*	815*	860	861
Coord 2	975*	967*	956*	987*	024*	014*	993*	970*	055*	979*	014*	978*	970	971
	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	90	90	90	90	0	180	0	0	290	290	290	290	0	0
	90	90	90	90	0	180	0	0	290	290	290	290	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap
	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE
	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
	3	3	3	3	2	2	2	2	3	3	3	3	2	2
Weapon 1	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
Ammo 1	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat
Rounds 1	22	22	22	22	0	0	0	0	40	40	40	40	0	0
Weapon 2	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
Ammo 2	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot
Rounds 2	33	33	33	33	40	40	40	40	0	0	0	0	0	0
Weapon 3	CoAx	CoAx	CoAx	CoAx					Sagger Missile	Sagger Missile	Sagger Missile	Sagger Missile		
Ammo 3	CoAx	CoAx	CoAx	CoAx					Sagger Missile	Sagger Missile	Sagger Missile	Sagger Missile		
Rounds 3	900	900	900	900					4	4	4	4		
	30	30	30	30					2	2	2	2		

OPFOR NON-PLAYERS			
999	999	999	999

MISC.

IndirectFireAllocation
100 100 100   100

Controllines:
7100	9870	7350	0490
7350	9770	7600	0390
7650	9640	7850	0290
7850	9560	8200	0150
8300	9380	8500	0020
0000	0000	0000	0000
0000	0000	0000	0000

Minefields:
727*	993*	729*	993*
759*	985*	761*	986*
772*	974*	774*	974*
828*	987*	830*	987*
999	999	999	999
999	999	999	999
999	999	999	999
999	999	999	999

999	999	999

NOTES: 1 - * Convert UTM coordinates to SIMCAT coordinates before entering into the computer.   2 - Friendly ID Fire Coordinates:
Lane A - 75400250, Lane B - 77160140, Lane C - 78700080, Lane D - 82009660

B-2. SIMCAT STTX-1 scenario outline.

Figure B-3. SIMCAT Single Tank Tactical Exercise - STTX-1.

```
┌─────────────────────────────────────────────────────────────┐
│                  PERFORMANCE EVALUATION                       │
│                      STTX-__                                  │
│  Student _____      Controller _____   │
│  Date _____      Station _____  │
├═════════════════════════════════════════════════════════════┤
│                                                               │
│                  GENERAL COMMENTS                             │
│  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  │
│                  COMMUNICATIONS                               │
│                                                               │
│                                                               │
│                                                               │
│  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  │
│                  CALL FOR FIRE                                │
│                                                               │
│                                                               │
│                                                               │
│  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  │
│                  SYSTEM MASTERY                               │
│                                                               │
│                                                               │
│                                                               │
│  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  │
│                     OVERALL                                   │
│                                                               │
│   EXCELLENT        SATISFACTORY        UNSATISFACTORY         │
│                                                               │
│    ┌────┐           ┌────┐              ┌────┐                │
│    │    │           │    │              │    │                │
│    └────┘           └────┘              └────┘                │
└─────────────────────────────────────────────────────────────┘
```

Figure B-4. SIMCAT controller student performance evaluation sheet.

PERFORMANCE EVALUATION

STTX-___

Student _____   OPFOR Controller _____

Date _____   Station _____

GENERAL COMMENTS

- -

REACTION TO INDIRECT FIRE

- -

GUNNERY ENGAGEMENTS

- -

OVERALL

EXCELLENT   SATISFACTORY   UNSATISFACTORY

Figure B-5.   SIMCAT OPFOR controller student performance evaluation sheet.

PERFORMANCE EVALUATION

STTX-___

Student _____   Station Evaluator _____

Date _____   Station _____

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
START POINT			
Enter a radio net			
Use an automated CEOI			
Use KTC 1400 numerical cipher/ authentication system	—	—	—
ENGAGE T72 TANK			
Send a CONTACT report			
Send a radio message			
Acquire and identify target			
Issue a fire command			
Send a SPOT report			
ENGAGE BMP			
Send a CONTACT report			
Send a radio message			
Acquire and identify target			
Issue a fire command			
Send a SPOT report			

Figure B-6. SIMCAT station evaluator student performance evaluation sheet.

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
BYPASS MINEFIELD			
Check location of minefield			
Select movement route around minefield using a map			
Direct driver around minefield			
EVADE OPFOR ID FIRE			
Direct hatches be closed			
Direct driver accelerate through ID fire			
Direct MOPP 4			
Use M256 chemical detector kit			
Prepare/submit NBC 1 report			
Encode/decode messages using KTC 600 tactical operations code	—	—	—
Send a radio message			
Direct MOPP 2			
Direct hatches be opened			
CALL FOR AND ADJUST ID FIRE			
Acquire and identify target			
Request fire			
Adjust fire			
ELECTRONIC COUNTERMEASURES			
Identify technique			
Attempt to transmit through jam			
Change to alternate frequency			
Submit interference report			

Figure B-6.   SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
RELEASE POINT	////////	////////	////////
Submit a SITREP			
Send a radio message			
Encode/decode messages using KTC 600			
tactical operations code	—	—	—
Use an automated CEOI			
Use KTC 1400 numerical cipher/			
authentication system	—	—	—
Leave a radio net			

GENERAL COMMENTS

Figure B-6. SIMCAT station evaluator student performance evaluation sheet
(cont'd.).

TAB B

Single Tank Tactical Exercise (STTX-2)

Scenario Outline

The scenario outline is shown in Figure B-7. The outline establishes the locations of lane boundaries and minefields, the initial locations of friendly and threat vehicles, provides friendly and threat force indirect fire capabilities, and configures ammunition capabilities for all vehicles in the exercise.

Schematic

The schematic (see Figure B-8) depicts student operational lanes, start points, routes of movement, release points, and the general locations where various actions take place. The schematic also includes columns indicating schematic symbols, action numbers and names, lane action sequence, and tasks by action.

Evaluation Sheets

There are three evaluation sheets (see Figures B-9 through B-11). A separate sheet and format is prescribed for the controller, the OPFOR controller, and the station evaluators.

Controller Evaluation Sheet. This evaluation sheet has three sections for comments--COMMUNICATIONS, CALL FOR FIRE, and SYSTEM MASTERY, for controller general comments. The fourth section, OVERALL, provides blocks for a general rating of student performance (i.e., EXCELLENT, SATISFACTORY, or UNSATISFACTORY).

OPFOR Controller Evaluation Sheet. This evaluation sheet is similar to the controller's evaluation sheet. It has two sections for comments--REACTION TO INDIRECT FIRE and GUNNERY ENGAGEMENTS. The third section, OVERALL, is the same as the corresponding section in the controller's evaluation sheet.

Station Evaluator Evaluation Sheets. Down the left side of this evaluation sheet is a list of all action stations and the procedural tasks to be performed at each action station. Down the right side of the evaluation sheet are GO and NO GO columns for indicating student performance. The NO GO column is subdivided into TASK MASTERY and SYSTEM MASTERY columns. The bottom section of the sheet has space for general comments. This space is used for entering comments pertaining to non-procedural (command and control) tasks.

Guidelines

The following guidelines pertain to controller, OPFOR controller, and station evaluators' duties prior to, during, and after an exercise.

Controller

- Issues to each student an exercise overlay which includes: (a) lane boundaries, (b) start points, (c) movement routes, (d) release points, and (e) grid coordinates of suspected minefields.

- Directs students to place overlay data on their tactical maps.

- Brings up STTX-2 on the system.

- Directs students to locate their respective lane of operation, tank, start point, movement route, and release point.

- Reminds students to orient their general line of movement on the designated route.

- Tells students that they are attempting to catch up with their platoon after delay in a rear assembly area caused by a broken track. They have communications with the platoon leader (controller).

- Tells students that the threat in the area consists of scattered units supported by artillery. The units are withdrawing south. The threat has used chemical munitions in the past.

- Announces exercise call signs (i.e., TC1 - RED ONE, TC2 - RED TWO, TC3 - RED THREE, TC4 - RED FOUR, PL (controller) - RED ONE ZERO, and FIST (controller) - SHORT ROUND FOUR SEVEN).

- Opens radio net.

- Directs indirect fire be placed on terrain features (e.g., road junctions, bridges) in accordance with the scenario action sequence.

- Provides friendly indirect fire on request.

- Monitors student progress and be alert to detect student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on communications, indirect fire procedures, and reporting.

- Monitors OPFOR controller and station evaluator actions.

- Conducts the exercise critiques.

OPFOR Controller

- Verifies that threat vehicles are in correct locations.

- Provides threat indirect fire in accordance with the scenario action sequence.

- Initiates main gun engagements ten seconds <u>after</u> friendly tanks are acquired.

- Evaluates student performance with emphasis on reaction to indirect and direct fire.

- Limits threat actions to that prescribed in the scenario.

- Participates in the exercise critiques.

Station Evaluators

- Ensures that students have the following necessary material for conducting the exercise.

  - MOPP Gear*   - Protractor

  - M256 Chemical Detector   - Coordinate Scale
    Kit*

  - CEOI   - Grease Pencil

  - Tactical Operations Code   - Lead Pencils

  - Straight Edge

- Ensures student station components are functioning.

  - Communications   - Color monitor

  - Voice Recognition   - Keypad

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on procedural tasks and reporting.

- Participates in the exercise critiques.

---

* This equipment may be hard to acquire, and their use will lengthen and complicate the exercise.

SIMCAT STTX-2 scenario outline (data entry form)

Scenario Name	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)
STTX-2					OPFOR1	OPFOR2	OPFOR3	OPFOR4	OPFOR5	OPFOR6	OPFOR7	OPFOR8	OPFOR9	OPFOR10	IndirectFireAllocation
(Leave Blank)					15	6	7	8	9	10	11	12	13	14	(Leave Blank)
ScenarioData	TC2	PS	PL		2	2	2	2	3	3	3	3	2	2	100 100 100 100
1	799*	825*	733*	TC1 790*	733*	750*	786*	810*	727*	753*	790*	797*	790*	845*	ControlLines
TC1	014*	001*	023*	017*	023*	983*	967*	978*	005*	007*	006*	969*	006*	977*	(Leave Blank)
1	15	15	15	15	15	15	15	15	15	15	15	15	15	845*	7100 9870 7350 0490
743*	15	15	15	15	15	15	15	15	15	15	15	15	15	978*	7350 9770 7600 0390
040	270	270	0	270	0	0	180	180	37	37	37	37	180	15	7650 9640 7850 0290
15	270	270	0	270	0	0	180	180	37	37	37	37	280	180	7850 9560 8200 0150
15	0	0	0	0	0	0	0	0	0	0	0	0	0	180	8300 9380 8500 0020
270	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	0000 0000 0000 0000
270	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	0000 0000 0000 0000
0	TRUE	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	0000 0000 0000 0000
UpMap	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	(Leave Blank)
TRUE	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Minefields
TRUE	22	22	0	22	0	0	0	0	40	40	40	40	10	0	(Leave Blank)
MainGun	3	3	0	3	0	0	0	0	3	3	3	3	0	0	727* 993* 730* 993*
Heat	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	758* 991* 760* 991*
22	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	799* 983* 799* 981*
3	33	33	40	33	40	40	40	40	0	0	0	0	0	0	820* 997* 822* 996*
MainGun	3	3	3	3	3	3	3	3	0	0	0	0	0	0	999 999 999 999
Sabot									Sagger	Sagger	Sagger	Sagger			999 999 999 999
33	CoAx	CoAx		CoAx					Missile	Missile	Missile	Missile			999 999 999 999
3	CoAx	CoAx		CoAx					4	4	4	4			999 999 999 999
CoAx	900	900		900					2	2	2	2			999 999 999
CoAx	30	30		30											
900															
30															
CoAx															
9C2															
30															
														1999 999 999	

Section labels along bottom: ← FRIENDLY PLAYERS → | ← OPFOR PLAYERS → | OPFOR NON-PLAYERS | MISC.

NOTES: 1 - * Convert UTM coordinates to SIMCAT coordinates before entering into the computer. 2 - Friendly ID Fire Coordinates:
Lane A - 73000140, Lane B - 76009800, Lane C - 78009810, Lane D - 80109850

B-7. SIMCAT STTX-2 scenario outline.

B-24

SYMBOLS

- Lane boundaries
- Primary roads
- Secondary roads
- Railroad
- Stream
- Movement
- A B C D
- Bridge
- Action marker
- T 72 tank
- BMP
- ECM
- Minefield
- OPFOR ID fire
- Friendly ID fire

ACTIONS

1	START POINT
2	ENGAGE T 72
3	ENGAGE BMP
4	BYPASS MINEFIELD
5	EVADE OPFOR ID FIRE
6	CALL/ADJUST ID FIRE
7	ECM
8	RELEASE POINT

LANE AND ACTION SEQUENCE

A	B	C	D
1	1	1	1
2	6	3	4
7	7	7	7
6	3	5	5
3	4	4	2
5	2	2	6
4	5	6	3
8	8	8	8
A	B	C	D

TASKS BY ACTION

START POINT
- Enter a radio net
- Use an automated CEOI
- Use KTC 1400 numerical cipher / authent system

ENGAGE T 72 TANK
- Send a CONTACT report
- Send a radio message
- Acquire and identify target
- Issue a fire command
- Send a SPOT report

ENGAGE BMP
- Send a CONTACT report
- Send a radio message
- Acquire and identify target
- Issue a fire command
- Send a SPOT report

BYPASS MINEFIELD
- Check location of minefield
- Select movement route using a map
- Direct driver around minefield

EVADE OPFOR ID FIRE
- Direct hatches be closed
- Direct driver accelerate through fire
- Direct MOPP 4
- Use M 256 chemical detector kit
- Prepare/submit NBC 1 report
- Encode/decode messages using KTC 600 tactical operations code
- Send a radio message
- Direct MOPP 2
- Direct hatches b/r opened

CALL FOR/ADJUST ID FIRE
- Acquire and identify target
- Request fire
- Adjust fire

ELECTRONIC COUNTER MEASURES
- Identify technique
- Attempt to transmit through the jam
- Change to alternate frequency
- Submit interference report

RELEASE POINT
- Submit a SITREP
- Send a radio message
- Encode/decode messages using KTC 600 tactical operations code
- Use an automated CEOI
- Use KTC 1400 numerical cipher/ authentication system
- Leave a radio net

DOE VALLEY LAKE

Figure B-8. SIMCAT Single Tank Tactical Exercise - STTX-2.

PERFORMANCE EVALUATION

STTX-___

Student _____   Controller _____

Date _____   Station _____

GENERAL COMMENTS

COMMUNICATIONS

CALL FOR FIRE

SYSTEM MASTERY

OVERALL

EXCELLENT   SATISFACTORY   UNSATISFACTORY

Figure B-9.   SIMCAT controller student performance evaluation sheet.

```
+-------------------------------------------------------------+
|                  PERFORMANCE EVALUATION                     |
|                        STTX-__                              |
|                                                             |
| Student_____    OPFOR Controller _____   |
|                                                             |
| Date _____      Station _____     |
+=============================================================+
|                                                             |
|                    GENERAL COMMENTS                         |
|  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  |
|                                                             |
|                 REACTION TO INDIRECT FIRE                   |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  |
|                                                             |
|                  GUNNERY ENGAGEMENTS                        |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  |
|                                                             |
|                       OVERALL                               |
|                                                             |
|                                                             |
|    EXCELLENT        SATISFACTORY       UNSATISFACTORY        |
|                                                             |
|      [   ]             [   ]              [   ]             |
+-------------------------------------------------------------+
```

Figure B-10. SIMCAT OPFOR controller student performance evaluation sheet.

		GO	NO GO	
			TASK MASTERY	SYSTEM MASTERY

PERFORMANCE EVALUATION

STTX-__

Student_____   Station Evaluator _____

Date _____   Station _____

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
START POINT			
Enter a radio net			
Use an automated CEOI			
Use KTC 1400 numerical cipher/ authentication system	—	—	—
ENGAGE T72 TANK			
Send a CONTACT report			
Send a radio message			
Acquire and identify target			
Issue a fire command			
Send a SPOT report			
ENGAGE BMP			
Send a CONTACT report			
Send a radio message			
Acquire and identify target			
Issue a fire command			
Send a SPOT report			

Figure B-11. SIMCAT station evaluator student performance evaluation sheet.

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
BYPASS MINEFIELD	///////	///////	///////
Check location of minefield			
Select movement route around minefield using a map			
Direct driver around minefield			
EVADE OPFOR ID FIRE	///////	///////	///////
Direct hatches be closed			
Direct driver accelerate through ID fire			
Direct MOPP 4			
Use M256 chemical detector kit			
Prepare/submit NBC 1 report			
Encode/decode messages using KTC 600 tactical operations code	—	—	—
Send a radio message			
Direct MOPP 2			
Direct hatches be opened			
CALL FOR AND ADJUST ID FIRE	///////	///////	///////
Acquire and identify target			
Request fire			
Adjust fire			
ELECTRONIC COUNTERMEASURES	///////	///////	///////
Identify technique			
Attempt to transmit through jam			
Change to alternate frequency			
Submit interference report			

Figure B-11.   SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY

RELEASE POINT

    Submit a SITREP

    Send a radio message

    Encode/decode messages using KTC 600
      tactical operations code

    Use an automated CEOI

    Use KTC 1400 numerical cipher/
      authentication system

    Leave a radio net

GENERAL COMMENTS

Figure B-11.   SIMCAT station evaluator student performance evaluation sheet
(cont'd.).

TAB C

Single Tank Tactical Exercise (STTX-3)

Scenario Outline

The scenario outline is shown in Figure B-12. The outline establishes the locations of lane boundaries and minefields, the initial locations of friendly and threat vehicles, provides friendly and threat force indirect fire capabilities, and configures ammunition capabilities for all vehicles in the exercise.

Schematic

The schematic (see Figure B-13) depicts student operational lanes, start points, routes of movement, release points, and the general locations where various actions take place. The schematic also includes columns indicating schematic symbols, action numbers and names, lane action sequence, and tasks by action.

Evaluation Sheets

There are three evaluation sheets (see Figures B-14 through B-16). A separate sheet and format is prescribed for the controller, the OPFOR controller, and the station evaluators.

Controller Evaluation Sheet. This evaluation sheet has three sections for comments--COMMUNICATIONS, CALL FOR FIRE, and SYSTEM MASTERY, for controller general comments. The fourth section, OVERALL, provides blocks for a general rating of student performance (i.e., EXCELLENT, SATISFACTORY, or UNSATISFACTORY).

OPFOR Controller Evaluation Sheet. This evaluation sheet is similar to the controller's evaluation sheet. It has two sections for comments--REACTION TO INDIRECT FIRE and GUNNERY ENGAGEMENTS. The third section, OVERALL, is the same as the corresponding section in the controller's evaluation sheet.

Station Evaluator Evaluation Sheets. Down the left side of this evaluation sheet is a list of all action stations and the procedural tasks that are to be performed at each action station. Down the right side of the evaluation sheet are GO and NO GO columns for indicating student performance. The NO GO column is subdivided into TASK MASTERY and SYSTEM MASTERY columns. The bottom section of the sheet has space for general comments. This space is used for entering comments pertaining to non-procedural (command and control) tasks.

Guidelines

The following guidelines pertain to controller, OPFOR controller, and station evaluators' duties prior to, during, and after an exercise.

Controller

- Issues to each student an exercise overlay which includes: (a) lane boundaries, (b) start points, (c) movement routes, (d) release points, (e) grid coordinates of suspected minefields, and (f) locations of persistent chemical contaminated areas.

- Directs students to place overlay data on their tactical maps.

- Brings up STTX-3 on the system.

- Directs students to locate their respective lane of operation, tank, start point, movement route, and release point.

- Reminds students to orient their general line of movement on the designated route.

- Tells students that they are attempting to catch up with their platoon after delay in a rear assembly area caused by a broken track. They have communications with the platoon leader (controller).

- Tells students that the threat in the area consists of scattered units supported by artillery. The units are withdrawing. The threat has used chemical munitions in the past.

- Announces exercise call signs (i.e., TC1 - RED ONE, TC2 - RED TWO, TC3 - RED THREE, TC4 - RED FOUR, PL (controller) - RED ONE ZERO, and FIST (controller) - SHORT ROUND FOUR SEVEN).

- Opens radio net.

- Directs indirect fire be placed on terrain features (e.g., road junctions, bridges) in accordance with the scenario action sequence.

- Provides friendly indirect fire on request.

- Monitors student progress and be alert to detect student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on communications, indirect fire procedures, and reporting.

- Monitors OPFOR controller and station evaluator actions.

- Conducts the exercise critiques.

OPFOR Controller

- Verifies that threat vehicles are in correct locations.

- Provides threat indirect fire in accordance with the scenario action sequence.

- Initiates main gun engagements ten seconds __after__ friendly tanks are acquired.

- Evaluates student performance with emphasis on reaction to indirect and direct fire.

- Limits threat actions to that prescribed in the scenario.

- Participates in the exercise critiques.

Station Evaluators

- Ensures that students have the following necessary material for conducting the exercise.

  - MOPP Gear*   - Protractor

  - M256 Chemical Detector   - Coordinate Scale
    Kit*

  - CEOI   - Grease Pencil

  - Tactical Operations Code   - Lead Pencils

  - Straight Edge

- Ensures student station components are functioning.

  - Communications   - Color monitor

  - Voice Recognition   - Keypad

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on procedural tasks and reporting.

- Participates in the exercise critiques.

* This equipment may be hard to acquire, and their use will lengthen and complicate the exercise.

Figure B-12 — SIMCAT STTX-3 scenario outline.

Scenario Name	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	IndirectFireAllocation
STTX-3	2	3	4	5	6	7	8	9	10	11	12	13	14	(Leave Blank)
(Leave Blank)	TC2	PS	PL	OPFOR1	OPFOR2	OPFOR3	OPFOR4	OPFOR5	OPFOR6	OPFOR7	OPFOR8	OPFOR9	OPFOR10	100 100 100
ScenarioData 1	1	1	1	2	2	2	2	3	3	3	3	2	2	(Leave Blank)
TC1	849*	715*	843*	757*	798*	730*	799*	770*	821*	758*	779*	700*	702*	ControlLines
1	977*	015*	963*	034*	004*	000*	978*	020*	994*	975*	981*	035*	037*	(Leave Blank)
718*	15	15	15	15	15	15	15	15	15	15	15	15	15	7070 0240 8480 9630
022*	15	15	15	15	15	15	15	15	15	15	15	15	15	7620 9660 7890 0270
:5	180	270	180	270	0	90	0	180	0	180	0	270	270	0000 0000 0000 0000
:5	180	270	180	270	0	90	0	180	0	180	0	270	270	0000 0000 0000 0000
270	0	0	0	0	0	0	0	0	0	0	0	0	0	0000 0000 0000 0000
270	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	0000 0000 0000 0000
0	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	0000 0000 0000 0000
UpMap	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	(Leave Blank)
TRUE	3	3	3	2	0	2	2	3	3	3	3	2	2	Minefields
TRUE	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	(Leave Blank)
3	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	754* 026* 756* 027*
MainGun	22	22	22	0	0	0	40	40	40	40	40	0	0	814* 995* 816* 996*
Heat 22	3	3	3	0	0	0	3	3	3	3	3	0	0	727* 996* 729* 996*
3	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	813* 966* 814* 964*
MainGun	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	999 999 999 999
Sabot 33	33	33	33	40	40	40	40	0	0	0	0	0	0	999 999 999 999
3	3	3	3	3	3	3	3	0	0	0	0	0	0	999 999 999 999
MainGun	CoAx	CoAx	CoAx					Sagger Missile	Sagger Missile	Sagger Missile	Sagger Missile			999 999 999 999
CoAx	CoAx	CoAx	CoAx					4	4	4	4			
900	900	900	900					2	2	2	2			
30	30	30	30											

CoAx
900
30

← FRIENDLY PLAYERS → ← OPFOR PLAYERS → ← OPFOR NON-PLAYERS → ← MISC. →

999 999 999

NOTES: 1 – * Convert UTM coordinates to SIMCAT coordinates before entering into the computer. 2 – Friendly ID Fire Coordinates:
Lane A – 77200140, Lane B – 8:209970, Lane C – 73509930, Lane D – 79509700

Figure B-12. SIMCAT STTX-3 scenario outline.

B-34

Figure B-13. SIMCAT Single Tank Tactical Exercise – STTX-3.

SYMBOLS

- Lane boundaries
- Primary roads
- Secondary roads
- Railroad
- Streams
- Obstacle bypass
- Bridge
- Movement
- Action marker
- T-72 tank
- BMP
- ECM
- Minefield
- OPFOR ID fire
- Friendly ID fire
- Persistent Chemical Contamination

ACTIONS

- [1] START POINT
- [2] ENGAGE T-72
- [3] ENGAGE BMP
- [4] BYPASS MINEFIELD
- [5] EVADE OPFOR ID FIRE
- [6] CALL/ADJUST ID FIRE
- [7] ECM
- [8] RELEASE POINT

LANE AND ACTION SEQUENCE

A → [1] [5] [2] [3] [4] [1]
[6] [7] [3] [5] [6] [1] → B

C → [1] [2] [5] [6] [3] [4]
[6] [7] [2] [4] [3] [1] → D

TASKS BY ACTION

START POINT
Enter a radio net
Use an automated CEOI
Use KTC 1400 num cipher
/authent. system

ENGAGE T-72 TANK
Send a CONTACT report
Send a radio message
Acquire and identify target
Issue a fire command
Send a SPOT report

ENGAGE BMP
Send a CONTACT report
Send a radio message
Acquire and identify target
Issue a fire command
Send a SPOT report

BYPASS MINEFIELD
Check location of minefield
Select movement route using a map
Direct driver around minefield

EVADE OPFOR ID FIRE
Direct hatches be closed
Direct driver accelerate through fire
Direct MOPP4
Use M256 chemical detector kit
Prepare/submit NBC 1 report
Encode/decode messages using KTC 600 tactical operations code
Send a radio message
Direct MOPP2
Direct hatches be opened

CALL FOR/ADJUST ID FIRE
Acquire and identify target
Request fire
Adjust fire

ELECTRONIC COUNTERMEASURES
Identify technique
Attempt to transmit through jam
Change to alternate frequency
Submit interference report

RELEASE POINT
Submit a SITREP
Send a radio message
Encode/decode messages using KTC 600 tactical operations code
Use an automated CEOI
Use KTC 1400 numerical cipher/authentication system
Leave a radio net

DOE VALLEY LAKE
OTTER CREEK
BRANDENBURG

```
┌─────────────────────────────────────────────────────────┐
│                 PERFORMANCE EVALUATION                   │
│                        STTX-__                           │
│                                                          │
│  Student _____      Controller _____ │
│                                                          │
│  Date _____       Station _____ │
│                                                          │
├═════════════════════════════════════════════════════════┤
│                                                          │
│                   GENERAL COMMENTS                       │
│ - - - - - - - - - - - - - - - - - - - - - - - - - - - - -│
│                   COMMUNICATIONS                         │
│                                                          │
│                                                          │
│                                                          │
│                                                          │
│ - - - - - - - - - - - - - - - - - - - - - - - - - - - - -│
│                   CALL FOR FIRE                          │
│                                                          │
│                                                          │
│                                                          │
│                                                          │
│ - - - - - - - - - - - - - - - - - - - - - - - - - - - - -│
│                   SYSTEM MASTERY                         │
│                                                          │
│                                                          │
│                                                          │
│                                                          │
│ - - - - - - - - - - - - - - - - - - - - - - - - - - - - -│
│                      OVERALL                             │
│                                                          │
│   EXCELLENT        SATISFACTORY      UNSATISFACTORY      │
│                                                          │
│     ┌───┐             ┌───┐              ┌───┐           │
│     └───┘             └───┘              └───┘           │
└─────────────────────────────────────────────────────────┘
```
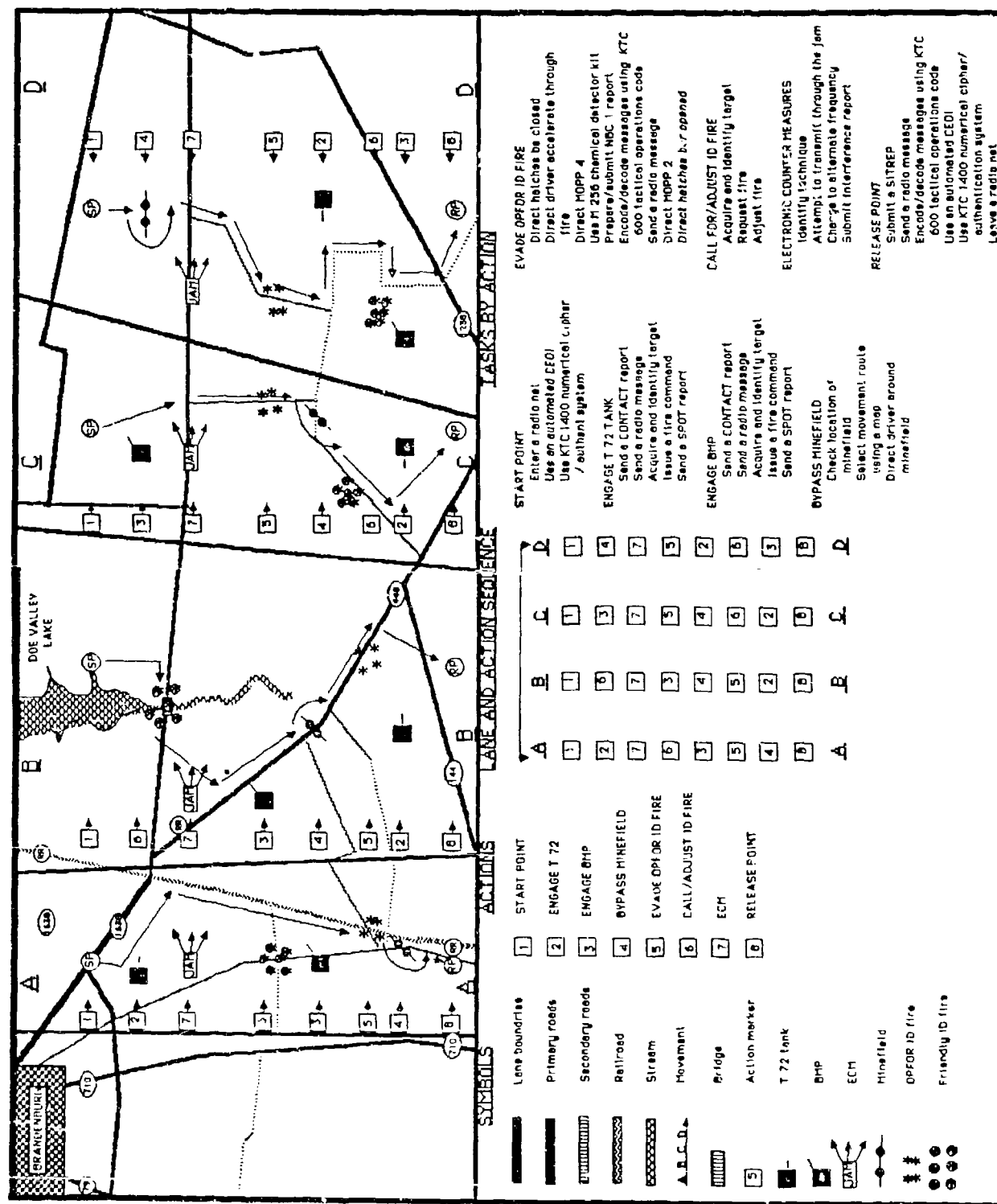
Figure B-14. SIMCAT controller student performance evaluation sheet.

```
┌──────────────────────────────────────────────────────────┐
│                  PERFORMANCE EVALUATION                  │
│                         STTX-__                          │
│                                                          │
│   Student_____    OPFOR Controller _____  │
│                                                          │
│   Date _____    Station _____   │
├──────────────────────────────────────────────────────────┤
│                                                          │
│                     GENERAL COMMENTS                     │
│  - - - - - - - - - - - - - - - - - - - - - - - - - - -   │
│                 REACTION TO INDIRECT FIRE                │
│                                                          │
│                                                          │
│                                                          │
│                                                          │
│  - - - - - - - - - - - - - - - - - - - - - - - - - - -   │
│                   GUNNERY ENGAGEMENTS                    │
│                                                          │
│                                                          │
│                                                          │
│                                                          │
│  - - - - - - - - - - - - - - - - - - - - - - - - - - -   │
│                         OVERALL                          │
│                                                          │
│    EXCELLENT        SATISFACTORY       UNSATISFACTORY     │
│                                                          │
│     ┌────┐            ┌────┐             ┌────┐          │
│     └────┘            └────┘             └────┘          │
│                                                          │
└──────────────────────────────────────────────────────────┘
```

Figure B-15.   SIMCAT OPFOR controller student performance evaluation sheet.

