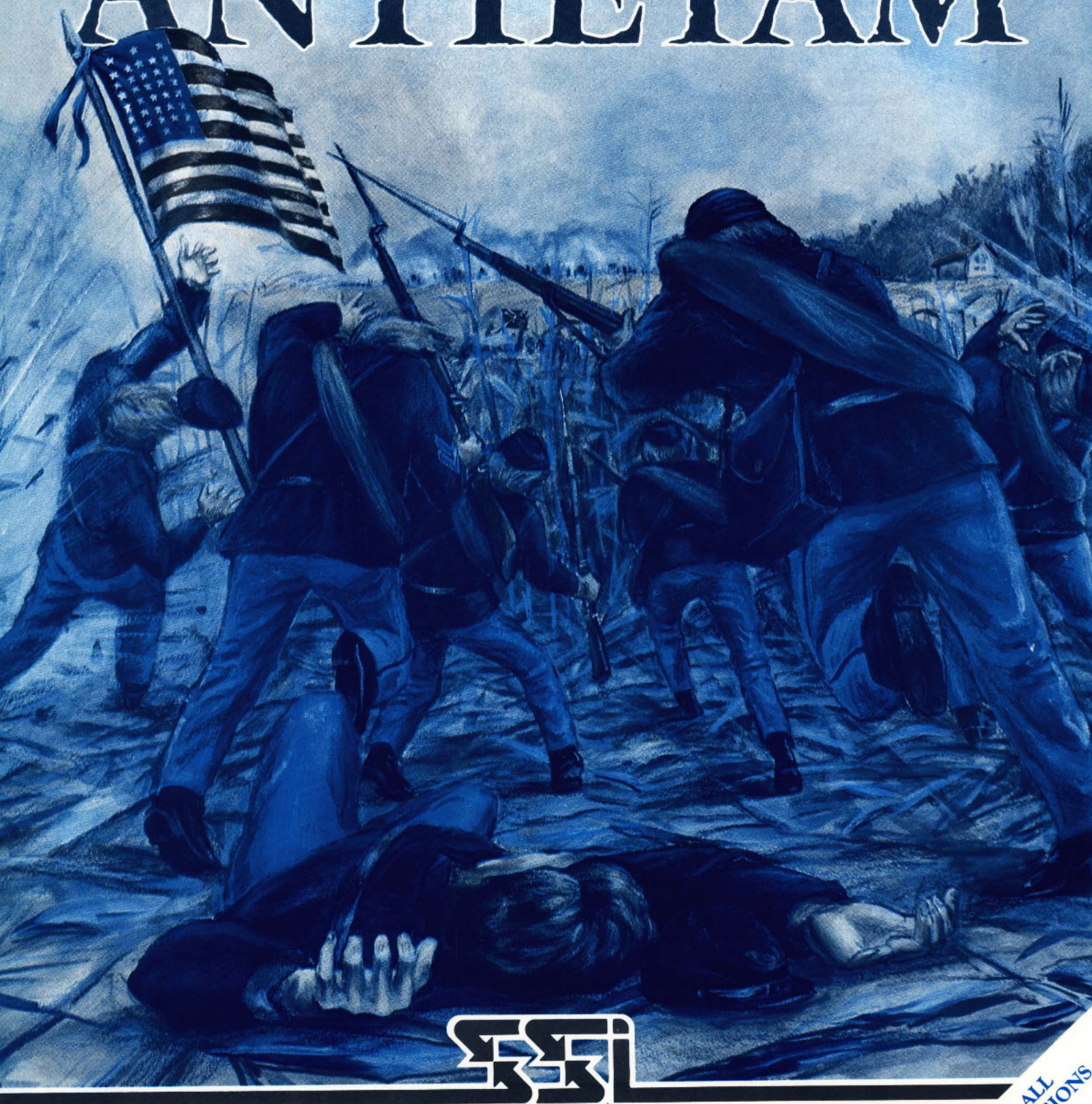


BATTLE OF ANTIETAM™



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ALL
VERSIONS

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QUICK START RULES

1.0 START-UP

These rules allow the player to quickly get into a simple and straightforward game with a minimum of rules reading. Those of you who wish more complexity and realism are invited to play the INTERMEDIATE and ADVANCED games.

1.1 Starting the Game (C-64)

To begin the game, insert the game disk and type LOAD "*",8 and press (RETURN). When READY appears, type RUN and press (RETURN).

1.2 Starting the Game (Atari)

Remove all cartridges from your computer. Boot-up the front side of the disk (800XL owners will have to hold down the OPTION key when they turn on their computer to boot). After selecting the starting values for your game, you will be instructed to insert the Game Side of your disk.

1.3 Starting the Game (Apple)

To begin the game, boot your game disk with the front side up and the game will start automatically. If you are using the Apple IIc or IIe, keep the CAPS LOCK key depressed throughout the game.

1.4 Starting the Game (IBM)

To begin the game, remove the BASIC cartridge (if using the IBM PCjr) and insert your 2.0 to 3.2 DOS disk in the drive. Turn on the computer system and DOS will boot in. Press RETURN until you see the ready "A>". Insert your game diskette. Type START, press ENTER, and the game will boot. On the start-up menu, you will find an option to use an RBG, composite (including TV), or black and white (green screen included) monitor. The IBM version has additional menus that allow you to choose the 10-key option (movement compass using "8" for moving North instead of standard "1") and also allow you to adjust the screen to the right or left and change the colors. On these menus, simply press the key that corresponds to the desired options.

1.5 Main Menu

When the game is booted and past the title page, you will see a menu with a list of options. At a later time you may wish to use these menu options. See 2.1 of the INTERMEDIATE and ADVANCED Game rules. For Quick Start purposes, leave the default selections and press the RETURN key.

2.0 ACTIVATION

Not all Union units will be allowed to move. Porter's Corps cannot move until turn five (10:00 AM), Franklin's Corps until turn seven (12 Noon), Pleasanton's Division until turn eight (1:00 PM), and Burnside's Corps until turn eight (1:00 PM). The above limits may be changed due to a random factor or if the enemy moves next to the above units. If you wish to have this restriction removed, then set the Activation Option, #9, on the Main Menu to NO. In the IBM version, Union cavalry unit may not be activated until turn 3.

3.0 OPERATION PHASE

During this phase you are allowed to move and plot melee combat for all your troops. Most actions require you to spend operation points (see Operation Costs Table).

3.1 Cursor Menu

When you first enter the Operation Phase, you will see the following menu below the map.

- (V) = Highlights all the squares that a unit could see from that square.
- (O) = Centers the map at the cursor.
- (1-8) = Moves the cursor in the desired direction according to the compass on the right hand side of the display.
- (T) = Removes unit shapes from the map so you can see the terrain underneath.
- (C) = Takes you to the Combat Phase — press this key when you are finished moving.
- (SPACE) = Picks up the unit under the cursor to allow you to give it commands. If two or more units are in the square, you will pick up the first unit. You are now in the Command Menu for that unit.

3.2 Unit Information

When you pick up a unit, the unit statistics are displayed below the map such as the example below:

CONFED RIPLEY - A INF 501 MEN
RFL EFF:83 FT:0 MORALE:83
OP:7 MELEE:N FIRE:17,34
ROAD(3) X,Y:16,34

The above display shows that the Confederate unit, RIPLEY A is INFANTRY with 501 men. Its men are armed with RIFLES, has an EFFICIENCY of 83, a FATIGUE of 0, and a MORALE of 83. It has 7 OPERATION POINTS left, does not wish to MELEE and has plotted FIRE into square 17,34. The unit is on a ROAD square with an elevation of (3). It is located on square 16,34. The direction compass is located on the right hand side. Units have different shapes on the map according to the type of unit (Infantry, Cavalry, or Artillery) and the stacking. See Figure 3.2 in the column to the right.

3.3 Command Menu

As soon as you pick up a unit the Command Menu for that unit is ready for any commands. The commands you may select are listed below:

UNION		CONFEDERATE
	"One" Infantry	
	"Two" Infantry	
	Artillery	
	Artillery plus "One" Infantry	
	Artillery plus "Two" Infantry	
	Routed	
	Cavalry	

Figure 3.2 Unit Icons

— THE BASIC GAME

- (0) = Centers map on the unit.
- (1–8) = Moves unit in desired direction as indicated by the compass.
- (M) = Plots the unit to MELEE combat the unit it fires at.
- (F) = Takes you to the Target Menu which allows you to set a priority fire square.
- (V) = Allows you to view all squares that you can fire into. You see in a 360 degree arc.
- (T) = Removes units on the map to view terrain underneath.
- (H) = Displays list of commands available in this menu.
- (U) = Picks up the next unit in the square.
- (N) = Goes to the next unit on the map in promotion order (this is the order of units present in the Order of Battle).
- (Z) = Aborts or cancels the actions of the unit you have currently picked up. The unit is returned to its original square.
- (Q) = Puts down the unit and takes you back to the Cursor Menu.

3.4 Moving A Unit

When you have picked up a unit you may move it in the desired direction according to the compass. Moving costs you operation points, according to the Operation Costs Chart. Your units receive 10 operation points each OPERATION PHASE. If you don't use up all your operation points, up to two points will be added to your allowance of 10 for the next phase of the turn. If you don't have enough operation points, you won't be allowed to move into the square. You can't move into a square that would cause it to have too many units. If you move an artillery unit, it may not fire until the next phase.

3.5 Stacking

A square may have one or two infantry or cavalry units. In addition, it may have one artillery unit.

3.6 Zones of Control

The eight squares that a unit is next to is defined as its Zone of Control (ZOC). This

Zone of Control costs enemy units 2 extra operation points to move into. Routed units are eliminated if forced to retreat into an enemy Zone of Control. A unit must have 10 operation points to move ZOC to ZOC. Artillery may not move ZOC to ZOC.

3.7 Fire Plots

A unit will fire at the closest enemy unit it can see unless you have set a priority fire square it can fire into. To plot the square, press "F" in the Command Menu. It will take you to the Target Menu that allows you to move the cursor over a square and press "T" to set it as the priority target. In the Target Menu you may also press "V" to view your line of fire or "E" to exit the menu.

3.8 Melee Plot

If you wish to plot a unit to engage in melee (hand-to-hand) combat, press "M" in the Command Menu. The unit will melee the enemy unit it fired at if it is adjacent to the enemy unit. If it isn't, it will not melee.

4.0 COMBAT PHASES

During this phase, all fire phases and melees are resolved. Casualties are taken.

4.1 Fire and Melee Phases

There are a total of five fire phases and one melee phase during a combat phase as outlined below:

- Defensive Artillery Fire Phase
- Offensive Artillery Fire Phase
- Defensive Fire Phase
- Offensive Fire Phase
- Defensive Melee Fire Phase
- Melee Phase

Units will fire if they have a line of sight and are within range of the target unit. Ranges of weapons are found on the Weapon Range/Casualty Table. All fire phases are automatically resolved by the computer.

4.2 Advances and Retreats

Units will retreat and advance after combat automatically by the program.

4.3 Rout and Rally

Units will change to the rout shape and retreat when their morale breaks. After they have rested they may rally and return to the combat shape. When routed they may move only one square per phase by the player.

5.0 FATIGUE

A unit's fatigue rating is a measure of how tired it is. It gains fatigue when it moves and takes losses. See the Fatigue Gain and Fatigue Recovery Tables for details. Fatigue also affects morale.

6.0 REINFORCEMENTS

Each side receives reinforcements according to the Order of Battle.

7.0 HOW TO WIN

Players receive victory points. A score is calculated by subtracting the Confederate points from the Union. You may examine the map and look at the units of both sides when the game has ended.

7.1 Victory Points

Players receive points based on enemy casualties according to the schedule below:

- 1 pt per Infantryman lost
- 3 pts per Cavalryman lost
- 150 pts per Artillery Gun lost

For Union only:

In possession of square

17,2	=	1000 (500 if in ZOC)
18,9	=	1000 (500)
21,14	=	1000 (500)
31,18	=	1000 (500)
25,3	=	1000 (500)
28,11	=	2000 (1000)
32,7	=	4000 (2000)
33,1	=	10000 (5000)

7.2 Victory Levels

The score is compared to the chart below:

Union Major Victory	=	6000+
Union Minor Victory	=	2000 to 5999
Draw	=	-1000 to 1999
Confederate Minor	=	-6000 to -1001
Confederate Major	=	Less than -6000

The Union may attain a major or minor victory only if he has inflicted at least 5000 casualties on the Confederates. If he doesn't meet this requirement, the Confederates automatically win at least a Minor Victory.

INTERMEDIATE AND ADVANCED GAME RULES

1.0 INTRODUCTION

BATTLE OF ANTIETAM is a grand-tactical level game of the Civil War battle centered at Sharpsburg, Maryland along the Antietam Creek. It has become known as the bloodiest day of the Civil War.

1.1 Description of Action

Each game turn represents an hour of real time. The execution of a game turn includes activation and rally, movement, mode changes, facing changes, and resolution of artillery fire, offensive fire, defensive fire, and melee.

1.2 Talking to the Computer

To select a routine from a menu or answer a YES/NO question, just press the desired key.

1.3 Game Scale and Map

There are eleven turns in the game each representing one hour from 6:00 AM to 5:00 PM of September 17, 1862. The map is

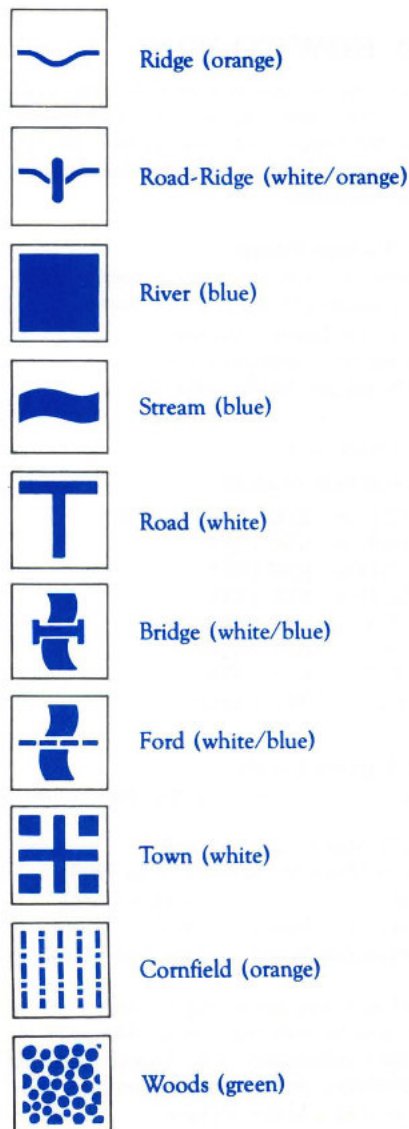


Figure 1.4 Terrain Symbols

situated on a 42 x 36 square grid. Each square represents 200 yards from side to side. The various terrain depicted includes clear, town, woods, cornfields, fords, roads, streams, rivers, and bridges. One to seven randomly placed fords may appear in addition to the two historical ones. Four elevations are represented by contour lines. See Figure 1.4 below for terrain symbols.

1.4 Saving a Game

At the end of each combat phase, the computer will allow the player(s) to save the game in progress. You will need a blank disk to store the saved game data. Players must initialize their blank disk from within the program as offered by the Save Game Menu. Once a game is saved, you may restart it at the point where you left off. You may not change selected options when you restart a game in progress.

1.5 Units

There are three unit types in the game: Infantry, Cavalry, and Artillery. Each unit is rated for manpower (guns for artillery), effectiveness, fatigue, morale, weapon type, mode, facing, operation points, command control, rout status, and disruption status. Units are represented by specific graphic shapes depending on unit type and stacking. See Figure 1.5 below. On your screen, Union symbols are blue and Confederate symbols are white. Note that the symbols will change shape to reflect different facings.

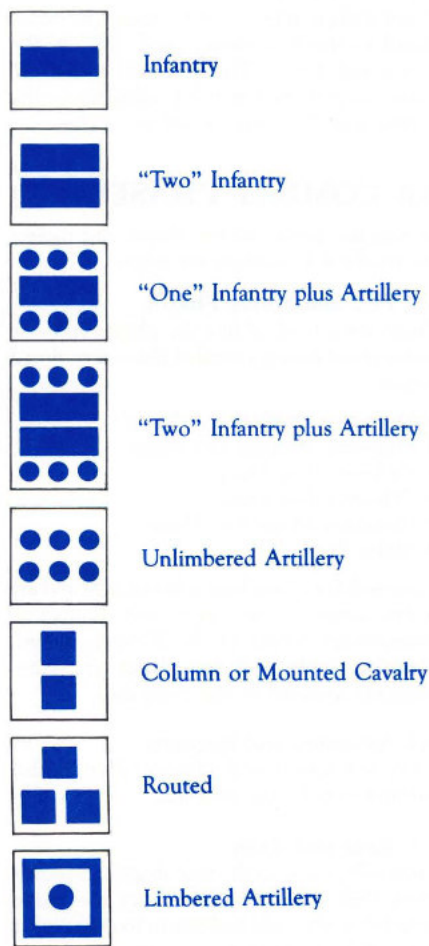


Figure 1.5 Unit Symbols

Each unit represents about two to three regiments or one half of a brigade. A unit is named after its brigade commander with an "A" or "B" designation attached. Attached to units are divisional and corps commanders. The brigade commander is assumed to be present at both A and B units of its brigade.

1.6 Starting the Game (Commodore 64)

To begin the game, insert the game disk and type LOAD "*",8 and press (RETURN). When READY appears, type RUN and press (RETURN).

1.7 Starting the Game (Atari)

Remove all cartridges from your computer. Boot-up the front side of the disk (800XL owners will have to hold down the OPTION key when they turn on their computer to boot). After selecting the starting values for your game, you will be instructed to insert the Game Side of your disk.

