



OPERATION MARKET GARDEN™

DRIVE ON ARNHEM, SEPTEMBER 1944



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1.0 INTRODUCTION

On September 17, 1944 the largest daylight airborne operation in history was conducted in Holland. Thirty thousand paratroopers were landed in an effort to seize and hold a highway over canals and rivers that led straight into the Ruhr valley of Germany. Breaking out from the front lines was a full armored corps determined to drive up that open highway into the heart of Germany. OPERATION MARKET GARDEN simulates this combined airborne and armored assault fostered by Field Marshal Montgomery.

1.1 Description of Action

Each game turn represents a full day of operations. These operations include supply, air strikes, buildups and breakdowns of battalions and regiments, artillery barrage plots, bridge blowing and building, fortifications, mode changes, unit movement, and combat allocation and resolution.

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 Saving a Game

At the end of the Reinforcement Phase and every phase thereafter, the computer will allow the player(s) to save the game in progress. You will need a scratch disk to store the saved game data. Save game disks for the Apple® must be initialized for SSI use during a game by following instructions included in the game program. Atari® and Commodore 64™ users may use any disk that has been properly formatted for use on their computer or format a disk from within the program. Once a game is saved, you will be able to restart it at the point where you left off.

1.4 Game Scale and Map

The game begins September 17, 1944 and ends September 26, 1944 for a total of ten turns. Units in the game range from battalions to divisions.

The map includes parts of Holland and Germany superimposed on a 32 by 31 hexagon grid. Each hexagon contains a specific terrain type (clear, rough, forest, and town) and represents an area of about two miles. Hexagons with a small white dot in the middle show Allied ownership. German ownership is shown by a hexagon with no white dot. Ownership changes when a unit moves into an enemy hexagon (very important for supply). Rivers and canals are represented by blue hexsides. Hexagons connected by a road have white hexsides in common.












The actual playing field of the map is bordered by white hexsides. Only German units are allowed to move outside of the bordered area, representing strategic movement. Allied zones of control do not extend past the border nor may Allied units attack across it.

1.5 Units

The various units depicted in the game are graphically represented by standard military symbols for type and size (see Unit Symbol Legend in next column). Units are given a number of characteristics: unit and parent unit designations, combat strength, efficiency, fortification level, supply status, mode, command status, stacking value, and operation points.

The standard unit of the game is the battalion. These battalions may build up

into regimental units which in turn may break down into component battalions. Some understrength regiments may build up into divisional units. Various support and independent units have also been included. Possible unit buildups and breakdowns are found in the Order of Battle Chart. Abbreviations used in unit designations are included at the back of the rulebook. The unit legend is as follows:

	= Glider		= Artillery
	= Airborne		= Panzer Grenadier
	= Infantry		= Mechanized Infantry
	= Engineer		= Travel mode (mechanized)
	= Recon		= Travel mode (Allied airborne)
	= Headquarters		
	= Armor		
	II = Battalion		XX = Division
	III = Regiment		X = 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. To begin the game, boot up the Scenario side of the disk (800XL owners will have to hold down the OPTION key when they turn on their computer to boot the game). After selecting the starting values for your game, you will be told to insert the Game Side of your disk.

1.8 Starting the Game (Apple)

To begin the game, boot your game disk and the game will start automatically. If you are using an Apple II with Pascal you must first use your BASICS disk. If you are using an Apple III you must first go into Apple II emulation mode. If you are using the Apple IIe keep the CAPS LOCK key pressed down throughout the game.

1.9 Parts Inventory

Your game should contain the following parts:

- Game box
- Rule book
- One 5 1/4" game disk
- Two data cards

2.0 SEQUENCE OF PLAY

OPERATION MARKET GARDEN is a two-sided game: Allied vs. German. The Allied forces must be commanded by the human player. The German forces may be commanded by either a human or the computer.

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:

1. NEW GAME	SAVED GAME
2. LEVEL OF PLAY	1 2 3 4
3. HISTORICAL	FREE SET-UP
4. SOLITAIRE	TWO PLAYER
5. INTERMEDIATE	ADVANCED
6. HIDDEN UNITS	NON-HIDDEN
7. RANDOM WEATHER	HISTORICAL

If you choose a saved game, all options will be pre-determined by that saved game.

The level of play represents handicaps given to the Allied forces. Level four is the easiest level and level one is the hardest. Level three is the historical level.

The HISTORICAL/FREE SET-UP option allows the player(s) to use the historic drop zones or choose their own. Drop zones may not be targeted in city, forest, or enemy occupied hexes. Glider units will only land in town or clear terrain hexes. Units landing in rough terrain will suffer losses. Each airborne formation's supply source hex will also be designated by the player and will become the drop hex of reinforcing airborne units. Be sure to land someone in the hex designated as the supply hex to change the hex ownership. When using this option the starting German unit locations will be altered.

The INTERMEDIATE game is less complex and easier to play than the ADVANCED game. The ADVANCED game adds on options and features to the INTERMEDIATE game. Such differences are explained in the pertinent sections of the rulebook.