PERFORMANCE EVALUATION			
STTX-___			

Student_____   Station Evaluator _____

Date _____   Station _____

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
START POINT			
Enter a radio net			
Use an automated CEOI			
Use KTC 1400 numerical cipher/			
authentication system	—	—	—
ENGAGE T72 TANK			
Send a CONTACT report			
Send a radio message			
Acquire and identify target			
Issue a fire command			
Send a SPOT report			
ENGAGE BMP			
Send a CONTACT report			
Send a radio message			
Acquire and identify target			
Issue a fire command			
Send a SPOT report			

Figure B-16. SIMCAT station evaluator student performance evaluation sheet.

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
BYPASS MINEFIELD			
Check location of minefield			
Select movement route around minefield using a map			
Direct driver around minefield			
EVADE OPFOR ID FIRE			
Direct hatches be closed			
Direct driver accelerate through ID fire			
Direct MOPP 4			
Use M256 chemical detector kit			
Prepare/submit NBC 1 report			
Encode/decode messages using KTC 600 tactical operations code	—	—	—
Send a radio message			
Direct MOPP 2			
Direct hatches be opened			
CALL FOR AND ADJUST ID FIRE			
Acquire and identify target			
Request fire			
Adjust fire			
ELECTRONIC COUNTERMEASURES			
Identify technique			
Attempt to transmit through jam			
Change to alternate frequency			
Submit interference report			

Figure 16.   SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
RELEASE POINT	/////	/////	/////
Submit a SITREP			
Send a radio message			
Encode/decode messages using KTC 600 tactical operations code	—	—	—
Use an automated CEOI			
Use KTC 1400 numerical cipher/ authentication system	—	—	—
Leave a radio net			

GENERAL COMMENTS

Figure B-16. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

TAB D

Single Tank Tactical Exercise (STTX-4)

Scenario Outline

The scenario outline is shown in Figure B-17. The outline establishes the locations of lane boundaries and minefields, the initial locations of friendly and threat vehicles, provides friendly and threat force indirect fire capabilities, and configures ammunition capabilities for all vehicles in the exercise.

Schematic

The schematic (see Figure B-18) depicts student operational lanes, start points, routes of movement, release points, and the general locations where various actions take place. The schematic also includes columns indicating schematic symbols, action numbers and names, lane action sequence, and tasks by action.

Evaluation Sheets

There are three evaluation sheets (see Figures B-19 through B-21). A separate sheet and format is prescribed for the controller, the OPFOR controller, and the station evaluators.

Controller Evaluation Sheet. This evaluation sheet has three sections for comments--COMMUNICATIONS, CALL FOR FIRE, and SYSTEM MASTERY, for controller general comments. The fourth section, OVERALL, provides blocks for a general rating of student performance (i.e., EXCELLENT, SATISFACTORY, or UNSATISFACTORY).

OPFOR Controller Evaluation Sheet. This evaluation sheet is similar to the controller's evaluation sheet. It has two sections for comments--REACTION TO INDIRECT FIRE and GUNNERY ENGAGEMENTS. The third section, OVERALL, is the same as the corresponding section in the controller's evaluation sheet.

Station Evaluator Evaluation Sheets. Down the left side of this evaluation sheet is a list of all action stations and the procedural tasks that are to be performed at each action station. Down the right side of the evaluation sheet are GO and NO GO columns for indicating student performance. The NO GO column is subdivided into TASK MASTERY and SYSTEM MASTERY columns. The bottom section of the sheet has space for general comments. This space is used for entering comments pertaining to non-procedural (command and control) tasks.

Guidelines

The following guidelines pertain to controller, OPFOR controller, and station evaluators' duties prior to, during, and after an exercise.

Controller

- Issues to each student an exercise overlay which includes: (a) lane boundaries, (b) start points, (c) movement routes, (d) release points, (e) grid coordinates of suspected minefields, and (f) locations of persistent chemical contaminated areas.

- Directs students to place overlay data on their tactical maps.

- Brings up STTX-4 on the system.

- Directs students to locate their respective lane of operation, tank, start point, movement route, and release point.

- Reminds students to orient their general line of movement on the designated route.

- Tells students that they are attempting to catch up with their platoon after delay in a rear assembly area caused by a broken track. They have communications with the platoon leader (controller).

- Tells students that the threat in the area consists of scattered units supported by artillery. The units are withdrawing. The threat has used chemical munitions in the past.

- Announces exercise call signs (i.e., TC1 - RED ONE, TC2 - RED TWO, TC3 - RED THREE, TC4 - RED FOUR, PL (controller) - RED ONE ZERO, and FIST (controller) - SHORT ROUND FOUR SEVEN).

- Opens radio net.

- Directs indirect fire be placed on terrain features (e.g., road junctions, bridges) in accordance with the scenario action sequence.

- Provides friendly indirect fire on request.

- Monitors student progress and be alert to detect student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on communications, indirect fire procedures, and reporting.

- Monitors OPFOR controller and station evaluator actions.

- Conducts the exercise critiques.

OPFOR Controller

- Verifies that threat vehicles are in correct locations.

- Provides threat indirect fire in accordance with the scenario action sequence.

- Initiates main gun engagements ten seconds _after_ friendly tanks are acquired.

- Evaluates student performance with emphasis on reaction to indirect and direct fire.

- Limits threat actions to that prescribed in the scenario.

- Participates in the exercise critiques.

Station Evaluators

- Ensures that students have the following necessary material for conducting the exercise.

  - MOPP Gear*   - Protractor

  - M256 Chemical Detector - Coordinate Scale
    Kit*

  - CEOI   - Grease Pencil

  - Tactical Operations Code - Lead Pencils

  - Straight Edge

- Ensures student station components are functioning.

  - Communications   - Color monitor

  - Voice Recognition   - Keypad

- Monitors student progress and be alert to detect student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on procedural tasks and reporting.

- Participates in the exercise critiques.

---

* This equipment may be hard to acquire, and their use will lengthen and complicate the exercise.

Figure B-17 — SIMCAT STTX-4 scenario outline (rotated landscape form).

Scenario Name: STTX-4 **(Leave Blank)** — **ScenarioData:** 1

Each data column carries a "(Leave Blank)" arrow header. Field values by player unit:

Unit	Idx	Cat	X	Y	v1	v2	Or1	Or2	v3	Map	F1	F2	N	Wpn1	Ammo1	Q1	R1	Wpn2	Ammo2	Q2	R2	Wpn3	Ammo3	Q3	R3
TC1	2	1	780*	010*	15	15	180	180	0	UpMap	TRUE	TRUE	3	MainGun	Heat	22	3	MainGun	Sabot	33	3	CoAx	CoAx	900	30
TC2	3	1	784*	009*	15	15	0	0	0	UpMap	TRUE	TRUE	3	MainGun	Heat	22	3	MainGun	Sabot	33	3	CoAx	CoAx	900	30
PS	3	1	758*	975*	15	15	0	0	0	UpMap	TRUE	TRUE	3	MainGun	Heat	22	3	MainGun	Sabot	33	3	CoAx	CoAx	900	30
PL	4	1	770*	972*	15	15	45	45	0	UpMap	TRUE	TRUE	3	MainGun	Heat	22	3	MainGun	Sabot	33	3	CoAx	CoAx	900	30
OPFOR1	5	2	773*	013*	15	15	0	0	0	UpMap	TRUE	FALSE	2	MainGun	Heat	40	3	MainGun	Sabot	40	3				
OPFOR2	6	2	799*	013*	15	15	270	270	0	UpMap	TRUE	FALSE	2	MainGun	Heat	40	3	MainGun	Sabot	40	3				
OPFOR3	7	2	758*	093*	15	15	0	0	0	UpMap	TRUE	FALSE	2	MainGun	Heat	0	0	MainGun	Sabot	40	3				
OPFOR4	8	2	783*	982*	15	15	270	270	0	UpMap	TRUE	FALSE	2	MainGun	Heat	0	0	MainGun	Sabot	40	3				
OPFOR5	9	3	763*	030*	15	15	270	270	0	UpMap	TRUE	FALSE	3	MainGun	Heat	40	3	MainGun	Sabot	0	0	Sagger	Missile	4	2
OPFOR6	10	3	830*	990*	15	15	180	180	0	UpMap	TRUE	FALSE	3	MainGun	Heat	40	3	MainGun	Sabot	0	0	Sagger	Missile	4	2
OPFOR7	11	3	734*	003*	15	15	270	270	0	UpMap	TRUE	FALSE	3	MainGun	Heat	40	3	MainGun	Sabot	0	0	Sagger	Missile	4	2
OPFOR8	12	3	797*	970*	15	15	45	45	0	UpMap	TRUE	FALSE	3	MainGun	Heat	40	3	MainGun	Sabot	0	0	Sagger	Missile	4	2
OPFOR9	13	2	700*	035*	15	15	270	270	0	UpMap	FALSE	FALSE	2	MainGun	Heat	0	0	MainGun	Sabot	0	0				
OPFOR10	14	2	702*	037*	15	15	270	270	0	UpMap	FALSE	FALSE	2	MainGun	Heat	0	0	MainGun	Sabot	0	0				

Group spans (bottom brackets): ← FRIENDLY PLAYERS → (TC1, TC2, PS, PL); ← OPFOR PLAYERS → (OPFOR1–OPFOR8); ← OPFOR NON-PLAYERS → (OPFOR9–OPFOR10); ← MISC. →

Right-hand block (MISC.):

IndirectFireAllocation
(Leave Blank)
100 100 100 100   100

(Leave Blank)
ControlLines
(Leave Blank)
7070 0240 8480 9630
7620 9660 7890 0270
0000 0000 0000 0000
0000 0000 0000 0000
0000 0000 0000 0000
0000 0000 0000 0000
0000 0000 0000 0000

(Leave Blank)
Minefields
(Leave Blank)
755* 024* 756* 026*
816* 994* 816* 996*
742* 995* 742* 997*
819* 966* 821* 964*
999 999 999 999
999 999 999 999
999 999 999 999
999 999 999 999
999 999 999 999

999 999 999   (MISC.)

NOTES: 1 - * Convert UTM coordinates to SIMCAT coordinates before entering into the computer. 2 - Friendly ID Fire Coordinates:
Lane A - 75400260, Lane B - 85309750, Lane C - 72909930, Lane D - 78909820

Figure B-17. SIMCAT STTX-4 scenario outline.

Figure B-18. SIMCAT Single Tank Tactical Exercise – STTX-4.

```
                    PERFORMANCE EVALUATION

                          STTX-___

Student _____        Controller _____

Date _____        Station _____


                      GENERAL COMMENTS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                      COMMUNICATIONS




- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                      CALL FOR FIRE




- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                      SYSTEM MASTERY




- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                        OVERALL


   EXCELLENT           SATISFACTORY          UNSATISFACTORY

   [    ]               [    ]                 [    ]
```

Figure B-19. SIMCAT controller student performance evaluation sheet.

PERFORMANCE EVALUATION

STTX-__

Student_____   OPFOR Controller _____

Date _____   Station _____

GENERAL COMMENTS

- -

REACTION TO INDIRECT FIRE

- -

GUNNERY ENGAGEMENTS

- -

OVERALL

EXCELLENT   SATISFACTORY   UNSATISFACTORY

Figure B-20. SIMCAT OPFOR controller student performance evaluation sheet.

```
                    PERFORMANCE EVALUATION
                          STTX-__

Student_____    Station Evaluator _____

Date _____      Station _____
```

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
START POINT			
Enter a radio net			
Use an automated CEOI			
Use KTC 1400 numerical cipher/ authentication system	—	—	—
ENGAGE T72 TANK			
Send a CONTACT report			
Send a radio message			
Acquire and identify target			
Issue a fire command			
Send a SPOT report			
ENGAGE BMP			
Send a CONTACT report			
Send a radio message			
Acquire and identify target			
Issue a fire command			
Send a SPOT report			

Figure B-21. SIMCAT station evaluator student performance evaluation sheet.

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
BYPASS MINEFIELD	/////////	/////////	/////////
Check location of minefield			
Select movement route around minefield using a map			
Direct driver around minefield			
EVADE OPFOR ID FIRE	/////////	/////////	/////////
Direct hatches be closed			
Direct driver accelerate through ID fire			
Direct MOPP 4			
Use M256 chemical detector kit			
Prepare/submit NBC 1 report			
Encode/decode messages using KTC 600 tactical operations code	—	—	—
Send a radio message			
Direct MOPP 2			
Direct hatches be opened			
CALL FOR AND ADJUST ID FIRE	/////////	/////////	/////////
Acquire and identify target			
Request fire			
Adjust fire			
ELECTRONIC COUNTERMEASURES	/////////	/////////	/////////
Identify technique			
Attempt to transmit through jam			
Change to alternate frequency			
Submit interference report			

Figure B-21. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY

RELEASE POINT

    Submit a SITREP

    Send a radio message

    Encode/decode messages using KTC 600

      tactical operations code

    Use an automated CEOI

    Use KTC 1400 numerical cipher/

      authentication system

    Leave a radio net

GENERAL COMMENTS

Figure B-21. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

Enclosure 3 to Annex B

STTX SCHEDULE

The STTX schedule shown in Figure B-22 is for a class of sixteen students, organized into two groups of eight each, and with two students at each student station. The schedule is predicated on the assumption that only one SIMCAT system will be available.

Each student is allocated six hours on SIMCAT (twelve hours for a group, twenty-four hours for a class).

		SYSTEM OVERVIEW	STATION FAMIL	VOICE ENROLL.	MOVEMENT PRACTICE	TUR LAY PRACTICE	GUNNERY PRACTICE	STTX REPIT. 1	STTX REPIT. 2
GP 1a (STC)	DAY-1	0800-0830	0830-0930	0930-1000	1000-1020	1020-1040	1040-1100	1100-1230	1330-1500 □
GP 1b (SDV)	DAY-1	1500-1530	1530-1630	1630-1700					
GP 1b (SDV)	DAY-2				0800-0820	0820-0840	0840-0900	0900-1030	1030-1200 □
GP-2a (STC)	DAY-2	1300-1330	1330-1430	1430-1500	1500-1520	1520-1540	1540-1600	1600-1700	
GP-2a (STC)	DAY-3							0800-0830	0830-1000 □
GP-2b (SDV)	DAY-3	1000-1030	1030-1130	1130-1200	1300-1320	1320-1340	1340-1400	1400-1530	1550-1700 □

□ (Student change)

Figure B-22. SIMCAT STTX schedule.

ANNEX C

TANK SECTION TACTICAL EXERCISE

Richard E. O'Brien

HumRRO, Fort Knox, Kentucky

March 1987

ANNEX C   TANK SECTION TACTICAL EXERCISE

CONTENTS

LIST OF FIGURES

CONTENTS (Continued)

ANNEX C
TANK SECTION TACTICAL EXERCISE

This annex contains a pre-exercise training program, two tank section tactical exercises, an exercise schedule, and procedures for evaluating student performance.

Pre-Exercise Training

Pre-exercise training will focus on section movement with emphasis on maintaining the wingman position, and section gunnery (see Enclosure 1). (It is assumed that students have participated in pre-exercise training for single tank tactical exercises. If not, students should be given the pre-exercise training indicated in Annex B.)

Tank Section Tactical Exercises (TSTXs)

There are two TSTXs and each can simultaneously accommodate four students (see Enclosure 2). (Each TSTX can simultaneously accommodate eight students when the GN/DV student option is in effect.) Each TSTX includes ten actions which require the performance of fifty-eight tasks. The sequence of actions varies among student areas in each TSTX. The only difference between the TSTXs are:

TSTX-1. The exercise begins with the start points located in the east, follows designated routes, and ends at release points located in the west.

TSTX-2. The exercise begins with the start points located in the west, follows designated routes, and ends at release points located in the east.

Exercise Schedule

The estimated time for students to complete pre-exercise training and two repetitions of a TSTX on a single SIMCAT system is six hours. The total time for a class of sixteen students would be twenty-four hours.

Student Performance Evaluation

The primary reason for evaluating student performance is to determine if students can perform course tasks. Evaluation is accomplished by in-process scoring of student performance by station evaluators, the controller, and the OPFOR controller.

Critique. After each exercise the controller will conduct a formal critique. The scope of the critique and the sequence of presentations are.

- Student comments on their own good and poor performance.

- Station evaluator comments on good and poor performance.

- OPFOR controller comments on good and poor student performance.

- Controller comments on good and poor student performance.

Scoresheets. There are three different task performance scoresheets.

- The controller scoresheet is designed to allow the controller to focus on task performance related to communications, section movement and section gunnery control, and student performance.

- The OPFOR controller scoresheet is designed for comments on student reaction to indirect fire, gunnery engagements, and overall student performance.

- The station evaluator scoresheet lists all actions and tasks to be performed at each action. There are GO and NO GO columns, and the NO GO column is divided into TASK MASTERY and SYSTEM MASTERY sub-columns. The evaluator scoresheet is the primary source material for the critique of student performance.

Enclosure 1 to Annex C

PRE-EXERCISE TRAINING

This enclosure describes pre-exercise training. The program includes tank section movement and gunnery engagements. The controller should "bring up" on the system BASIC-1 scenario outline as shown in Figure B-1. The controller should then direct the students to place color monitors on MID VIEW range, note the location of the assembly area and their own tank, and orient themselves with the terrain display and the tactical map. The controller then directs the platoon sergeant to move his section to the lower half of the operational area.

Tank Section Movement

During tank section movement, the students should practice movement across terrain and along routes while maintaining appropriate movement formations. Emphasis should be placed upon the proper orientation of the wingman with the section leader.

Cross Country Movement. The controller directs the platoon leader and the platoon sergeant to move their sections cross country while practicing section formations, i.e., column, line, wingman right, and wingman left. The evaluators should assist the students if necessary, and critique cross country movement performance.

Route Movement. Each section leader should move his section, along the prescribed route, report crossing check points, and occupy temporary (three minutes) defensive positions just beyond each check point. The controller directs the platoon leader to move his section. The controller directs the platoon sergeant to move his section as soon as the platoon leader reports occupying the first temporary defensive position (see Figure C-1). The evaluators should assist the students if necessary, and critique route movement performance.

Tank Section Gunnery Engagements

During section gunnery engagement training the students will practice gunnery techniques and action/fire command drills. Tank gunnery voice commands require consistent pronunciation, correct target designation and the command FIRE be given only after the system has announced IDENTIFIED.

Gunnery Techniques. The controller should move the first training aid (see Figure C-2) into the student area and assemble the students around it. The controller should then talk the students through correct section gunnery techniques. Training emphasis should focus on consistent pronunciation of words, correct sequence of fire command elements, correct target identification, and announcing FIRE after the system has announced IDENTIFIED.
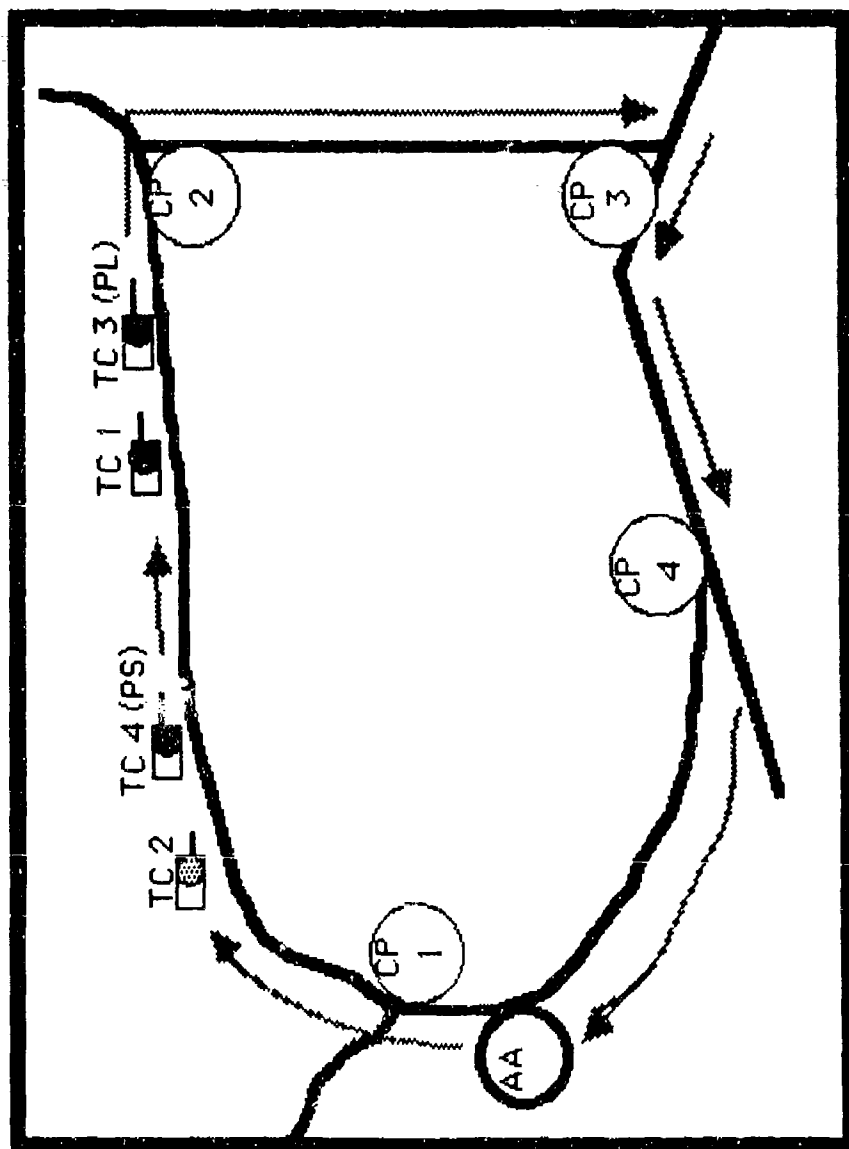
Figure C-1. SIMCAT tank section route movement layout.

Example A. Section fire command to engage targets using depth pattern (distribution) and simultaneous technique (control).

ELEMENT	COMMAND	REMARKS
Alert:	FOUR	Plt Sgt Section
Wpn/Ammo:	SABOT	--------
Description:	THREE TANKS	--------
Location:	ROAD JUNCTION	--------
Control:	DEPTH	Simultaneous fire technique used
Execution:	FIRE	--------

Example B. Section fire command for crossfire pattern with alternating fire control.

ELEMENT	COMMAND	REMARKS
Alert:	THREE	Plt Leader Section
Wpn/Ammo:	SABOT	--------
Description:	TWO TANKS	--------
Location:	TRP 1	--------
Control:	CROSS-- ALTERNATE	--------
Execution:	FIRE	--------

Example C. Section fire command for observed fire.

ELEMENT	COMMAND	REMARKS
Alert:	FOUR	Plt Sgt Section
Wpn/Ammo:	SABOT	--------
Description:	ONE TANK	--------
Location:	OLD BARN	--------
Control:	OBSERVE	(Pause before excuting)
Execution:	FIRE	.

Figure C-2. SIMCAT tank section gunnery techniques.

C-8

Action/Fire Command Drills. The controller displays the second training aid (see Figure C-3) and talks the student through action/fire command drills. Training emphasis should focus on fast action, maintaining wingman position, and correct fire commands.

Tank Section Target Engagements. The OPFOR controller should move four threat vehicles into stationary positions in each section leader's assigned area. The controller should direct students to move back to their stations. The controller should direct the platoon leader and the platoon sergeant to move their sections through their assigned areas and acquire and engage targets. NOTE: When targets have been destroyed in a section leader's area, students should practice initial and final lays on destroyed targets.) Training emphasis should focus on rapid engagement of acquired targets. The evaluators should assist the students if necessary, and critique their engagement performance.

The controller should announce a break in the training. During the break the controller should "bring up" on the system the first tank section tactical exercise.
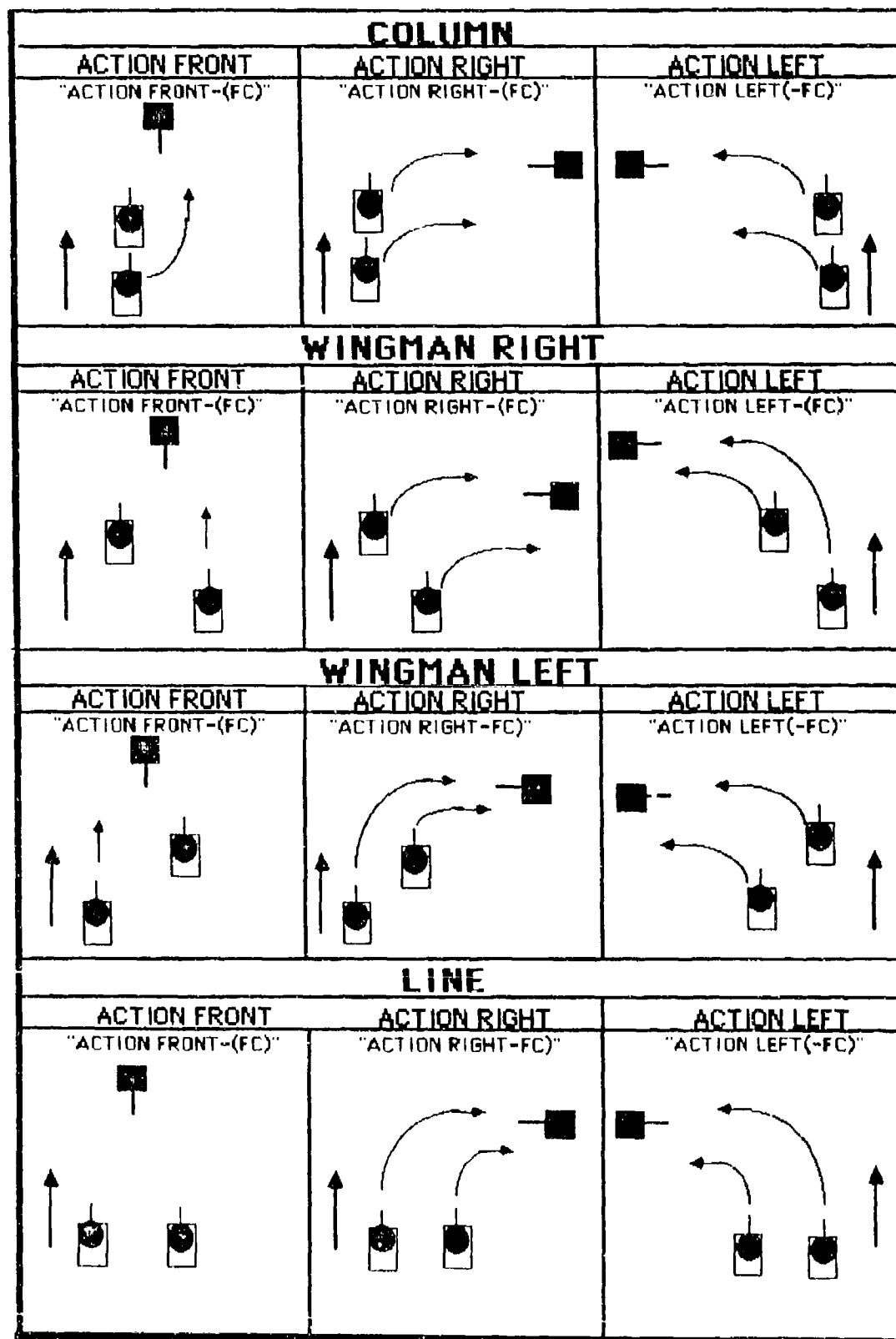
Figure C-3.   SIMCAT tank section action/fire command drills.