1.8 Starting the Game (Apple)

To begin the game, boot your game disk with the front side up and the game will start automatically. If you are using the Apple IIc or IIe, keep the CAPS LOCK key depressed throughout the game.

1.9 Starting the Game (IBM)

Refer to the Quick Start rules under section 1.4.

1.10 Parts Inventory

Your game should contain the following parts:

- Game box
- Rule book
- One 5 1/4" game disk
- One map card

2.0 SEQUENCE OF PLAY

BATTLE OF ANTIETAM is a two-sided game: Union vs Confederate. Both sides may be played by either a human player or the computer opponent.

2.1 Determining Conditions of Play

At the start of the game the player(s) must determine the conditions under which the game will be played from the menu below:

0. NEW GAME SAVED GAME
1. LEVEL OF PLAY 1 2 3 4 5
2. UNION HUMAN COMPUTER
3. CONFEDERATE HUMAN COMPUTER
4. BASIC INTERMEDIATE ADVANCED
5. HIDDEN UNITS NON-HIDDEN
6. TIME LIMIT NO TIME LIMIT
7. COLOR TV BLACK/WHITE
8. ACTIVATION YES NO
9. ICONS SYMBOLS

Type "0-9" to make your choice and RETURN to continue. You will then be asked to set the delay loop for displayed messages in the game. Set it at 4 or 5 if you are a beginner.

• The #0 option allows you to select a new game or continue with a game in progress. When you select a saved game, the options on the menu are defaulted to the options selected in your saved game. When you select the

"SAVED GAME" option and press RETURN, you will be prompted to insert your saved game diskette and type in the name of the file (you will be allowed to catalog the save game disk if you wish). You may not change game options when you boot up a saved game.

- The #1 option selects the difficulty level. Level 3 is historical and makes no modification to either side. Levels 1 and 2 favor the Confederate player (level 1 more so than level 2). Levels 4 and 5 favor the Union (5 more so than 4). Levels affect the casualties inflicted in fire and melee combat and also the number of activations for the Union.

- Options #2 and #3 allow you to set the Confederate or Union player to be controlled by a human or the computer. Please note that you may have the computer play against itself for a demo game.

- Option #4 gives you a choice of three games of varying complexity. The differences are explained under the appropriate headings of this rulebook. The INTERMEDIATE Game is exactly the same as the ADVANCED Game except for the deletion of leaders and command control and the addition of the automatic fortification rule.

- Option #5 allows you to play a game where only sighted enemy units of both sides will appear on the map during the combat phase. Hidden units will also become visible when moved adjacent to during the operation phases.

- Option #6 gives you the ability to set a time limit to how much time a player has to complete his operations phase.

- Option #7 gives the black and white or monochrome user better suited unit shapes.

- Option #8 gives you the choice of using the Activation rules or having every Union formation automatically activated.

- Option #9 allows you to play with icons (figure profiles) or symbols (bars). Symbols are recommended for INTERMEDIATE and ADVANCED play since they show facing and mode charges. Icons are automatically used for the BASIC game.

2.2 Historical Set-up

At the start of the game, the computer will assign all combat forces to their locations the early morning of September 17, 1862 when J. Hooker launched his I Union Corps against the Confederate line.

2.3 Sequence of Play for a Game Turn

1. Activation Phase
2. Command Control Phase
3. Recovery/Rally Phase
4. Reinforcement Phase
5. Union 1st Operations Phase
6. Union 1st Combat Phase
7. Confederate 1st Operations Phase
8. Confederate 1st Combat Phase
9. Mid-Turn Recovery Phase
10. Union 2nd Operations Phase
11. Union 2nd Combat Phase
12. Confederate 2nd Operations Phase
13. Confederate 2nd Combat Phase
14. Victory Determination Phase

3.0 ACTIVATION PHASE

The Union army commanded by George McClellan was slow to be committed into action. Only when encouraged by the battle or hounded by his officers and aides did he commit troops. Even though he actually outnumbered the Confederate by 2 to 1, he believed the Confederate outnumbered him 2 to 1. Even units ordered to the attack lost momentum after an hour or so due to the lack of generalship of McClellan. Corps were ordered to the attack in piecemeal fashion. The activation rules attempt to recreate these leadership factors.

In this phase the Union player is allowed to cycle through his various divisional commanders on the map and activate those he wishes, up to the activation limit.

3.1 Activation Cycle

The program will flash the cursor over Union units where a divisional commander is present, inverse all squares that contain units of that division, and prompt you to activate or bypass them. All Union divisions on the map will be cycled through until you have activated up to your limit of divisions.

3.2 Activation Limits

You will be allowed to activate a base number of four divisions per turn with a random number added to that. In addition, as your score goes up and the day wears on, you will be allowed to activate additional divisions. Divisions are activated on a turn by turn basis. Being activated one turn does not ensure activation the next turn. When the computer plays the Union, it will follow the restrictions placed on the Union player in the BASIC game (see 2.0 in the BASIC game rules) instead of the limits listed here. In the IBM version, Union cavalry units may not be activated until turn 3.

3.3 Activation Effects

Units belonging to activated divisions may move normally (assuming they are in command control). Union Corps artillery units are activated with any division of their corps. Unactivated units may not move, but may perform any other actions up to their operation allowance. Union artillery CAV units are activated with the CAV division.

3.4 Confederate Activation

All Confederate units are activated each turn.

4.0 COMMAND CONTROL PHASE (ADVANCED GAME ONLY)

During this phase, leaders and units execute a command control trace to determine if they are in command control or out of command control. This phase is skipped for the INTERMEDIATE Game. (All units are always in command control.)

4.1 Command Control Trace

Infantry and cavalry units make their command control trace to their appropriate divisional leader. Confederate units must be

within six squares and Union units within four squares of their divisional leaders to be in command control. Units are also in command control if within one square of their corps commander. Union artillery must be within six squares of their corps leader. Confederate artillery units are automatically in command control.

4.2 Divisional Trace

Divisional commanders must also trace to be in command control. To be in command control, divisional commanders must be within six squares of their appropriate corps commanders for the Union and unlimited for the Confederate.

4.3 Automatic Command Control

All cavalry units, cavalry artillery units, Confederate artillery units, and units of the Confederate Evans's brigade are automatically considered in command control. Corps leaders are also automatically in command control.

4.4 Effects of Command Control

Units out of command control have operation point allowances cut in half. In addition, units out of command do not have ammo supplied or disruption recovered. They may not rally.

5.0 RECOVERY/RALLY PHASE

Units in this phase recover disruption and fatigue. They also receive ammo. Routed units will rally if eligible.

5.1 Disruption Recovery

Units in command control have a chance of changing from disrupted to undisrupted status. See the Disruption Recovery Table.

5.2 Rally

Units in command control will change from routed to normal status (Rally) if their morale is 40 or greater, they are in command control, and they have more than 100 men for the Confederate and 300 men for the Union.

5.3 Fatigue Recovery

Units recover fatigue at a certain percent of their effectiveness rating (See Fatigue Recovery Table).

5.4 Ammo Replenishment

Units out of ammo will replenish their ammo according to the Ammo Resupply Tables at the beginning of the turn and at the Mid-Turn Recovery Phase.

6.0 REINFORCEMENT PHASE

Reinforcements are automatically put on the map at designated entry squares. Units are delayed if stacking would be violated or the entry squares are enemy occupied. See Order of Battle.

7.0 OPERATION PHASE

During this phase players may perform a variety of actions including movement, force marches, fire and melee plots, leader transfers, mode changes, and facing changes.

7.1 Cursor Menu

In this menu the player may do the actions listed below:

- (V) = Prompts you to indicate a direction and then displays the line of sight.
- (O) = Centers map at cursor
- (1-8) = Moves cursor in desired directions
- (T) = Removes units from map to see terrain
- (S) = Stops time clock
- (C) = Exits to Combat Phase (Press this key when you are finished moving)
- (SPACE = Accesses first unit in square if friendly. Command Menu for that unit is now active.

Also displayed is the terrain type, elevation, and X,Y coordinates of the square.

7.2 Unit Statistics

When you access the first unit in a square, you will see the following display (example):

```
CONFED RIPLEY - A INF 501 MEN
DS:N AMMO:Y MEL:Y MRL:83 FIRE 17,34
NORMAL OP:7 DIR:5 ADV:N ACT:Y
ROAD (3) X,Y:16,34
```

The display above shows that the Confederate unit, RIPLEY - A, is INFANTRY with 501 men. It is not DISRUPTED, still has AMMO, is plotted for MELEE, and has a MORALE of 83. The unit is plotted for priority FIRE at square 17,34. It is in NORMAL mode, has seven remaining operation points, is facing DIRECTION five, and is not plotted for ADVANCE. It is ACTIVATED (Union only) and on a road square with an elevation of 3. The unit occupies square with X,Y coordinates 16,34. There is a compass showing directions of movement and facing.

A second page of unit statistics may be accessed by typing "P".

```
CONFED RIPLEY - A INF 501 MEN
FORT:0 NORMAL CC:IN
RFL EFF:83 FT:0
ROAD (3) X,Y:16,34
```

The second display above shows that the Confederate unit, RIPLEY - A is INFANTRY with 501 men. The unit has a FORT value of 0, is in NORMAL mode, and is in COMMAND CONTROL. Its weapon type is RIFLE, EFFECTIVENESS is 83, and FATIGUE 0. It is on a road square with an elevation of 3 on X,Y coordinates 16,34.

7.3 Command Menu

When a unit is accessed a number of commands are available. The commands can be enacted by pressing the appropriate key in either page of the unit statistics.

- (O) = Centers map on unit
- (1-8) = Moves unit in desired direction as indicated by the compass, changing its facing automatically.
- (X) = Force March (adds to the unit more operation points at a cost of fatigue).
- (D) = Prompts you to input a new facing (1-8) for the unit.
- (L) = (Advanced Game Only) Displays a menu with the name of the divisional or corps commander attached and allows you to transfer that leader if you desire. The menu also allows you to go to the divisional or corps commanders.
- (I) = All units that belong to the same division as the accessed unit will be inversed. The square with the divisional leader will be inversed and blinking (Advanced Game).
- (A) = Plots the unit to advance if given the opportunity in fire phases or melee
- (M) = Plots the unit to melee in the direction of facing
- (F) = Takes you to the Target Menu which allows you to set a priority fire square.
- (S) = Changes the mode of the unit
- (B) = (Advanced Game Only) Builds one level of fortification
- (V) = Allows you to view all squares in the LOS of the accessed unit (squares are inversed)
- (T) = Removes units on map to view terrain underneath
- (P) = Displays the other page of unit statistics
- (H) = Displays Help Menus
- (U) = Accesses next unit in the same square
- (N) = Accesses next unit in the unit order
- (Z) = Abort move. The unit you have accessed will return to its original square, facing, and mode with its original operation points and fatigue.
- (Q) = Exits Command menu and goes to Cursor Menu

7.4 Operation Point Allowances/Costs

At the beginning of each operation phase units receive ten operation points, unless they are out of command control in which case they receive five points. Up to two unused operation points are carried over to the second operation phase of a turn, thereby giving some units 12 operation points to begin the second phase. Some Confederate units receive 0 operation points for the entire first turn. Most actions require the expenditure of operation points that differ with unit type. Refer to the Operation Costs Table for a complete list of costs.

7.5 Moving a Unit

Once a unit is accessed it may be moved by pressing keys "1-8" in the desired direction. Operation points expended to move depend on unit type, unit mode, terrain of the square,

and other factors (see Costs Table). Units may always move one square if activated at the cost of 5 operation points when out of command control and 10 operation points when in command control. Units may move as part of an advance during the combat phase without expending operation points. The advance is allowed if plotted and the unit is otherwise eligible. Units may not move into streams or rivers unless a bridge or ford is present (and the unit is in column mode for bridge crossing). Artillery may not move unless limbered. Units may not move onto enemy units or violate stacking limits of friendly units. Press "Z" to abort if you have made a mistake with the unit you are moving to put it back to its original place.

7.6 Zones of Control

The eight squares next to a unit constitute its zone of control. Zones of control affect movement costs per the Operation Costs Table. Movement from an enemy ZOC to another will cost extra operation points in addition to normal costs and will only be allowed if no other movement has been made by that unit (see Costs Table). ZOC to ZOC movement is also allowed during advances in the combat phase. Limbered Artillery may not move ZOC to ZOC. Routed units forced to retreat through an enemy ZOC suffer losses and stop their retreat.

7.7 Stacking

No more than two non-artillery units may stack together. No more than one artillery unit may be in a single square regardless of the presence of other units. You may have a maximum of two non-artillery units and one artillery unit in a square. Only one unit may occupy a town, ford, or bridge square. Stacking shapes are dependent on what is in the square. All units in a square assume the direction of facing of the last unit to end its turn on the square. When a square is fired upon by non-artillery units or artillery at greater than one range, casualties are distributed among the defenders with one of the defending units receiving 3 times the casualties of the others. Artillery only takes losses if in a square alone or fired upon by another artillery unit. A square fired upon by artillery at a range of two or more will affect each unit in the square. Units in column receive the road rate only if the road square being moved onto does not contain another unit. When routed units stack onto friendly units each unit gains five fatigue points.

7.8 Unit Modes

Units may be in one of two modes which affect movement and combat. Infantry units may be in column or normal. Cavalry may be mounted or dismounted. Artillery may be limbered or unlimbered. When a unit changes mode its graphic shape on the map also changes. Changing modes requires the expenditure of operation points as listed on the costs table. Unlimbered artillery may not move. Units must be limbered, mounted, or in column to cross a bridge. Dismounted cavalry has a .75 modifier applied against its strength (horse-

holders). Infantry in column, limbered artillery, and mounted cavalry are considered to be flanked when fired upon from any direction.

7.9 Facing

A unit may have eight different facings from 1 to 8. Facing may be changed at any time during the operations phase at no cost. Facing automatically changes during movement as a unit faces the square it is moving into. In addition, all units in a square will assume the facing of the last unit accessed in the square. All units in a square have the same facing. This way you may change the facing of an entire stack by changing the facing of just one unit. Units and stacks of units will assume appropriate shapes on the map to reflect their facing.

Facing determines a unit's line of sight. A unit has a line of sight equal to a 90 degree angle radiating in a V shape from the unit. See 8.3 for further details on line of sight. A unit fired at through a direction not in its line of sight is considered to be flanked.

7.10 Force Marches

A unit may receive extra operation points by force marching at a cost of fatigue points on a one to six basis. Pressing the "X" command will increase the fatigue level by six and increment the operation points remaining by one. Units with fatigue levels of 40 or higher may not force march.

7.11 Fortification

A unit may have a fortification value of 0 to 5 that modifies combat results (See Modifier Table). Fortifications are built one level at a time by pressing the "B" key at a cost of operation and fatigue points (see costs table). Units automatically fortify themselves when they have remaining operation points at the end of the combat phase of the Confederate turn in the INTERMEDIATE game.

7.12 Leaders and Leader Movement (Advanced Game Only)

Leaders are assigned to specific units. Each leader commands a formation. Formations are brigades, divisions, and corps. Leaders are organized into a chain of command that must be updated when a leader is wounded. A corps commander that is wounded will be replaced by one of the divisional commanders in his corps. That divisional commander will be replaced by a brigade leader of his division. Brigade leaders are assumed to be present at both units of their brigade. They are not attached to a particular unit as long as they are a brigade commander. Brigade commanders promoted to command a division act as divisional commanders.

Divisional and Corps commanders may be transferred to any unit within their formation. Pressing "L" when a unit is accessed will list any leader present and prompt you to transfer it. If you wish to transfer, the cursor will cycle through eligible units. Pressing "I" will inverse all units that belong to the same division as the accessed unit. The location with the divisional leader will blink.

Every time a unit with a leader takes casualties, there is a check to see if a leader is

wounded. Each leader has a combat bonus. A leader with a bonus of 20 will increase casualties, inflicted by the unit it is with by 20%. See the Order of Battle for each leader's bonus. Corps and divisional leaders are important to command control. Divisional leaders affect the resupply of ammo. Brigade leaders affect rally. When a leader dies, the unit it is attached to gains five fatigue points.

7.13 Fire and Melee Plots

During the operations phase, units may plot priority fire, melee, and advances if they wish to perform those actions during combat.

To plot melee, press "M". To plot advance, press "A". For both these plots you may toggle between Y for yes and N for no by pressing the appropriate command key. Note also that plotting melee will automatically plot advance, as a convenience to the player, since advances are usually desired in melee attacks. You may toggle it back to N for no by pressing "A".

An important note is that a unit will melee only if it has also fired at the square it intends to melee. Plotting melee automatically plots fire into the square directly in front of the unit. Consequently, do not plot melee until after you have moved your unit. You may melee a unit not directly in front of you by plotting melee and then retargeting the fire plot.

To plot fire press "F", which will display a menu that will allow you to move the cursor to the target square and press "T" to plot it. Pressing "V" will inverse all squares eligible to be target squares and pressing "E" will return you to the command menu, inserting a "No Plot" into the fire plot. A fire plot will only be accepted if the targeted square is within range and in line of sight (see line of sight 8.3). A unit that plots a melee will automatically plot the square directly in front for fire.

Units that are unable to execute their priority fire plot or units with no plot will fire at the nearest enemy unit in range and in line of sight.

8.0 COMBAT PHASES

During this phase, all fire phases and melees are resolved. Casualties are taken. Routs, retreats, and advances are all executed.

8.1 Fire Phases

There are a total of five fire phases and one melee phase during a combat phase as outlined below:

- Defensive Artillery Fire Phase
- Offensive Artillery Fire Phase
- Defensive Fire Phase
- Offensive Fire Phase
- Defensive Melee Fire Phase
- Melee Phase

Defensive fire phases are executed by the non-phasing player and offensive fire phases by the phasing player. Messages will appear on the screen and the map will scroll to fired upon units. Casualties and other combat results will be printed on the screen.