Enclosure 2 to Annex C

TANK SECTION TACTICAL EXERCISES

Tank Section Tactical Exercises are designed to provide tank section leaders (platoon leader and platoon sergeant) the opportunity to practice procedural tasks and command and control while moving their sections over prescribed routes on the SIMCAT simulated battlefield. These exercises also provide wingmen the opportunity to practice maintaining their positions in section formations while practicing procedural tasks.

Each exercise will accommodate four students simultaneously. During each exercise, student section leaders will be confronted with twelve action stations which will require section leaders to perform fifty-five procedural tasks and numerous non-procedural (command and control) tasks. Wingmen will be required to perform thirty-three procedural tasks. The only differences between the two TSTXs are movement route orientations and the sequence of the action stations.

This enclosure includes two TSTXs, described in TABs A and B. Each exercise is self-contained and includes: (a) exercise scenario outline, (b) exercise schematic, (c) exercise evaluation sheets, (d) and guidelines for the controller, OPFOR controller, and station evaluators.

TAB A

Tank Section Tactical Exercise (TSTX-1)

Scenario Outline

The scenario outline is shown in Figure C-4. The outline establishes the locations of area boundaries and minefields, the initial locations of friendly and threat vehicles, provides friendly and threat force indirect fire capabilities, and configures ammunition capabilities for all vehicles in the exercise.

Schematic

The schematic (see Figure C-5) depicts section operational areas, start points, routes of movement, release points, and general locations where various actions take place. The schematic also includes columns indicating schematic symbols, action numbers and names, area action sequence, and tasks by action.

Evaluation Sheets

There are three evaluation sheets (see Figures C-6 through C-8). A separate sheet and format is prescribed for the controller, the OPFOR controller, and the station evaluators.

Controller Evaluation Sheet. This evaluation sheet has three sections for comments--COMMUNICATIONS, SECTION MOVEMENT CONTROL, and SECTION GUNNERY CONTROL. The fourth section, OVERALL, provides blocks for a general rating of student performance (i.e., EXCELLENT, SATISFACTORY, or UNSATISFACTORY).

OPFOR Controller Evaluation Sheet. This evaluation sheet is similar to the controller's evaluation sheet. It has two sections for comments-- REACTION TO INDIRECT FIRE and GUNNERY ENGAGEMENTS. The third section, OVERALL, is the same as the corresponding section in the controller's evaluation sheet.

Station Evaluator Evaluation Sheet. Down the left side of this evaluation sheet is a list of all action stations and the procedural tasks to be performed at each action station. Down the right side of the evaluation sheet are GO and NO GO columns for indicating student performance. The NO GO column is sub-divided into TASK MASTERY and SYSTEM MASTERY columns. The bottom section of the sheet has space for general comments. This space can be used to enter comments pertaining to non-procedural (command and control) tasks.

Guidelines

The following guidelines pertain to controller, OPFOR controller, and station evaluators' duties prior to, during, and after an exercise.

Controller

- Issues to each student an exercise overlay which includes:
  (a) lane boundaries, (b) start points, (c) check points,
  (d) movement routes, (e) release points, and (f) grid coordinates
  of suspected minefield.

- Directs students to place overlay data on their tactical maps.

- Brings up TSTX-1 on the system.

- Directs students to locate their area of operation, tank, start point, movement route, check points, release point, and chemical contaminated area.

- Reminds students' section leaders to orient their general line of movement on the designated route.

- Tells students that they are attempting to rejoin their company after detached service. They have communications with the company commander (controller).

- Tells students that the threat in the area consists of scattered units supported by artillery. The units are withdrawing west. The threat has used chemical munitions in the past.

- Announces exercise call signs (i.e., Platoon Leader - RED ONE, TC1 - RED TWO, Platoon Sergeant - RED THREE, TC2 - RED FOUR, Company Commander (controller) -- RED FOUR SIX, and FIST (controller) - SHORT ROUND FOUR SEVEN).

- Opens radio net.

- Directs indirect fire be placed on terrain feature (e.g., road junctions, bridges, hills) in accordance with the scenario sequence.

- Provides friendly indirect fire on request.

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on communications, section movement control, and section gunnery control.

- Monitors OPFOR controller and station evaluator actions.

- Conducts the exercise critiques.

OPFOR Controller

- Verifies that threat vehicles are in correct locations.

- Provides threat indirect fire in accordance with the scenario action sequence.

- Initiates main gun engagements ten seconds _after_ friendly tanks are acquired.

- Evaluates student performance with emphasis on reaction to indirect and direct fire.

- Limits threat actions to that prescribed in the scenario.

- Participates in the exercise critiques.

Station Evaluators

- Ensures that students have the following necessary material for conducting the exercise:

    - MOPP Gear*   - Protractor

    - M256 Chemical Detector   - Coordinate Scale
      Kit*

    - CEOI   - Grease Pencil

    - Tactical Operations Code   - Lead Pencils

    - Straight Edge

- Ensures that the following student station components are functioning:

    - Communications   - Color monitor

    - Voice Recognition   - Keypad

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on procedural tasks and reporting.

- Participates in the exercise critiques.

*This equipment may be hard to acquire, and their use will lengthen and complicate the exercise.

Figure C-4. SIMCAT TSTX-1 scenario outline. — a SIMCAT data-entry form reproduced below.

Scenario Name: TSTX-1
(Leave Blank)
ScenarioData: 1

Attribute	TC2	PS	PL	OPFOR1	OPFOR2	OPFOR3	OPFOR4	OPFOR5	OPFOR6	OPFOR7	OPFOR8	OPFOR9	OPFOR10
Index	2	3	4	15	6	7	8	9	10	11	12	13	14
Coord X	844*	837*	849*	827*	809*	806*	775*	762*	758*	787*	761*	798*	748*
Coord Y	967*	967*	970*	989*	008*	007*	984*	989*	988*	009*	031*	973*	975*
	15	15	15	15	15	15	15	15	15	15	15	15	15
	15	15	15	15	15	15	15	15	15	15	15	15	15
	180	180	180	290	315	315	0	280	280	290	280	270	0
	180	180	180	290	315	315	0	280	280	290	280	270	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Map	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap
	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE
	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
	3	3	3	2	3	3	3	2	2	3	3	3	3
Weapon1	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat
	22	22	22	40	40	40	40	40	40	40	40	40	40
	3	3	3	3	3	3	3	3	3	3	3	3	3
Weapon2	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot
	33	33	33	40	40	40	40	40	40	0	0	0	0
	3	3	3	3	3	3	3	3	3	0	0	0	0
Weapon3	CoAx	CoAx	CoAx					Sagger	Sagger	Sagger	Sagger	Sagger	Sagger
	CoAx	CoAx	CoAx					Missile	Missile	Missile	Missile	Missile	Missile
	900	900	900					4	4	4	4	4	4
	30	30	30					2	2	2	2	2	2
Weapon4	CoAx												
	90)												
	30												

Player grouping (brace labels): ⟵ FRIENDLY PLAYERS ⟶ | ⟵ OPFOR PLAYERS ⟶ | ⟵ OPFOR NON-PLAYERS ⟶ | MISC.

IndirectFireAllocation

100 100 100 100 | 100

ControlLines

```
9490 9550 7090 0280
0000 0000 0000 0000
0000 0000 0000 0000
0000 0000 0000 0000
0000 0000 0000 0000
0000 0000 0000 0000
0000 0000 0000 0000
```

Minefields

```
817* 996* 814* 933*
732* 999* 733* 997*
999  999  999  999
999  999  999  999
999  999  999  999
999  999  999  999
999  999  999  999
```

MISC.

999 999 999

NOTES: 1 – * Convert UTM coordinates to SIMCAT coordinates before entering into the computer.
2 – Friendly ID Fire Coordinates: Area A – 77200140, Area B – 79600710.

Figure C-4. SIMCAT TSTX-1 scenario outline.

Figure C-5. SIMCAT Tank Section Tactical Exercise – TSTX-1.

C-16

```
┌─────────────────────────────────────────────────────┐
│              PERFORMANCE EVALUATION                  │
│                                                      │
│                    TSTX-__                           │
│                                                      │
│  Student _____    Controller _____   │
│                                                      │
│  Date _____    Station _____    │
├─────────────────────────────────────────────────────┤
│                                                      │
│                 GENERAL COMMENTS                     │
│  - - - - - - - - - - - - - - - - - - - - - - - - -   │
│                 COMMUNICATIONS                       │
│                 ───────────────                      │
│                                                      │
│                                                      │
│                                                      │
│  - - - - - - - - - - - - - - - - - - - - - - - - -   │
│              SECTION MOVEMENT CONTROL                │
│              ────────────────────────                │
│                                                      │
│                                                      │
│                                                      │
│  - - - - - - - - - - - - - - - - - - - - - - - - -   │
│              SECTION GUNNERY CONTROL                 │
│              ───────────────────────                 │
│                                                      │
│                                                      │
│  - - - - - - - - - - - - - - - - - - - - - - - - -   │
│                    OVERALL                           │
│                    ───────                           │
│                                                      │
│   EXCELLENT       SATISFACTORY      UNSATISFACTORY   │
│                                                      │
│   ┌────┐            ┌────┐            ┌────┐         │
│   └────┘            └────┘            └────┘         │
└─────────────────────────────────────────────────────┘
```

Figure C-6.   SIMCAT controller student performance evaluation sheet.

```
┌─────────────────────────────────────────────────────┐
│                PERFORMANCE EVALUATION                 │
│                      TSTX-__                          │
│                                                       │
│  Student _____    OPFOR Controller _____ │
│                                                       │
│  Date _____    Station _____ │
├─────────────────────────────────────────────────────┤
│                                                       │
│                  GENERAL COMMENTS                     │
│  - - - - - - - - - - - - - - - - - - - - - - - - - -  │
│              REACTION TO INDIRECT FIRE                │
│                                                       │
│                                                       │
│                                                       │
│                                                       │
│                                                       │
│  - - - - - - - - - - - - - - - - - - - - - - - - - -  │
│                 GUNNERY ENGAGEMENTS                   │
│                                                       │
│                                                       │
│                                                       │
│                                                       │
│  - - - - - - - - - - - - - - - - - - - - - - - - - -  │
│                      OVERALL                          │
│                                                       │
│    EXCELLENT      SATISFACTORY      UNSATISFACTORY    │
│                                                       │
│     ┌────┐          ┌────┐             ┌────┐         │
│     └────┘          └────┘             └────┘         │
└─────────────────────────────────────────────────────┘
```

Figure C-7. SIMCAT OPFOR controller student performance evaluation sheet.

PERFORMANCE EVALUATION

TSTX-__

Student_____   Station Evaluator _____

Date _____   Station _____

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
START POINT			
Enter a radio net (both)			
Use an automated CEOI (both)			
Use KTC 1400 numerical cipher/ authentication system (both)	—	—	—
ENGAGE T72 TANK			
Send a CONTACT report (first)			
Send a radio message (first)			
Acquire and identify target (first)			
Issue a fire command (first)			
Send a SPOT report (SL)			
BYPASS A MINEFIELD			
Check location of minefield (SL)			
Select a movement route using a map (SL)			
Direct driver around minefield (SL)			
Maintain wingman position (W)			

Figure C-8. SIMCAT station evaluator student performance evaluation
        sheet.

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY

ENGAGE TWO T72 TANKS

    Send a CONTACT report (first)

    Send a radio message (first)

    Acquire and identify target (both)

    Issue a section fire command (SL)

    Respond to section fire command (W)

    Send a SPOT report (SL)

OCCUPY A FIRING POSITION

    Designate primary positions (SL)

    Direct driver into position (both)

    Designate sectors of fire (SL)

    Direct driver into turret defilade (both)

ENGAGE A BMP

    Send a CONTACT report (first)

    Send a radio message (first)

    Acquire and identify target (first)

    Issue a section fire command (first)

    Send a SPOT report (SL)

CALL FOR AND ADJUST FIRE

    Acquire and identify target (SL)

    Request fire (SL)

    Adjust fire (SL)

Figure C-8. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
BYPASS A CONTAMINATED AREA	/////	/////	/////
Identify contaminated area (SL)			
Select a movement route using a map (SL)			
Direct driver around contaminated area (SL)			
Maintain wingman position (W)			
ENGAGE A BMP	/////	/////	/////
Send a CONTACT report (first)			
Send a radio message (first)			
Acquire and identify target (first)			
Issue a section fire command (first)			
Send a SPOT report (SL)			
EVADE OPFOR INDIRECT FIRE	/////	/////	/////
Direct hatches be closed (both)			
Direct driver accelerate through ID fire (both)			
Direct MOPP-4 (SL)			
Use M256 chemical agent detector kit (both)			
Prepare/submit NBC-1 report (SL)			
Encode/decode messages using KTC 600 tactical operations code (SL)	—	—	—
Send a radio message (SL)			
Direct MOPP-2 (SL)			
Direct hatches be opened (both)			

Figure C-8. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
ELECTRONIC COUNTERMEASURES	/////	/////	/////
Identify technique (SL)			
Attempt to transmit through jam (SL)			
Change to alternate frequency (SL)			
Submit interference report (SL)			
RELEASE POINT			
Submit a SITREP (W to SL to CO)			
Send a radio message (both)			
Encode/decode messages using KTC 600 tactical operations code (both)	—	—	—
Use an Automated CEOI (both)			
Use KTC 1400 numerical cipher/ authentication system (both)	—	—	—
Leave a radio net (both)			

GENERAL COMMENTS

Figure C-8. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

TAB B

Tank Section Tactical Exercise (TSTX-2)

Scenario Outline

The scenario outline is shown in Figure C-9. The outline establishes the locations of the boundary between areas and minefields, the initial locations of friendly and threat vehicles, provides friendly and threat force indirect fire capabilities, and configures ammunition capabilities for all vehicles in the exercise.

Schematic

The schematic (see Figure C-10) depicts section operational areas, start points, routes of movement, release points, and general locations where various actions take place. The schematic also includes columns indicating schematic symbols, action numbers and names, area action sequence, and tasks by action.

Evaluation Sheets

There are three evaluation sheets (see Figures C-11 through C-13). A separate sheet and format is prescribed for the controller, the OPFOR controller, and the the station evaluators.

Controller Evaluation Sheet. This evaluation sheet has three sections for comments--COMMUNICATIONS, SECTION MOVEMENT CONTROL, and SECTION GUNNERY CONTROL. The fourth section, OVERALL, provides blocks for a general rating of student performance (i.e., EXCELLENT, SATISFACTORY, or UNSATISFACTORY).

OPFOR Controller Evaluation Sheet. This evaluation sheet is similar to the controller's evaluation sheet. It has two sections for comments-- REACTION TO INDIRECT FIRE and GUNNERY ENGAGEMENTS. The third section, OVERALL, is the same as the corresponding section in the controller's evaluation sheet.

Station Evaluator Evaluation Sheet. Down the left side of this evaluation sheet is a list of all action stations and the procedural tasks to be performed at each action station. Down the right side of the evaluation sheet are GO and NO GO columns for indicating student perform- ance. The NO GO column is sub-divided into TASK MASTERY and SYSTEM MASTERY columns. The bottom section of the sheet has space for general comments. This space can be used to enter comments pertaining to non-procedural (command and control) tasks.

Guidelines

The following guidelines pertain to controller, OPFOR controller, and station evaluators' duties prior to, during, and after an exercise.

Controller

- Issues to each student an exercise overlay which includes: (a) lane boundaries, (b) start points, (c) check points, (d) movement routes, (e) release points, and (f) grid coordinates of suspected minefield.

- Directs students to place overlay data on their tactical maps.

- Brings up TSTX-2 on the system.

- Directs students to locate their area of operation, tank, start point, movement route, check points, release point, and chemical contaminated area.

- Reminds students' section leaders to orient their general line of movement on the designated route.

- Tells students that they are attempting to rejoin their company after detached service. They have communications with the company commander (controller).

- Tells students that the threat in the area consists of scattered units supported by artillery. The units are withdrawing east. The threat has used chemical munitions in the past.

- Announces exercise call signs (i.e., Platoon Leader - RED ONE, TC1 - RED TWO, Platoon Sergeant - RED THREE, TC2 - RED FOUR, Company Commander (controller) - RED FOUR SIX, and FIST (controller) - SHORT ROUND FOUR SEVEN).

- Opens radio net.

- Directs indirect fire be placed on terrain feature (e.g., road junctions, bridges, hills) in accordance with the scenario sequence.

- Provides friendly indirect fire on request.

- Monitors student progress and be alert to detect student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on communications, section movement control, and section gunnery control.

- Monitors OPFOR controller and station evaluator actions.

- Conducts the exercise critiques.

OPFOR Controller

- Verifies that threat vehicles are in correct locations.

- Provides threat indirect fire in accordance with the scenario action sequence.

- Initiates main gun engagements ten seconds _after_ friendly tanks are acquired.

- Evaluates student performance with emphasis on reaction to indirect and direct fire.

- Limits threat actions to that prescribed in the scenario.

- Participates in the exercise critiques.

Station Evaluators

- Ensures that students have the following necessary material for conducting the exercise:

    - MOPP Gear *   - Protractor

    - M256 Chemical Detector   - Coordinate Scale
      Kit*

    - CEOI   - Grease Pencil

    - Tactical Operations Code - Lead Pencils

    - Straight Edge

- Ensures that the following student station components are functioning:

    - Communications   - Color monitor

    - Voice Recognition   - Keypad

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on procedural tasks and reporting.

- Participates in the exercise critiques.

---

*This equipment may be hard to acquire, and their use will lengthen and complicate the exercise.

Figure C-9. SIMCAT TSTX-2 scenario outline.

Scenario Name	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)
TSTX-2	2	3	4	5	6	7	8	9	10	11	12	13	14
(Leave Blank)	TC2	PS	PL	OPFOR1	OPFOR2	OPFOR3	OPFOR4	OPFOR5	OPFOR6	OPFOR7	OPFOR8	OPFOR9	OPFOR10
ScenarioData	1	1	1	2	2	2	2	3	2	2	2	2	2
TC1	733*	733*	716*	764*	798*	800*	779*	780*	801*	810*	829*	754*	796*
1	032*	030*	018*	023*	014*	011*	982*	981*	963*	998*	991*	994*	974*
716*	15	15	15	15	15	15	15	15	15	15	15	15	15
019	15	15	15	15	15	15	15	15	15	15	15	15	15
15	90	90	90	135	190	190	225	225	135	135	135	225	135
15	99	90	90	135	190	190	225	225	135	135	135	225	135
270	0	0	0	0	0	0	0	0	0	0	0	0	0
270	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap
0	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
UpMap	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	3	3	2	2	2	2	3	3	3	3	3	3	3
TRUE	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
3	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat
MainGun	22	22	40	0	0	0	0	0	0	0	40	40	40
Heat	3	3	3	3	3	3	3	3	3	3	3	3	3
22	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
3	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot
MainGun	33	33	40	40	40	40	40	40	40	0	0	0	0
Sabot	3	3	3	3	3	3	3	3	3	3	3	3	3
33	CoAx	CoAx								Sagger Missile	Sagger Missile	Sagger Missile	Sagger Missile
3	CoAx	CoAx								Sagger Missile	Sagger Missile	Sagger Missile	Sagger Missile
MainGun	900	900								4	4	4	4
Sabot	30	30								2	2	2	2
3										999	999	999	999
CoAx													
CoAx													
900													
30													

IndirectFireAllocation
(Leave Blank)
100 100 100 100
(Leave Blank)
ControlLines
(Leave Blank)
7090 0260 8500 9680
0000 0000 0000 0000
0000 0000 0000 0000
0000 0000 0000 0000
0000 0000 0000 0000
(Leave Blank)
Minefields
(Leave Blank)
751* 025* 757* 026*
819* 968* 821* 964*
999 999 999 999
999 999 999 999
999 999 999 999
999 999 999 999
999 999 999 999
999 999 999 999
999 999 999 999
999 999 999

←—— FRIENDLY PLAYERS ——→ | ←——————— OPFOR PLAYERS ———————→ | —→ OPFOR NON-PLAYERS ←— | MISC.

NOTES:
1 - * Convert UTM coordinates to SIMCAT coordinates before entering into the computer.
2 - Friendly ID Fire Coordinates: Area A - 77200140, Area B - 79600710.

Figure C-10. SIMCAT Tank Section Tactical Exercise – TSTX-2.

```
+---------------------------------------------------------+
|                PERFORMANCE EVALUATION                   |
|                        TSTX-__                          |
|  Student _____   Controller _____   |
|                                                         |
|  Date _____   Station _____    |
+---------------------------------------------------------+
|                                                         |
|                   GENERAL COMMENTS                      |
|- - - - - - - - - - - - - - - - - - - - - - - - - - - - -|
|                   COMMUNICATIONS                        |
|                                                         |
|                                                         |
|                                                         |
|- - - - - - - - - - - - - - - - - - - - - - - - - - - - -|
|                SECTION MOVEMENT CONTROL                 |
|                                                         |
|                                                         |
|                                                         |
|                                                         |
|- - - - - - - - - - - - - - - - - - - - - - - - - - - - -|
|                SECTION GUNNERY CONTROL                  |
|                                                         |
|                                                         |
|                                                         |
|                                                         |
|- - - - - - - - - - - - - - - - - - - - - - - - - - - - -|
|                       OVERALL                           |
|                                                         |
|   EXCELLENT        SATISFACTORY      UNSATISFACTORY      |
|                                                         |
|    [    ]            [    ]            [    ]            |
+---------------------------------------------------------+
```
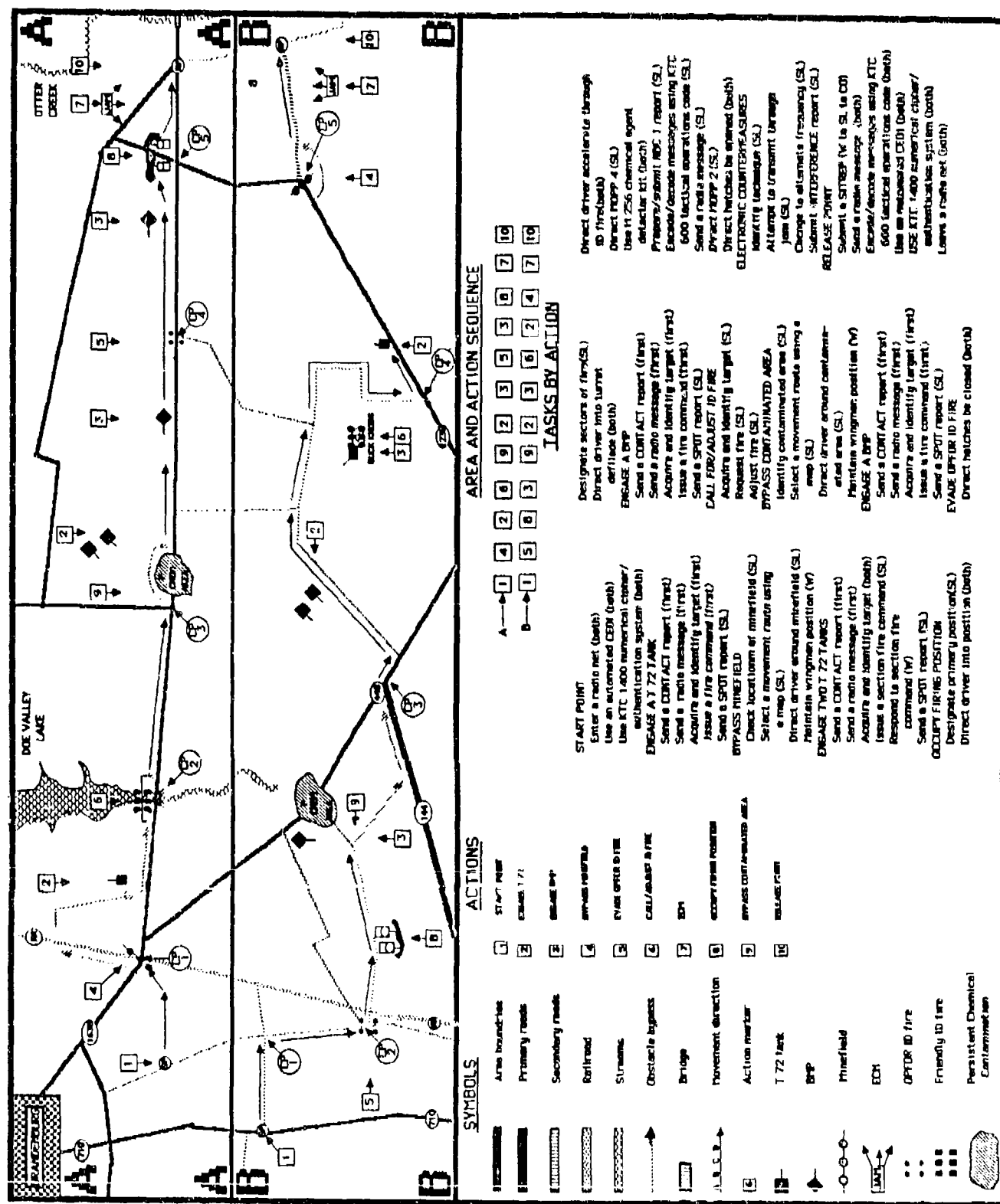
Figure C-11.   SIMCAT controller student performance evaluation sheet.

```
┌─────────────────────────────────────────────────────────────┐
│                   PERFORMANCE EVALUATION                    │
│                                                             │
│                        TSTX-__                              │
│                                                             │
│  Student _____      OPFOR Controller _____  │
│                                                             │
│  Date _____       Station _____   │
├─────────────────────────────────────────────────────────────┤
│                                                             │
│                     GENERAL COMMENTS                        │
│                                                             │
│                 REACTION TO INDIRECT FIRE                   │
│                                                             │
│                                                             │
│                                                             │
│                                                             │
│                                                             │
│                                                             │
│                    GUNNERY ENGAGEMENTS                      │
│                                                             │
│                                                             │
│                                                             │
│                                                             │
│                         OVERALL                             │
│                                                             │
│                                                             │
│    EXCELLENT        SATISFACTORY        UNSATISFACTORY      │
│                                                             │
│      ┌───┐             ┌───┐               ┌───┐           │
│      └───┘             └───┘               └───┘           │
└─────────────────────────────────────────────────────────────┘
```

Figure C-12. SIMCAT OPFOR controller student performance evaluation
             sheet.

PERFORMANCE EVALUATION			
TSTX-___			

Student_____   Station Evaluator _____

Date _____ __   Station _____

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
START POINT	////	////	////
Enter a radio net (both)			
Use an automated CEOI (both)			
Use KTC 1400 numerical cipher/			
authentication system (both)	—	—	—
ENGAGE T72 TANK	////	////	////
Send a CONTACT report (first)			
Send a radio message (first)			
Acquire and identify target (first)			
Issue a fire command (first)			
Send a SPOT report (SL)			
BYPASS A MINEFIELD	////	////	////
Check location of minefield (SL)			
Select a movement route using a map (SL)			
Direct driver around minefield (SL)			
Maintain wingman position (W)			

Figure C-13. SIMCAT station evaluator student performance evaluation
sheet.