8.2 Casualties

A unit inflicts casualties with its fire based upon a number of factors. See the strength/

casualties modifier tables to give you an idea of what the factors are and what effects they have. Artillery units lose guns and fatigue. They are eliminated when their gun count reaches 0. Artillery guns are lost due to combat only when enemy artillery is firing upon them. In addition, artillery takes fatigue losses from infantry fire, only if alone in the square. An artillery unit will take gun losses and retreat in melee combat if their fatigue exceeds 75 or if forced to retreat by the combat results.

8.3 Line of Sight and Range

In order for a unit to plot or even to execute its priority fire plot it must have a line of sight and be in range of the target. Ranges of weapon types are listed on the Weapons/Range Casualty Table. You may view the line of sight of any unit by pressing "V" when the unit is accessed in the command menu or target menu or when in the cursor menu.

There are four elevation levels on the map representing 40–50 feet of elevation per level. Woods represent a 20 foot elevation obstacle, towns 30 feet, cornfields 6 feet, and units 5 feet.

In addition to the normal line of sight and weapon range limitations, there is an additional visibility limit built into each level. A unit at level 1 may see no further than four squares, regardless of its weapon range or normal line of sight. Eight squares is the limit at level 2, twelve at level 3, and sixteen at level 4. These visibility limits will be proportionately modified downward by the overall percent visibility of the battlefield.

8.4 Melee

To melee, a unit must be plotted for melee and be undisrupted. It will melee into the square it fired into if the square is adjacent. All units plotted against the same square are added together as a group. Defending units in a melee have an extra defensive fire before melee is resolved. Units expend operation points to melee. Units must have enough operation points to fire and melee the same square, otherwise their melee is cancelled. See the modifier tables and the Melee Combat Results Table for details.

8.5 Retreats

As a result of rout or melee, units may be forced to retreat up to four squares. Retreated units will generally retreat away from enemy units towards the rear of their lines. The rear of the Confederate lines is considered to be the upper right corner of the map and the lower left corner for the Union. Routed units suffer casualties and stop their retreat if they have to enter an enemy ZOC. Unlimbered artillery is forced to retreat when it gains over 75% fatigue in melee. It will also retreat and take extra losses if so indicated by the Melee Results Table. Friendly units retreated onto gain five fatigue points.

8.6 Morale, Rout, and Rally

A unit's morale is equal to its effectiveness minus its fatigue. A unit with a morale of less than 15 has a 40% chance of routing. A morale check is made for possible rout whenever a

unit takes losses. Units with less than 80 men will automatically rout when they take losses. When a unit routs it retreats four squares. It may move only one square per phase until rallied. A unit will rally when its morale reaches 40 or more and it is in command control (and has more than 100 men for the Confederate and 300 for the Union).

8.7 Advances

Units plotted to advance will advance in the combat phase if defending units are retreated. Advancing ZOC to ZOC is allowed.

8.8 Disruption

Every time a unit suffers losses, there is a chance it will become disrupted. A unit has about a 40% chance of becoming disrupted per 100 casualties. A disrupted unit loses its priority fire plot. It may not fire except for defensive melee fire nor may it execute melee plots. A unit has a chance of becoming undisrupted at the beginning of the turn and at the Mid-Turn Recovery Phase. Its chances and conditions for recovery are outlined on the Disruption Recovery Table.

8.9 Ammo

Every time a unit fires it has a chance of running out of ammo. Infantry/Cavalry have a 7% chance and artillery has about a 10% chance. Casualties inflicted by a unit that runs out of ammo in that phase will be greatly reduced. At the beginning of each turn and at the Mid-Turn Recovery Phase a unit may be resupplied with ammo if in command control (see Ammo Resupply Table). Units without ammo may not fire, but may melee at a reduced strength.

8.10 Fatigue

A unit starts the game with zero fatigue points. As it moves and loses casualties it will gain fatigue (see Fatigue Gain Table). It also gains five fatigue points when a routed unit stacks onto the same square or a leader attached to the unit dies. Fatigue has a proportional effect on fire strength. Fatigue is subtracted from effectiveness to yield a unit's morale which affects routs. A unit will recover fatigue at the beginning of the turn (see Fatigue Recovery Table).

9.0 MID-TURN RECOVERY PHASE

During this phase units will check to recover disruption and resupply ammo, according to the appropriate tables.

10.0 VICTORY DETERMINATION PHASE

During this phase, players are awarded points for casualties and territorial objectives. After the eleventh turn (4:00 p.m.) is completed, the game ends and the score is compared to the victory levels. You may examine the map and access units of both sides after the game has ended.

10.1 Victory Points

Players receive victory points according to the chart below:

- 1 pt per infantryman lost
- 3 pts per cavalryman lost
- 100 pts per brigade leader lost
- 300 pts per division leader lost
- 500 pts per Union corps leader lost
- 1000 pts per Confederate corps leader lost
- 150 pts per artillery gun lost

Ignore Leader points for the Intermediate Game.

For Union Player only:

In possession of square	
17,2	= 1000 (500 if in ZOC)
18,9	= 1000 (500)
21,14	= 1000 (500)
31,18	= 1000 (500)
25,3	= 1000 (500)
28,11	= 2000 (1000)
32,7	= 4000 (2000)
33,1	= 10000 (5000)

10.2 Victory Levels

The score is calculated by subtracting the Confederate victory points from the Union and comparing the result to the chart below:

	SCORE
Union Major Victory	= 6000+
Union Minor Victory	= 2000 to 5999
Draw	= -1000 to 1999
Confederate Minor	= -6000 to -1001
Confederate Major	= less than -6000

The Union may attain a major or minor victory only if he has inflicted at least 5000 casualties on the Confederates. If he doesn't, the Confederates win at least a minor victory.

11.0 STRATEGY AND TACTICS

Union Strategy:

The Union has two major stumbling blocks: Activation limits and the Antietam Creek. You'll find that there is more than one approach for the Union army. Some strategies may include advancing one division to each of

the bridges opposite Confederate positions on the first turn to secure them. Other strategies may activate the Union I Corps and use them to charge the Confederate middle or right flank. Still others may decide to keep the Union I Corps inactive and bring additional divisions across the creek, waiting to make a concerted attack. The success of the Union strategy will be based on how the Confederate reacts with his reserves and how well each side tactically deploys its armies. A good strategy with bungled tactics will fail miserably.

Confederate Strategy:

The Confederate is on interior lines and has flexible control over its divisions. Although outnumbered 2 to 1, he can muster a 3 to 1 advantage against the Union in localized areas of the battlefield. The Union I Corps is usually a likely candidate to attack with the Confederate reserve divisions. Counter-attacking the Union when they are weak can be devastating. Be careful not to overextend yourself. Let the Union come to you. Remember that the advantage is with the defensive player.

Tactics:

1. Well-placed artillery can be deadly. Put your artillery on a high elevation or behind the lines with a clear line of sight.
2. When attacking, be sure to counter battery the opposing artillery guns to make them gain fatigue.
3. Avoid attacking and defending with units in column and mounted cavalry.
4. Place leaders with units in key areas of your attack or defense. Their bonuses can really make a difference. Place them with units that have a lot of men to lessen their chance of becoming a casualty.
5. Place units in a defensive line that assures channels of retreat for routed units.
6. Make sure you will have enough operation points to fire and/or melee.
7. Be aware that stacks of units with over 650 men will incur additional casualties.
8. Use force marching judiciously.
9. Fortify whenever you are not in contact with the enemy.
10. Remember to keep routed units in command control when you wish to have them rally.
11. Be careful not to have units plotted to advance "from the frying pan into the fire".
12. When you attack, make it an all-out attack with reserves ready to exploit it.

UNION ORDER OF BATTLE

TURN OF REIN.	NAME	MEN	WEAPON	EFF	DIV	CORPS
1	Seymour-A (11)	400	M	80	Meade (16)	Hooker (33)
1	Seymour-B	701	R/S	87	"	"
1	Magilton-A (7)	503	M	70	"	"
1	Magilton-B	451	RFL	84	"	"
1	Anderson-A (7)	210	M	81	"	"
1	Anderson-B	450	RFL	76	"	"
1	Duryea-A (12)	501	RFL	80	Ricketts (13)	"
1	Duryea-B	503	RFL	81	"	"
1	Hartstuf-A (11)	753	RFL	90	"	"
1	Hartstuf-B	651	RFL	98	"	"
1	Christian-A (7)	251	RFL	79	"	"
1	Christian-B	402	RFL	81	"	"
1	Gibbon-A (16)	451	RFL	98	Doubleday (11)	"
1	Gibbon-B	552	RFL	99	"	"
1	Patrick-A (9)	455	RFL	79	"	"
1	Patrick-B	405	RFL	91	"	"
1	Phelps-A (9)	361	RFL	82	"	"
1	Phelps-B	263	S/R	99	"	"
1	Hoffman-A (7)	346	RFL	84	"	"
1	Hoffman-B	403	RFL	81	"	"

1	Stainbeck-A (7)	359	RFL	81	Greene (19)	Mansfield (28)
1	Stainbeck-B	251	RFL	83	"	"
1	Goodrich-A (6)	299	RFL	81	"	"
1	Goodrich-B	452	RFL	83	"	"
1	Tyndale-A (6)	400	RFL	90	"	"
1	Tyndale-B	603	RFL	76	"	"
1	Crawford-A (15)	1149	RFL	75	Williams (13)	"
1	Crawford-B	1348	RFL	72	"	"
1	Gordon-A (12)	1299	RFL	81	"	"
1	Gordon-B	948	RFL	78	"	"

2	Griffin-A (12)	1050	R/M	84	Morrell (16)	Porter (21)
2	Griffin-B	1010	RFL	80	"	"
2	Barnes-A (12)	902	RFL	80	"	"
2	Barnes-B	751	RFL	75	"	"
2	Stockton-A (9)	1005	RFL	70	"	"
2	Stockton-B	953	RFL	90	"	"
1	Warren-A (4)	550	RFL	99	Sykes (13)	"
1	Warren-B	451	CRB	98	"	"
1	Buchanan-A (7)	903	RFL	92	"	"
1	Buchanan-B	905	RFL	93	"	"
1	Lovell-A (6)	651	RFL	81	"	"
1	Lovell-B	405	RFL	83	"	"

3	Hancock-A (15)	1203	RFL	84	Smith (17)	Franklin (24)
3	Hancock-B	1100	RFL	75	"	"
3	Brooks-A (13)	801	RFL	81	"	"
3	Brooks-B	803	RFL	86	"	"
3	Irwin-A (7)	853	RFL	82	"	"
3	Irwin-B	850	RFL	80	"	"
3	Newton-A (12)	801	RFL	81	Slocum (15)	"
3	Newton-B	799	RFL	79	"	"
3	Bartlett-A (9)	800	RFL	80	"	"
3	Bartlett-B	803	RFL	83	"	"
3	Torbert-A (9)	801	RFL	83	"	"
3	Torbert-B	803	RFL	82	"	"

TURN OF REIN.	NAME	MEN	WEAPON	EFF	DIV	CORPS
1	Meagher-A (15)	755	R/M	98	Richardson (18)	Sumner (26)
1	Meagher-B	603	RFL	99	"	"
1	Caldwell-A (12)	751	RFL	89	"	"
1	Caldwell-B	602	R/M	89	"	"
1	Brooks-A (9)	601	R/M	80	"	"
1	Brooks-B	651	RFL	86	"	"
1	Dana-A (10)	801	RFL	99	Sedgwick (17)	"
1	Dana-B	1150	RFL	78	"	"
1	Gorman-A (11)	800	R/M	90	"	"
1	Gorman-B	951	RFL	92	"	"
1	Howard-A (5)	850	R/M	41	"	"
1	Howard-B	852	RFL	62	"	"
1	Kimball-A (10)	701	RFL	97	French (13)	"
1	Kimball-B	1051	RFL	82	"	"
1	Weber-A (7)	705	RFL	78	"	"
1	Weber-B	1052	RFL	76	"	"
1	Morris-A (7)	1505	R/C	75	"	"
1	Morris-B	1453	RFL	77	"	"

1	Fairchild-A (7)	349	RFL	83	Rodman (17)	Burnside/Cox
1	Fairchild-B	553	RFL	80	"	(20) (19)
1	Harland-A (6)	849	RFL	87	"	"
1	Harland-B	1001	RFL	68	"	"
1	Christ-A (7)	649	RFL	79	Wilcox (10)	"
1	Christ-B	748	RFL	81	"	"
1	Welsh-A (6)	699	RFL	83	"	"
1	Welsh-B	901	RFL	87	"	"
1	Ferrero-A (15)	851	RFL	83	Sturgis (10)	"
1	Ferrero-B	699	RFL	81	"	"
1	Nagle-A (9)	698	RFL	83	"	"
1	Nagle-B	701	RFL	80	"	"
1	Ewing-A (7)	403	RFL	81	Scammon (9)	"
1	Ewing-B	550	RFL	80	"	"
1	Crook-A (6)	1201	RFL	79	"	"
1	Crook-B	653	RFL	81	"	"

1	Farnworth-A (7)	802	CRB	81	Pleasanton (11)	IND
1	Farnworth-B	403	RFL	83	"	"
1	Davis-A (6)	301	CRB	98	"	"
1	Davis-B	299	CRB	83	"	"
1	Rush-A (6)	303	CRB	82	"	"
1	Rush-B	301	PST	99	"	"
1	McReynolds-A (6)	303	CRB	61	"	"
1	McReynolds-B	300	PST	60	"	"
1	Whiting (6)	402	CRB	99	"	"
1	I. Corps-A	26	N12	80		
1	I. Corps-B	19	RG3	79		
1	II. Corps-A	18	P10	83		
1	II. Corps-B	22	N12	81		
1	V. Corps-A	28	N12	98		
1	V. Corps-B	30	P20	98		
3	VI. Corps-A	28	RG3	80		
3	VI. Corps-B	12	N12	81		
1	IX. Corps-A	19	H12	79		
1	IX. Corps-B	29	P10	80		
1	XII. Corps-A	18	RG3	83		
1	XII. Corps-B	16	P10	84		
1	Cav-A	10	N12	93		
1	Cav-B	12	RG3	93		

Turn 2 reinforcements appear on squares 0,18 to 0,20.
Turn 3 reinforcements appear on squares 0,25 to 0,32.

CONFEDERATE ORDER OF BATTLE

TURN OF REIN.	NAME	MEN	WEAPON	EFF	DIV	CORPS
1	Law-A (13)	503	RFL	99	Hood (23)	Longstreet (46)
1	Law-B	351	RFL	97	"	"
1	Wofford-A (13)	301	RFL	99	"	"
1	Wofford-B	603	RFL	98	"	"
1	Armistead-A (15)	160	MSK	80	R. Anderson (21)	"
1	Armistead-B	261	RFL	83	"	"
1	Pryor-A (13)	350	RFL	81	"	"
1	Pryor-B	349	RFL	84	"	"
1	Wright-A (13)	351	RFL	82	"	"
1	Wright-B	302	RFL	95	"	"
1	Posey-A (15)	455	RFL	82	"	"
1	Posey-B	405	R/M	83	"	"
1	Cumming-A (10)	353	RFL	99	"	"
1	Cumming-B	354	RFL	98	"	"
1	Parham-A (9)	305	RFL	83	"	"
1	Parham-B	160	R/M	80	"	"
1	Kemper-A (19)	202	RFL	91	D.R. Jones (20)	"
1	Kemper-B	256	RFL	82	"	"
1	Garnett-A (15)	155	RFL	80	"	"
1	Garnett-B	151	RFL	82	"	"
1	Toombs-A (15)	255	RFL	98	"	"
1	Toombs-B	401	RFL	99	"	"
1	Drayton-A (13)	303	RFL	82	"	"
1	Drayton-B	160	RFL	84	"	"
1	J. Walker-A (15)	352	RFL	99	"	"
1	J. Walker-B	405	RFL	98	"	"
1	G.T. Anderson-A (13)	354	RFL	81	"	"
1	G.T. Anderson-B	451	RFL	82	"	"
1	Ransom-A (17)	751	RFL	80	J.G. Walker (19)	"
1	Ransom-B	853	RFL	71	"	"
1	Manning-A (15)	955	MSK	95	"	"
1	Manning-B	1203	RFL	81	"	"
1	Kershaw-A (17)	503	MSK	81	McLaws (19)	"
1	Kershaw-B	302	MSK	80	"	"
1	Barksdale-A (16)	453	MSK	83	"	"
1	Barksdale-B	401	R/M	91	"	"
1	Semmes-A (13)	451	MSK	90	"	"
1	Semmes-B	302	R/M	81	"	"
1	Sanders-A (7)	201	RFL	82	"	"
1	Sanders-B	203	RFL	80	"	"

Turn 2 reinforcements appear on square 17,0.

Turn 9 reinforcements appear on the road from 33,1 to 32,4 unless square 33,1 is enemy occupied, in which case they are delayed.

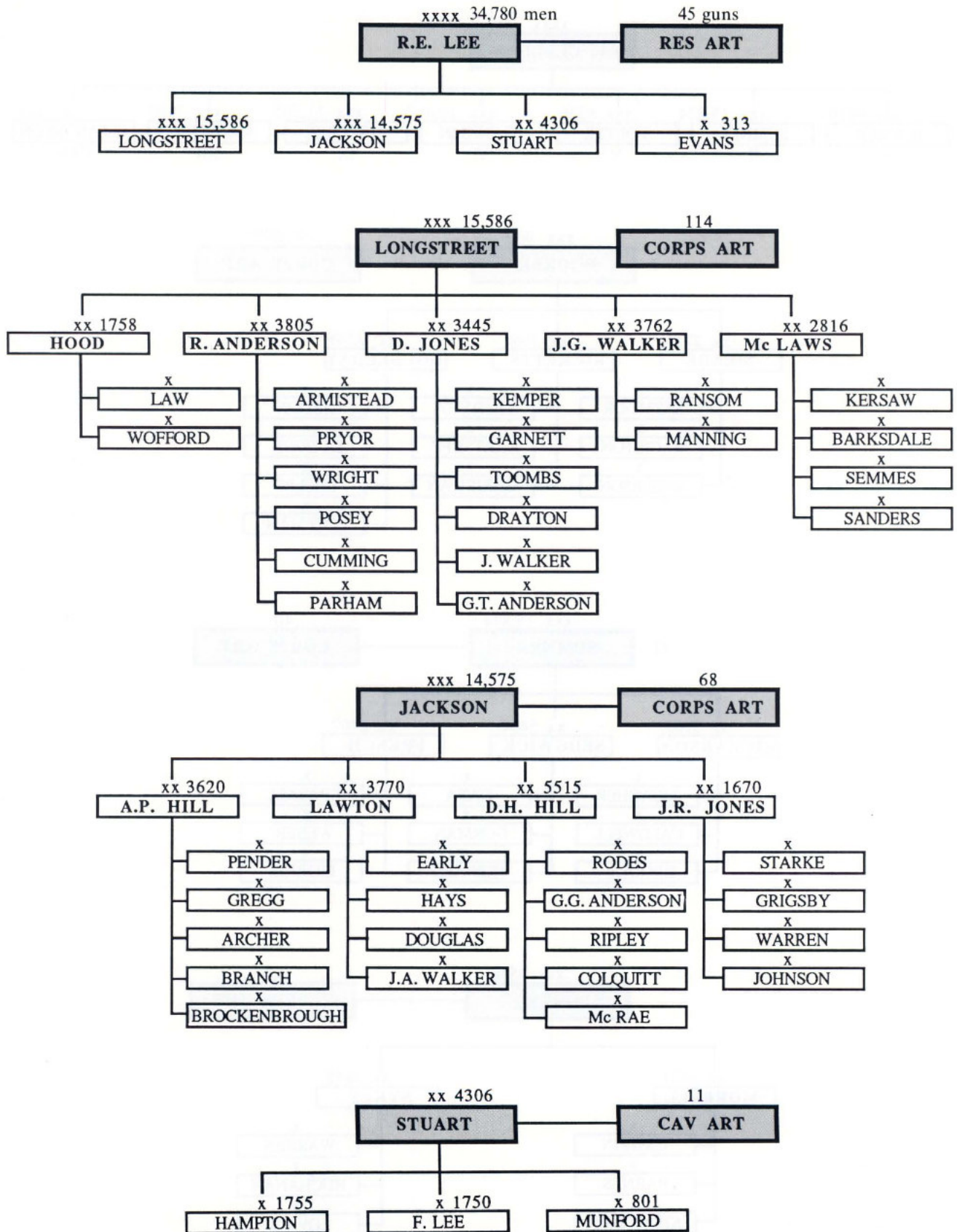
NOTE: Numbers in parentheses represent Leader bonuses.

*Turn 9 is the last possible time these units will come in.
There is a chance they will arrive on turn 7 or 8.

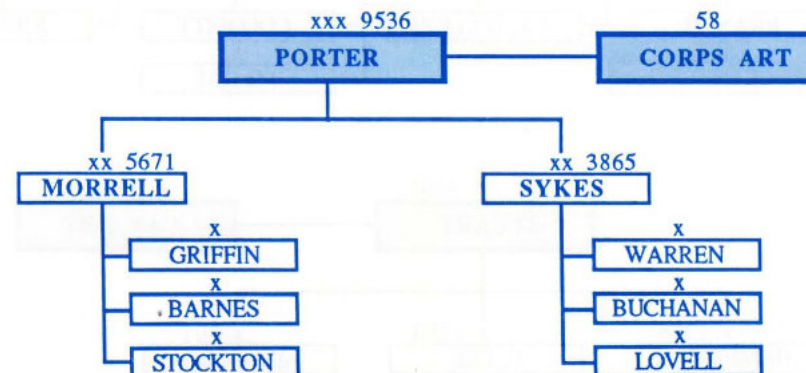
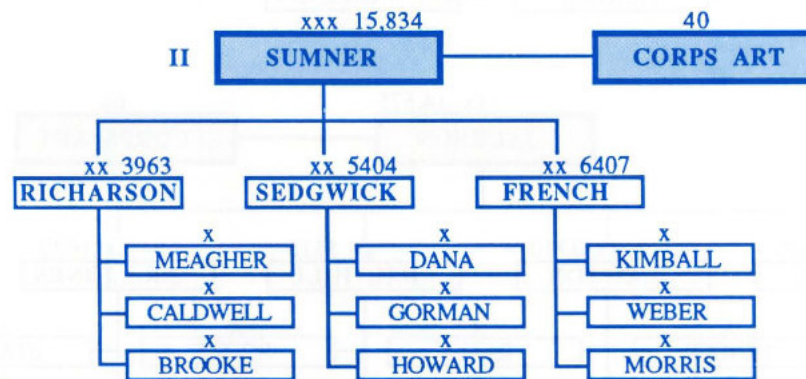
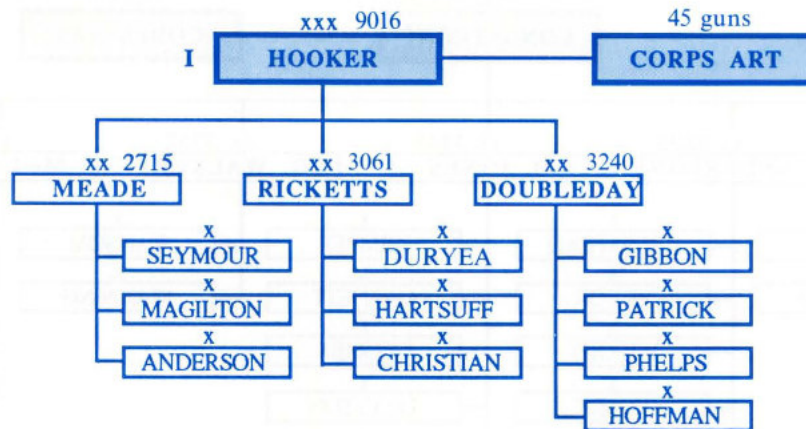
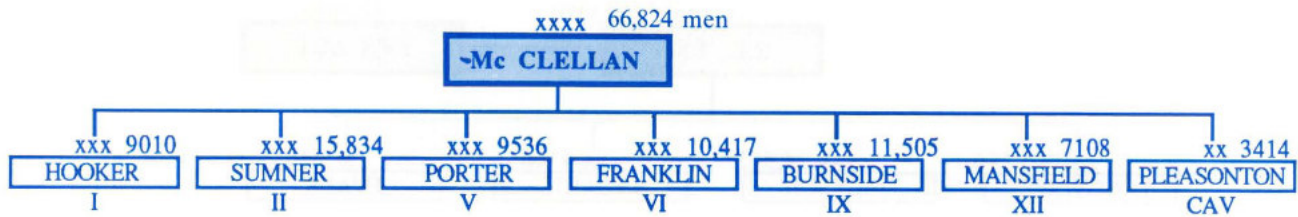
TURN OF REIN.	NAME	MEN	WEAPON	EFF	DIV	CORPS
*9	Pender-A (23)	351	RFL	91	A.P. Hill (33)	Jackson (49)
*9	Pender-B	303	RFL	92	"	"
*9	Gregg-A (21)	755	RFL	98	"	"
*9	Gregg-B	451	RFL	99	"	"
*9	Archer-A (15)	201	RFL	99	"	"
*9	Archer-B	203	RFL	97	"	"
*9	Branch-A (13)	451	RFL	87	"	"
*9	Branch-B	303	RFL	81	"	"
*9	Broker-A (7)	302	RFL	81	"	"
*9	Broker-B	300	RFL	83	"	"
1	Early-A (24)	605	RFL	91	Lawton (19)	"
1	Early-B	603	RFL	99	"	"
1	Hays-A (15)	302	RFL	99	"	"
1	Hays-B	203	RFL	98	"	"
1	Douglas-A (9)	651	RFL	82	"	"
1	Douglas-B	653	RFL	81	"	"
1	J.A. Walker-A (10)	401	RFL	98	"	"
1	J.A. Walker-B	352	RFL	91	"	"
1	Rodes-A (17)	352	RFL	99	D.H. Hill (18)	"
1	Rodes-B	501	RFL	95	"	"
1	G.B. Anderson-A (13)	450	RFL	81	"	"
1	G.B. Anderson-B	753	RFL	83	"	"
1	Ripley-A (13)	501	RFL	83	"	"
1	Ripley-B	851	RFL	80	"	"
1	Colquitt-A (13)	551	MSK	80	"	"
1	Colquitt-B	803	MSK	99	"	"
1	McRae-A (7)	302	RFL	63	"	"
1	McRae-B	451	RFL	61	"	"
1	Starke-A (9)	251	RFL	99	J.R. Jones (11)	"
1	Starke-B	351	RFL	97	"	"
1	Grigsby-A (7)	105	RFL	81	"	"
1	Grigsby-B	103	RFL	83	"	"
1	Warren-A (6)	203	RFL	91	"	"
1	Warren-B	252	RFL	82	"	"
1	Johnson-A (7)	202	RFL	83	"	"
1	Johnson-B	203	RFL	92	"	"

1	Evans-A (9)	153	MSK	81	IND	IND
1	Evans-B	160	MSK	83	IND	IND
2	Hampton-A (11)	1052	CRB	81	Stuart (33)	IND
2	Hampton-B	703	SHG	90	"	"
1	F. Lee-A (11)	1051	SHG	87	"	"
1	F. Lee-B	699	R/S	82	"	"
1	Munford-A (7)	351	PST	98	"	"
1	Munford-B	450	PST	81	"	"
1	Long-A	17	SM6	80		
1	Long-B	17	SM6	83		
1	Long-C	23	P10	79		
1	Long-D	24	H12	84		
1	Long-E	18	H24	81		
1	Long-F	15	RG3	83		
1	Jack-A	22	RG3	83		
*9	Jack-B	18	SM6	79		
1	Jack-C	11	P10	80		
1	Jack-D	17	H12	84		
1	Res-A	15	SM6	83		
1	Res-B	14	P10	82		
1	Res-C	16	H12	82		
1	Cavart	11	RG3	83		

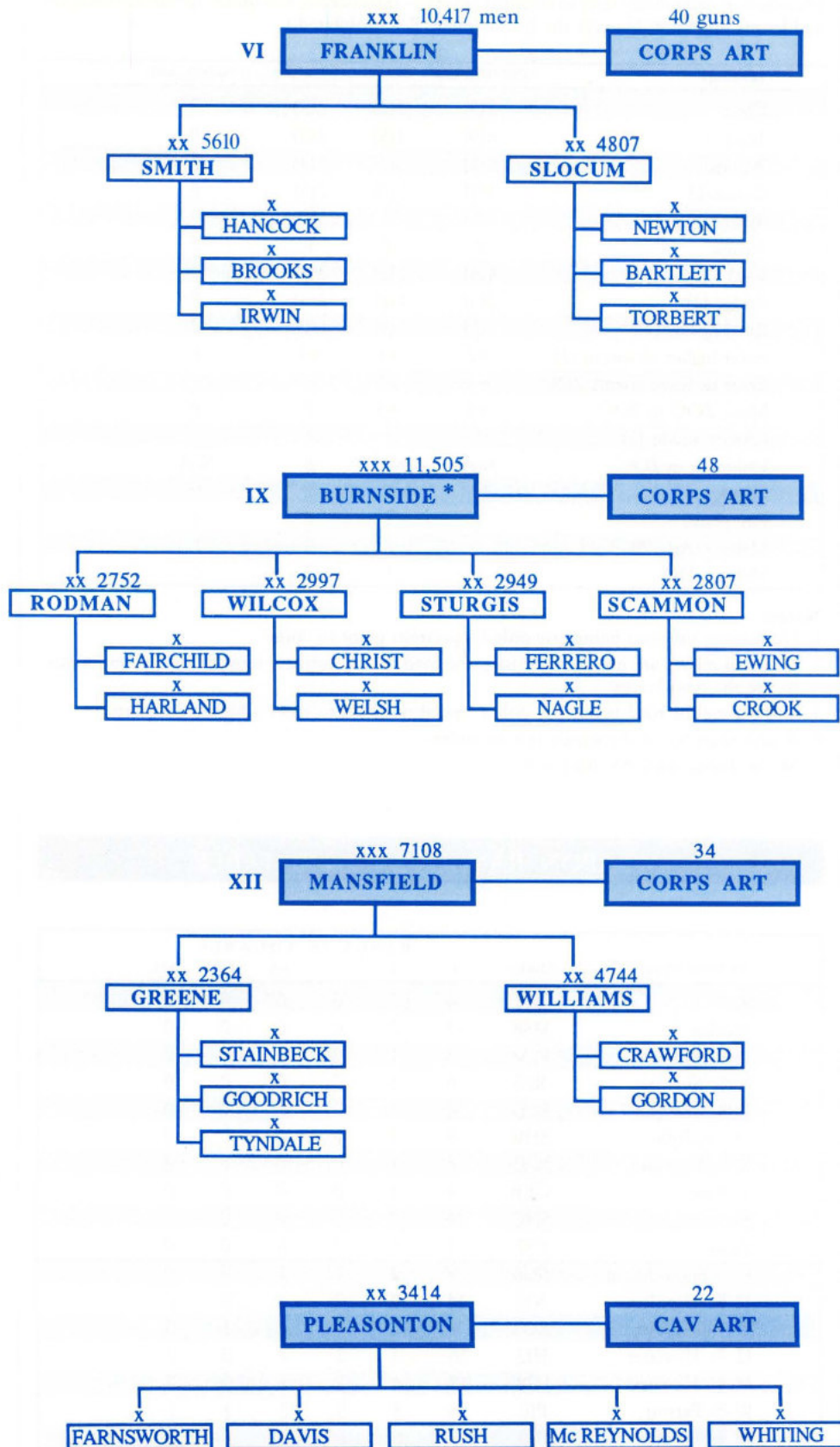
CONFEDERATE ORGANIZATIONAL CHART



UNION ORGANIZATIONAL CHART



UNION ORGANIZATIONAL CHART (cont.)



* Although Cox was not a divisional commander, he was first in line to command the Corps.

OPERATION COSTS TABLE

(Numbers in parentheses refer to diagonal moves — directions 2, 4, 6, and 8. Ignore the numbers and letters printed in blue for the BASIC game. P = Prohibited.)

TERRAIN	INF./DIS. CAV.	CAV.	LIMB. ART.	UNLIMB. ART.
Clear	2(3)	1(2)	2(3)	P
Town	6(9)	3(5)	3(5)	P
Woods	5(7)	2(3)	2(3)	P
Cornfield	3(5)	2(3)	2(3)	P
River	P	P	P	P
Stream	P	P	P	P
Ford	4(6)	1(2)	3(5)	P
Bridge (1)	2(3)	1(2)	2(3)	P
Road bonus (2)	1(P)	1(P)	1(P)	P
Enter higher elevation (3)	+2	+1	+3	P
Enter or leave enemy ZOC	+2	+1	+3	P
Move ZOC to ZOC	+8	+5	P	P
Change mode (5)	2	2	4	4
Unlimber in ZOC	N/A	N/A	8	N/A
Fortify	12	P	P	P
Fire phase	2	2	P	4
Melee – Att. (4)	2	2	P	P
Melee – Def.	1	1	2	2

Notes:

- Units using the road bonus pay only 1 operation point to enter.
- Diagonal moves are not allowed using the road bonus. Infantry must be in Column mode to use the road bonus.
- Units using the road bonus pay only 1 operation point to enter a higher elevation.
- A unit must fire at the square it is to melee.
- Mode change for CAV ART is 2.

WEAPON/RANGE CASUALTY TABLE

WEAPON TYPE	ABREV.	RANGE IN SQUARES					
		1	2	3	4-6	7-10	11-15
Rifle	RFL	4	2	0	0	0	0
Musket	MSK	3	0	0	0	0	0
Rifle/Musket	R/M	3	1	0	0	0	0
Rifle/Sharps	R/S	6	2	0	0	0	0
Rifle/Shotgun	R/G	4	1	0	0	0	0
Sharps Rifle	SHR	8	2	0	0	0	0
Rifle/Carbine	R/C	4	1	0	0	0	0
Carbine	CRB	4	1	0	0	0	0
Shotgun	SHG	4	0	0	0	0	0
Pistol	PST	1	0	0	0	0	0
6 lb. Smoothbore	SM6	8	2	2	1	0	0
12 lb. Napoleon	N12	14	4	2	1	0	0
3" Rifled Gun	RG3	8	5	4	2	1	0
12 lb. Howitzer	H12	16	2	2	1	0	0
24 lb. Howitzer	H24	17	4	2	1	0	0
10 lb. Parrott	P10	8	5	5	2	2	1
20 lb. Parrott	P20	8	6	6	2	2	1

The number under the range column is the number of men lost per 100 men for small arms fire and per one gun for artillery. These numbers are further modified by the various strength/casualty modifiers.

MELEE COMBAT RESULTS TABLE

Compare the results of the following formula with the table below:

$$(\text{Attacker's Mod. Strength} - \text{Def. Mod. Strength}) / 50$$

DIFFERENTIAL FROM ABOVE	ATT. LOSSES	DEF. LOSSES	% ATT. RETREAT	% DEF. RETREAT
-7 or less	Random of 25 + 150	Random 25	50%	0%
-5 to -6	Random of 25 + 50	Random 25	50%	0%
-4 to 4	Random of 25	Random 25	20%	40%
5 to 12	Random of 25	Random 25 + 50	0%	100%
13 and more	Random of 25	Random 25 + 100	0%	100%

Defender's retreat is checked first and then the Attacker is checked. Both the attacker and defender (except for routed units) will not retreat at the same time.