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
ENGAGE TWO T72 TANKS	///////	///////	///////
Send a CONTACT report (first)			
Send a radio message (first)			
Acquire and identify target (both)			
Issue a section fire command (SL)			
Respond to section fire command (W)			
Send a SPOT report (SL)			
OCCUPY A FIRING POSITION	///////	///////	///////
Designate primary positions (SL)			
Direct driver into position (both)			
Designate sectors of fire (SL)			
Direct driver into turret defilade (both)			
ENGAGE A BMP	///////	///////	///////
Send a CONTACT report (first)			
Send a radio message (first)			
Acquire and identify target (first)			
Issue a fire command (first)			
Send a SPOT report (SL)			
CALL FOR AND ADJUST FIRE	///////	///////	///////
Acquire and identify target (SL)			
Request fire (SL)			
Adjust fire (SL)			

Figure C-13. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
BYPASS A CONTAMINATED AREA	///////	///////	///////
Identify contaminated area (SL)			
Select a movement route using a map (SL)			
Direct driver around contaminated area (SL)			
Maintain wingman position (W)			
ENGAGE A BMP	///////	///////	///////
Send a CONTACT report (first)			
Send a radio message (first)			
Acquire and identify target (first)			
Issue a fire command (first)			
Send a SPOT report (SL)			
EVADE OPFOR INDIRECT FIRE	///////	///////	///////
Direct hatches be closed (both)			
Direct driver accelerate through ID fire (both)			
Direct MOPP-4 (SL)			
Use M256 chemical agent detector kit (both)			
Prepare/submit NBC-1 report (SL)			
Encode/decode messages using KTC 600 tactical operations code (SL)	—	—	—
Send a radio message (SL)			
Direct MOPP-2 (SL)			
Direct hatches be opened (both)			

Figure C-13. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
ELECTRONIC COUNTERMEASURES	/////	/////	/////
Identify technique (SL)			
Attempt to transmit through jam (SL)			
Change to alternate frequency (SL)			
Submit interference report (SL)			
RELEASE POINT	/////	/////	/////
Submit a SITREP (W to SL to CO)			
Send a radio message (both)			
Encode/decode messages using KTC 600 tactical operations code (both)	—	—	—
Use an Automated CEOI (both)			
Use KTC 1400 numerical cipher/ authentication system (both)	—	—	—
Leave a radio net (both)			

GENERAL COMMENTS

Figure C-13. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

TSTX SCHEDULE

The TSTX schedule shown in Figure C-14 is for a class of sixteen students, organized into groups of eight each, and with two students at each student station. This schedule is predicated on the assumption that only one SIMCAT system will be available.

Each student is allocated six hours on SIMCAT (twelve hours for a group, twenty-four hours for a class).

		SECTION MOVEMENT PRACTICE	SECTION GUNNERY PRACTICE	TSTX REPIT. 1	TSTX REPIT. 2
GP 1a (STC)	DAY-1	0800-0900	0900-1000	1000-1200	1300-1500 ▓
GP 1b (SDV)	DAY-1	1500-1600	1600-1700		
GP 1b (SDV)	DAY-2			0800-1000	1000-1200 ▓
GP 2a (STC)	DAY-2	1300-1400	1400-1500	1500-1700	
GP 2a (STC)	DAY-3				0800-1000 ▓
GP 2b (SDV)	DAY-3	1000-1100	1100-1200	1300-1500	1500-1700 ▓

▓ (Student change)

Figure C-14. SIMCAT TSTX schedule.

ANNEX D

TANK PLATOON TACTICAL EXERCISE

Richard E. O'Brien

HumRRO, Fort Knox, Kentucky

March 1987

ANNEX D   TANK PLATOON TACTICAL EXERCISE

CONTENTS

LIST OF FIGURES

CONTENTS (Continued)

ANNEX D
TANK PLATOON TACTICAL EXERCISE

This annex contains a pre-exercise training program, two tank platoon tactical exercises, an exercise schedule, and procedures for evaluating student performance.

Pre-Exercise Training

Pre-exercise training will focus on platoon movement with emphasis on maintaining the wingman position, and on the control of platoon fires (see Enclosure 1). (It is assumed that students have participated in pre-exercise training for tank section tactical exercises. If not, students should be given the pre- exercise training indicated in Annex C.)

Tank Platoon Tactical Exercises (TPTXs)

There are two TPTXs and each can simultaneously accommodate four students (see Enclosure 2). (Each TPTX can simultaneously accommodate eight students when the GN/DV student option is in effect.) Each TPTX includes eight actions which require the performance of 164 tasks. The only difference between the TPTXs are:

TPTX-1. This exercise begins in a forward assembly area in the west, follows a designated route, and ends in a rear assembly area in the west.

TPTX-2. This exercise begins in a forward assembly area in the east, follows a designated route, and ends in a rear assembly area in the east.

Exercise Schedule

The estimated time for students to complete pre-exercise training and two repetitions of a TPTX is eight hours. The total time for a class of sixteen students would be thirty-two hours.

Student Performance Evaluation

The primary reason for evaluating student performance is to determine if students can perform course tasks. Evaluation is accomplished by in-process scoring of student performance by station evaluators, the controller, and the OPFOR controller.

Critique. After each exercise the controller will conduct a formal critique. The scope of the critique and the sequence of presentations are:

- Student comments on their own good and poor performance.

- Station evaluator comments on good and poor performance.

- OPFOR controller comments on good and poor student performance.

- Controller comments on good and poor student performance.

Scoresheets. There are three different task performance scoresheets.

- The controller scoresheet is designed to allow the controller to focus on task performance related to platoon movement and platoon gunnery control and overall student performance.

- The OPFOR controller scoresheet is designed for comments on student reaction to indirect fire, control of platoon gunnery, and overall student performance.

- The station evaluator scoresheet lists all actions and tasks to be performed at each action. There are GO and NO GO columns, and the NO GO column is divided into TASK MASTERY and SYSTEM MASTERY sub-columns. The evaluator scoresheet is the primary source material for the critique of student performance.

Enclosure 1 to Annex D

PRE-EXERCISE TRAINING

This enclosure describes pre-exercise training. The program includes tank platoon movement and gunnery engagements. The controller should "bring up" on the system the BASIC-1 scenario outline as shown in Figure B-2. The controller should then direct the students to place color monitors on MID VIEW range, to note the location of the assembly area and their own tank, and orient themselves with the terrain display and the tactical map.

Tank Platoon Movement

During tank platoon movement training the students should review arm and hand signals and movement formations. Then the students should practice movement formations.

Arm and Hand Signals. There are fourteen arm and hand signals that can be initiated at each student station and displayed on the color monitors at the different student stations. The controller should demonstrate at one of the student stations how to initiate arm and hand signals. In addition, he should talk the students through the different arm and hand signals, i.e., column, combat column (staggered column), wedge, line, coil, herringbone, traveling overwatch, bounding overwatch-successive bounds, bounding overwatch-alternating bounds, pass through defile, contact left, contact right, action left, and action right.

Movement Formations. There are nine movement formations that should be practiced during movement training. The controller refers to the first training aid (see Figure D-1) and talks the students through the movement formations, i.e., column, staggered column (combat column), echelon right, echelon left, vee, wedge, line, coil, and herringbone. The controller points out the relative positions of individual tanks when formations are changed.

Formation Movement Practice. During tactical movement, when enemy contact is imminent, the platoon leader should move his platoon in bounding overwatch (successive bounds or alternating bounds). The controller refers to the second training aid (see Figure D-2) and talks the students through the movement techniques. The controller should then explain the movement practice procedure, e.g., the route to follow and the areas where movement formations will be executed. The controller should then direct the students to return to their stations and the platoon leader to inform him when the platoon is ready to move. Training emphasis should focus on the recognition of arm and hand signals, rapid movement from one formation to another, and the proper orientation of wingmen with section leaders. The evaluators should assist the students if necessary, and critique their formation practice performance.
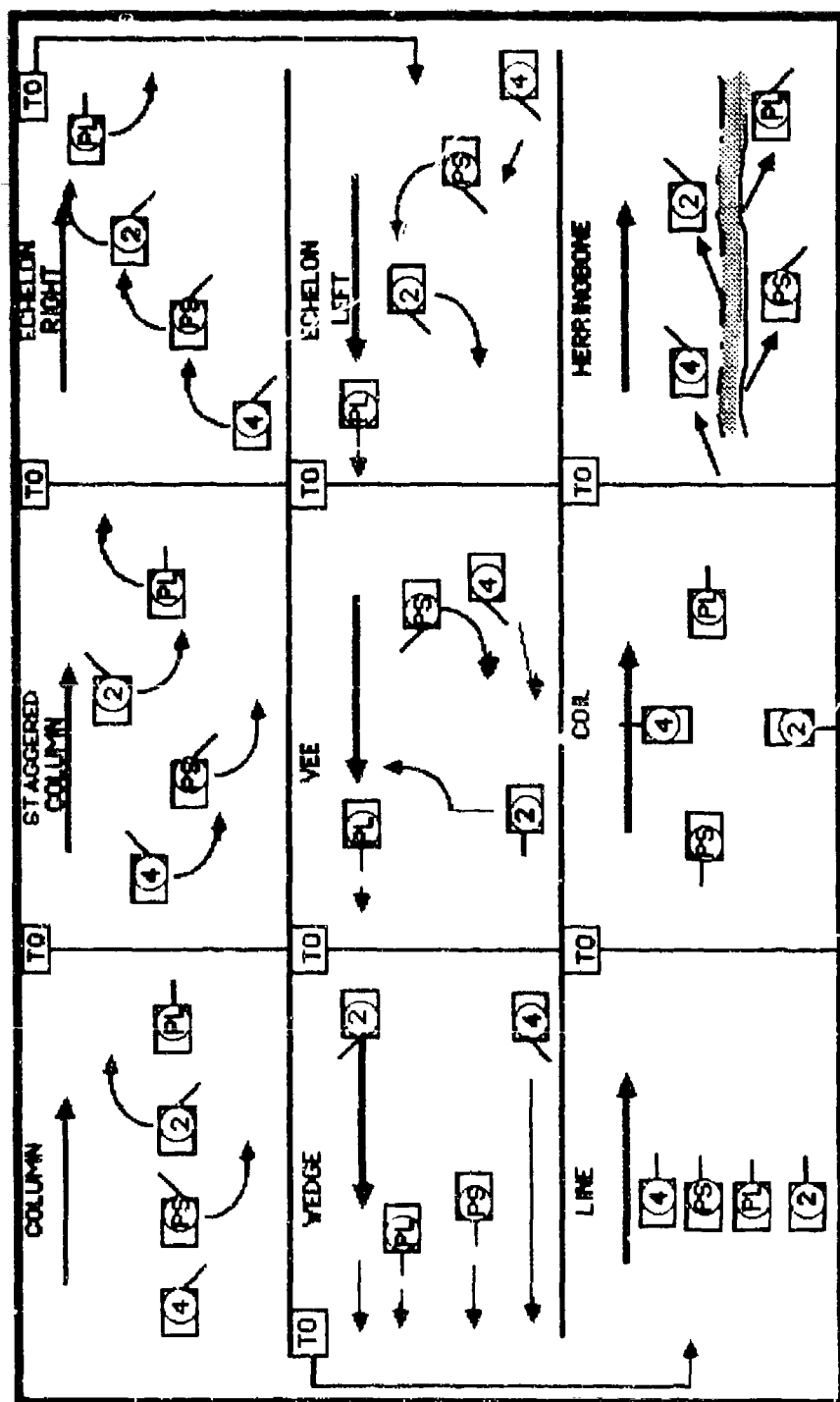
Figure D-1. SIMCAT tank platoon movement formations.

BOUNDING O-WATCH(SB)

BOUNDING O-WATCH(AB)

① COLUMN
② S-COLUMN
③ ECH.RIGHT
④ ECH.LEFT
⑤ COIL
⑥ VEE
⑦ H-BONE
⑧ WEDGE
⑨ LINE
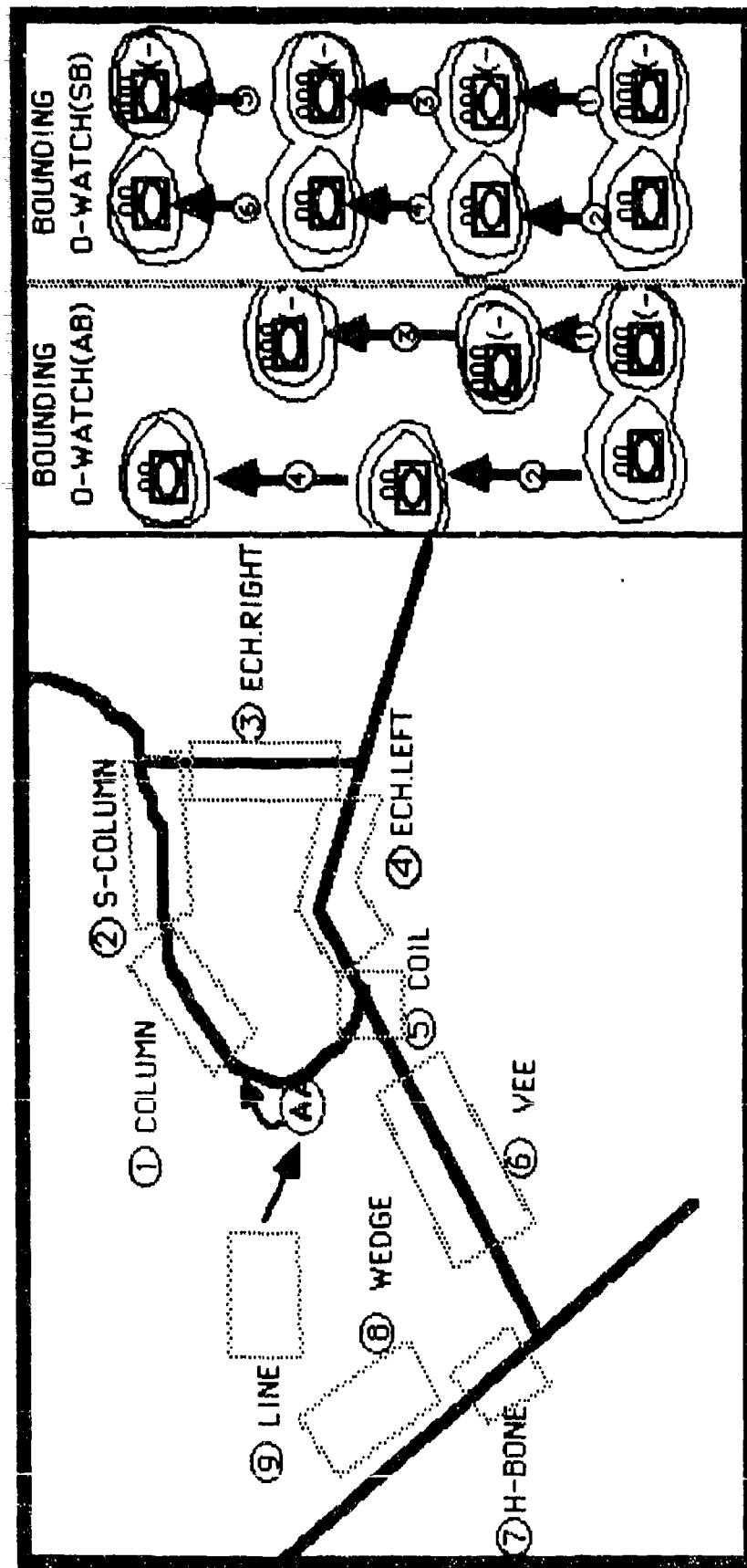
D-2. SIMCAT tank platoon movement layout.

Control of Platoon Fire

During platoon fire training, students should review gunnery techniques and action/fire command drills. Then students should practice platoon fire.

Platoon Gunnery Techniques. There are three basic platoon level gunnery techniques (fire patterns), frontal, cross, and depth. Terrain or tactical necessity can dictate two different techniques within a platoon fire pattern, e.g., one section executing frontal fire and the other section executing cross fire. The controller moves the first training aid (see Figure D-3) into the student area and assembles the students around it. The controller should then talk the students through the three platoon gunnery techniques, i.e., platoon cross fire, platoon frontal fire, and platoon leader section frontal fire and platoon sergeant section cross fire.

Action/Fire Command Drills. Action/fire command drills usually occur when the platoon is in a staggered column, vee, wedge, or line formation. A tank commander acquires the threat, gives a CONTACT report, and the platoon leader announces an ACTION drill and follows it with a fire command. The controller refers to the second training aid (see Figure D-4) and talks the students through action/fire command drills, i.e., ACTION LEFT, ACTION FRONT, and ACTION RIGHT, for staggered column, vee, wedge, and line formations.

Gunnery Practice. Effective target engagement requires early target acquisition, prompt execution of the appropriate action drill, and proper fire control (appropriate fire commands). The OPFOR controller moves threat vehicles into initial positions. The controller should direct the students to move back to their stations. The controller then directs the platoon leader to move his platoon over the prescribed route, and to acquire and engage targets (see Figure D-5). Training emphasis should focus on rapid engagement of acquired targets. The evaluators should assist students if necessary, and critique gunnery practice performance.

The controller should announce a break. During the break the controller should "bring up" on the system the first tank platoon tactical exercise.

Example a. Platoon leader fire command to engage two assaulting threat platoons using crossfire

ELEMENT	COMMAND	REMARKS
Alert	BLUE	3d Plt
Wpn/Ammo	SABOT	(Optional)
Description	SIX TANKS	-----
Location	TRP 3	-----
Control	CROSS	Simultaneous fire technique used
Execution	FIRE	-----

Example B. Platoon leader fire command to engage multiple enemy tanks using frontal fire.

ELEMENT	COMMAND	REMARKS
Alert	RED	1ST Plt
Wpn/Ammo	-----	(Optional)
Description	EIGHT TANKS	-----
Location	FOUR-TRP 1 -ONE-TRP 2	-----
Control		Frontal pattern used
Execution	FIRE	Simultaneous fire technique used

Example C. Platoon leader fire commands to engage threat targets with different types of control in each section

ELEMENT	COMMAND	REMARKS
Alert	WHITE	2d Plt
Wpn/Ammo	-----	-----
Description	THREE TANKS -TWO BMPs	-----
Location	ONE-TRP 2 -FRONTAL	Locate/control for PL sector
	FOUR-TRP 2 CROSS-	Locate control for PS sector
Control	-----	-----
Execution	FIRE	Simult fire technique used

NOTES: RED=1st Plt prep to fire.WHITE=2d Plt prep to fire.BLUE=3d Plat prep to fire.ONE=PL's sec prep to fire, FOUR=PS sec prep to fire

Figure D-3. SIMCAT tank platoon gunnery techniques.
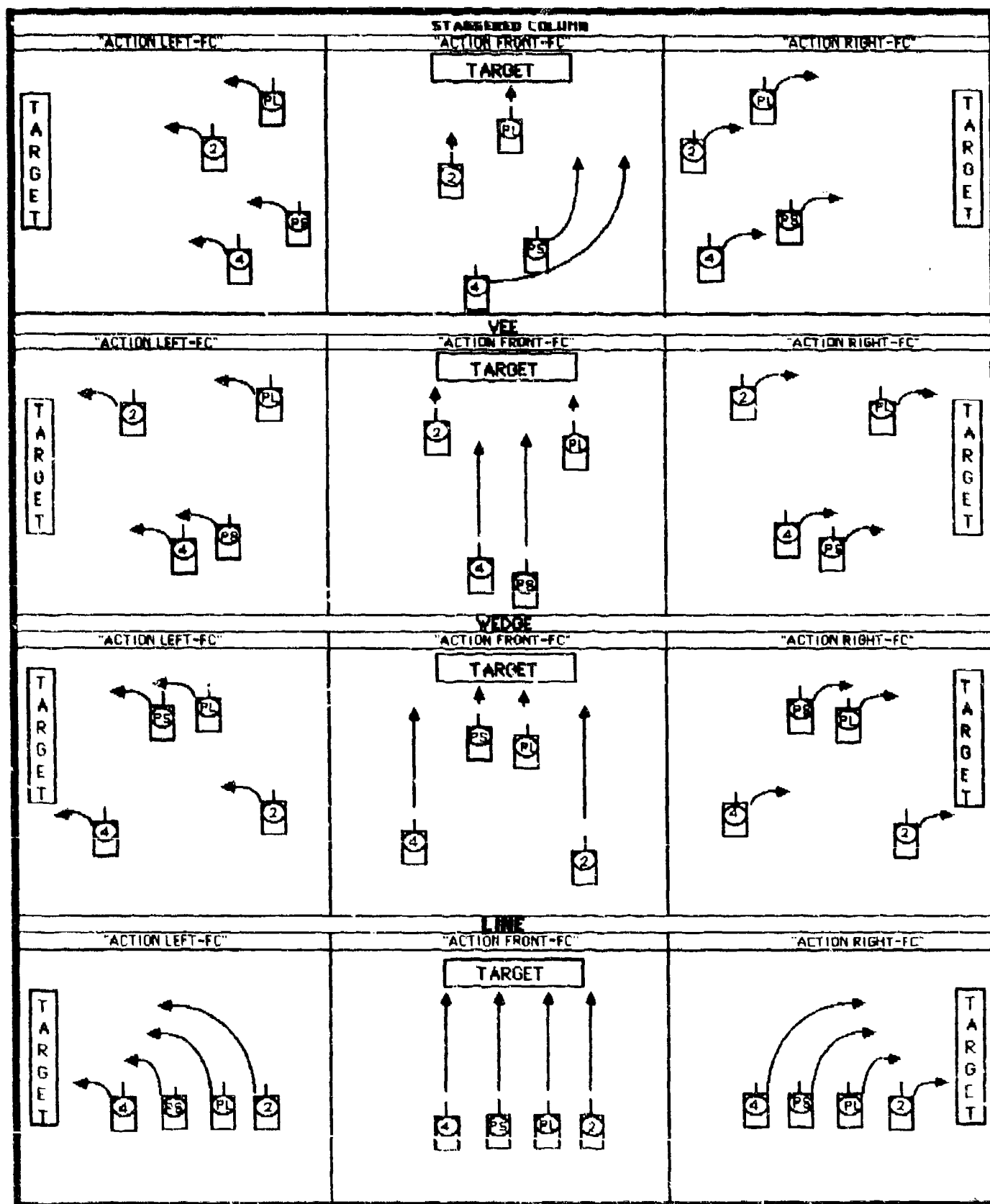
Figure D-4.   SIMCAT tank platoon actions/fire command drills.
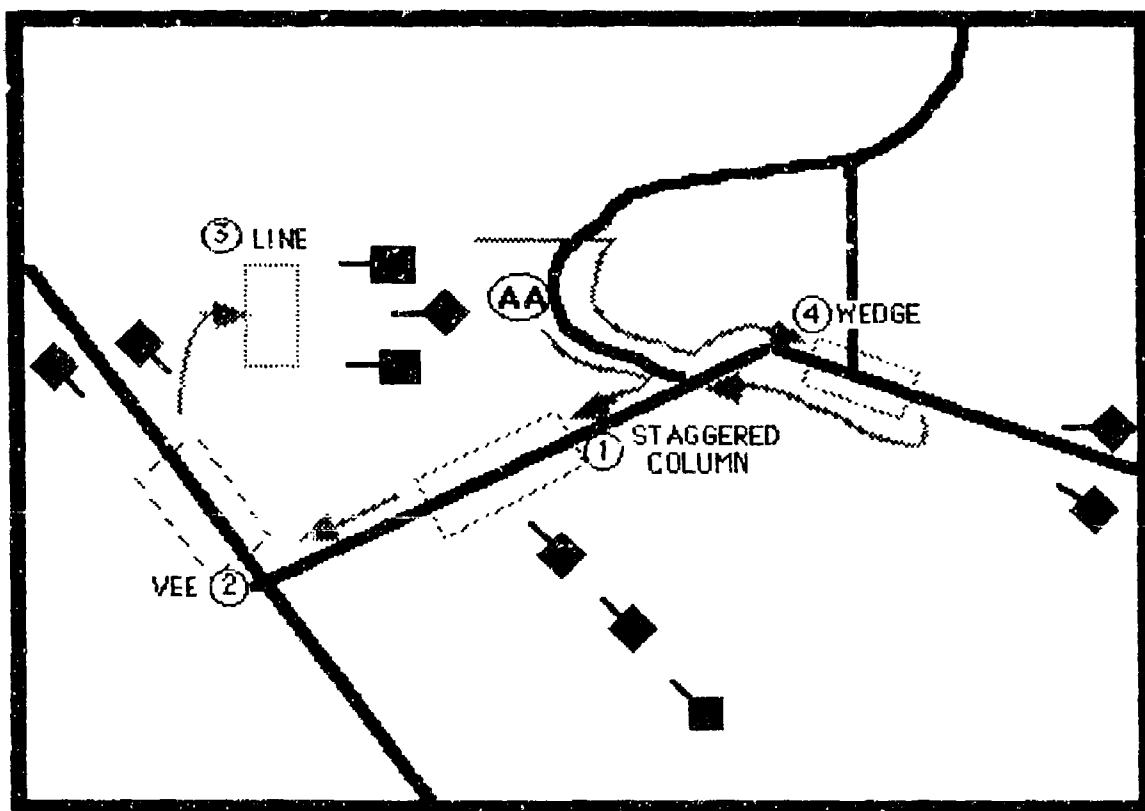
Figure D-5. SIMCAT tank platoon target engagement.

Enclosure 2 to Annex D

TANK PLATOON TACTICAL EXERCISES

Tank Platoon Tactical Exercises are designed to provide the tank platoon leader the opportunity to practice procedural tasks and command and control while moving his platoon over prescribed routes on the SIMCAT simulated battlefield. These exercises also provide wingmen the opportunity to practice maintaining their position in platoon formations while practicing procedural tasks.

Each exercise will accommodate four students simultaneously. During each exercise the student platoon leader will be confronted with eight action stations which will require the platoon leader to perform one hundred and thirteen tasks. The only difference between the two TPTXs are movement route orientations.

This enclosure includes two TPTXs, described in TABs A and B. Each exercise is self-contained and includes: (a) exercise scenario outline, (b) exercise schematic, (c) exercise evaluation sheets, and (d) guidelines for the controller, OPFOR, and station evaluators.

Tank Platoon Tactical Exercise (TPTX-1)

Scenario Outline

The scenario outline is shown in Figure D-6. The outline establishes the locations of minefields, the initial locations of friendly and threat vehicles, provides friendly and threat indirect fire capabilities, and configures ammunition capabilities for all vehicles in the exercise.

Schematic

The schematic (see Figures D-7A and D-7B) depicts the platoon operational area, the forward assembly area, the start point, passage points, routes of movement, check points, general locations where various actions take place, the release point, and the rear assembly area.

Evaluation Sheets

There are three evaluation sheets (see Figures D-8 through D-10). A separate sheet and format is prescribed for the controller, the OPFOR controller, and the station evaluators.

Controller Evaluation Sheet. This evaluation sheet has two sections for comments--PLATOON MOVEMENT CONTROL and PLATOON GUNNERY CONTROL general comments. The third section, OVERALL, provides blocks for a general rating of student performance (i.e., EXCELLENT, SATISFACTORY, or UNSATISFACTORY).

OPFOR Controller Evaluation Sheet. This evaluation sheet is similar to the controller's evaluation sheet. It has two sections for comments-- REACTION TO INDIRECT FIRE and GUNNERY ENGAGEMENTS. The third section, OVERALL, is the same as the corresponding section in the controller's evaluation sheet.

Station Evaluator Evaluation Sheet. Down the left side of this evaluation sheet is a list of all action stations and the procedural tasks to be performed at each action station. Down the right side of the evaluation sheet are GO and NO GO columns for indicating student performance. The NO GO column is sub-divided into TASK MASTERY and SYSTEM MASTERY columns. The bottom section of the sheet has space for general comments. This space can be used to enter comments pertaining to non- procedural (command and control) tasks.

Guidelines

The following guidelines pertain to controller, OPFOR controller, and station evaluators' duties prior to, during, and after an exercise.

Controller

- Issues the platoon leader the team operation order (attached). Directs the platoon leader to conduct troop leading procedures. (Allows fifteen minutes.)

- Checks that each student has posted on his tactical map pertinent operation order information, i.e., rear assembly area, start point, forward passage point, check points to Objective GOLD, the movement route to Objective GOLD, and Objective GOLD.

- Brings up TPTX-1 on the system.

- Directs students to locate on their color monitors the area of operations, their tank, the start point, the forward passage point, the movement route, check points, and Objective GOLD.

- Reminds the platoon leader to orient his general direction of movement on the designated route.

- Announces exercise call signs (i.e., Platoon Leader - RED ONE, TC1 - RED TWO, Platoon Sergeant - RED THREE, TC2 - RED FOUR, Team Commander (controller) - RED FOUR SIX, and FIST (controller) - SHORT ROUND FOUR SEVEN). The other tank platoon in the team will have the prefix WHITE and the attached mechanized infantry platoon will have the prefix BLUE.

- Opens the team radio net.

- Directs the platoon leader to open the platoon radio net.

- Directs the platoon leader to place indirect fire on terrain features (i.e., road junctions, bridges, hills) in accordance with scenario requirements.

- Provides friendly indirect fire on request.

- At the end of the team hasty attack, stops all action, restarts the scenario at the point where all friendly tanks were operational and all OPFOR vehicles on Objective GOLD were operational, directs OPFOR controller to move two threat tanks to the next action location, and directs students to assemble their tanks on Objective GOLD.