FATIGUE RECOVERY TABLE

CONDITION	AMOUNT RECOVERED
Unit in enemy ZOC = Eff. Rating/3	
Unit not in ZOC = Eff. Rating/6	

FATIGUE GAIN TABLE

ACTION	FATIGUE GAIN
Enter square in normal mode	2
Enter square in column mode	1
Fortify one level	20
Per 2 casualties in men (see below)	1
Per one operation point of force march	6
Leader dies in unit	5
Routed unit passes through friendly unit	5

NOTE: Units with over 600 men in them will gain proportionately less fatigue up to 1000 men. For example, a 600-man unit gains 1 fatigue point per 3 losses (33% of casualties turn into fatigue). A 900-man unit would gain 1 fatigue per 4½ men lost (16%).

DISRUPTION RECOVERY TABLE

Units must be in command control and have a morale of greater than 40.

	PERCENT CHANCE TO BECOME UNDISRUPTED
Brigade leader alive & not in ZOC	80
Brigade leader dead or in ZOC	60
Brigade leader dead & in ZOC	40

NOTE: In the Intermediate Game, the leader is assumed to be alive.

AMMO RESUPPLY TABLES

Eligibility Table: Chance to go to Resupply Table. 50% chance to go to Resupply Table for CAV, CAV ART, Confederate ART, and Evans Brigade.

RANGE TO DIV. LEADER	PERCENT CHANCE OF GOING TO RESUPPLY TABLE
0	Auto - Resupply*
1	Auto - Resupply*
2	90%
3	70%
4	50%
5	30%
6	10%
7	Auto - No Resupply

* Resupply Table is skipped.

Resupply Table: Chance to become re-supplied with ammo.

	UNION (Mid Turn)	CONFED. (Mid Turn)
Art.	70% (35%)	50% (25%)
Inf./Cav.	90% (45%)	70% (35%)

FIRE AND MELEE STRENGTH/CASUALTY TERRAIN MODIFIERS

If the defender is in:

TERRAIN	FIRE MOD.	MELEE MOD.
Clear	1.00	1.00
Cornfield	1.00	1.00
Woods	.80	1.00
Higher Elev.	.90	.90
Town	.70	1.00
Bridge/Ford	1.00	.80*

*Attacker on bridge/ford

MODE MODIFIERS ON FIRE AND MELEE STRENGTH/CASUALTIES

MODE	UNIT TYPE	FIRE	MELEE
Normal	INF	1.00	1.00
Column	INF	.75	.75
Mounted	CAV	.75	1.50
Routed	ALL	.75	.50
Lim. or Unlim. Art.	ART	1.00	1.00

OTHER MODIFIERS ON FIRE AND MELEE STRENGTH/CASUALTIES

Leader Bonus = Direct Modifier
(See Order of Battle)

Flank Modifier to Attacker = 1.50

Flank Modifier to Defender = .50

Density Modifier = 1% more or less casualties per 12 men more or less than 650 men in the square. No more or less casualties than 25%.

Random Modifier = ±50% (.5 to 1.5)

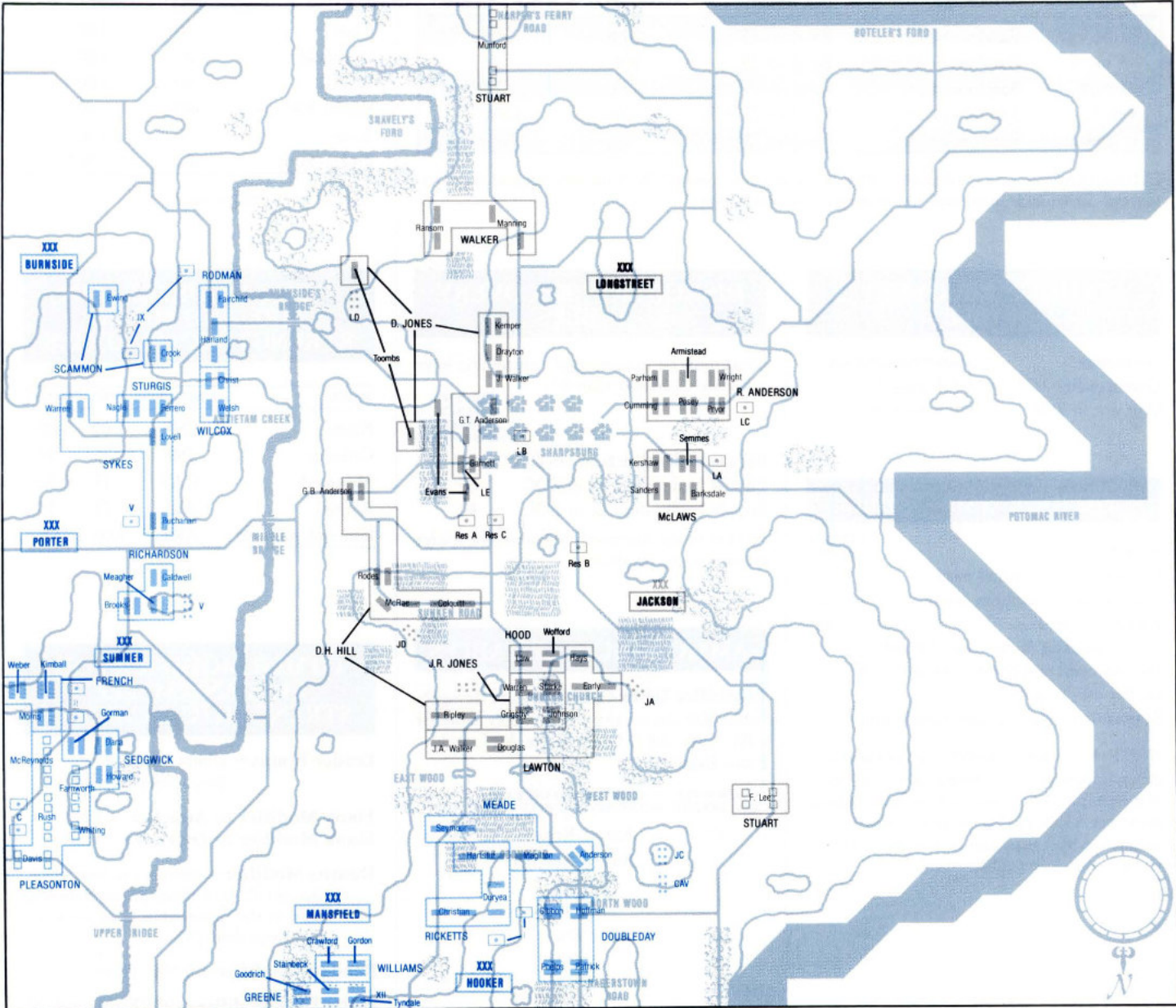
Battle Time Modifier = (OP Remaining)/10

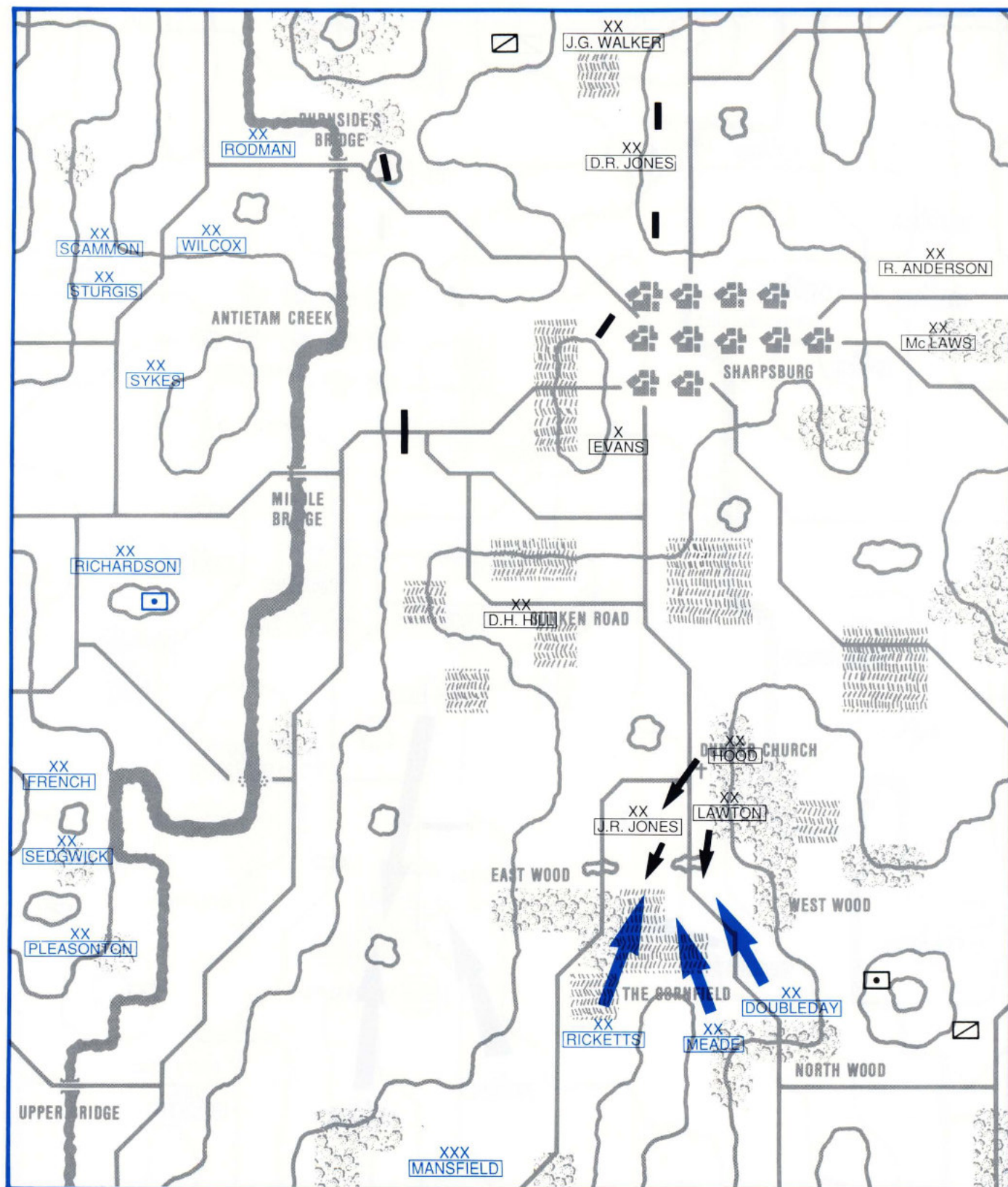
NOTE: This modifier is for fire combat, not melee. A unit is assumed to always have at least five operation points remaining.

Fortification = Level × .10

NOTE: This modifies Att. Fire Strength.

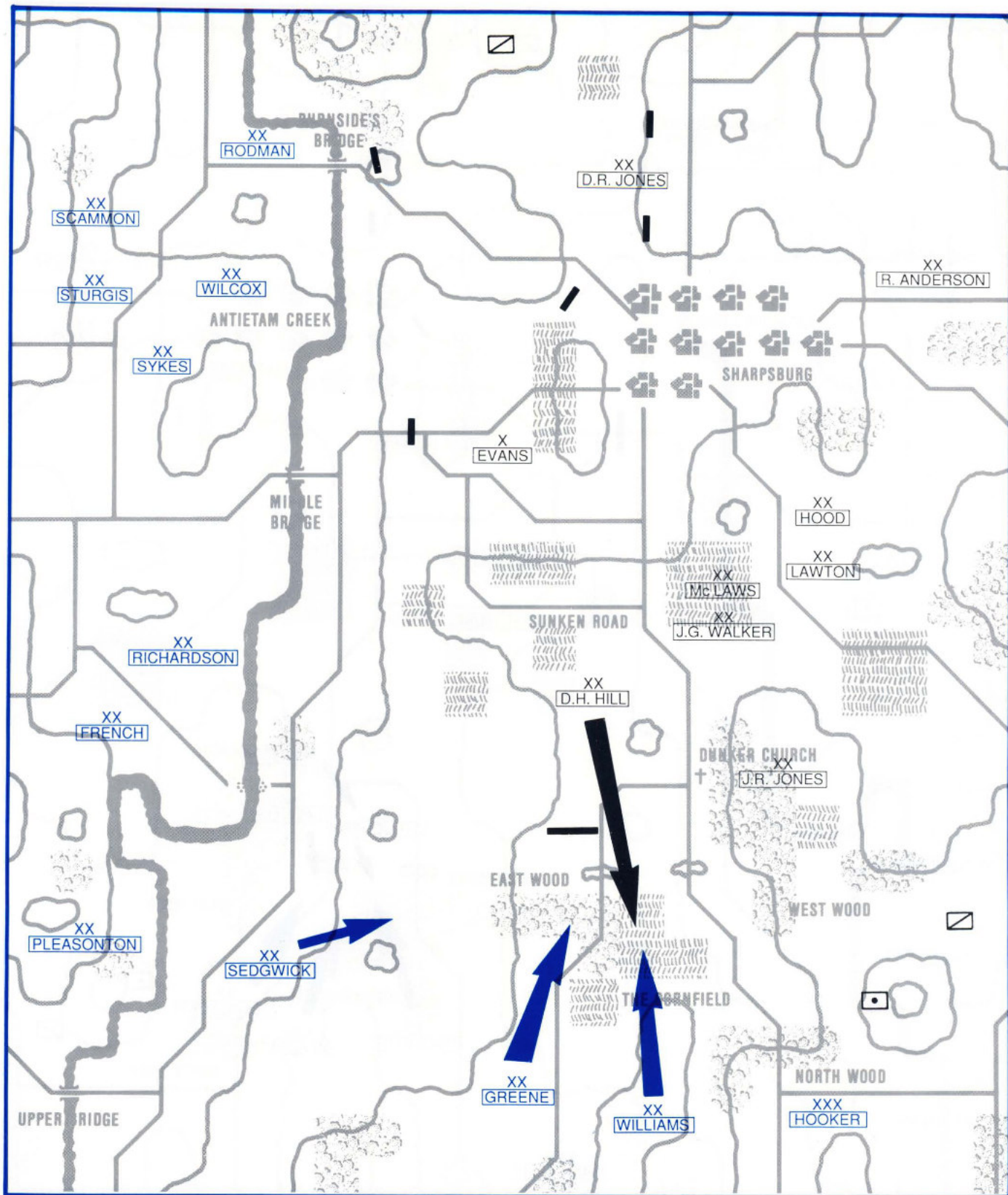
INITIAL SET-UP





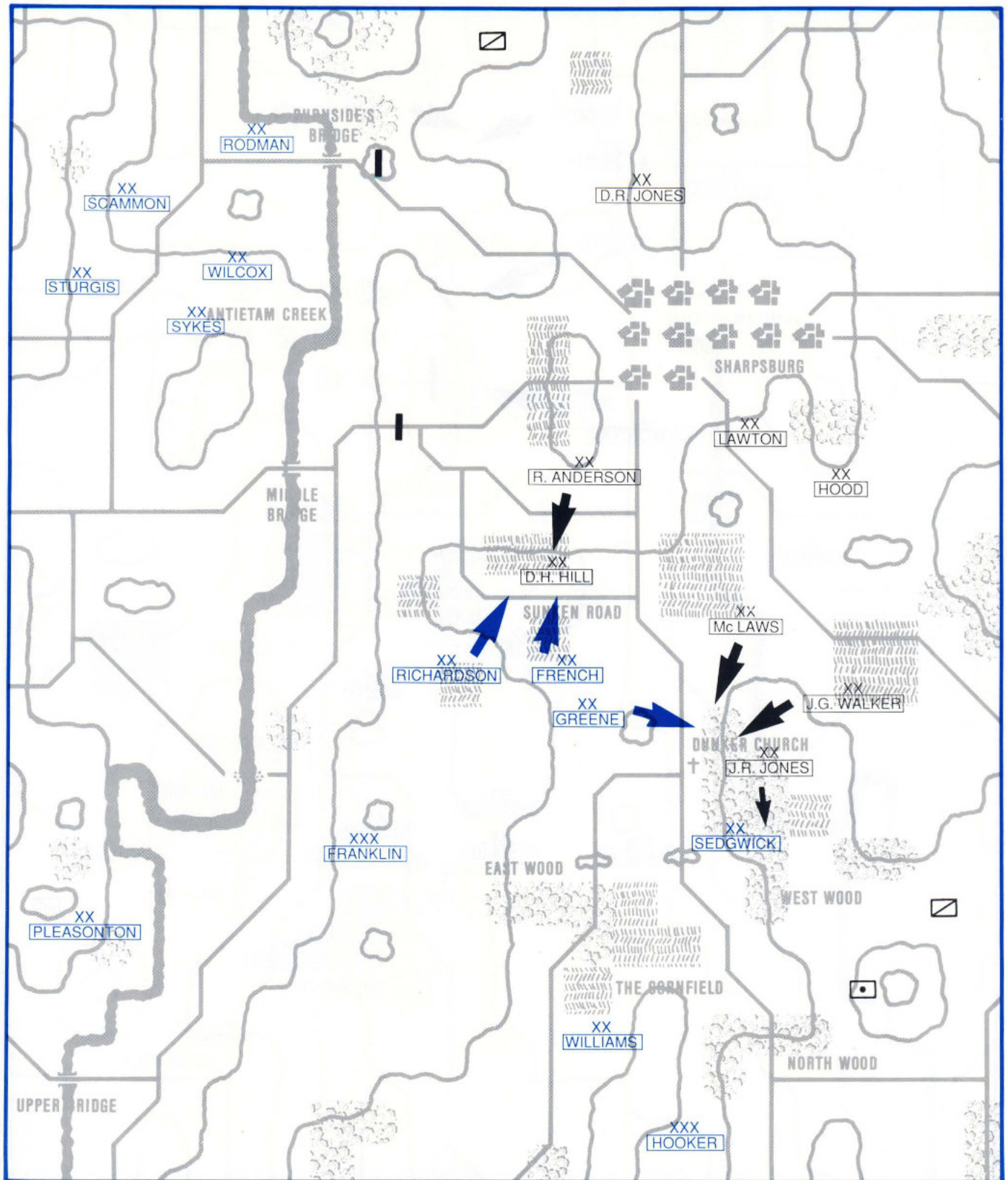
HISTORICAL SITUATION MAP

ATTACK OF HOOKER'S CORPS
6:00 AM to 7:30 AM



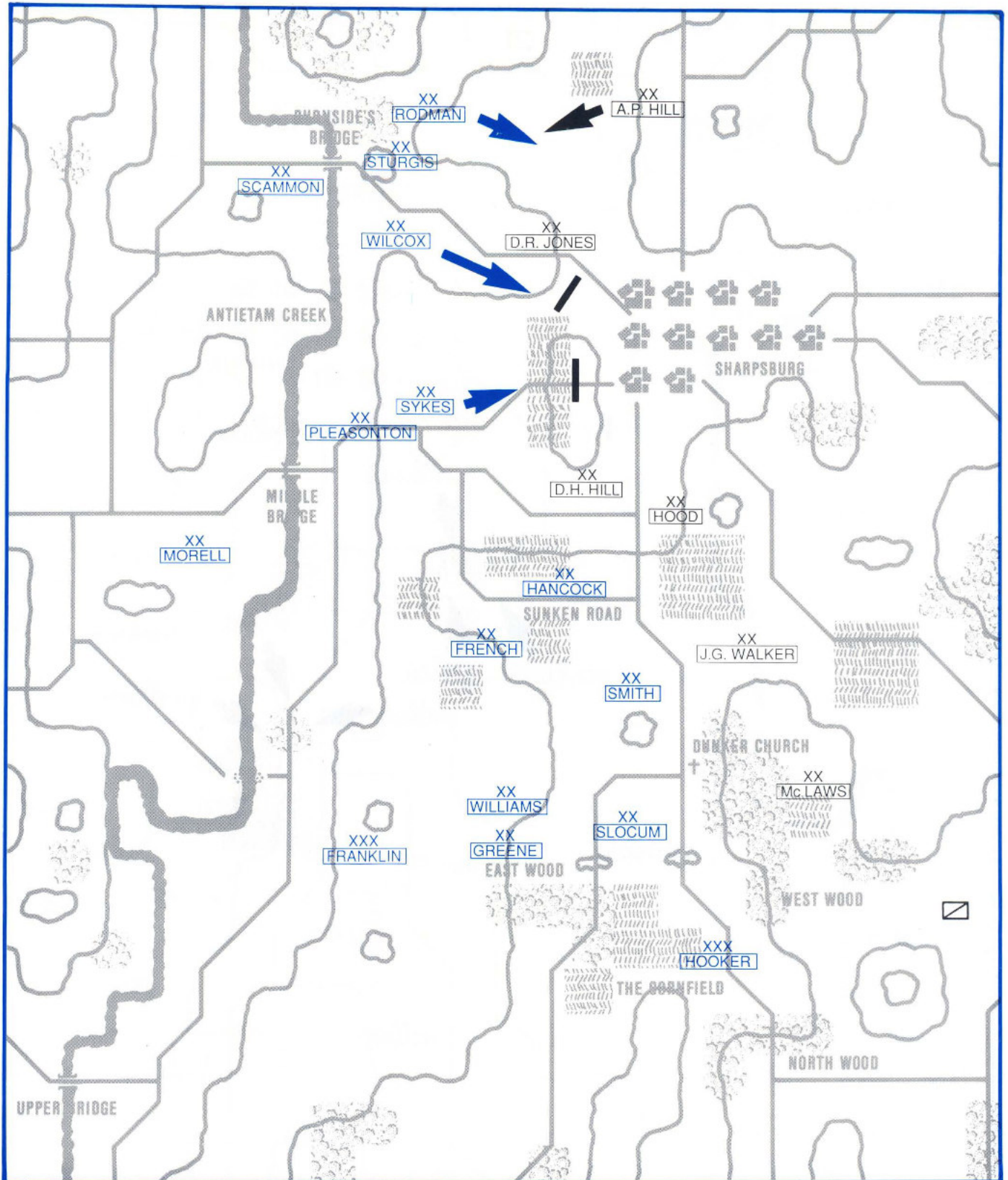
HISTORICAL SITUATION MAP

ATTACK OF THE UNION 12 CORPS
7:30 AM to 9:00 AM



HISTORICAL SITUATION MAP

ATTACK OF THE UNION SECOND CORPS
9:00 AM to 1:00 PM



HISTORICAL SITUATION MAP

ATTACK OF THE UNION 9TH CORPS
1:00 PM to 4:30 PM

ANTIETAM: Indecision's Triumph

By Robert S. Billings

General George B. McClellan gazed out over the rolling terrain—largely open but with scattered patches of forest about—and waited for the first sounds that would tell him Hooker's I Corps had started the battle.

It was to be his battle—his masterpiece, he hoped. Although he had planned and commanded the Peninsula campaign that had taken him to within six miles of Richmond, he had never had the experience of commanding a full-scale clash of armies on a single battlefield. The Peninsula campaign had been a careful sliding forward and overcoming prepared positions with cautious sieges. He had been criticized for being too slow, but he was convinced his plan had been strategically sound—and would have worked if that amateur strategist, President Lincoln, had not countermanded his orders to McDowell's huge corps, keeping it from him at the crucial moment. And so Lee, with forces that McClellan was sure were vastly superior in number to his own, had attacked. Things had been very tricky there for a while, but McClellan had recovered fast, conducted a masterful retreat over almost impossible terrain—only to find his efforts rewarded by being ordered to send his troops back to Washington, where most of them had been given to that western buffoon on horseback, General Pope.

This new hero of the politicians and the newspapers had promptly taken the men McClellan had trained into an army and led them straight into a disastrous defeat at Second Bull Run. Suddenly their tunes had changed—all those politicians and journalists. Lee was across the Potomac and moving through Maryland—nobody knew where, but panic was everywhere. That was when they had had to come and ask him, George B. McClellan, to save them.

He had put aside all thoughts of the personal wrongs done him and accepted the command back. And this time he hoped they had learned their lesson and would leave all questions of strategy and tactics for the expert intelligence of the army commander himself. An army was not to be run by journalists or politicians or even a clown of a rail-splitter President.

He'd been worried there for a bit, he had to admit. There was no solid intelligence concerning Lee's troops—they seemed to be marching and counter-marching all over the state of Maryland. But then he had had it—his own stroke of luck. Lee's Special Order 191, it was called.

Picked up on the site of a former Confederate bivouac by one of his own soldiers and rushed to his headquarters, it had told him all he needed to know. Lee had recklessly divided his force, sending half of it back to capture the 12,000-man garrison at Harper's Ferry, while Lee himself stayed with the remnant of his troops further north. McClellan was sure he had him this time.

The order had been delivered to McClellan about noon on the 13th. He had had his corps moving by the morning of the 14th. He had sent Franklin's VI Corps to relieve the besieged garrison at Harper's Ferry. The rest he had ordered through South Mountain to get at Lee before he had reassembled the pieces of his scattered army.

Things had not gone perfectly. Lee had managed to hold the pass through South Mountain during the 14th. But the next day McClellan's men had made it through and he had begun to put together his own grand plan for the battle which would decide it all.

He had not rushed into anything. He had had the positions for the big guns picked carefully; he had made his own plans for the infantry corps without undue haste. Nothing should go wrong this time.

His plan was simple but, he was sure, sound. Attack the Confederate left with as much as three corps if necessary; attack the Rebel right with another large corps—and hold back a full corps or more to hit the center hard when the enemy was fully committed and had begun to waver. He liked the sense of balance in it. There would be no wild floundering such as Pope went through in that Bull Run disaster.

It had been too late to attack on the 15th when all his arrangements had been completed. And then at dawn the next morning there had been a heavy ground fog. He had been uncertain about starting his major attack under such conditions. So he had waited—finally deciding to put the whole thing forward another day. The attack would jump off at first light on the 17th.

It was unfortunate that Harper's Ferry had not been able to hold out a little longer. Colonel Miles, an old army man, should have been able to do better there. He had surrendered them all—lock, stock and barrel—on the 15th.

Well, a commander couldn't look out for everyone—especially when he had had his command taken from him and then, without preparation, been told to pick up the pieces of someone else's mess and save the Republic. He had to concentrate now on this battle. If he could win it, truly it would justify all his past decisions.

A rumble of artillery fire two miles to the west told him it had begun.

As day dawned and the landscape brightened except in spots where the morning fog lingered, the great blue machine stirred itself for the action ahead. The Army of the Potomac had approximately 87,000 soldiers present for the battle—but it was perfectly representative of the long day of blunders that lay ahead that Joe Hooker's I Corp, containing 9,010 men, would hit the Confederate line alone and unsupported. It is true that McClellan had arranged for support: Mansfield's XII Corps and Sumner's II Corps were to be on call for action on this flank. But Mansfield's troops were over a mile from Hooker's, and Sumner's were even further removed from both of them. And it is not at all clear who was supposed to make the coordinating decisions. Hooker was originally under Burnside's direction—but now Burnside was on the far southern flank and angry at having lost control of half his former command. And Sumner, who had been in general control of both XII and II Corps, was not trusted by McClellan to play so large a role; consequently, Little Mac had arranged that Sumner would come in only after Hooker and Mansfield had been committed—thus making it impossible for Sumner to exert control over any troops but his own (and as things turned out he couldn't keep even one corps properly coordinated).

The upshot of all this was that no one apparently was coordinating the actions of the three corps, and their massive combat power was dissipated like that of a block of TNT broken up into a hundred little fire-crackers.

But the soldiers were moving forward now—the bloodiest day in American history was under way and the generals would be dragged into the vortex as haphazardly as the tens of thousands of private soldiers. As a matter of fact, no fewer than eighteen general officers, North and South, would become casualties before the day was over. It would not be a day memorable in the annals of tactical history, but it would be a day remembered for its unbelievable death toll.

Hooker's 9,010 were opposed by 7,700 men under Jackson, and the Union men were determined to show their new commander (they had formerly been McDowell's corps) that they could fight. Hooker attacked with Doubleday's division along the Hagerstown road, Ricketts' division to the left in the cornfield, and Meade's division (except for one brigade which had gotten into a fight the previous evening in the East Wood and resumed it at daybreak) in the center in reserve.

Along the Hagerstown road the battle was heavy. Stuart's guns on Nicodemus Hill were firing into the Union flank and guns from the Dunker church area were hitting them from the front. The open right flank was a continuing problem. Gibbon's Black Hat Brigade was trying both to attack the front and defend the flank. This latter chore at first fell to a mere two companies. Then after fog and smoke obscured the flanking companies temporarily, they were mistaken for Confederate troops, fired into, and withdrew precipitately. Doubleday moved in Patrick's brigade to help out on the flank, and this restored the situation there for a time. Doubleday's men, though suffering heavy casualties, pushed on down both sides of the road—those on the left going through what was to become famous as "the cornfield" and approaching within five or six hundred yards of the Dunker Church, which was to become the key landmark in the battle on the Union right.

Ricketts' division, attacking on the left of Doubleday's, was having all sorts of coordinating problems. His first brigade to attack, under Duryea, gave a good account of itself. They went into the eastern end of the cornfield, held together under artillery fire, and made it to the south end of the field. As they came out of the corn they were met with a tremendous blast of fire from Confederates who had been waiting. Both sides stood up and blazed away at each other for a number of minutes, with men on both sides falling in great numbers. By an apparently mutual decision, both sides then went to the ground and continued the battle from there.

With ammunition running low, Duryea looked about for his support. There was none to be seen. The rest of his division had apparently disappeared. Finally, with casualties mounting and afraid of being caught alone with such a meager force, Duryea withdrew his men. The support of Ricketts' other brigades at the crucial moment could have given them an important victory and a key part of the battlefield. Duryea's men had fought well; over a third had become casualties—but their fighting force was exhausted for the day with nothing (beyond considerable Confederate casualties) to show for it.

The mystery of the missing two brigades is illustrative of the command problems of the Union that day. In one case the commander had been wounded while reconnoitering and his command stood around waiting while Duryea's men had attacked, fought, and retreated. In the second case the brigade commander, after some initial shelling, cracked up and headed for the rear to escape the artillery. Both brigades were eventually brought up by other leaders. One fought well, with one of its regiment's losing 224 of 334 men. But there had been time for Southern reinforcements to be rushed in, and they began to push the Yankee brigade back. Only then did the other brigade (whose commander

had retired so ingloriously) get up and into action. By now the attack was over an hour old. These men were hit by reinforcing Confederates, and three of four regiments were soon withdrawn through the East Wood. The fourth stayed and fought until more than half had become casualties. Only then did they withdraw—slowly and still under firm discipline.

But Hooker's powerful punch was fast losing its power. Ricketts' division was through for the day. Doubleday's had fought left but could not hold on long alone. Meade's division (with only two brigades available to him now) could do little to restore the situation.

As great chunks of the Confederate left began to disappear in the Union assault, Hood's division, in reserve in the West Wood by the Dunker Church, was called up. These men, many of them Texans, drove up into and right through the cornfield to its northern boundary. Their left extended to the Hagerstown road, their right well into the East Wood. They arrived at the north edge of the cornfield in time to catch one of Meade's brigades in flank as it marched to reinforce its comrades in the East Wood. The Texans settled down to a systematic slaughter.

Doubleday's men, meanwhile, had fallen back stubbornly before an attack from their right front and flank by two new Southern brigades under General Starke. Though Confederate casualties had been high and their line maintained only by rushing in reinforcements, Northern casualties had been even higher—and they had almost nothing to show for them. It was clearly time for reinforcements for the Union side.

They were coming—under General Mansfield, an old-line army officer who had been desperately working to get a major combat command and had succeeded only two days before, when he was given XII Corps. Anxious to get his men forward, he had had them aroused early. But he had no clear orders to enter the battle yet, and his men were kept busy falling in and out and trying to heat coffee in between. When word came to reinforce I Corps, the commanding general kept his leading division in massed column formation, even as they approached the battlefield. He was afraid that "volunteer" troops would break and run unless kept in solid formation.

Some of his subordinates argued with him about the unnecessary risk of staying in such massed formations when they were beginning to come under artillery fire, but he was adamant. He had worked long for this command, and he was going to be sure it attacked as he wanted it to.

His task was complicated by the fact that he had so many new regiments that had never seen battle. They were large, unwieldy groups of men untrained in battle drill and therefore very difficult to form up for an attack. But he finally got them spread out from the Hagerstown road across the pasture and into the East Wood. There was some confusion about whose side some troops firing from the East Wood were on. Mansfield was sure they were Union. Some of his men who had been fired on assured him they were Rebel. A new burst of firing convinced the general the men were right—too late. One round of the burst caught him full in the chest with a mortal wound.

There was now further delay. Then General Williams, who had commanded the corps temporarily two days before, resumed the command and gave the order to advance. They drove through into the cornfield (that same deadly landmark, now filled with dead and wounded from both sides) and, on their left flank, into the East Wood. Confederate reinforcements had arrived but not enough to handle this full corps striking with most of its force concentrated into a single blow. Furthermore Greene's division, having cleared the remaining Rebels out of the East Wood, found themselves where someone should have placed Union troops in the first place—right on the flank of troops in the cornfield. With this terrible fire coming in from the flank, Confederate leaders could do nothing but try to get the remnants of their men back into the West Wood and reorganize some sort of defense there.

While much of the XII Corps drove straight ahead, taking again the ground I Corps had taken earlier in the cornfield and along the Hagerstown road, Greene's men continued south until they came out of the East Wood nearly opposite the Dunker Church. With little to oppose them there he stopped briefly to get some artillery support and then drove right up to within two hundred yards of the church itself, forcing the main group of Southern artillery that had been in position here to pull back. Finally, a large regiment of Pennsylvania rookies came up and were ordered across the road and into the trees around the church. Now even the West Wood, the haven from which the Confederate attacks had sprung, had been punctured. Things were at last beginning to look very good for the attackers. Jackson had little left to oppose a determined attack with. Lee was methodically stripping his right flank to raise reinforcements—but they would take some time to get from one wing of the army to the other. The chance for the knock-out punch (which had been there momentarily and then lost during I Corps' earlier attack) had come round again. Would the moment be seized this time?

It was now nine o'clock. Three hours and about 8,000 men (on both sides) had been expended in some of the hottest fighting in the war. And it was at this point, with everything ready for a commander on the field who would move fast and decisively, that Hooker was wounded and had to be carried from the field. Hooker, as the initiator of the battle, had been in control of the entire right-flank action. Now Sumner would be called in with his II Corps. McClellan, who doubted the ability (though not the courage) of this old veteran of forty years' service, had carefully arranged things so that Sumner would not have to exercise independent command over a large body of troops. Normally he would have had control over both his own giant (15,834 men) II Corps and Mansfield's XII Corps. Mansfield's men had been committed while Hooker was on the ground and in control. Now Sumner's huge corps (equal to Hooker's and Mansfield's combined) would enter the fray — with no one except its own ancient leader to decide the outcome. It seemed as if the fates had determined to dangle victory before the

Union troops all day—and then deprive them of the leadership they needed to drive through to that victory.