- Conducts a short critique while OPFOR tanks are moving into position.

- Issues a frag order directing the platoon leader to move his platoon to a blocking position (attached).

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Issues a frag order directing the platoon leader to withdraw from the blocking position and to move to and occupy a battle position, in accordance with the scenario sequence (attached).

- Issues a frag order directing the platoon leader to withdraw from the battle position and to move to a rear assembly area, in accordance with the scenario requirements (attached).

- Evaluates student performance with emphasis on communications, platoon movement control, and platoon gunnery control.

- Monitors OPFOR controller and station evaluator actions.

- Conducts exercise critique.

OPFOR Controller

- Verifies that threat vehicles are in correct locations.

- Provides threat indirect fire in accordance with the scenario action sequence.

- Initiates main gun engagements ten seconds **after** friendly tanks are acquired.

- Evaluates student performance with emphasis on reaction to indirect and direct fire.

- Limits threat actions to that prescribed in the scenario.

- Participates in the exercise critiques.

Station Evaluators

- Ensures that students have the following necessary material for conducting the exercise.

  - MOPP Gear*   - Protractor

  - M256 Chemical Detector Kit*   - Coordinate Scale

  - CEOI   - Grease Pencil

  - Tactical Operations Code   - Lead Pencils

  - Straight Edge

*This equipment may be hard to acquire, and their use will lengthen and complicate the exercise.

- Ensures that the following student station components are functioning.

  - Communications   - Color monitor

  - Voice Recognition   - Keypad

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on procedural tasks and reporting.

- Participates in the exercise critiques.

Figure D-6. SIMCAT TPTX-1 scenario outline.

Scenario Name: TPTX-1
(Leave Blank)
ScenarioData: 1

	TC1	TC2	PS (4)	PL (4)	OPFOR1 (5)	OPFOR2 (6)	OPFOR3 (7)	OPFOR4 (8)	OPFOR5 (9)	OPFOR6 (10)	OPFOR7 (11)	OPFOR8 (12)	OPFOR9 (13)	OPFOR10 (14)
	1	1	1	1	2	2	2	2	3	3	3	3	3	3
	707*	707*	708*	709*	820*	817*	766*	767*	797*	797	822*	814*	800*	754*
	030*	029*	029*	028*	990*	995*	976*	974*	013*	012*	997*	993*	954*	977*
	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	90	90	90	90	180	180	180	180	225	225	225	180	135	45
	90	90	90	90	180	180	180	180	225	225	225	180	135	45
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap
	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
	3	3	3	3	2	2	2	3	3	3	3	3	3	3
	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat
	22	22	22	22	0	0	0	0	40	40	40	40	40	40
	3	3	3	3	0	0	0	0	3	3	3	3	3	3
	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot
	33	33	33	33	20	40	40	40	0	0	0	0	0	0
	3	3	3	3	0	0	0	0	0	0	0	0	0	0
	MainGun	MainGun	MainGun	MainGun					Sagger Missile	Sagger Missile	Sagger Missile	Sagger Missile	Sagger Missile	Sagger Missile
	CoAx	CoAx	CoAx	CoAx					4	4	4	4	4	4
	CoAx	CoAx	CoAx						2	2	2	2	2	2
	900	900	900	900										
	30	30	30	30										

FRIENDLY PLAYERS ← TC1, TC2, PS, PL
OPFOR PLAYERS ← OPFOR1–OPFOR4
OPFOR NON-PLAYERS ← OPFOR5–OPFOR10
MISC.

MISC. / Right-hand columns:

IndirectFireAllocation	100 100 100 100
(Leave Blank)	
ControlLines	0000 0000 0000 0000
(Leave Blank)	
	0000 0000 0000 0000
	0000 0000 0000 0000
	0000 0000 0000 0000
	0000 0000 0000 0000
	0000 0000 0000 0000
	0000 0000 0000 0000
(Leave Blank)	
Minefields	
(Leave Blank)	
	810* 996* 816* 997*
	757* 982* 982* 984*
	764* 982* 766* 984*
	999 999 999 999
	999 999 999 999
	999 999 999 999
	999 999 999 999
	999 999 999 999
	999 999 999 999
MISC.	999 999 999

NOTES:
1 - * Convert UTM coordinates to SIMCAT coordinates before entering into the computer.
2 - Friendly ID Fire Coordinates: Lane A - 79700130, Lane B - 81300963, Lane C - 80009540, Lane D - 76809760

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Figure D-7A. SIMCAT Tank Platoon Tactical Exercise - TPTX-1.

Figure D-7B. SIMCAT Tank Platoon Tactical Exercise – TPTX-1.

```
+--------------------------------------------------------------+
|                   PERFORMANCE EVALUATION                     |
|                                                              |
|                         TPTX-___                             |
|                                                              |
|  Student_____      Controller _____    |
|                                                              |
|  Date _____        Station _____       |
+==============================================================+
|                                                              |
|                     GENERAL COMMENTS                         |
| - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  |
|                                                              |
|              PLATOON MOVEMENT CONTROL                        |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
| - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  |
|                                                              |
|              PLATOON GUNNERY CONTROL                         |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
| - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  |
|                                                              |
|                        OVERALL                               |
|                                                              |
|                                                              |
|    EXCELLENT        SATISFACTORY      UNSATISFACTORY          |
|                                                              |
|     [    ]            [    ]             [    ]               |
+--------------------------------------------------------------+
```
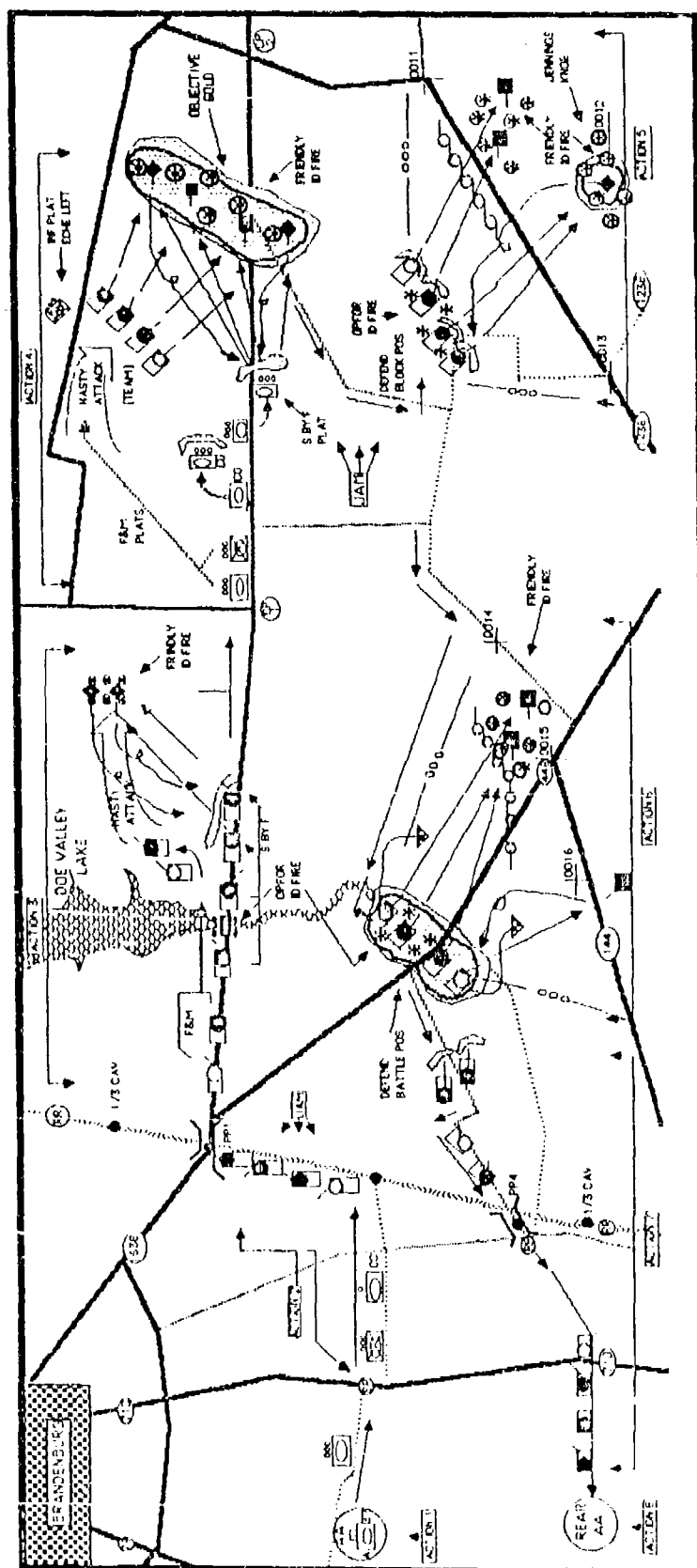
Figure D-8. SIMCAT controller student performance evaluation sheet.

PERFORMANCE EVALUATION

TPTX-___

Student _____   OPFOR Controller _____

Date _____   Station _____

GENERAL COMMENTS

REACTION TO INDIRECT FIRE

GUNNERY ENGAGEMENTS

OVERALL

EXCELLENT   SATISFACTORY   UNSATISFACTORY

Figure D-9.   SIMCAT OPFOR controller student performance evaluation sheet.

PERFORMANCE EVALUATION

TPTX-___

Student _____   Station Evaluator _____

Date _____   Station _____

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
FORWARD ASSEMBLY AREA	/////	/////	/////
Vehicle preparation (omitted)	—	—	—
Troop leading procedures	—	—	—
Issue warning order (PL)			
Conduct reconnaissance (PL)			
Prepare/issue OPORD (PL)			
COMMUNICATIONS	—	—	—
Open platoon radio net (PL)			
Enter a radio net (PS, TC1, TC2)			
Use an automated CEOI (All)			
Use 1400 KTC numerical cipher/			
authentication system (All)	—	—	—
TACTICAL ROAD MARCH	/////	/////	/////
Movement	—	—	—
Signal movement formation (PL)			
Direct driver to move out (All)			
Maintain wingmen position (PS, TC1, TC2)			
Cross SP on schedule (PL)			

Figure D-10.   SIMCAT station evaluator student performance
evaluation sheet.

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Security	—	—	—
Maintain main gun orientation (All)			
Maintain ground surveillance (All)			
Maintain aerial surveillance (PL)			
ECM			
Identify jamming technique (PL)			
Attempt to transmit through jam (PL)			
Change to alternate frequency (PL)			
Submit interference report (PL)			
Movement	—	—	—
Direct platoon through passage point (PL)			
Maintain wingman position (PS, TC1, TC2)			
Evade OPFOR ID Fire	—	—	—
Direct hatches be closed (All)			
Direct driver accelerate through ID fire (All)	—	—	—
Direct MOPP-4 (PL)			
Direct driver into defilade (All)			
Use M256 chemical detector kit (TC1, TC2)			
Prepare/submit NBC-1 report (PL)			
Encode/decode messages using KTC 600 tactical operations code (PL)	—	—	—
Send a radio message (PL)			
Direct MOPP-2 (All)			
ACTION ON CONTACT (Platoon Attack)	/////	/////	/////
Lead Section	—	—	—
Announce missile alert (PL or TC1)			
Direct driver into defilade (PL, TC1)			
Submit CONTACT report (PL)			

Figure D-10. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Trail Section	—	—	—
Direct driver into defilade (PS, TC2)			
Search for targets (PS, TC2)			
Develop Situation (lead section)	—	—	—
Determine OPFOR strength and disposition (PL)			
Submit SPOTREP (PL) (Rec. plat. attack, attack plan approved)	—	—	—
Develop Situation (trail section)	—	—	—
Maintain position (PS, TC2)			
Attack (lead section)	—	—	—
Issue platoon attack order (PL)			
Request/adjust ID fire (PL)			
Issue section fire command (PL)			
Respond to action fire command (TC1)			
Direct cease fire or shift fire (PL)			
Direct gunner cease fire or shift fire (TC1)			
Report attack results to CO (PL)			
Attack (trail section)	—	—	—
Issue section attack order (PS)			
Signal movement formation (PS)			
Direct driver to move out (PS)			
Maintain wingman position (TC2)			
Signal attack formation (PS)			
Maintain wingman position (TC2)			
Issue section fire command (PS)			
Respond to section fire command (TC2)			
Report attack results to PL (PS)			

Figure D-10. SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY

	GO	TASK MASTERY	SYSTEM MASTERY
CONTINUE MOVEMENT TO CONTACT			
Report crossing checkpoint (PL)			
ACTION ON CONTACT (Team Attack)	—	—	—
Lead Platoon	—	—	—
Announces missile alert (Any TC)			
Direct driver into defilade (All)			
Engage OPFOR targets (All)			
Submit CONTACT report (PL)			
Trail Platoon	—	—	—
Direct driver into defilade (All)			
Search for targets (All)			
Develop Situation (lead platoon)	—	—	—
Determine OPFOR strength and disposition (PL)			
Submit SPOTREP (PL) (Rec. team attack, attack plan approved)			
Develop Situation (trail platoon)	—	—	—
Maintain position (All)			
Attack (lead platoon, support by fire)	—	—	—
Receive team attack order (PL)			
Issue platoon attack order (PL)			
Request/adjust ID fire (PL)			
Issue platoon fire command (PL)			
Respond to platoon fire command (PS, TC1, TC2)			
Direct cease fire or shift fire (PL)			
Direct gunner cease fire or shift fire (PS, TC1, TC2)	—	—	—
Submit SITREP (PL)			

Figure D-10. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Attack (trail platoon fire and maneuver)	—	—	—
Receive team attack order (PL)			
Issue platoon attack order (PL)			
Signal movement formation (PL)			
Direct driver to move out (PL)			
Maintain wingman position (PS, TC1, TC2)			
Signal attack formation (PL)			
Maintain wingman position (PS, TC1, TC2)			
Direct assault begin (PL)			
Respond to assault order (PS, TC1, TC2)			
Direct consolidation and reorganization on the objective (PL)	—	—	—
Consolidate and reorganize on the objective (All)			
Submit SITREP (PL)			
MOVE TO AND OCCUPY BLOCKING POSITION	////	////	////
DEFEND BLOCKING POSITION	////	////	////
Organize Blocking Position	—	—	—
Assign primary firing positions (PL)			
Direct driver into primary firing positions (All)			
Assign sectors of fire, TRPs, ID fire concentrations, and locations for minefields (PL)	—	—	—
Prepare sketch range cards (All)			
Prepare platoon fire plan (PL)			
Direct hot loop be installed (PL)			
Direct minefields be installed (PL)			

Figure D-10. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Select alternate firing position (All)			
Defend Blocking Position	—	—	—
Call for/adjust ID fire (PL)			
Issue section fire command (PL, PS)			
Respond to section fire command (TC1)			
Call for/adjust ID fire (PL)			
Direct PS engage OPFOR tanks (PL)			
Issue a section fire command (PS)			
Respond to section fire command (TC2)			
Receive OPFOR ID fire, direct hatches be closed (PL)	—	—	—
Direct hatches be closed (PS, TC1, TC2)			
Direct MOPP-4 (PL)			
Use M256 chemical detector kit (TC1, TC2)			
Prepare/submit NBC-1 report (PL)			
Encode/decode messages using KTC 600 tactical operations code (PL)			
Send a radio message (PL)			
Report situation to CO (PL)			
Receive order to withdraw (PL)			
Direct platoon withdrawal (PL)			
Signal movement formation (PL)			
Direct driver back off of position (All)			
Maintain wingman position (PS, TC1, TC2)			
MOVE TO AND OCCUPY BATTLE POSITION	///////	///////	///////

Figure D-10. SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
DEFEND BATTLE POSITION	/////	/////	/////
Organize Battle Position	—	—	—
Assign primary firing positions (PL)			
Direct driver into primary firing positions (All)			
Assign sectors of fire, TRPs, ID fire concentrations, and locations of minefields (PL)	—	—	—
Prepare sketch range cards (All)			
Prepare platoon fire plan (PL)			
Direct hot loop be installed (PL)			
Direct minefields be installed (PL)			
Direct auto chemical agent alarm system (TC1, TC2)	—	—	—
Defend Battle Position	—	—	—
Call for/adjust ID fire (PL)			
Issue a section fire command (PL)			
Respond to section fire command (TC1)			
Call for adjust ID fire (PL)			
Issue a platoon fire command (PL)			
Respond to platoon fire command (PS, TC1, TC2)			
Receive OPFOR ID fire, direct hatches be closed (PL)	—	—	—
Direct hatches be closed (All)			
Direct MOPP-4 (PL)			
Use M256 chemical detector kit (TC1, TC2)			
Prepare/submit NBC-1 report (PL)			

Figure D-10. SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Encode/decode messages using KTC 600 tactical operations code (PL)			
Send a radio message (PL)			
Report situation to CO (PL)			
Receive order to withdraw (PL)			
Direct PS section cover withdrawal of PL section (PL)	—	—	—
Direct section engage targets of opportunity (PS)			
Engage targets of opportunity (TC2)			
Signal section move off of battle position (PL)	—	—	—
Direct driver back off of battle position (PS)			
Maintain wingman position (TC1)			
Direct section into defilade to cover PS section (PL)	—	—	—
Maintain wingman position (TC1)			
Direct PS to withdraw section (PL)			
Signal section movement off of battle position (PS)			
Direct driver back off of battle position (PS)			
Maintain wingman position (TC2)			
MOVE TO REAR ASSEMBLY AREA	///////	///////	///////
Movement	—	—	—
Signal movement formation (PL)			
Direct driver move out (PL)			
Maintain wingman position (PS, TC1, TC2)			
Direct platoon through passage point (PL)			
Maintain wingman position (PS, TC1, TC2)			

Figure D-10. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Security	—	—	—
Maintain main gun orientation (All)			
Maintain ground surveillance (All)			
Maintain aerial surveillance (All)			
REAR ASSEMBLY AREA	/////////	/////////	/////////
Communications	—	—	—
Close platoon radio net (PL)			
Leave a radio net (All)			
Use an automated CEOI (All)			
Use KTC 1400 numerical cipher/			
authentication system (All)	—	—	—
Submit a SITREP (PL)			

GENERAL COMMENTS

Figure D-10.   SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

Tank Platoon Tactical Exercise (TPTX-1)

EXTRACT OF OPERATION ORDER

X X X X X X X X X X X X X X X X X X X X X X X X X X

TASK ORGANIZATION

1A/2-33 Ar	3C/2-91 Mech
2A/2-33 Ar	Hq A/2-33 Ar

1. Situation

a. Enemy Forces. Major en elms withdrawing east along Hy 1638. En has the capability to atk, defend, withdraw, or reinf. Since he is building a defensive line along east bank of OTTER Creek, it is probable he will delay west of OTTER Creek with plat size mech recon elms supported by artillery. The en has used chemical wpns during past opns.

b. Friendly Forces

(1) TF 2-33 Ar conducts a movement to contact at 310350 Aug 19__ east with two columns along Hy 1638 and the line EKRON, BUCK GROVE, MILES HILL to secure crossing over OTTER Creek.

(2) Tm C/2-91 Mech follows Tm A/2-33 Ar.

(3) 1-3 Cav screens east along L&N RR from WALDON Church (ES 75800350) to EKRON (ES 72209830).

(4) 2-51 FA DS to Bde, pri fires to 2-33 Ar.

c. Attachments and Detachments. 3A/2-33 Ar to C/2-91 Mech.

2. Mission

Tm A/2-33 Ar passes through 1-3 Cav at PP1 and conducts movement to contact east along Hy 1638 to seize Objective GOLD. Be prepared to support TM C/2-91 Mech crossing over OTTER Creek.

3. Execution

a. Concept of Operation (Annex B, Operation Overlay)

(1) <u>Maneuver.</u> Move through PP1 in a column of plats, 1st tank plat, cmd gp, 3d mech plat, 2d tank plat, move east along Hy 1638 and seize Objective GOLD.

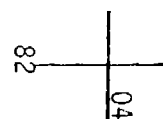(2) <u>Fires.</u> Pri init to 1st tank plat, then lead plat.

X X X X X X X X X X X X X X X X X X X X X X X X

Annexes   HAMMER
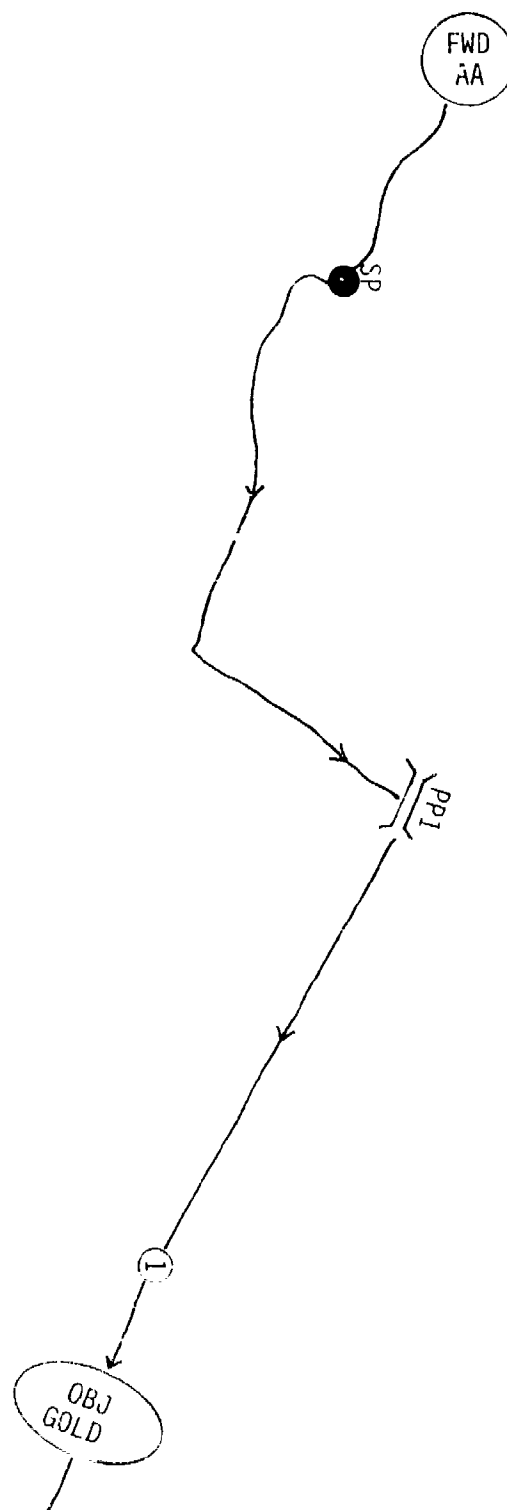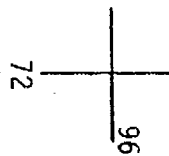   CPT

    A - Omitted
    B - Operation Overlay

Tank Platoon Tactical Exercise (TPTX-1)

OPERATION OVERLAY

Tank Platoon Tactical Exercise (TPTX-1)

FRAG ORDERS

Frag Order 1

"RED ONE THIS IS RED FOUR SIX---MOVE YOUR UNIT IMMEDIATELY TO ECHO
SIERRA 79909770 - BREAK - ESTABLISH BLOCKING POSITION FROM ECHO
SIERRA 79909770 TO ECHO SIERRA 80509770 - BREAK - ORIENT SOUTHEAST -
BREAK - ACKNOWLEDGE, OVER"
(Controller encode messages prior to transmission)

Frag Order 2

"RED ONE THIS IS RED FOUR SIX---WITHDRAW FROM PRESENT POSITION -
BREAK - MOVE TO AND OCCUPY BATTLE POSITION TWO ONE ALPHA AT ECHO
SIERRA 75909920 - BREAK - ORIENT SOUTHEAST - BREAK - ACKNOWLEDGE,
OVER"
(Controller encode messages prior to transmission)

Frag Order 3

"RED ONE THIS IS RED FOUR SIX---WITHDRAW FROM PRESENT POSITION -
BREAK - MOVE THROUGH PASSAGE POINT FOUR AT ECHO SIERRA 73009970 TO
REAR ASSEMBLY AREA AT ECHO SIERRA 70509960 - ACKNOWLEDGE, OVER"
(Controller encode messages prior to transmission)

TAB B

Tank Platoon Tactical Exercise (TPTX-2)

Scenario Outline

The scenario outline is shown in Figure D-11. The outline establishes the locations of minefields, the initial locations of friendly and threat vehicles, provides friendly and threat indirect fire capabilities, and configures ammunition capabilities for all vehicles in the exercise.

Schematic

The schematic (see Figures D-12A and D-12B) depicts the platoon operational area, the forward assembly area, the start point, passage points, routes of movement, check points, general locations where various actions take place, the release point, and the rear assembly area.

Evaluation Sheets

There are three evaluation sheets (see Figures D-13 through D-15). A separate sheet and format is prescribed for the controller, the OPFOR controller, and the station evaluators.

Controller Evaluation Sheet. This evaluation sheet has two sections for comments--PLATOON MOVEMENT CONTROL AND PLATOON GUNNERY CONTROL, for controller general comments. The third section, OVERALL, provides blocks for a general rating of student performance (i.e., EXCELLENT, SATISFACTORY, or UNSATISFACTORY).

OPFOR Controller Evaluation Sheet. This evaluation sheet is similar to the controller's evaluation sheet. It has two sections for comments-- REACTION TO INDIRECT FIRE and GUNNERY ENGAGEMENTS. The third section, OVERALL, is the same as the corresponding section in the controller's evaluation sheet.

Station Evaluator Evaluation Sheet. Down the left side of this evaluation sheet is a list of all action stations and the procedural tasks to be performed at each action station. Down the right side of the evaluation sheet are GO and NO GO columns for indicating student performance. The NO GO column is sub-divided into TASK MASTERY and SYSTEM MASTERY columns. The bottom section of the sheet has space for general comments. This space can be used to enter comments pertaining to non-procedural (command and control) tasks.

Guidelines

The following guidelines pertain to controller, OPFOR controller, and station evaluators' duties prior to, during, and after an exercise.

Controller

- Issues the platoon leader the team operation order (attached). Directs the platoon leader to conduct troop leading procedures. (Allows fifteen minutes.)

- Checks that each student has posted on his tactical map pertinent operation order information, i.e., rear assembly area, start point, forward passage point, check points to Objective GOLD, the movement route to Objective GOLD, and Objective GOLD.

- Brings up TPTX-2 on the system.

- Directs students to locate on their color monitors the area of operations, their tank, the start point, the forward passage point, the movement route, check points, and Objective GOLD.

- Reminds the platoon leader to orient his general direction of movement on the designated route.

- Announces exercise call signs (i.e., Platoon Leader - RED ONE, TC1 - RED TWO, Platoon Sergeant - RED THREE, TC2 - RED FOUR, Team Commander (controller) - RED FOUR SIX, and FIST (controller) - SHORT ROUND FOUR SEVEN). The other tank platoon in the team will have the prefix WHITE and the attached mechanized infantry platoon will have the prefix BLUE.

- Opens the team radio net.

- Directs the platoon leader to open the platoon radio net.

- Directs the platoon leader to place indirect fire on terrain features (i.e., road junctions, bridges, hills) in accordance with scenario requirements.

- Provides friendly indirect fire on request.

- At the end of the team hasty attack, stops all action, restarts the scenario at the point where all friendly tanks were operational and all OPFOR vehicles on Objective GOLD were operational, directs OPFOR controller to move two threat tanks to the next action location, and directs students to assemble their tanks on Objective GOLD.

- Conducts a short critique while OPFOR tanks are moving into position.

- Issues a frag order directing the platoon leader to move his platoon to a blocking position (attached).

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Issues a frag order directing the platoon leader to withdraw from the blocking position and to move to and occupy a battle position, in accordance with the scenario sequence (attached).

- Issues a frag order directing the platoon leader to withdraw from the battle position and to move to a rear assembly area, in accordance with the scenario requirements (attached).

- Evaluates student performance with emphasis on communications, platoon movement control, and platoon gunnery control.

- Monitors OPFOR controller and station evaluator actions.

- Conducts the exercise critiques.

OPFOR Controller

- Verifies that threat vehicles are in correct locations.

- Provides threat indirect fire in accordance with the scenario action sequence.

- Initiates main gun engagements ten seconds after friendly tanks are acquired.

- Evaluates student performance with emphasis on reaction to indirect and direct fire.

- Limits threat actions to that prescribed in the scenario.

- Participates in exercise critique.

Station Evaluators

- Ensures that students have the following necessary material for conducting the exercise.

  - MOPP Gear*   - Protractor

  - M256 Chemical Detector   - Coordinate Scale
    Kit*

  - CEOI   - Grease Pencil

  - Tactical Operations Code   - Lead Pencils

  - Straight Edge

*This equipment may be hard to acquire, and their use will lengthen and complicate the exercise.

- Ensures that the following student station components are functioning.

  - Communications   - Color monitor

  - Voice Recognition   - Keypad

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Evaluates student performance with emphasis on procedural tasks and reporting.

- Participates in the exercise critiques.

Figure D‑11 — SIMCAT TPTX‑2 scenario outline (rotated data form).

Column headers (players): Scenario Name / friendly players (TC2, PS, PS, PL) and OPFOR1–OPFOR10; rightmost column = descriptor / (Leave Blank) headings.

Field (descriptor)	TC2	PS	PS	PL	OPFOR1	OPFOR2	OPFOR3	OPFOR4	OPFOR5	OPFOR6	OPFOR7	OPFOR8	OPFOR9	OPFOR10
Scenario Name	TPTX‑2													
(Leave Blank)														
ScenarioData / ID	1	3	3	4	5	6	7	8	9	10	11	12	13	14
name	TC2	PS	PS	PL	OPFOR1	OPFOR2	OPFOR3	OPFOR4	OPFOR5	OPFOR6	OPFOR7	OPFOR8	OPFOR9	OPFOR10
type	1	1	1	1	2	2	2	2	2	2	2	2	3	3
X	840*	840*	840*	840*	800*	803*	758*	756*	809*	809	760*	753*	710*	814*
Y	973*	972*	971*	977*	977*	976*	993*	991*	008*	007*	995*	989*	050*	008*
	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	15	15	15	15	15	15	15	15	15	15	15	15	15	15
azimuth	180	180	180	180	270	270	315	315	315	315	315	315	45	315
azimuth	180	180	180	180	270	270	315	315	315	315	315	315	45	315
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap
	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
count	3	3	3	3	2	2	2	2	2	2	3	3	3	3
Sys1	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
ammo1	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat
	22	22	22	22	0	0	0	0	0	0	40	40	40	40
	3	3	3	3	0	0	0	0	0	0	3	3	3	3
Sys2	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun
ammo2	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot
	33	33	33	33	40	40	40	40	40	40	0	0	0	0
	3	3	3	3	3	3	3	3	3	3	0	0	0	0
Sys3	MainGun										Sagger	Sagger	Sagger	Sagger
ammo3	Sabot										Missile	Missile	Missile	Missile
	3										4	4	4	4
											2	2	2	2
Sys4	CoAx	CoAx	CoAx	CoAx										
ammo4	CoAx	CoAx	CoAx	CoAx										
	900	900	900	900										
	30	30	30	30										

Right‑hand descriptor column (vertical, reading down):

- (Leave Blank)
- IndirectFireAllocation — 150 100 100 | 100 100 | 100
- (Leave Blank)
- Controllines
- (Leave Blank)
- 0000 0000 0000 0000 0000
- 0000 0000 0000 0000 0000
- 0000 0000 0000 0000 0000
- 0000 0000 0000 0000 0000
- 0000 0000 0000 0000 0000
- 0000 0000 0000 0000 0000
- 0000 0000 0000 0000 0000
- (Leave Blank)
- Minefields
- (Leave Blank)
- 709* 012* 708* 007*
- 708* 007* 710* 004*
- 812* 999* 817* 004*
- 999 999 999 999
- 999 999 999 999
- 999 999 999 999
- 999 999 999 999
- 999 999 999 999
- MISC. — 999 999 999 999

Section markers: FRIENDLY PLAYERS — OPFOR PLAYERS — OPFOR NON‑PLAYERS — MISC.

NOTES:
1 – * Convert UTM coordinates to SIMCAT coordinates before entering into the computer.
2 – Friendly ID Fire Coordinates: Lane A – 80009770, Lane B – 75809930, Lane C – 71000500, Lane D – 80900040

Figure D‑11. SIMCAT TPTX‑2 scenario outline.

.D‑40.

Figure D-12A. SIMCAT Tank Platoon Tactical Exercise – TPTX-2.

Figure D-12B. SIMCAT Tank Platoon Tactical Exercise - TPTX-2.

```
          PERFORMANCE EVALUATION

                  TPTX-___

Student _____        Controller _____

Date    _____        Station    _____
_____

                  GENERAL COMMENTS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                  COMMUNICATIONS




- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
               PLATOON GUNNERY CONTROL




- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
              PLATOON MOVEMENT CONTROL




- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                     OVERALL

   EXCELLENT          SATISFACTORY        UNSATISFACTORY

    [    ]              [    ]               [    ]
```

Figure D-13. SIMCAT controller student performance evaluation sheet.

```
+----------------------------------------------------------+
|                 PERFORMANCE EVALUATION                   |
|                       TPTX-__                            |
|                                                          |
|  Student_____    OPFOR Controller _____   |
|                                                          |
|  Date _____    Station _____   |
+==========================================================+
|                                                          |
|                    GENERAL COMMENTS                      |
|  - - - - - - - - - - - - - - - - - - - - - - - - - - -   |
|                                                          |
|                REACTION TO INDIRECT FIRE                 |
|                                                          |
|                                                          |
|                                                          |
|  - - - - - - - - - - - - - - - - - - - - - - - - - - -   |
|                                                          |
|                  GUNNERY ENGAGEMENTS                     |
|                                                          |
|                                                          |
|                                                          |
|  - - - - - - - - - - - - - - - - - - - - - - - - - - -   |
|                                                          |
|                       OVERALL                            |
|                                                          |
|   EXCELLENT        SATISFACTORY        UNSATISFACTORY     |
|                                                          |
|   [      ]         [      ]            [      ]           |
+----------------------------------------------------------+
```

Figure D-14.   SIMCAT OPFOR controller student performance
               evaluation sheet.

PERFORMANCE EVALUATION

TPTX-.___

Student _____   Station Evaluator _____

Date _____   Station _____

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
FORWARD ASSEMBLY AREA	///////	///////	///////
Vehicle preparation (omitted)	───	───	───
Troop leading procedures	───	───	───
Issue warning order (PL)			
Conduct reconnaissance (PL)			
Prepare/issue OPORD (PL)			
COMMUNICATIONS	───	───	───
Open platoon radio net (PL)			
Enter a radio net (PS, TC1, TC2)			
Use an automated CEOI (All)			
Use 1400 KTC numerical cipher/			
authentication system (All)	───	───	───
TACTICAL ROAD MARCH	///////	///////	///////
Movement	───	───	───
Signal movement formation (PL)			
Direct driver to move out (All)			
Maintain wingmen position (PS, TC1, TC2)			
Cross start point on schedule (PL)			

Figure D-15.   SIMCAT station evaluator student performance
               evaluation sheet.

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Security	—	—	—
Maintain main gun orientation (All)			
Maintain ground surveillance (All)			
Maintain aerial surveillance (PL)			
ECM			
Identify jamming technique (PL)			
Attempt to transmit through jam (PL)			
Change to alternate frequency (PL)			
Submit interference report (PL)			
Movement	—	—	—
Direct platoon through passage point (PL)			
Maintain wingman position (PS, TC1, TC2)			
Evade OPFOR ID Fire	—	—	—
Direct hatches be closed (All)			
Direct driver accelerate through ID fire (All)	—	—	—
Direct MOPP-4 (PL)			
Direct driver into defilade (All)			
Use M256 chemical detector kit (TC1, TC2)			
Prepare/submit NBC-1 report (PL)			
Encode/decode messages using KTC 600 tactical operations code (PL)	—	—	—
Send a radio message (PL)			
Direct MOPP-2 (All)			
Announce crossing checkpoint (PL)			
ACTION ON CONTACT (Platoon Attack)	/////	/////	/////
Lead Section	—	—	—
Announce ACTION FRONT (PL)			
Direct driver into defilade (PL, TC1)			

Figure D-15.   SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Engage OPFOR target (PL, TC1)			
Submit CONTACT report (PL)			
Trail Section	—	—	—
Direct driver into defilade (PS, TC2)			
Search for targets (PS, TC2)			
Develop Situation (lead section)	—	—	—
Determine OPFOR strength and disposition (PL)			
Submit SPOTREP (PL) (Rec. plat. attack, attack plan approved)	—	—	—
Develop Situation (trail section)	—	—	—
Maintain position (PS, TC2)			
Search for targets (PS, TC2)			
Attack (lead section)	—	—	—
Issue platoon attack order (PL)			
Request/adjust ID fire (PL)			
Issue section fire command (PL)			
Respond to section fire command (TC1)			
Direct cease fire or shift fire (PL)			
Direct gunner cease fire or shift fire (TC1)			
Report attack results to CO (PL)			
Attack (trail section)	—	—	—
Issue section attack order (PS)			
Signal movement formation (PS)			
Direct driver to move out (PS)			
Maintain wingman position (TC2)			
Signal attack formation (PS)			
Maintain wingman position (TC2)			
Issue section fire command (PS)			
Respond to section fire command (TC2)			
Report attack results to PL (PS)			

Figure D-15.   SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

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	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
CONTINUE MOVEMENT TO CONTACT	////////	////////	////////
Report crossing checkpoint (PL)			
ACTION ON CONTACT (Team Attack)	—	—	—
Lead Platoon	—	—	—
Announces missile alert (Any TC)			
Direct driver into defilade (All)			
Engage OPFOR targets (All)			
Submit CONTACT report (PL)			
Trail Platoon	—	—	—
Direct driver into defilade (All)			
Search for targets (All)			
Develop Situation (lead platoon)	—	—	—
Determine OPFOR strength and disposition (PL)			
Submit SPOTREP (PL) (Rec. team attack, attack plan approved)			
Develop Situation (trail platoon)	—	—	—
Maintain position (All)			
Attack (lead platoon, support by fire)	—	—	—
Receive team attack order (PL)			
Issue platoon attack order (PL)			
Request/adjust ID fire (PL)			
Issue platoon fire command (PL)			
Respond to platoon fire command (PS, TC1, TC2)			
Direct cease fire or shift fire (PL)			
Direct gunner cease fire or shift fire (PS, TC1, TC2)	—	—	—
Submit SITREP (PL)			

Figure D-15. SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Attack (trail platoon, fire and maneuver)	—	—	—
Receive team attack order (PL)			
Issue platoon attack order (PL)			
Signal movement formation (PL)			
Direct driver to move out (PL)			
Maintain wingman position (PS, TC1, TC2)			
Signal attack formation (PL)			
Maintain wingman position (PS, TC1, TC2)			
Direct assault begin (PL)			
Respond to assault order (PS, TC1, TC2)			
Direct consolidation and reorganization on the objective	—	—	—
Consolidate and reorganize on the objective (All)			
Submit SITREP (PL)			
MOVE TO AND OCCUPY BLOCKING POSITION	///////	///////	///////
DEFEND BLOCKING POSITION	///////	///////	///////
Organize Blocking Position	—	—	—
Assign primary firing positions (PL)			
Direct driver into primary firing positions (All)			
Assign sectors of fire, TRPs, ID fire concentrations, and locations for minefields (PL)	—	—	—
Prepare sketch range cards (All)			
Prepare platoon fire plan (PL)			
Direct hot loop be installed (PL)			
Direct minefields be installed (PL)			

Figure D-15. SIMCAT station evaluator student perforamance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Select alternate firing position (All)			
Defend Blocking Position	—	—	—
Call for/adjust ID fire (PL)			
Issue section fire command (PL, PS)			
Respond to section fire command (TC1)			
Direct PS to supplementary firing position (PL)			
Issue platoon fire command (PL)			
Respond to platoon fire command (PS, TC1, TC2)			
Receive OPFOR ID fire, direct hatches be closed (PL)	—	—	—
Direct hatches be closed (All)			
Direct MOPP-4 (PL)			
Use M256 chemical detector kit (TC1, TC2)			
Prepare/submit NBC-1 report (PL)			
Encode/decode messages using KTC 600 tactical operations code (PL)			
Send a radio message (PL)			
Report situation to CO (PL)			
Receive order to withdraw (PL)			
Direct platoon withdrawal (PL)			
Signal movement formation (PL)			
Direct driver back off of position (PL)			
Maintain wingman position (PS, TC1, TC2)			
MOVE TO AND OCCUPY BATTLE POSITION	///////	///////	///////
Evade OPFOR ID Fire			
Direct hatches be closed (All)			
Direct MOPP-4 (PL)			
Use M256 chemical detector kit (TC1, TC2)			

Figure D-15. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Prepare/submit NBC-1 report (PL)			
Encode/decode messages using KTC 600 tactical operations code (PL)			
Report crossing checkpoint (PL)			
DEFEND BATTLE POSITION	/////	/////	/////
Organize Battle Position			
Assign primary firing positions (PL)			
Direct driver into primary firing positions (All)			
Assign sectors of fire, TRPs, ID fire concentrations, and locations of minefields (PL)	—	—	—
Prepare sketch range cards (All)			
Prepare platoon fire plan (PL)			
Direct hot loop be installed (PL)			
Direct minefields be installed (PL)			
Direct auto chemical agent alarm system be installed (PS)	—	—	—
Defend Battle Position	—	—	—
Call for/adjust ID fire (PL)			
Issue a platoon fire command (PL)			
Respond to platoon fire command (TC1)			
Respond to platoon fire command (PS, TC1, TC2)			
Direct TC2 engage OPFOR threat on left flank (PS)			
Respond to PS order (TC2)			

Figure D-15.   SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Receive OPFOR ID fire, direct hatches be closed (PL)	—	—	—
Direct hatches be closed (All)			
Direct MOPP 4 (PL)			
Use M256 chemical detector kit (TC1, TC2)			
Prepare/submit NBC-1 report (PL)			
Encode/decode messages using KTC 600 tactical operations code (PL)			
Send a radio message (PL)			
Report situation to CO (PL)			
Receive order to withdraw (PL)			
Direct PS section cover withdrawal of PL section (PL)	—	—	—
Direct section engage targets of opportunity (PS)			
Engage targets of opportunity (TC2)			
Signal section move off of battle position (PL)	—	—	—
Direct driver back off of battle position (PL)			
Maintain wingman position (TC1)			
Direct section into defilade to cover PS section (PL)	—	—	—
Maintain wingman position (TC1)			
Direct PS to move section off of battle position (PL)			
Signal section movement off of battle position (PS)			
Direct driver back off of battle position (PS)			
Maintain wingman position (TC2)			

Figure D-15. SIMCAT station evaluator student performance
            evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
MOVE TO REAR ASSEMBLY AREA	//////	//////	//////
Movement	——	——	——
Signal movement formation (PL)			
Direct driver move out (PL)			
Maintain wingman position (PS, TC1, TC2)			
Direct platoon through passage point (PL)			
Maintain wingman position (PS, TC1, TC2)			
Security	——	——	——
Maintain main gun orientation (All)			
Maintain ground surveillance (All)			
Maintain aerial surveillance (All)			
REAR ASSEMBLY AREA	//////	//////	//////
Communications	——	——	——
Close platoon radio net (PL)			
Leave a radio net (All)			
Use an automated CEOI (All)			
Use KTC 1400 numerical cipher/ authentication system (All)	——	——	——
Submit a SITREP (PL)			

GENERAL COMMENTS

Figure D-15.   SIMCAT station evaluator student performance evaluation sheet (cont'd.).

Tank Platoon Tactical Exercise (TPTX-2)

EXTRACT OF OPERATION ORDER

X X X X X X X X X X X X X X X X X X X X X X X X X X

TASK ORGANIZATION

1A/2-33 Ar	3C/2-91 Mech
2A/2-33 Ar	Hq A/2-33 Ar

1. Situation

a. Enemy Forces. Major en elms withdrawing west along Hy 1638. En has the capability to atk, defend, withdraw, or reinf. Since he is concentrating new forces in the BRANDENBURG area, it is probable he will delay west to the L&N RR line, with plat size mech recon elms supported by artillery, and then conduct offensive operations southeast from BRANDENBURG. The en has used chemical wpn during past opns.

b. Friendly Forces.

(1) TF 2-33 Ar conducts a movement to contact at 310350 Aug 19 west with two columns along Hy 1638 and the line Hy 1238, BUCK KNOBS, BUCK GROVE, to secure the EKRON-BRANDENBURG RR line.

(2) TM C-91 Mech follows TM A/2-33 Ar.

(3) 1-3 Cav screens west along the line JENNINGS KNOB-LICKSKILLET-ROCK HAVEN.

(4) 2-51 FA DS to Bde pri fires to 2-33 Ar.

2. Mission

Tm A/2-33 passes through 1-3 Cav at PP1 and conducts a movement to contact west along the line Hy 1238, BUCK KNOBS to seize Objective GOLD. Be prepared to support TF 2-33 Ar teams operating west along Hy 1638.

3. Execution

a. Concept of Operations (Annex B, Operations Overlay)

(1) Maneuver. Move through PP1 in a column of plats, 1st tank plat, cmd gp, 3d mech plat, 2d tank plat, move west along thrust line and seize Objective Gold.

(2) Fires. Pr init to 1st tank plat, then lead plat.

X X X X X X X X X X X X X X X X X X X X X X X X X

Annexes: SLEDGE
                                                      CPT

    A - Omitted
    B - Operations Overlay

Tank Platoon Tactical Exercise (TPTX-2)

OPERATION OVERLAY
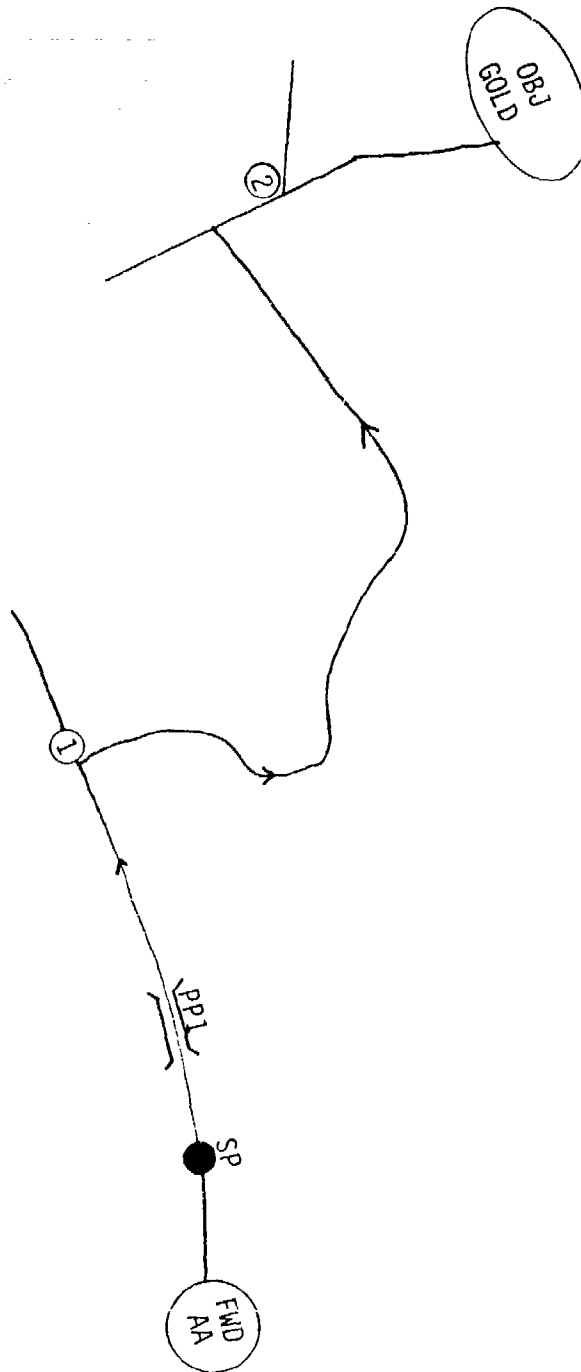
Tank Platoon Tactical Exercise (TPTX-2)

FRAG ORDERS

Frag Order 1

"RED ONE THIS IS RED FOUR SIX---MOVE YOUR UNIT IMMEDIATELY TO ECHO
SIERRA 71500150-BREAK-ESTABLISH BLOCKING POSITION FROM ECHO SIERRA
71400170 TO ECHO SIERRA 71600120- BREAK-ORIENT
SOUTHWEST-BREAK-ACKNOWLEDGE, OVER"
(Controller encodes message prior to transmission)

Frag Order 2

"RED ONE THIS IS RED FOUR SIX---WITHDRAW FROM PRESENT POSITION-BREAK-
MOVE TO AND OCCUPY BATTLE POSITION THREE THREE BRAVO AT ECHO SIERRA
81709950-BREAK-ORIENT NORTHWEST-BREAK-ACKNOWLEDGE, OVER"
(Controller encodes message prior to transmission)

Frag Order 3

"RED ONE THIS IS RED FOUR SIX---WITHDRAW FROM PRESENT POSITION-BREAK-
MOVE THROUGH PASSAGE POINT TWO AT ECHO SIERRA 82909870 TO REAR
ASSEMBLE AREA AT ECHO SIERRA 85509740-ACKNOWLEDGE, OVER"
(Controller encodes message prior to transmission)

Enclosure 3 to Annex D

TPTX SCHEDULE

The TPTX schedule, shown in Figure D-16, is for a class of sixteen students, organized into groups of eight, with two students at each student station.

Each student has eighteen hours on SIMCAT, six hours each as the platoon leader, platoon sergeant, and as a wingman. Assuming that only one system is available, this equates to thirty-six hours for a group and seventy-two hours for a class.

Each student will have an opportunity to perform as a platoon leader, platoon sergeant, and wingman.

		PLATOON MOVEMENT PRACTICE	PLATOON GUNNERY PRACTICE	TPTX PRACTICE
Gp 1a (STC)	DAY-1	0800 0900	0900 1000	1000 1500
Gp 1b (STC)	DAY-1	1500 1600	1600 1700	
Gp 1b (STC)	DAY-2			0800 1200
Gp 1c (STC)	DAY-2	1300 1400	1400 1500	1500 1700
Gp 1c (STC)	DAY-3			0800 1000
Gp 1d (STC)	DAY-3	1000 1100	1100 1200	1300 1700

NOTE. Groups 1e through 1h follow the above schedule for days 4 through 6, using SDVs in command positions. Groups 2e through 2h follow the above schedule for days 7 through 12. NOTE.■ (Student change)

Figure D-16. SIMCAT TPTX schedule.

ANNEX E

TANK COMPANY TACTICAL EXERCISE

Richard E. O'Brien

HumRRO, Fort Knox, Kentucky

March 1987

ANNEX E   TANK COMPANY TACTICAL EXERCISE

CONTENTS

LIST OF FIGURES

CONTENTS (Continued)

ANNEX E
TANK COMPANY TACTICAL EXERCISE

SIMCAT was designed as a tank platoon tactical trainer with four simulated M1 tanks and ten simulated T72 tanks and/or BMPs. This annex describes how SIMCAT can be used as a company (team) tactical trainer for practicing command and control procedures.

To use the system as a company (team) tactical trainer the M1 tank icons represent tank or mechanized infantry platoons and the company (team) command group. The controller represents the battalion (task force) commander and company (team) combat support and service support sources.

This annex contains a pre-exercise training program, a tank company (team) tactical exercise, an exercise schedule, and procedures for evaluating student performance.

Pre-Exercise Training

Pre-exercise training will focus on company (team) movement, and procedures for implementing movement to contact, hasty attack, delay, and defend a battle position missions (see Enclosure 1). (It is assumed that students have participated in pre-exercise training for tank platoon tactical exercises. If not, students should be given pre-exercise training indicated in Annex D.)

Tank Company Tactical Exercise (TCTX)

The TCTX can accommodate four students or eight students when the GN/DV student option is in effect. The exercise includes nine actions which require the performance of 165 tasks (see Enclosure 2). The exercise begins in a forward assembly area located along the east, follows a designated route, and ends in a rear assembly area.

Exercise Schedule

The estimated time for pre-exercise training and one repetition of the TCTX is six hours. The time required for four students, rotating through four command positions is twenty-four hours.

Student Performance Evaluation

The primary reason for evaluating student performance is to determine if students can perform command and control tasks during company (team) operations. Evaluation is accomplished by in-process scoring of student performance by station evaluators, the controller, and the OPFOR controller.

E-4

Critique. After each exercise the controller will conduct a formal critique. The scope of the critique and the sequence of presentations are:

- Student comments on their own good and poor performance.

- Station evaluator comments on good and poor student performance.

- OPFOR controller comments on good and poor student performance.

- Controller comments on good and poor student performance.

Scoresheets. There are three different task performance scoresheets.

- The controller scoresheet is designed to allow the controller to focus on task performance related to team movement and fire control and overall student performance.

- The OPFOR controller scoresheet is designed for comments on student reaction to indirect fire, gunnery engagements, and overall student performance.

- The station evaluator scoresheet lists all actions and tasks to be performed at each action. There are GO and NO GO columns, and the NO GO column is divided into TASK MASTERY and SYSTEM MASTERY sub-columns. The evaluator scoresheet is the primary source material for the critique of student performance.

Enclosure 1 to Annex E

PRE-EXERCISE TRAINING

This enclosure describes pre-exercise training. The program includes tank company (team) movement formations and techniques, and procedures for implementing movement to contact, hasty attack, delay, and defend a battle position missions. The controller should "bring up" on the system BASIC-1 scenario outline (se Figure B-2). The controller should then direct the students to place color monitors on MID VIEW range, to note the location of the assembly area and their own task, and orient themselves with the terrain display and the tactical map.

Tank Company (Team) Movement

During tank company (team) movement, the students should practice movement formations and movement techniques.

Movement Formations. During movement formation practice students should execute the vee, wedge, line, column, coil, and herringbone formations. The controller should move the first training aid (see Figure E-1) to the student area and assemble the students around it. The controller should then talk the students through the basic tank company (team) movement formations. Training emphasis should focus on the prompt movement of platoons to correct positions in designated formations and maintaining the correct position in the designated formations. The controller should direct the students to return to their stations. The controller then directs the company (team) commander to move his unit along a designated route and execute movement formations (see Figure E-2). The evaluators should assist the students if necessary, and critique movement formation performance.

Movement Techniques. During movement techniques practice students should execute traveling, traveling overwatch, bounding overwatch (alternating bounds and successive bounds) techniques. The controller should move the second training aid (see Figure E-3) to the student area and assemble the students around it. The controller should then talk the students through tank company (team) movement techniques. Training emphasis should focus on continuous mutual support between platoons. The controller should direct the students to return to their stations. The controller then directs the company (team) commander to move his unit along a designated route and execute movement techniques (see Figure E-4). The evaluators should assist students if necessary, and critique movement technique performance.