Sumner might not be a tactical genius, but some of his instincts were sound enough. He had felt the way to victory was to commit his entire force along with I and XII Corps. Consequently he had had his men up early and ready to move forward at a moment's notice. For three hours he had been listening to the roar of battle in the distance and anxious to go. Now he was to be turned loose.

McClellan had positioned II Corps east of Antietam Creek opposite the central portion of the battlefield. It would take Sumner considerable time to march his troops up to and over the northern bridge where the other two corps had crossed. He cut this time by finding a ford and crossing opposite the Dunker Church. From there he had his men hurried forward while he tried to find out the situation (he had almost no information of the many events of the morning's fight). When he found the wounded Hooker, that general was barely conscious and could tell him nothing. He could see no formations of troops on the field except for a few men clinging to the ground across from the Dunker Church. (These were some of the forces which under Greene had had such success a short time before but were beginning to feel isolated.) To Sumner it looked as if almost the entire two corps who had attacked ahead of him had been destroyed. He obviously had to get his men into action fast. But where should he lead them?

He finally found General Williams, who had taken over for Mansfield. Williams tried to explain the situation, but it all seemed too complicated to the old veteran of the Indian wars. He needed simple directions. His leading brigades were fast approaching and he had to attack somewhere fast. Unlike McClellan he trusted not in caution but in action.

Leaving Williams without apparently having heard anything he had said, Sumner started his men in a massed body toward what he thought would be the enemy's flank. He had with him only Sedgwick's division of three brigades (over 5,000 men). His second division under French was coming twenty minutes behind Sedgwick. His third division (Richardson's) had been held in place as McClellan's reserve until it was replaced by one of Porter's V Corps divisions. The fate of II Corps was thus being decided by the extreme rashness of one commander and the extreme caution of another.

Sedgwick's division was advancing on a single-brigade front—over a quarter-mile in width, but one brigade directly behind another with only fifty yards between them. Sumner rode at the head. He directed them toward the West Wood somewhat to the right of the Dunker Church where he could see neither Union nor Confederate troops.

The troops that were there had learned the hard way not to make their presence obvious. There were the remnants of I and XII Corps holding the positions they had finally gained after the morning's slaughter—but they were badly scattered, for the most part, and under little organized control. There were at the moment very few Confederates, and those in little condition to sustain a major attack. But Lee had more on the way.

"Tige" Anderson's brigade and McLaws' division were hurrying toward the Dunker Church (McLaws' men were among those who had been at Harper's Ferry and had reached the battle area only in time for a short rest before they were rushed forward to prop up the decimated right wing). Jackson saw the huge Yankee division approaching and sensed in a moment his chance for getting maximum use out of the reinforcements Lee had sent. Sumner's men were marching in a formation which gave them enormous power to the front—but not even room to maneuver if attacked from the flank. Jackson's new troops would come in squarely on Sumner's flank if the latter kept marching a quarter-mile into the West Wood. And Sumner was doing just that—crossing the Hagerstown road and proceeding in brigade front into the West Wood.

There is a time-worn piece of advice for young American army officers that goes: "Don't just stand there, Lieutenant. Do SOMETHING!" General Sumner may or may not have received such advice as a young subaltern, but he certainly was acting as if he had—and was following it to the letter. He might have no idea at all what was going on, but he was doing something—and doing it in spades. And he was about to find out old army slogans are no north star to cling to rigidly for direction.

When the first volleys hit Sedgwick's left flank, the horrible realization of exactly what kind of a mess he had led his men into finally dawned on the white-haired old Sumner. Confederates came poured in from three sides. General Sumner, courageous old soul that he was, never wavered. He rushed about on his horse, ignoring all the bullets, trying to restore some kind of order so the men he still had left could get out of the mess they were in. They retreated the only way they could—to the north—finally slowing and stopping the attack, but not before they had been swept way back to the North Woods.

The fine prospects of the Northern right flank a mere few minutes before had been nearly washed away. Although Greene clung to his foothold by the Dunker Church, troops who had joined his line and extended it to the north had also been driven back. And that expanse of terrain littered with thousands of wounded, dead and dying—the cornfield and the fields around the Hagerstown Turnpike—were no longer solid Yankee territory, but a wasteland in which McClellan, when he visited the northern flank shortly after, could find only further grounds for the utmost caution. Sedgwick's large division of veteran troops had taken over 5,000 men into that grand march into the West Wood—and nearly half of them were now dead or wounded, and the rest so scattered and demoralized by what they had been through that few on the field considered them any longer combat-worthy.

But Sumner's other two divisions were about to appear on the scene. At 9:30 General French was already across the Antietam, and General Richardson was finally released to enter the battle. Unfortunately, French, as he gazed out across what he could see of the battlefield, could discover no sign of his commander or Sedgwick's division. And crusty old Sumner, trusting direct action as his only guide, hadn't thought of such a detail as leaving a few route markers with some clear orders for his subordinate. French did the best he could. He saw Greene's men up ahead by the Dunker Church and decided to take his own men in on their left flank. This would bring him up against D. H. Hill's men, settled in a strong position along a sunken road that angled out from the Hagerstown Turnpike a few hundred yards below the Dunker Church. It ran eastward for a quarter-mile, after which in a series of jogs it turned south to the Boonsboro Turnpike.

Hill's men had built a barricade of fence rails to increase the protection the sunken road had already provided. They were ready and waiting.

French's men advanced willingly enough—even though some of the regiments were completely new. They had protection against direct rifle fire during much of their advance, as the sunken road was on the reverse slope of a ridge and the Union troops could not be seen until they topped a rise about 200 yards from the Confederate line. So the ranks swept grandly on, in clear view of McClellan and his staff on their hill in the distance. After chasing Confederate skirmishers out of the Roulette farm, the soldiers had their first brush with a surprising enemy. Confederate artillery hit among some beehives in the farmyard, stirring the bees to a spirited defense against the invaders, and it took some time to get the fleeing and desperately swatting soldiers back into formation. But after a wasted few minutes the line was reformed and again swept on.

All went well until they topped the rise and started down. The Confederates unleashed a devastating volley, knocking down men in the front rank like ten-pins. Back they went—to reform and try again. The firing reached a crescendo; lead was flying from thousands of rifles on both sides as fast as they could be reloaded. Casualties mounted quickly. Even in the relative protection of the sunken road, corpses were soon lying in increasing numbers among the soldiers still firing from that constricted space. The Northern troops were game and spent themselves in futile rushes that were always stopped short of the road. Finally they had to settle for lying and pouring their own fire into that great jumble of bodies firing from the road.

This was the situation when General Richardson came up with his division. He sent his men in on the left of French's division, protecting that body's right flank from possible counterattacks. While the wild fighting continued, it became apparent that Richardson's men could overlap the right flank of the Confederates, and troops were slowly put in position for such a move.

Confederate reinforcements had been sent forward to help out the defenders, but when the commander was wounded his replacement did not keep firm control of the regiments; consequently many of the troops did not advance all the way to the road, but stayed in a field some distance in its rear. One group of men did reach the road, crossed it and went on past—only to be wiped out by Union fire.

Finally it was too much for the Confederates. Sweating, cursing soldiers were still loading and firing, even as the dead and mangled bodies pressed against them from all sides. But there had to be a breaking point—and it came rather suddenly. The right side of the line went first, followed shortly after (perhaps because of a misunderstood command—but at a certain point human flesh has to crack and the reasons can be thought up later) by the whole left side of the Confederate line.

They rushed back, taking with them the troops who had been sent to their support and were still in the field behind them. In a few moments that whole section of the front had disappeared, the two Union divisions were rushing across the road and down into the fields and an orchard that were nearly on the outskirts of Sharpsburg.

Longstreet and others tried to find something to plug the gap. All that was at hand was some artillery which was so understaffed that at one point Longstreet's staff were serving as cannoners.

Now, once again, the moment was at hand when the influx of a few thousand fresh men could have swept right into and through the center of the Confederate position. And McClellan had those thousands—Franklin's corps was at hand and its commander eager to attack. Though he had been slow and cautious when he was fighting independently a few days before trying to reach Harper's Ferry—now he was back where he felt at home, at the head of his own corps but under an army commander. He was sure he could push through the weakened Confederate line to certain victory.

McClellan considered. It was true there seemed a great chance here. But his visit to the north wing had shaken him. Two full corps there had seemed to vanish like the morning fog. And he had always in mind those phantom thousands he was sure Lee possessed. Committing Franklin's troops here might lead to victory—but what would McClellan do if Lee suddenly appeared on his north flank with those "extra" thousands that were ever-present in the Northern commander's imagination?

No—better not. Victory was an ever-desired dream—but disastrous defeat an even more powerful nightmare. Perhaps Burnside would make it possible for him to have the victory without risking so much.

With General Ambrose Burnside and the Union's IX Corps' attack on the southern flank we come to a fitting finale to this most bloody of all America's days of battle—what some have referred to as ACT III of the Antietam tragedy.

Perhaps it is fitting that this general, who had such an opportunity for attaining military glory through expenditure of the nation's youth, is remembered by the present generation only in the name for a male hairstyle—and even there (i.e. "sideburns") the name comes out wrong-end-first. Burnside could not be called an egotistical man (he had been offered command of the entire Army of the Potomac but had turned it down because he felt he was not "qualified" for such high command). Here he had under him only one corps, but his limitations were certainly well demonstrated. And when he finally did swallow his humility and accept command of the entire army, his one major battle (Fredericksburg) gave the soldiers enough reason to consider even leadership of an infantry squad considerably beyond his meager talents. But now McClellan, who had begun to have his own doubts about the man, had consigned his own military future and the very fate of the Army of the Potomac to this general with the magnificent hairgrowth around the ears.

Burnside had one corps of four divisions, and he had been told to be ready to attack the southern flank in the morning. The attack was supposed to be made close to the time of Hooker's attack on the northern flank. But the orders were not specific as to the hour, and so the attack was not called for until the fight on the north flank had pretty well run down. It was 9:10 before McClellan finally sent word to start the southern-flank attack. It was nearly 10:00 when Burnside and Cox (IX Corps commander but serving under Burnside's direction) received it. It was already too late to help the northern flank. But if Burnside had had his attack ready to jump off upon receipt of the order, it might have helped the center in its fight along the sunken road. Burnside was not ready—nor was anyone else, apparently.

There is no question that it was a rough assignment. Although Lee had drawn off a large part of the southern flank's defenders to reinforce the north, the remaining Confederates had a naturally strong position to defend. The only creek-crossing in the area was the bridge, and that could be defended by infantry concealed in the woods along the steep western bank and by artillery both from the hilltop above and from guns east of Sharpsburg. To make matters worse, all approaches to the bridge from the east, as well as the eastern ground sloping down to the river, were almost all clear terrain. The Union soldiers would have to attack down an open slope, cross through the narrow bottleneck of the bridge, and then scale a steep slope—all under a hail of infantry and artillery fire. The only possibility of cover for an approach to the bridge was in following a farm lane down to the Rohrbach Road—but the junction came 250 yards from the bridge, and men taking this route would then have to follow the river for those 250 yards while under heavy fire from the flank just a few yards away on the far bank. It was a tough nut to crack, and more energetic generals than Burnside might have quailed at the task.

First it was necessary to get a regiment down along the riverbank to provide covering fire. The 11th Connecticut tried. They (or most of them) got to the riverbank, but when they tried to provide cover fire they took such heavy casualties themselves that they finally withdrew—having lost nearly half the regiment.

The men they were to have provided covering fire for were having trouble too. Crook's brigade of Scammon's division were to charge straight for the bridge after they were in position. They got lost and ended up nearly a quarter-mile up-river from the bridge—where they skirmished for the next few hours with the Confederates across the river.

Issac Rodman, meanwhile, took his division south of the bridge to cross by a ford that McClellan's engineers had prepared the previous day. It turned out that this ford was between such steep banks that it was unusable. Rodman went on further south, looking for Snavely's Ford—which may have been what the engineers thought they had found, but clearly hadn't. The upshot of all this was that Rodman's entire division was soon out of contact and "off the board" for several hours.

It was time for the men of Sturgis' division to try. The 2nd Maryland and 6th New Hampshire regiments were ordered to take the farm lane to the Rohrbach road—and then charge all out along that deadly stretch of 250 yards that ran beside the river. They were game, setting out on their riverbank run into a devastating fire from both rifles and artillery. Though many dropped, still they kept on—fewer men left at every step. It was finally too much—the remnant of the column simply fell apart. Once again nearly half of the men became casualties.

It was already past noon and messages were flying from McClellan to Burnside telling him to hurry. Sturgis was ordered to try again with another brigade. General Edward Ferraro would now attempt it with the 51st New York and the 51st Pennsylvania. Everyone had had enough of that 250-yard stretch along the river. This time they would line up on higher ground and, accompanied by cover fire from more infantry and artillery, charge across the open ground heading straight for the bridge. If they made it across, one regiment would peel off to the left and one to the right; then they would attack together up the wooded hill.

They started their dash over 300 yards of open terrain, taking casualties as they went. As they approached the bridge it appeared they couldn't make it in one rush, so they took cover along the bank to left and right of the bridge and poured their own rifle fire into the weary and thinning ranks of Confederates. After a short time the fire from across the river seemed to slacken and both regiments made the gallant effort, charging side by side across the bridge. Suddenly they were over! Rebels retreated before them hurriedly up the hill.

Perhaps the battle and McClellan's career could still be saved. The remainder of Sturgis' division was soon across; Crook's men (the ones who had become lost on the first attempt) found a spot where they could wade the river, and far downstream Rodman's division, having finally found Snavely's Ford, crossed and linked up with the other two divisions. It was now after 1:00 in the afternoon. Still, Lee had no reserves left to send to the disintegrating southern flank. Everything had been committed in saving the northern and central sectors of the battlefield. A quick push by Burnside's corps could overwhelm the numerically inferior defenders, and the Union soldiers would be in Sharpsburg, cutting the road to Harper's Ferry and rolling up the battered Confederate line from south to north.

Then Sturgis found out his division had shot up almost all their ammunition. He told the corps commander his men would have to be replaced by another division. Willcox's division was ordered up so the attack could start. Somehow time sped by and it was 3:00 in the afternoon before IX Corps had been reorganized for the attack. All this time, with Franklin's and Porter's Corps now up and largely uncommitted, McClellan put off making a bold play for victory. Burnside was told to hurry—for the rest, Little Mac had his mind fixed on Lee's phantom legions striking on the north wing. Union artillery had been lined up nearly hub to hub waiting for this strike there. But on the southern flank where the fighting was still going on, close-support artillery was sadly lacking.

Lee meanwhile could do nothing but wait and hope. He had been saved again and again through the long day's battle by the fortunate arrival of contingents of troops from Harper's Ferry. By now they had all arrived except for A. P. Hill's division—and those men had not been able to begin their seventeen-mile march to Sharpsburg until after the battle had started that morning. So even though Burnside had lost so much of the day in needless delays, it appeared he might yet provide the force which could gain an overwhelming victory.

So at 3:00 in the afternoon when IX Corps started the final leg of the drive that should bring them to the crucial Harper's Ferry-Sharpsburg road and into Sharpsburg itself, the troops attacked with a sense that a great victory might lie ahead. The long delay had been used to straighten out the front of the corps; they were now attacking with Willcox's division on the right and Rodman's covering the left flank, while each had a brigade from Scammon's division in support. And a little to the rear in reserve was Sturgis' division. Against these there were only about 3,000 Confederates who had been hard-pressed for hours but somehow must hold out without more help from the northern front, to which so many men had been transferred that morning.

Though small units of skirmishers and the thin Confederate lines put up a valiant defense, the Union troops pushed on, gradually eliminating resistance from strong points, and soon they could see the buildings of Sharpsburg looming ever nearer. Willcox's two brigades were nearest the town. The troops in front of them suddenly broke and some of the blue-clad men ran ahead and into the streets of Sharpsburg. They were there at last!

Beside Willcox, Fairchild's brigade of Rodman's division made excellent progress and soon was only two or three hundred yards from the Harper's Ferry road. Harland's brigade of the same division was attacking on their left, and it seemed everything was suddenly going right and one more bound would cut the only road of retreat for Lee's army—putting the stopper in the bottle, with the Southern army caught inside.

That's the way it appeared for a moment. The only thing that went wrong with the attack seemed minor—in Harland's left flank brigade a slight mix-up sent the 8th Connecticut regiment on alone, the two other regiments remaining temporarily behind. But the 8th Connecticut drove ahead gallantly toward a battery of three guns. Straight into cannister fire the blue-clad men charged. The Confederate gunners finally had to withdraw, leaving their guns. The Connecticut boys had done it! They had the guns and they were within a hundred yards of the all-important Harper's Ferry road.

But where were their supporting regiments on the left? The brigade commander rushed back to bring them up.

So close—and yet so far. As the two wayward regiments rushed forward through another of those many cornfields, they were suddenly struck by a hard blast of fire that brought the troops (mostly new men untrained in battlefield maneuver) to an abrupt stop.

And now it seemed that the gods themselves had played their final trick. A. P. Hill's division, hurried along all day by its energetic commander, had arrived at the crucial moment at the necessary spot. If Colonel Miles had held out at Harper's Ferry just a few short hours more . . . or if he had been wounded earlier and a more rational, less stubborn officer had taken command . . . if only somebody somewhere along the way had just made a right decision. . . .

But they had not. And now A. P. Hill was turning back the troops of the two left-flank regiments. The 8th Connecticut, sensing their desperate plight, retired from the position they had won near the road to try to help form a defense line. It was hopeless. Some of the Confederates were wearing parts of Union uniforms captured at Harper's Ferry. The new, untrained troops were not only unable to form a proper line of battle—they couldn't even be sure who was friend and who was enemy. Division commander Rodman, in trying to rush to the danger spot and personally straighten out the confusion, was himself shot from his horse with a mortal wound. Finally the whole flank brigade broke and ran for it.