Command and Control Procedures

Mission accomplishment depends on the continuous appreciation of the factors of METT and the prompt and correct application of command and control procedures. These procedures are:
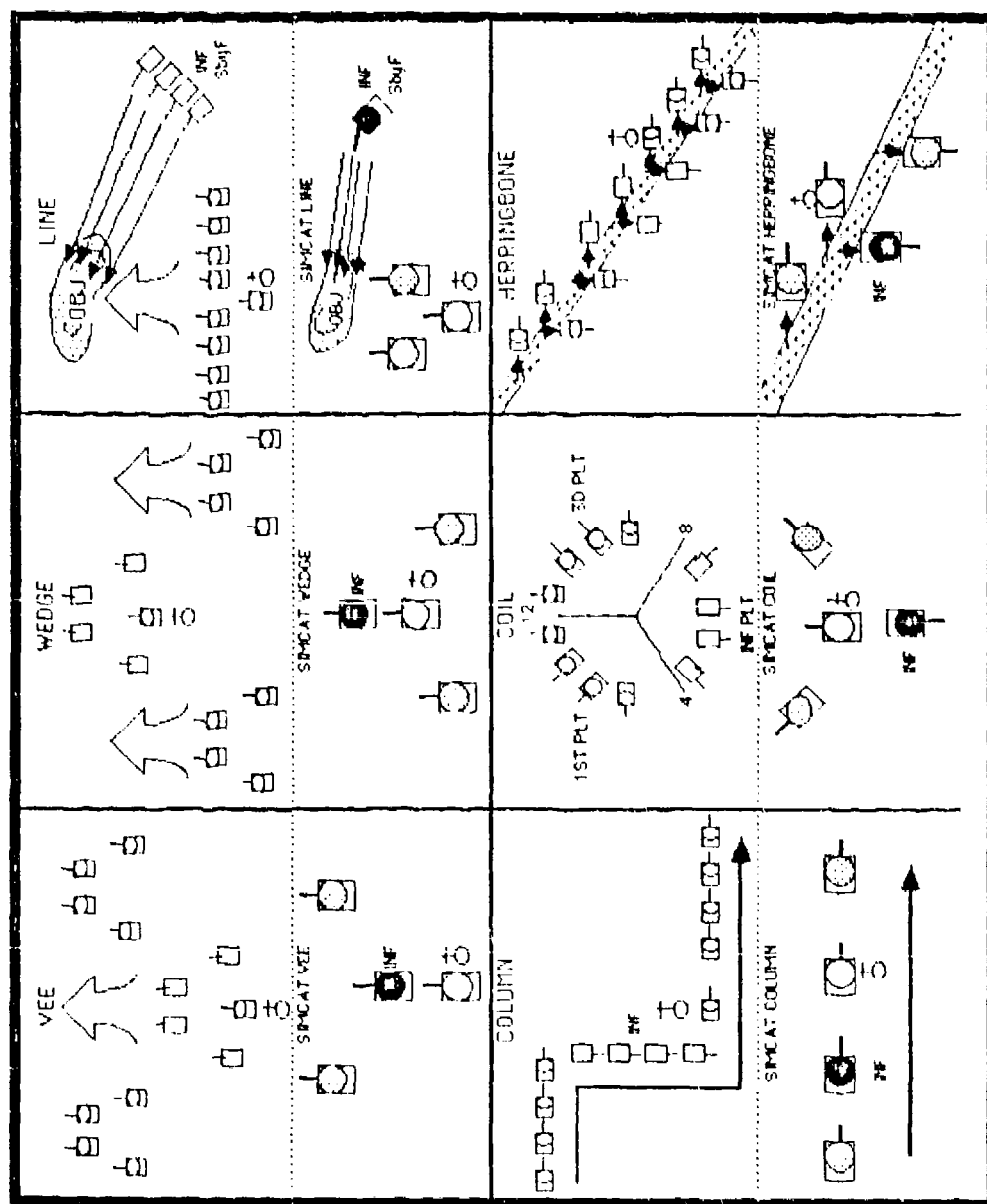
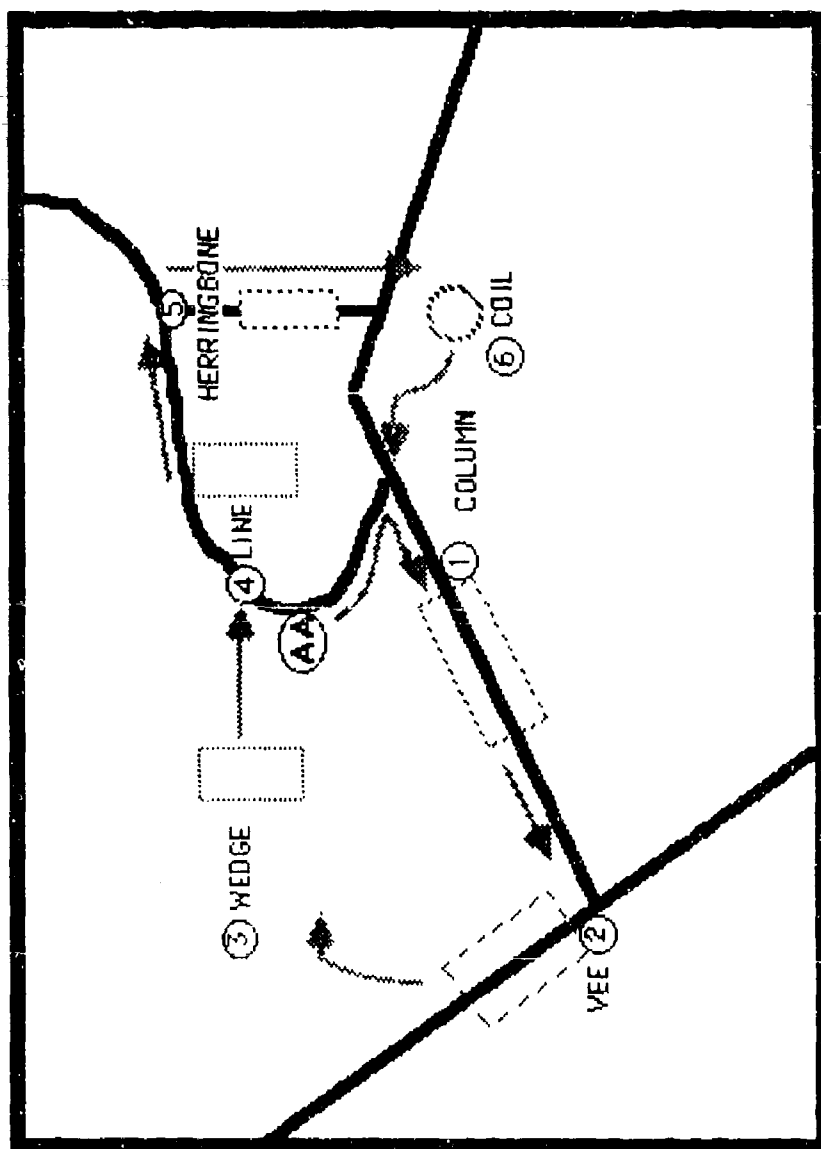Figure E-1. SIMCAT tank company (team) formations.

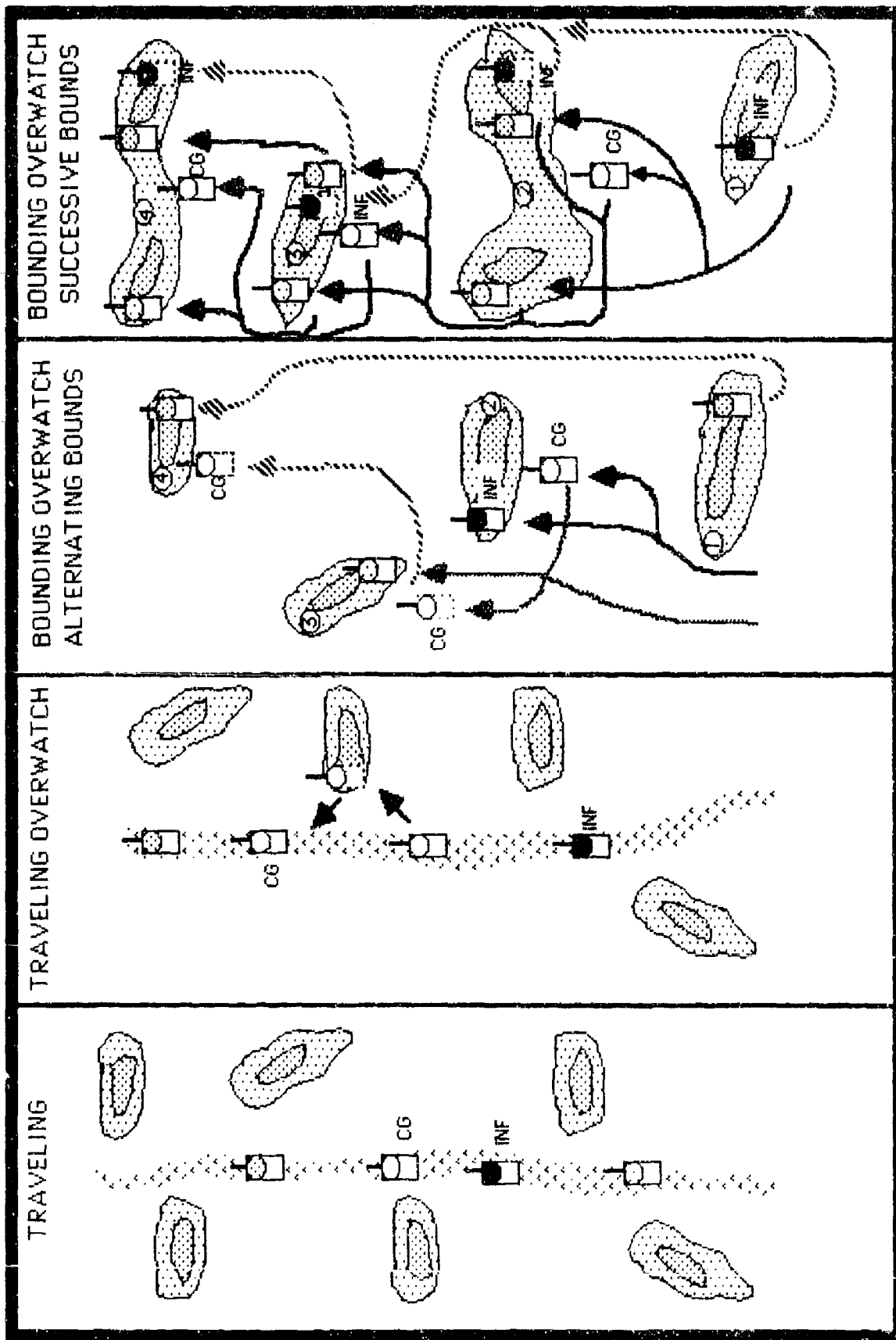Figure E-2. SIMCAT tank company (team) movement layout.

Figure E-3. SIMCAT tank company (team) movement techniques.
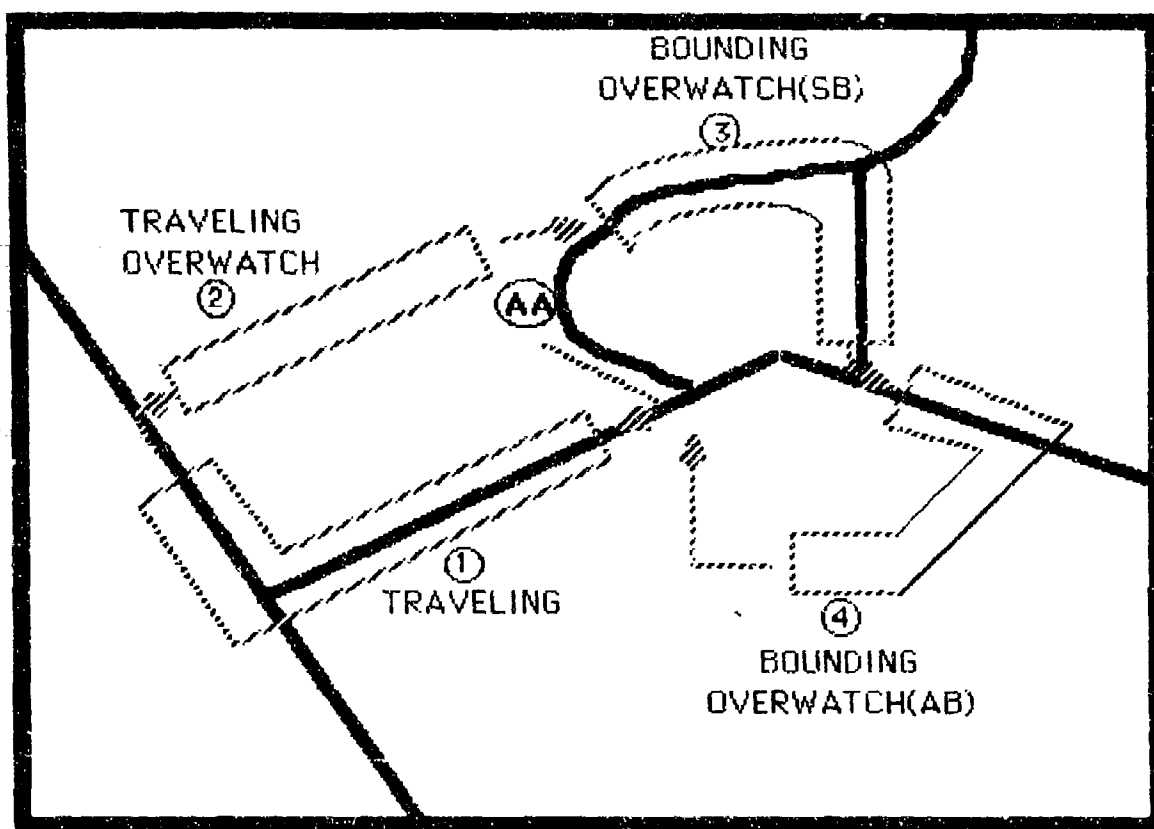
Figure E-4. SIMCAT tank company (tm) movement technique
layout.

- Company (team) and platoon formations
- Company (team) and platoon dispositions
- Control measures
- Combat support requests
- Service support requests
- Reports

Movement to Contact and Hasty Attack. The controller should move the
third training aid (see Figure E-5) to the student area and assemble the
students around it. The controller should then talk the students through
company (team) movement to contact and hasty attack command and control
procedures. Emphasis should focus on action on contact procedures and the
company (team) commander's decision, i.e., attack, bypass, defend, or
withdraw.
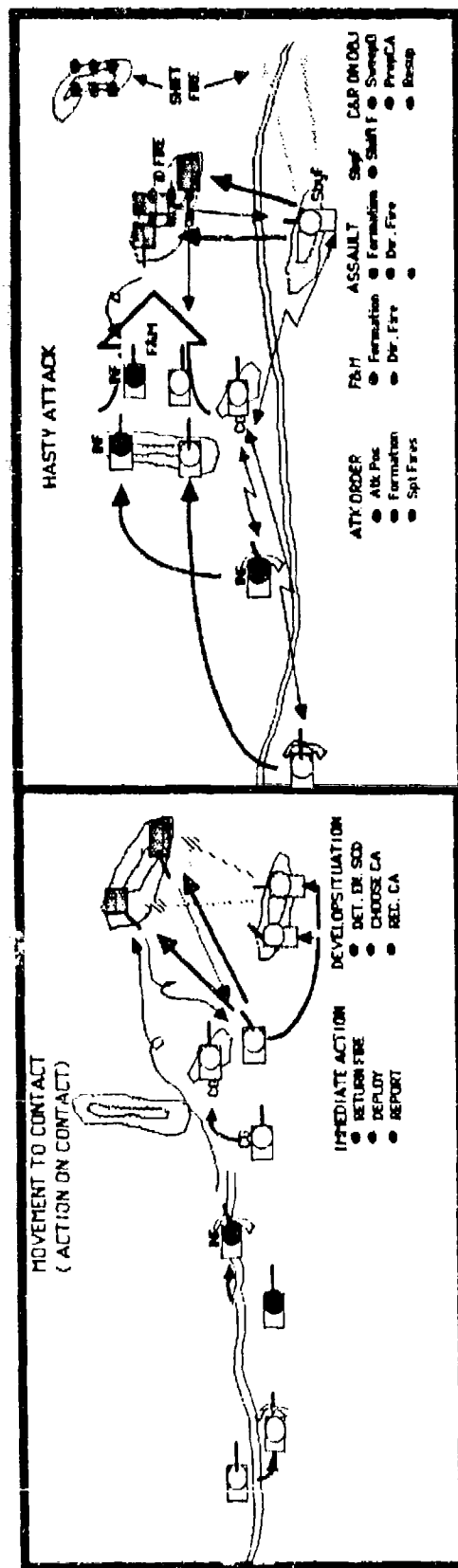
Figure E-5. SIMCAT movement to contact and hasty attack procedures.

<u>Delay and Defend a Battle Position</u>. The controller, using the fourth training aid (see Figure E-6) talks the students through ccmpany (team) delay and defend a battle position command and control procedures. <u>Emphasis should focus on the prevention of decisive engagement during the delay, and organization of the battle position during the defense.</u>

The controller should announce a break. During the break the controller should "bring up" on the system the tank company tactical exercise.

Figure E-6. SIMCAT delay and defend battle position procedures.

Enclosure 2 to Annex E

TANK COMPANY TACTICAL EXERCISE

The Tank Company Tactical Exercise is designed to provide the tank company commander with the opportunity to practice command and control while moving his company (team) over prescribed routes on the SIMCAT simulated battlefield. This exercise also provides platoon leaders with the opportunity to participate in company level tactical operations.

The exercise will accommodate four students simultaneously. During the exercise the student company (team) commander will be confronted with nine actions stations which will require the performance of ninety-four tasks.

This enclosure includes: (a) exercise scenario outline, (b) exercise schematic, (c) exercise evaluation sheets, and (d) guidelines for the controller, OPFOR controller, and station evaluators.

TAB A

Tank Company Tactical Exercise (TCTX)

Scenario Outline

The scenario outline is shown in Figure E-7. The outline establishes the locations of friendly and threat vehicles, provides friendly and threat force indirect fire capabilities, and configures ammunition capabilities for all vehicles in the exercise.

Schematic

The schematic (see Figures E-8A and E-8B) depicts the company (team) operational area, the foreward assembly area, the start point, passage points, routes of movement, check points, phase lines, general locations where various actions take place, the release point, and the rear assembly area. Cameos of major actions are shown in Figure E-9.

Evaluation Sheets

There are three evaluation sheets (see Figures E-10 through E-12). A separate sheet and format is prescribed for the controller, the OPFOR controller, and the station evaluators.

Controller Evaluation Sheet. This evaluation sheet has three sections for comments--COMMUNICATIONS, COMPANY (TEAM) MOVEMENT CONTROL, and COMPANY (TEAM) FIRE CONTROL. The fourth section, OVERALL, provides blocks for a general rating of student performance (i.e., EXCELLENT, SATISFACTORY, UNSATISFACTORY).

OPFOR Controller Evaluation Sheet. This evaluation sheet is similar to the the controller's evaluation sheet. It has two sections for comments--REACTION TO INDIRECT FIRE and GUNNERY ENGAGEMENTS. The third section, OVERALL, is the same as the corresponding section in the controller's evaluation sheet.

Station Evaluator Evaluation Sheet. Down the left side of this evaluation sheet is a list of all action stations and the tasks to be performed at each action station. Down the right side of the evaluation sheet are GO and NO GO columns for indicating student performance. The NO GO column is sub-divided into TASK MASTERY and SYSTEM MASTERY columns. The bottor section of the sheet has space for general comments.

Guidelines

The following guidelines pertain to the controller, OPFOR controller, and station evaluators' duties prior to, during, and after an exercise.

Controller

- Issues the company (team) commander the battalion (task force) operation order (attached). Directs the company (team) commander to conduct troop leading procedures. Allows fifteen minutes.

- Checks that each student has posted on his tactical map pertinent operation order information, i.e., rear assembly area, start point, forward passage point, check points to Objective DIAMOND, the movement route to Objective DIAMOND, and Objective DIAMOND.

- Brings-up the TCTX on the system.

- Directs students to locate on their color monitors the area of operations, their platoon or command group (tank), the start point, the forward passage point, the movement route, check points, phase lines, and Objective DIAMOND.

- Reminds the company (team) commander to orient his general direction of movement on the designated route.

- Announces exercise call signs (i.e., first tank platoon leader - RED ONE, second tank platoon leader - WHITE ONE, infantry platoon leader - BLUE ONE, company (team) commander - VIKING FOUR SIX, FIST - (controller), SHORT ROUND FOUR SEVEN, and battalion (task force) commander OX CART FIVE SIX).

- Opens the battalion (task force) radio net.

- Directs the company (team) commander to open the company (team) net.

- Directs the company (team) commander to place indirect fire on terrain features (e.g., road junctions, bridges, hills) in accordance with scenario requirements.

- Provides friendly indirect fire on request.

- At the end of the company's (team's) hasty attack on Objective DIAMOND stops all action, restarts the scenario at the point where all vehicles were operational, directs OPFOR controller to move T72s and BMPs to scenario locations north, northwest, and west of delay position LEAD, and assembles students and conducts mid-exercise critique.

- Directs students to move their vehicles to the road junction at 7300 0140.

- Issues a fragmentary order directing the company (team) commander to move his company (team) to blocking positions LEAD and TIN (attached).

- Monitors student progress and detects student problems which jeopardize the exercise time table.

- Issues frag orders to the company (team) commander to withdraw from delay positions and to move to and occupy new delay positions, in accordance with the scenario sequence (attached).

- Evaluates student performance with emphasis on communications, company (team) movement control, and company (team) fire control.

- Monitors OPFOR controller and station evaluator actions.

- Conducts the exercise critiques.

OPFOR Controller

- Verifies that threat vehicles are in correct locations.

- Provides threat indirect fire in accordance with the scenario action sequence.

- Initiates main gun engagements ten seconds after friendly tanks are acquired.

- Evaluates student performance with emphasis on reaction to indirect and direct fire.

- Limits threat actions, to that prescribed in the scenario.

- Participates in the exercise critiques.

Station Evaluators

- Ensures that students have the following necessary material for conducting the exercise:

  - MOPP Gear*   - Protractor
  - M256 Chemical Detector   - Coordinate Scale
    Kit*
  - CEOI   - Grease Pencil
  - Tactical Operations Code   - Lead Pencils
  - Tank Company/Platoon   - Paper Pad
    SOP
  - Straight Edge

- Ensures that student station components--communications, color monitor, voice recognition, and keypad--are functioning.

- Monitors student progress and detects student problems which jeopardize the exercise time table.

*This equipment may be hard to acquire, and their use will lengthen and complicate the exercise.

- Evaluates student performance with emphasis on reporting.
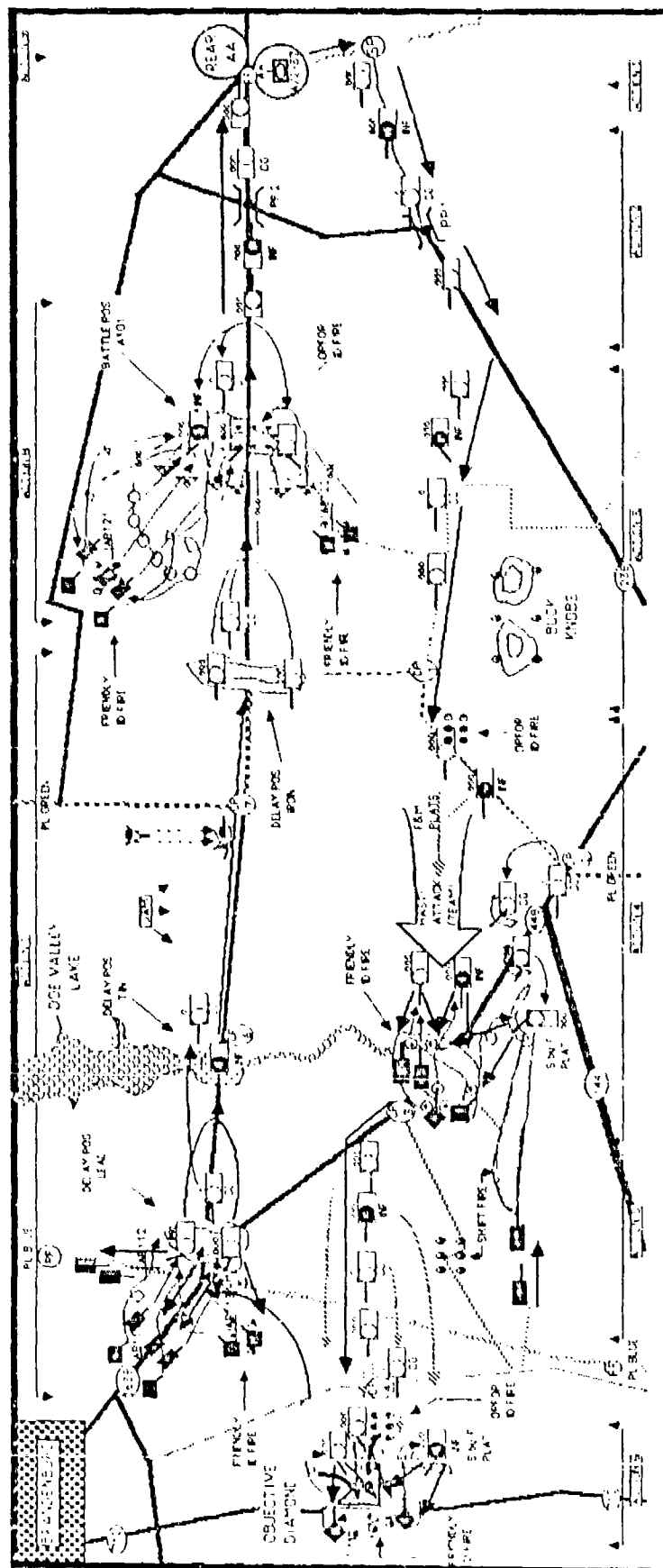
- Participates in exercise critique.

Figure E-7. SIMCAT TCTX scenario outline.

Scenario Name	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	(Leave Blank)	MISC.
TCTX	2	3	4	5	6	7	8	9	10	11	12	13	14		
(Leave Blank)	TC2	PS	PL	OPFOR1	OPFOR2	OPFOR3	OPFOR4	OPFOR5	OPFOR6	OPFOR7	OPFOR8	OPFOR9	OPFOR10		IndirectFireAllocation
ScenarioData	1	1	1	2	2	2	2	2	2	3	3	3	3		100 100 100 100
1	846*	847*	848*	760*	758*	747*	745*	759*	759*	757*	755*	718*	717*		(Leave Blank)
TC1	977*	977*	977*	952*	991*	986*	986*	034*	033*	993*	993*	022*	017*		ControlLines
1	15	15	15	15	15	15	15	15	15	15	15	15	15		(Leave Blank)
845*	15	15	15	15	15	15	15	15	15	15	15	15	15		0000 0000 0000 0000
977*	45	180	315	0	0	0	0	270	270	0	315	0	0		0000 0000 0000 0000
15	45	180	315					270	270		315				0000 0000 0000 0000
15	0	0	0	0	0	0	0	0	0	0	0	0	0		0000 0000 0000 0000
16D	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap	UpMap		0000 0000 0000 0000
16D	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE		0000 0000 0000 0000
0	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE		0000 0000 0000 0000
UpMap	3	3	3	2	2	2	2	2	2	3	3	3	3		0000 0000 0000 0000
TRUE	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun		(Leave Blank)
TRUE	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat	Heat		Minefields
3	22	22	22	40	40	40	40	0	40	40	40	40	40		(Leave Blank)
MainGun	3	3	3	3	3	3	3	0	3	3	3	3	3		999 999 999
Heat	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun	MainGun		999 999 999
22	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot	Sabot		999 999 999
3	33	33	33	40	40	40	40	40	40	0	0	0	0		999 999 999
MainGun	3	3	3	3	3	3	3	3	3	0	0	0	0		999 999 999
Sabot	CoAx	CoAx	CoAx							Sagger Missile	Sagger Missile	Sagger Missile	Sagger Missile		999 999 999
33	CoAx	CoAx	CoAx							4	4	4	4		999 999 999
3	900	900	900							2	2	2	2		999 999 999
MainGun	30	30	30												999 999 999
Sabot															
3															
CoAx															
CoAx															
900															
30														999	999 999 999

FRIENDLY PLAYERS — OPFOR PLAYERS — OPFOR NON-PLAYERS

NOTES:
1 - * Convert UTM coordinates to SIMCAT coordinates before entering into the computer.
2 - Friendly ID Fire Coordinates: 7589 9930, 7140 0190, 7500 0280, 8140 0060

Figure E-8A. SIMCAT Tank Company (Team) Tactical Exercise – TCTX.
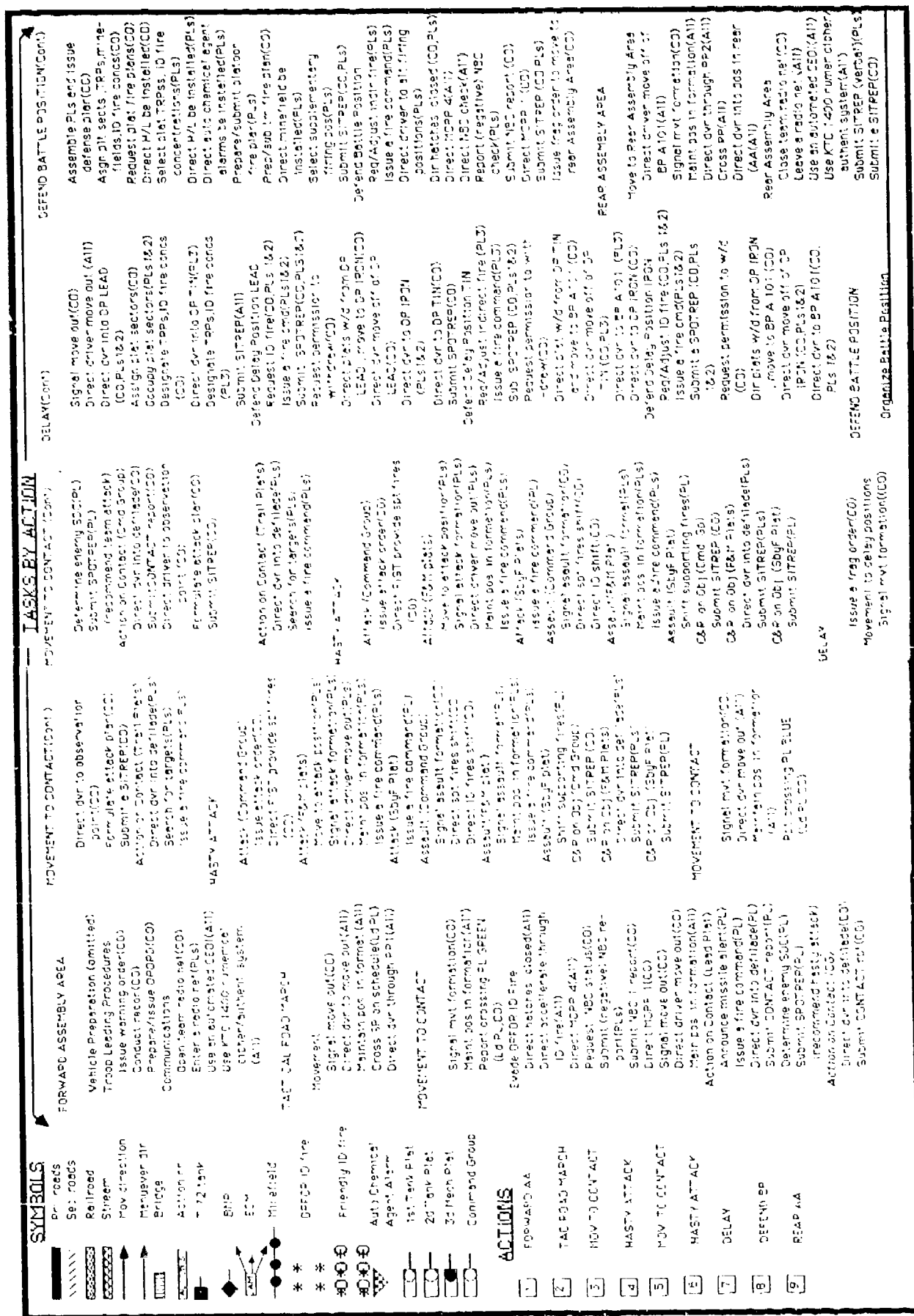
Figure E-8B. SIMCAT Tank Company (Team) Tactical Exercise (TCTX).
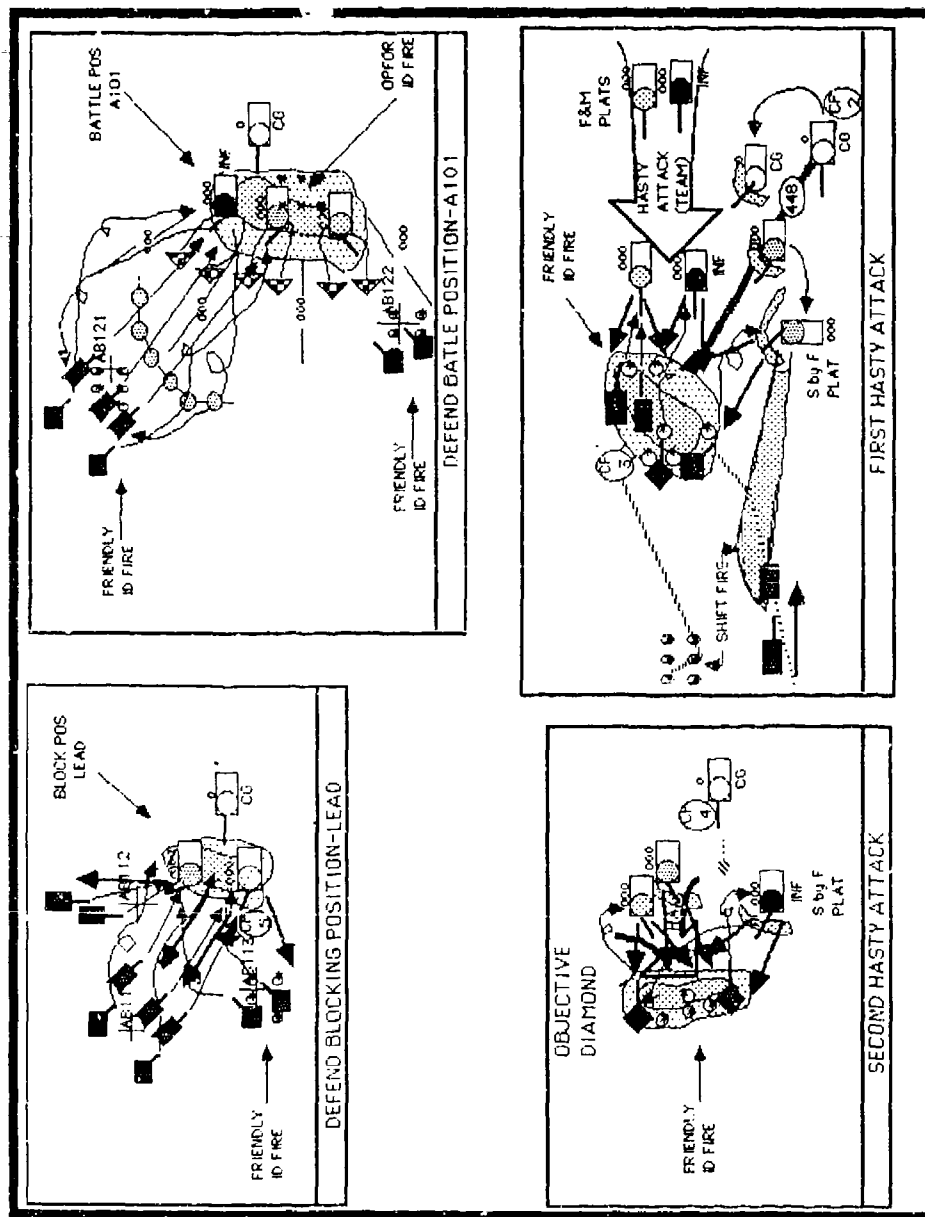
Figure E-9. SIMCAT tank company (team) tactical exercise-action cameos.

```
                    PERFORMANCE EVALUATION

                             TCTX


Student _____      Controller _____

Date _____         Station _____
```

GENERAL COMMENTS

- -

COMMUNICATIONS

- -

COMPANY (TEAM) MOVEMENT CONTROL

- -

COMPANY (TEAM) FIRE CONTROL

- -

OVERALL

EXCELLENT   SATISFACTORY   UNSATISFACTORY

```
  [      ]            [      ]              [      ]
```

Figure E-10.   SIMCAT controller student performance evaluation sheet.