Once again the Union soldiers had fought and died by the hundreds to gain a victory that was to be denied. With the left flank going, the successful attacks by Willcox's division and Fairchild's brigade had to be stopped and the fruits of their victory lost. The entire Union left flank had to pull back to a safer, more consolidated line that covered the bridge and the key high points around it. They had gained the bridge at great cost, paying it as the price of victory. But there was to be no victory—that would have to wait for more than two years of hard fighting and hundreds of thousands of casualties.

The Union army was still in good position to finish the job the next day. McClellan had committed only about 50,000 men of his 87,000 men. And Lee, surprisingly, despite his precarious position and his greater percentage of losses, kept his troops on the field all night, making no attempt to withdraw.

Many Union officers assumed the attack would continue in the morning. They sensed victory still waiting to be seized by a commander bold enough to make the attempt.

McClellan was not to be the man for it. His army had lost over 12,000; Lee's more than 10,000. No day of battle in American history has come close to matching its gory record. And the confused, blundering battle would have tremendous consequences. It led to the Emancipation Proclamation; it convinced the North that victory, should it come, would have to be bought at a terrible price. Lowest-ranking privates and high-ranking generals alike paid the final price that day. And for McClellan the final price of Antietam was to take his career, filled with the success of building an army that trusted and loved him, and shrink it to a footnote in history. The army would go on to its own hard-bought victory at Appomattox. It would leave behind that day—along with the inert bodies in the cornfield, the West Wood, and the Sunken Road—the slowly shrivelling reputation of its cautious young commander.

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CURSOR MENU

- (V) = Prompts you to indicate a direction and then displays the line of sight.
 (O) = Centers map at cursor.
 (1-8) = Moves cursor in desired directions.
 (T) = Removes units from map to see terrain.
 (S) = Stops time clock.
 (C) = Exits to Combat Phase (Press this key when you are finished moving).
 (SPACE = BAR) = Accesses first unit in square friendly. Command Menu for that unit is now active.

COMMAND MENU

- (O) = Centers map on unit.
 (1-8) = Moves unit in desired direction as indicated by the compass, changing its facing automatically.
 (X) = Force March (adds to the unit more operation points at a cost of fatigue).
 (D) = Prompts you to input a new facing (1-8) for the unit.
 (L) = (Advanced Game Only) Displays a menu with the name of the divisional or corps commander attached and allows you to transfer that leader if you desire. The menu also allows you to go to the divisional or corps commanders.
 (I) = All units that belong to the same division as the accessed unit will be inversed. The square with the divisional leader will be inversed and blinking (Advanced Game).
 (A) = Plots the unit to advance if given the opportunity in fire phases or melee.
 (M) = Plots the unit to melee in the direction of facing.
 (F) = Takes you to the Target Menu which allows you to set a priority fire square.
 (S) = Changes the mode of the unit.
 (B) = (Advanced Game Only) Builds one level of fortification.
 (V) = Allows you to view all squares in the LOS of the accessed unit (squares are inversed).
 (T) = Removes units on map to view terrain underneath.
 (P) = Displays the other page of unit statistics.
 (H) = Displays Help Menus.
 (U) = Accesses next unit in the same square.
 (N) = Accesses next unit in the unit order.
 (Z) = Abort move. The unit you have accessed will return to its original square, facing, and mode with its original operation points and fatigue.
 (Q) = Exits Command menu and goes to Cursor Menu.

OPERATION COSTS TABLE

(Numbers in parentheses refer to diagonal moves — directions 2, 4, 6, and 8. Ignore the numbers and letters printed in blue for the BASIC game. P = Prohibited.)

TERRAIN	INF./ DIS. CAV.	CAV.	LIMB. ART.	UNLIMB. ART.
Clear	2(3)	1(2)	2(3)	P
Town	6(9)	3(5)	3(5)	P
Woods	5(7)	2(3)	2(3)	P
Cornfield	3(5)	2(3)	2(3)	P
River	P	P	P	P
Stream	P	P	P	P
Ford	4(6)	1(2)	3(5)	P
Bridge (1)	2(3)	1(2)	2(3)	P
Road bonus (2)	1(P)	1(P)	1(P)	P
Enter higher elevation (3)	+2	+1	+3	P
Enter or leave enemy ZOC	+2	+1	+3	P
Move ZOC to ZOC	+8	+5	P	P
Change mode (5)	2	2	4	4
Unlimber in ZOC	N/A	N/A	8	N/A
Fortify	12	P	P	P
Fire phase	2	2	P	4
Melee: Att. (4)	2	2	P	P
Melee: Def.	1	1	2	2

Notes:

- Units using the road bonus pay only 1 operation point to enter.
- Diagonal moves are not allowed using the road bonus. Infantry must be in Column mode to use the road bonus.
- Units using the road bonus pay only 1 operation point to enter a higher elevation.
- A unit must fire at the square it is to melee.
- Mode change for CAV ART is 2.

FATIGUE RECOVERY TABLE

CONDITION	AMOUNT RECOVERED
Unit in enemy ZOC	= Eff. Rating/3
Unit not in ZOC	= Eff. Rating/6

DISRUPTION RECOVERY TABLE

Units must be in command control and have a morale of greater than 40.

	PERCENT CHANCE TO BECOME UNDISRUPTED
Brigade leader alive & not in ZOC	80
Brigade leader dead or in ZOC	60
Brigade leader dead & in ZOC	40

NOTE: In the Intermediate Game, the leader is assumed to be alive.

WEAPON/RANGE CASUALTY TABLE

WEAPON TYPE	ABREV.	RANGE IN SQUARES						
		1	2	3	4-6	7-10	11-15	
Rifle	RFL	4	2	0	0	0	0	
Musket	MSK	3	0	0	0	0	0	
Rifle/Musket	R/M	3	1	0	0	0	0	
Rifle/Sharps	R/S	6	2	0	0	0	0	
Rifle/Shotgun	R/G	4	1	0	0	0	0	
Sharps Rifle	SHR	8	2	0	0	0	0	
Rifle/Carbine	R/C	4	1	0	0	0	0	
Carbine	CRB	4	1	0	0	0	0	
Shotgun	SHG	4	0	0	0	0	0	
Pistol	PST	1	0	0	0	0	0	
6 lb. Smoothbore	SM6	8	2	2	1	0	0	
12 lb. Napoleon	N12	14	4	2	1	0	0	
3" Rifled Gun	RG3	8	5	4	2	1	0	
12 lb. Howitzer	H12	16	2	2	1	0	0	
24 lb. Howitzer	H24	17	4	2	1	0	0	
10 lb. Parrott	P10	8	5	5	2	2	1	
20 lb. Parrott	P20	8	6	6	2	2	1	

The number under the range column is the number of men lost per 100 men for small arms fire and per one gun for artillery. These numbers are further modified by the various strength/casualty modifiers.

AMMO RESUPPLY TABLES

Eligibility Table: Chance to go to Resupply Table. 50% chance to go to Resupply Table for CAV, CAV ART, Confederate ART, and Evans Brigade.

RANGE TO DIV. LEADER	PERCENT CHANCE OF GOING TO RESUPPLY TABLE
0	Auto - Resupply*
1	Auto - Resupply*
2	90%
3	70%
4	50%
5	30%
6	10%
7	Auto - No Resupply

* Resupply Table is skipped.

Resupply Table: Chance to become resupplied with ammo.

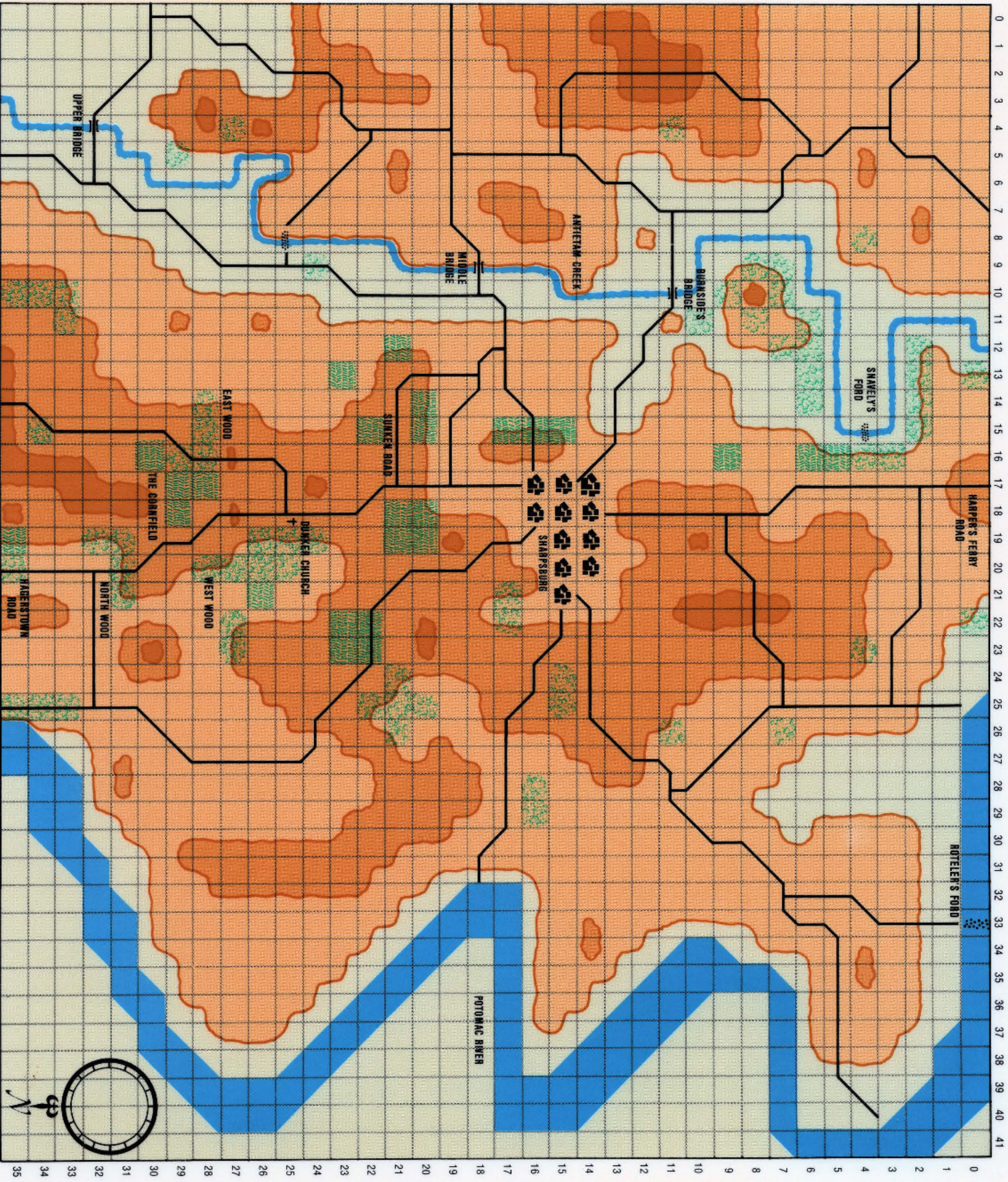
	UNION (Mid Turn)		CONFED. (Mid Turn)	
Art.	70%	(35%)	50%	(25%)
Inf./Cav.	90%	(45%)	70%	(35%)



STRATEGIC SIMULATIONS, INC.

BATTLE OF ANTIETAM

-  Road
-  Potomac River
-  Antietam Creek
-  Bridge
-  Ford
-  Cornfield
-  Ridge
-  Sharpshurg
-  Woods
-  Elevation 1
-  Elevation 2
-  Elevation 3
-  Elevation 4



OPERATION COSTS TABLE

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TERRAIN	INF./ DIS. CAV.	CAV.	LIMB. ART.	UNLIMB. ART.
Clear	2(3)	1(2)	2(3)	P
Town	6(9)	3(5)	3(5)	P
Woods	5(7)	2(3)	2(3)	P
Cornfield	3(5)	2(3)	2(3)	P
River	P	P	P	P
Stream	P	P	P	P
Ford	4(6)	1(2)	3(5)	P
Bridge (1)	2(3)	1(2)	2(3)	P
Road bonus (2)	1(P)	1(P)	1(P)	P
Enter higher elevation (3)	+2	+1	+3	P
Enter or leave enemy ZOC	+2	+1	+3	P
Move ZOC to ZOC	+8	+5	P	P
Change mode (5)	2	2	4	4
Unlimber in ZOC	N/A	N/A	8	N/A
Fortify	12	P	P	P
Fire phase	2	2	P	4
Melee: Att. (4)	2	2	P	P
Melee: Def.	1	1	2	2

Notes:

- Units using the road bonus pay only 1 operation point to enter.
- Diagonal moves are not allowed using the road bonus. Infantry must be in Column mode to use the road bonus.
- Units using the road bonus pay only 1 operation point to enter a higher elevation.
- A unit must fire at the square it is to melee.
- Mode change for CAV ART is 2.

AMMO RESUPPLY TABLES

Eligibility Table: Chance to go to Resupply Table. 50% chance to go to Resupply Table for CAV, CAV ART, Confederate ART, and Evans Brigade.

RANGE TO DIV. LEADER	PERCENT CHANCE OF GOING TO RESUPPLY TABLE
0	Auto - Resupply*
1	Auto - Resupply*
2	90%
3	70%
4	50%
5	30%
6	10%
7	Auto - No Resupply

* Resupply Table is skipped.

Resupply Table: Chance to become resupplied with ammo.

	UNION (Mid Turn)	CONFED. (Mid Turn)
Art.	70% (35%)	50% (25%)
Inf./Cav.	90% (45%)	70% (35%)

MELEE COMBAT RESULTS TABLE

Compare the results of the following formula with the table below:

$$(\text{Attacker's Mod. Strength} - \text{Def. Mod. Strength}) / 50$$

DIFFERENTIAL FROM ABOVE	ATT. LOSSES	DEF. LOSSES	% ATT. RETREAT	% DEF. RETREAT
-7 or less	Random of 25 + 150	Random 25	50%	0%
-5 to -6	Random of 25 + 50	Random 25	50%	0%
-4 to 4	Random of 25	Random 25	20%	40%
5 to 12	Random of 25	Random 25 + 50	0%	100%
13 and more	Random of 25	Random 25 + 100	0%	100%

Defender's retreat is checked first and then the Attacker is checked. Both the attacker and defender (except for routed units) will not retreat at the same time.

WEAPON/RANGE CASUALTY TABLE

WEAPON TYPE	ABREV.	RANGE IN SQUARES						
		1	2	3	4-6	7-10	11-15	
Rifle	RFL	4	2	0	0	0	0	
Musket	MSK	3	0	0	0	0	0	
Rifle/Musket	R/M	3	1	0	0	0	0	
Rifle/Sharps	R/S	6	2	0	0	0	0	
Rifle/Shotgun	R/G	4	1	0	0	0	0	
Sharps Rifle	SHR	8	2	0	0	0	0	
Rifle/Carbine	R/C	4	1	0	0	0	0	
Carbine	CRB	4	1	0	0	0	0	
Shotgun	SHG	4	0	0	0	0	0	
Pistol	PST	1	0	0	0	0	0	
6 lb. Smoothbore	SM6	8	2	2	1	0	0	
12 lb. Napoleon	N12	14	4	2	1	0	0	
3" Rifled Gun	RG3	8	5	4	2	1	0	
12 lb. Howitzer	H12	16	2	2	1	0	0	
24 lb. Howitzer	H24	17	4	2	1	0	0	
10 lb. Parrott	P10	8	5	5	2	2	1	
20 lb. Parrott	P20	8	6	6	2	2	1	

The number under the range column is the number of men lost per 100 men for small arms fire and per one gun for artillery. These numbers are further modified by the various strength/casualty modifiers.

FATIGUE GAIN TABLE

ACTION	FATIGUE GAIN
Enter square in normal mode	2
Enter square in column mode	1
Fortify one level	20
Per 2 casualties in men (see below)	1
Per one operation point of force march	6
Leader dies in unit	5
Routed unit passes through friendly unit	5

NOTE: Units with over 600 men in them will gain proportionately less fatigue up to 1000 men. For example, a 600-man unit gains 1 fatigue point per 3 losses (33% of casualties turn into fatigue). A 900-man unit would gain 1 fatigue per 4½ men lost (16%).

FIRE AND MELEE STRENGTH/CASUALTY TERRAIN MODIFIERS

If the defender is in:

TERRAIN	FIRE MOD.	MELEE MOD.
Clear	1.00	1.00
Cornfield	1.00	1.00
Woods	.80	1.00
Higher Elev.	.90	.90
Town	.70	1.00
Bridge/Ford	1.00	.80*

* Attacker on bridge/ford

MODE MODIFIERS ON FIRE AND MELEE STRENGTH/CASUALTIES

MODE	UNIT TYPE	FIRE	MELEE
Normal	INF	1.00	1.00
Column	INF	.75	.75
Mounted	CAV	.75	1.50
Routed	ALL	.75	.50
Lim. or Unlim. Art.	ART	1.00	1.00

OTHER MODIFIERS ON FIRE AND MELEE STRENGTH/CASUALTIES

Leader Bonus = Direct Modifier
(See Order of Battle)

Flank Modifier to Attacker = 1.50

Flank Modifier to Defender = .50

Density Modifier = 1% more or less casualties per 12 men more or less than 650 men in the square. No more or less casualties than 25%.

Random Modifier = ±50% (.5 to 1.5)

Battle Time Modifier = (OP Remaining)/10

NOTE: This modifier is for fire combat, not melee. A unit is assumed to always have at least five operation points remaining.

Fortification = Level × .10

NOTE: This modifies Att. Fire Strength.