E-23

```
+--------------------------------------------------------------+
|                   PERFORMANCE EVALUATION                     |
|                          TCTX                                |
|                                                              |
| Student_____   OPFOR Controller _____   |
|                                                              |
| Date _____     Station _____    |
+==============================================================+
|                     GENERAL COMMENTS                         |
| - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  |
|                  REACTION TO DIRECT FIRE                     |
|                                                              |
|                                                              |
| - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  |
|                   GUNNERY ENGAGEMENTS                        |
|                                                              |
|                                                              |
| - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -  |
|                        OVERALL                               |
|                                                              |
|   EXCELLENT        SATISFACTORY        UNSATISFACTORY         |
|    [    ]            [    ]               [    ]              |
+--------------------------------------------------------------+
```

Figure E-11.   SIMCAT OPFOR controller student performance evaluation sheet.

PERFORMANCE EVALUATION

TCTX

Student _____   Station Evaluator _____

Date _____   Station _____

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
FORWARD ASSEMBLY AREA			
Vehicle preparation (omitted)	—	—	—
Troop leading procedures	—	—	—
Issue warning order (CO)			
Conduct reconnaissance (CO)			
Prepare/issue OPORD (CO)			
Communications	—	—	—
Open team radio net (CO)			
Enter a radio net (PLs)			
Use an automated CEOI (CO, PLs)			
Use 1400 KTC numerical cipher/ authentication system (All)	—	—	—
TACTICAL ROAD MARCH			
Movement	—	—	—
Signal movement formation (CO)			
Direct driver to move out (All)			
Maintain position in formation (All)			
Cross start point on schedule (Ld PL)			
Direct driver through passage point (All)			

Figure E-12. SIMCAT station evaluator student performance evaluation sheet.

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
MOVEMENT TO CONTACT	////////	////////	////////
Signal movement formation (CO)			
Maintain position in formation (All)			
Report crossing of Phase Line Green (Ld PL, CO)			
Evade OPFOR ID Fire	—	—	—
Direct hatches be closed (All)			
Direct driver accelerate through ID fire (All)			
Direct MOPP-4 (All)			
Request CBR report (CO)			
Submit (negative CBR report (PLs)			
Submit NBC-1 report (CO)			
Direct MOPP-2 (CO)			
Signal move out (CO)			
Direct driver move out (All)			
Maintain position in formation (All)			
Action on Contact (Lead Platoon)	—	—	—
Announce missile alert (PL)			
Issue fire command (PL)			
Direct driver into defilade (PL)			
Submit CONTACT report (PL)			
Determine enemy SDC (PL)			
Submit SPOTREP (PL)			
(recommend team attack)	—	—	—
Action on Contact (Command Group)	—	—	—
Direct driver into defilade (CO)			
Submit CONTACT report (CO)			
Direct driver to observation point (CO)			

Figure E-12. SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Formulate attack plan (CO)			
Submit SPOTREP (CO)			
Action on Contact (Trail Platoons)	—	—	—
Direct driver into defilade (PLs)			
Search for targets (PLs)			
Issue fire command (PLs)			
HASTY ATTACK	////////	////////	////////
Attack (Command Group)	—	—	—
Issue attack order (CO)			
Direct FIST provide supporting fire (CO)			
Attack (F&M Platoons)	—	—	—
Move to attack position (PLs)			
Signal attack formation (PLs)			
Direct driver move out into attack (PL)			
Maintain position in formation (PL)			
Issue a fire command (PL)			
Attack (S by F Platoon)	—	—	—
Issue a fire command (PL)			
Assault (Command Group)	—	—	—
Signal assault formation (CO)			
Direct supporting fires be shifted (CO)			
Direct indirect fire be shifted (CO)			
Assault (F&M Platoons)	—	—	—
Signal assault formation (PL)			
Maintain position in formation (PL)			
Issue a fire command (PL)			
Assault (S&F Platoon)	—	—	—
Shift supporting fires (PL)			

Figure E-12. SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Consol./Reorganize on Objective (Cmd Gp)	—	—	—
Submit SITREP (CO)			
Consol./Reorganize on Objective (F&M PLs)	—	—	—
Direct driver into defilade (PLs)			
Submit SITREP (PLs)			
Consol./Reorganize on Objective (S by F PL)	—	—	—
Submit SITREP (PL)			
MOVEMENT TO CONTACT	///////	///////	///////
Signal movement formation (CO)			
Direct driver move out (All)			
Maintain position in formation (All)			
Report crossing Phase Line BLUE (CO)			
Action on Contact (Lead Platoon)	—	—	—
Announce missile alert (PL)			
Issue fire command (PL)			
Direct driver into defilade (PL)			
Determine enemy SDC (PL)			
Submit CONTACT report (PL)			
Submit SPOTREP (PL)			
(recommend team attack)	—	—	—
Action on Contact (Command Group)	—	—	—
Direct driver into defilade (CO)			
Submit CONTACT report (CO)			
Direct driver to observation point (CO)			
Formulate attack plan (CO)			
Submit SPOTREP (CO)			
Action on Contact (Trail Platoons)	—	—	—
Direct driver into defilade (PLs)			

Figure E-12. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Search for targets (PLs)			
Issue fire command (PLs)			
HASTY ATTACK	/////	/////	/////
Attack (Command Group)	—	—	—
Issue attack order (CO)			
Direct FIST provide supporting fires (CO)			
Attack (F&M Platoons)	—	—	—
Move to attack position (PLs)			
Signal attack formation (PLs)			
Direct driver move out into attack (PL)			
Maintain position in formation (PL)			
Issue a fire command (PL)			
Attack (S by F Platoon)	—	—	—
Issue a fire command (PL)			
Assault (Command Group)	—	—	—
Signal assault formation (CO)			
Direct supporting fires be shifted (CO)			
Direct indirect fires be shifted (CO)			
Assault (F&M Platoons)	—	—	—
Signal assault formation (PL)			
Maintain position in formation (PL)			
Issue a fire command (PL)			
Assault (S&F Platoon)	—	—	—
Shift supporting fires (PL)			
Consol./Reorganize on Objective (Cmd Gp)	—	—	—
Submit SITREP (CO)			
Consol./Reorganize on Objective (F&M PLs)	—	—	—
Direct driver into defilade (PLs)			

Figure E-12. SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Submit SITREP (PL)			
Consol./Reorganize on Objective (S by F PLs)	—	—	—
Submit SITREP (PL)			
DELAY	//////	//////	//////
Issue frag order (CO)			
Movement to Delay Position	—	—	—
Signal movement formation (CO)			
Signal move out (CO)			
Direct driver move out (All)			
Direct driver into Delay Position LEAD (CO, PLs 1 and 2)			
Assign platoon sectors (CO)			
Occupy platoon sectors (PLs 1 and 2)			
Designate TRPs and ID fire concentrations for DP LEAD (CO, PLs 1 and 2)			
Direct driver into Delay Position TIN (PL3)			
Designate TRPs and indirect fire concentration on DP TIN (PL3)			
Submit SITREP (All)			
Defend Delay Position LEAD	—	—	—
Request indirect fire (CO, PLs 1 and 2)			
Issue a fire command (PLs 1 and 2)			
Submit SPOTREP (CO, PLs 1 and 2)			
Request permission to withdraw (CO)			
Direct platoons withdraw from DP LEAD and move to DP IRON (CO)	—	—	—

Figure E-12. SIMCAT station evaluator student performance evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Direct driver move off of DP LEAD (CO, PLs 1 and 2)	—	—	—
Direct driver to DP IRON (PLs 1 and 2)			
Direct driver to DP TIN (CO)			
Submit SPOTREP (CO, PLs 1 and 2)			
Defend Delay Position TIN	—	—	—
Request indirect fire (PL3)			
Issue a fire command (PL3)			
Submit a SPOTREP (CO, PL3)			
Request permission to withdraw (CO)			
Direct platoon withdraw from DP TIN and move to BP A101 (CO)	—	—	—
Direct driver move off of DP TIN (CO, PL3)	—	—	—
Direct driver to BP A101 (PL3)			
Direct driver to BP IRON (CO)	—	—	—
Defend Delay Position IRON	—	—	—
Request indirect fire (CO, PLs 1 and 2)			
Issue a fire command (PLs 1 and 2)			
Submit a SPOTREP (CO, PLs 1 and 2)			
Request permission to withdraw (CO)			
Direct platoons withdraw from DP IRON and move to BP A101 (CO)	—	—	—
Direct driver move off of DP IRON (CO, PLs 1 and 2)			
Direct driver to BP A101 (CO, PLs 1 and 2)			
DEFEND BATTLE POSITION	/////	/////	/////
Organize Battle Position	—	—	—

Figure E-12.   SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Assemble platoon leaders and issue defense plan (CO)	――	――	――
Assign platoon sectors, TRPs, ID fire concentrations, location of mine-fields (CO)	――	――	――
Request platoon fire plans (CO)			
Direct hot loop be installed (CO)			
Select platoon TRPs, ID fire concen-trations (PLs)	――	――	――
Direct hot loop be installed (PLs)	――	――	――
Direct chemical agent auto alarm be installed (PLs)	――	――	――
Prepare/submit platoon fire plan (PLs)			
Prepare/submit team fire plan (CO)			
Direct minefield be installed (PLs)			
Select supplementary firing positions (PLs)			
Submit SITREP (CO, PLs)			
Defend Battle Position	――	――	――
Request indirect fire (PLs)			
Issue a fire command (PLs)			
Direct driver to alternate firing position (PL)	――	――	――
Direct hatches be closed (CO, PLs)			
Direct MOPP-4 (CO)			
Direct CBR check (All)			
Report (negative) CBR check (PLs)			
Submit NBC-1 report (CO)			
Direct MOPP-2 (CO)			
Submit SITREP (CO, PLs)			

Figure E-12. SIMCAT station evaluator student performance
evaluation sheet (cont'd.).

	GO	NO GO	
		TASK MASTERY	SYSTEM MASTERY
Issue frag order to move to rear assembly area (CO)			
REAR ASSEMBLY AREA	//////	//////	//////
Move to Rear Assembly Area	——	——	——
Direct driver move off of BP A101 (All)	——	——	——
Signal movement formation (CO)			
Maintain position in formation (All)			
Direct driver through passage point (All)			
Cross release point (All)			
Direct driver into position in rear assembly area (All)	——	——	——
Rear Assembly Area	——	——	——
Close team radio net (CO)			
Leave a radio net (PLs)			
Use an automated CEOI (All)			
Use KTC 1400 numerical cipher/ authentication system (All)	——	——	——
Submit SITREP (verbal) (PLs)			
Submit SITREP (CO)			

GENERAL COMMENTS

Figure E-12. SIMCAT station evaluator student performance
              evaluation sheet (cont'd.).

Tank Company Tactical Exercise (TCTX)

EXTRACT OF OPERATION ORDER

X   X   X   X   X   X   X   X   X   X   X   X   X   X   X   X   X   X

TASK ORGANIZATION:

Tm A

A/2-37 Ar (-)
3/C/2-19 Mech

Tm B

B/2-37 Ar (-)
3/D/2-19 Mech

Tm C

C/2-19 Mech (-)
3/A/2-37 Ar

Tm D

D/2-19 Mech (-)
3/B/2-37 Ar

TF Con

Sct Plt
Mort Plt
1st and 2d Tms/2/B/25 CEWI (GSR)
2/B/25 Engr Bn (Cbt) (DS)
AVLB Sec/D/25 Engr Bn (Cbt)
1/B/2-440 ADA (C/V) (DS to Bde)

1.   Situation

     a.   Enemy Forces. Major enemy forces withdrawing west from OTTER
CREEK defense line. Enemy has the capability to attack, defend, withdraw,
or reinforce. Air recon reports enemy building new defenses along the
BRANDENBURG-MIDWAY-GUSTON line. It is probable that enemy will delay west
with company size mechanized recon elements, supported with artillery, to
the new defense line. The enemy has used chemical weapons in past
operations.

     b.   Friendly Forces

          (1) 1st Bde attacks in sector 3/0530Z, August 19__ to seize
crossings over the OHIO River in the BRANDENBURG area.

          (2) TF 2-19 Mech attack west along Axis APPLE, seizes BRANDENBURG
STATION communications complex, and continues northwest to seize crossing
over the OHIO River.

          (3) 1-3 Cav initially screens bde forces along the line 83359950,
8R909870, 82009660, 81809540, 82309295. Upon passage of TF 2-19 Mech and
2-37 Ar, 1-3 Cav screens right flank of bde operation.

(4) 2-51 FA DS to Bde, priority of fires to 2-19 Mech.

(5) TF 1-11 Ar follows TF 2-19 Mech along Axis APPLE prepared to support TF 2-19 Mech or 2-37 Ar.

    c. <u>Attachments and Detachments</u>. Task Organization.

2. <u>Mission</u>

    TF 2-37 Ar attacks west along Axis PEAR 310530Z, August 19__, seizes Objectives DIAMOND and EMERALD, and prepared to block enemy forces moving north or northeast toward BRANDENBURG.

3. <u>Execution</u>

    a. <u>Concept of Operations</u> (Annex B, Operation Overlay)

    (1) Maneuver. TF 2-37 Ar attacks with two tank-heavy teams abreast, team A on the right, to seize Objective DIAMOND and EMERALD. Upon seizure of the objectives TF 2-37 Ar, on order moves northwest and secures Hy 79 from MIDWAY to BRANDENBURG. Team A conducts movement to contact along Route LIGHTNING to seize Objective DIAMOND, Team B conducts a movement to contact along Route THUNDER to seize Objective EMERALD. Team C follows Team A, Team D follows Team B.

    (2) <u>Fires</u>. Priority initially to Team A.

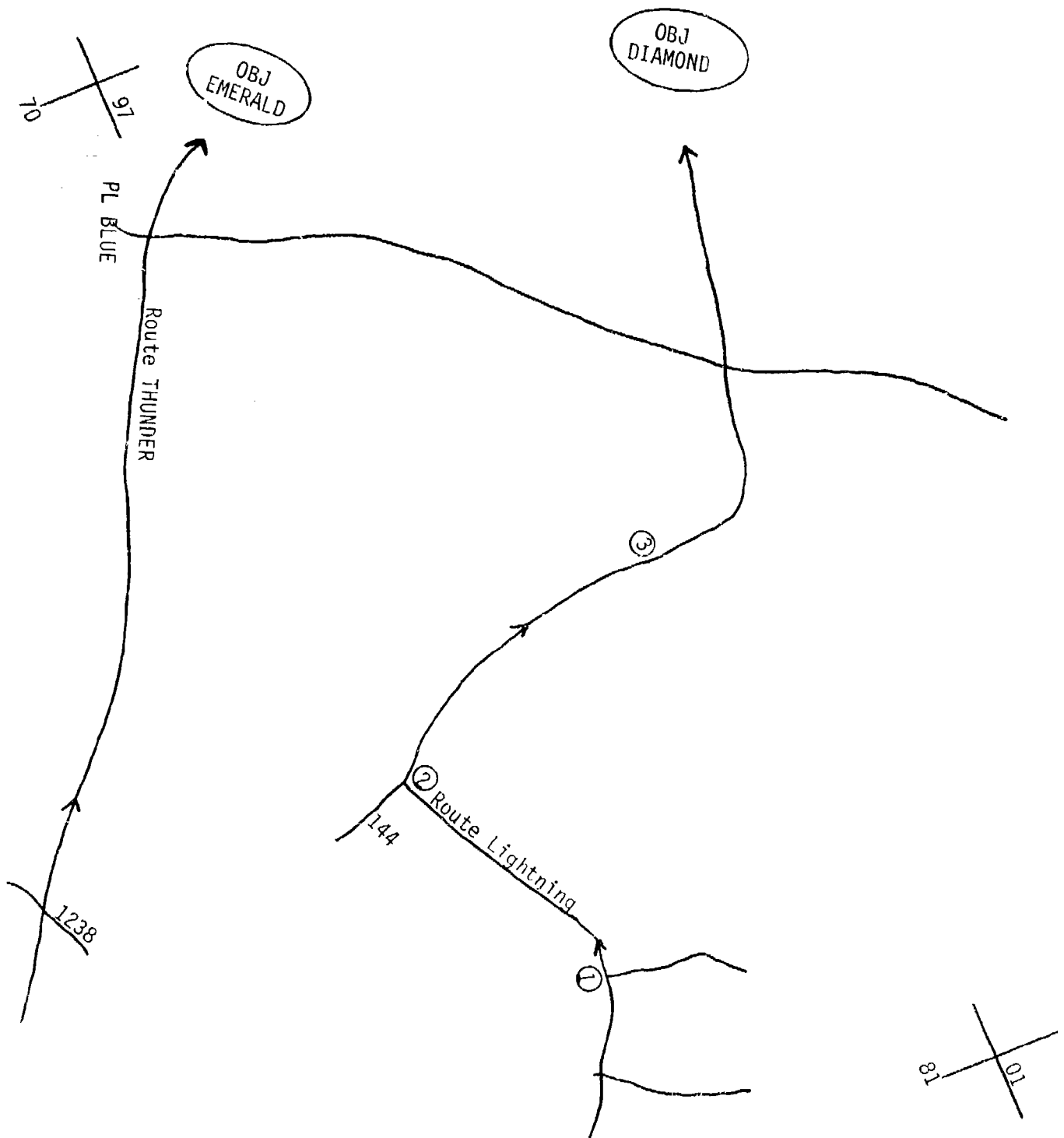X   X   X   X   X   X   X   X   X   X   X   X   X   X   X   X   X   X
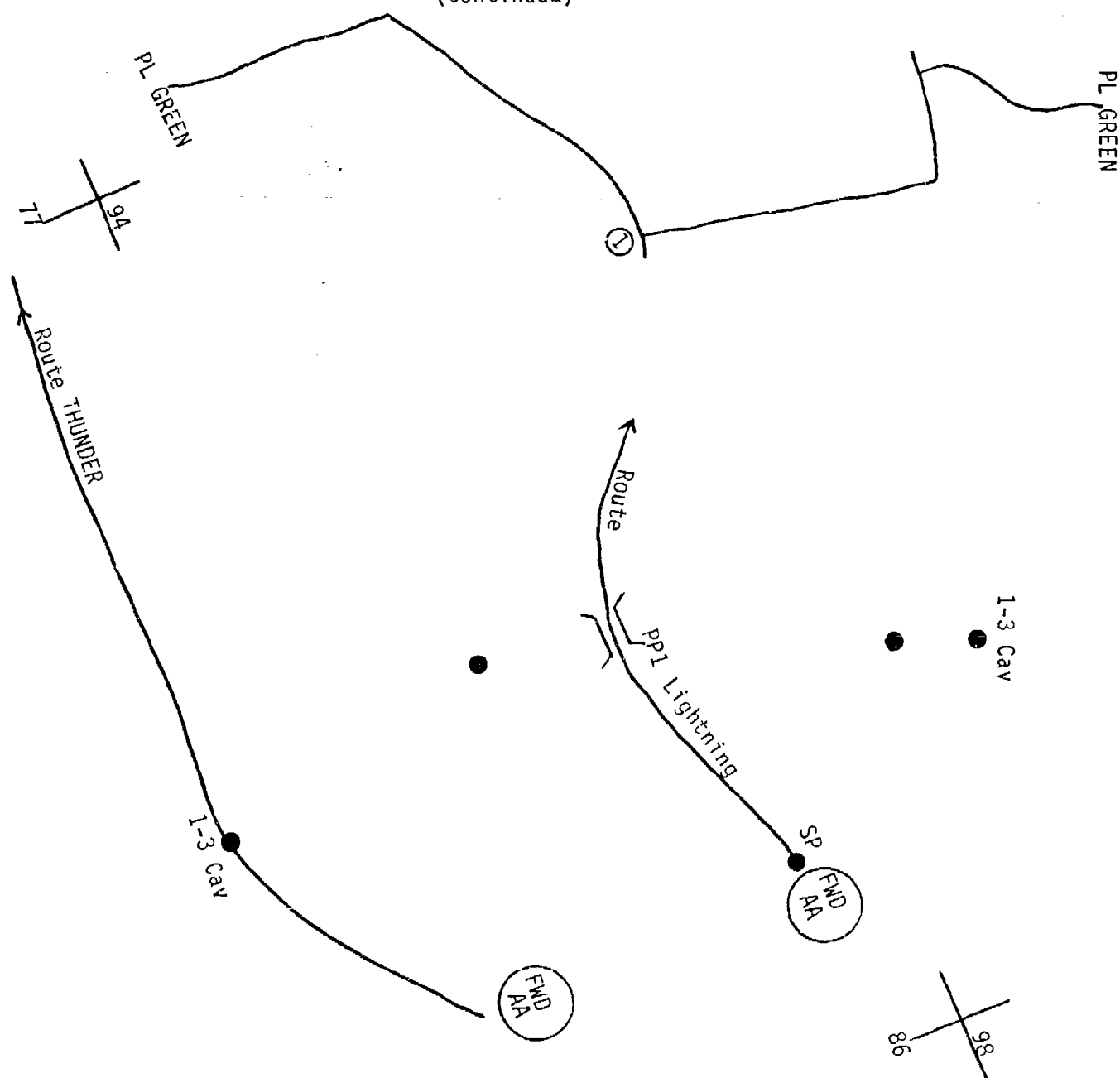
Annexes:

A - Omitted
B - Operation overlay

SLEDGE
LTC

Tank Company Tactical Exercise (TCTX)

OPERATION OVERLAY

Tank Company Tactical Exercise (TCTX)

FRAG ORDERS

Frag Order 1

"VIKING THIS IS OX CART FIVE SIX---ENEMY TANK COMPANY REINFORCED
MOVING SOUTHEAST OUT OF BRANDENBURG ALONG HIGHWAY FOUR FOUR
EIGHT - BREAK - VIKING FOUR SIX MOVE YOUR UNIT TO BRANDENBURG STATION
AND BLOCK ENEMY MOVEMENT SOUTHEAST - BREAK - CONDUCT MAXIMUM DELAY
SOUTHEAST ALONG HIGHWAY ONE SIX THREE EIGHT TO 8170 9945 - BREAK -
ESTABLISH BATTLE POSITION AT 8170 9945 - BREAK - WITH ORIENTATION
300 - BREAK - ACKNOWLEDGE, OVER"

Frag Order 2

"VIKING THIS IS VIKING FOUR SIX---VIKING RED MOVE TO DELAY POSITION
LEAD ONE AT 7540 0250 WITH ORIENTATION 270 - BREAK - VIKING WHITE
FOLLOW VIKING RED AND OCCUPY DELAY POSITION LEAD TWO AT 7550 0260 WITH
ORIENTATION 359 - BREAK - VIKING BLUE FOLLOW VIKING WHITE TO DELAY
POSITION TIN AT 7730 0120 WITH ORIENTATION 315 - BREAK - ACKNOWLEDGE,
OVER"

Frag Order 3

"VIKING THIS IS VIKING FOUR SIX---VIKING RED AND VIKING WHITE MOVE TO
DELAY POSITION IRON AT 8020 0000 WITH ORIENTATION 315. VIKING RED
LEAD AND OCCUPY NORTH PART OF DELAY POSITION IRON - BREAK -
ACKNOWLEDGE, OVER"

Frag Order 4

"VIKING THIS IS VIKING FOUR SIX---VIKING BLUE MOVE TO BATTLE POSITION
A101 AT 8200 9960 WITH ORIENTATION 325 - BREAK - ACKNOWLEDGE, OVER"

Frag Order 5

"VIKING THIS IS VIKING FOUR SIX---VIKING RED MOVE TO BATTLE POSITION
A101 AT 8180 9950 WITH ORIENTATION 315, VIKING WHITE MOVE TO BATTLE
POSITION A101 AT 8170 9905 WITH ORIENTATION 225 - BREAK - ACKNOWLEDGE,
OVER"

TCTX SCHEDULE

The TCTX schedule shown in Figure E-13 is for a class of eight students, organized in groups of four, with two students at each student station.

Each student has twenty-four hours on SIMCAT, six hours as the team commander, and eighteen hours as one of three platoon leaders. Assuming that one system is available, this equates to twenty-four hours for a group and forty-eight hours for a class.

Each student will have an opportunity to perform as a team commander and as a platoon leader.

		MOVEMENT FORMATION PRACTICE	MOVEMENT TECHNIQUE PRACTICE	TCTX PRACTICE
Gp 1a (STC)	DAY-1	0800-0900	0900-1000	1000-1500
Gp 1D (STC)	DAY-1	1500-1600	1600-1700	
Gp 1b (STC)	DAY-2			0800-1200
Gp 1c (STC)	DAY-2	1300-1400	1400-1500	1500-1700
Gp 1c (STC)	DAY-3			0800-1000
Gp 1d (STC)	DAY-3	1000-1100	1100-1200	1300-1700

NOTE; Groups 1e through 1h follow the above schedule for days 4 through 6, using SDVs in command positions. NOTE: ▮ (Student change)

Figure E-13. SIMCAT TCTX schedule.