The HIDDEN UNITS option allows you to play a game where units of the opposing side are hidden. Such units remain hidden unless they find themselves next to enemy units.

At the beginning of each turn, players are allowed to set the time delay of messages displayed on the computer screen by typing a number from 0 to 9.

Players may choose random or historical weather.

2.2 Historical Set-Up

At the start of the game, the computer will assign all combat forces to their locations the afternoon of September 17, when the Allies launched their offensive.

2.3 Sequence of Play

- Weather Determination Phase
- Air Strike Phase
- Supply Phase
- Reinforcement Phase
- Buildup/Breakdown Phase
- Allied 1st Operation Phase
- Allied 1st Combat Phase
- German 1st Operation Phase
- German 1st Combat Phase
- Allied 2nd Operation Phase
- Allied 2nd Combat Phase
- German 2nd Operation Phase
- German 2nd Combat Phase



3.0 WEATHER DETERMINATION PHASE

Weather affects the number of air points that each side receives. It also determines the number of reinforcing airborne units able to drop.

3.1 Weather Conditions and Probabilities

There are three weather conditions: CLEAR, CLOUDY, and OVERCAST. The first turn is always CLEAR. Thereafter there is an 18% chance of CLEAR weather, a 37% chance of CLOUDY, and a 45% chance of OVERCAST. When using historical weather, the following chart is used:

DATE	WEATHER CONDITION
Sept. 17	Clear
Sept. 18	Cloudy
Sept. 19	Overcast
Sept. 20	Overcast
Sept. 21	Clear
Sept. 22	Overcast
Sept. 23	Clear
Sept. 24	Cloudy
Sept. 25	Cloudy
Sept. 26	Clear

3.2 Effects of Weather on Air Points and Reinforcing Airborne Units

The Allies receive eight air points on CLEAR turns, four on CLOUDY, and zero on OVERCAST turns. The Germans receive two air points on CLEAR turns, one on CLOUDY, and zero on OVERCAST turns. If available, ten airborne units may drop during CLEAR and five during CLOUDY weather (see Order of Battle Chart).

4.0 AIR STRIKE PHASE

During this phase, players will execute ground attacks and air interdiction.

4.1 Air Mission Menu

When players receive air points, a menu will appear with the following commands available:

- (Ø-6): Ø centers the screen. 1-6 moves the cursor in the indicated direction.
- (Q)uit: Exits the menu.
- (I)nterdiction: Adds an air point to interdiction of enemy movement (Allies only).
- (G)round: Executes an attack on the hex beneath the cursor.

4.2 Interdiction (Allies only)

Every air point allocated to interdiction acts to reduce operation points received by enemy units. The more points allocated the greater the effect. Enemy units are randomly affected.

4.3 Ground Attack

A single unit in a hex has about a 40% chance of being hit. Stacked units and units in travel mode have a higher chance of being hit. A ground attack will generally reduce a unit's combat strength, efficiency, and operation points. A unit will never be eliminated or retreated as a result of an air ground attack. Allied air strikes may be conducted no further than six hexes from a unit of the 30th Corps or a unit linked to the 30th Corps. The Germans may not ground attack a unit of the 30th Corps or linked to the 30th Corps.

5.0 SUPPLY PHASE

Units may be in four supply states: SUPPLIED, OUT OF COMMUNICATIONS, UNSUPPLIED, or ISOLATED. Supply states are determined by the ground and airborne supply traces.

5.1 Ground Supply Trace

To be supplied, a unit must be able to trace a line of supply no more than two hexes, unblocked by enemy hexes, to a supplied road. A supplied road is one that can trace a line of road hexes off a friendly map edge, unblocked by enemy hexes. The ferry hexside is considered a road hexside for the Germans during the supply trace. Allied units must trace a line of supply off the roads in hexes 29,31 or 27,31. German units may use any other road leading off the map to trace supply. An enemy hex is one that either contains an enemy unit or one that was last entered by an enemy unit. An airborne unit supplied by the ground trace is considered to be linked up with the 30th Corps. Players do not need to concern themselves with the actual trace. The computer does it for all units. Note that enemy zones of control (hexes next to enemy units) do not block the supply trace.

5.2 Airborne Supply Trace

During the Supply Phase, each airborne unit is determined to be in airborne supply if within eight hexes of its formation's supply source. This trace may be through any



type of terrain or even enemy units. Airborne units linked with 30th Corps do not participate in the airborne supply trace. The historical supply source hexes are listed below. The Allied player chooses his own source hexes for the FREE SET-UP option.

FORMATION	SUPPLY SOURCE HEX
1st BR AB	3,7
101st US AB	15,26
82nd US AB	16,9
POL AB	8,7

A supply source that falls in enemy hands ceases to provide airborne supply until in friendly control. The Polish supply source will change if occupied by a German unit when the Polish Brigade actually drops.

ADVANCED GAME ONLY:

During the supply phase the Allied player will move the cursor from each supply source hex and pass it through units to be given airborne supply. Units so supplied will be temporarily removed from the map (although for all purposes they are considered to still be on the map). Only airborne units of that formation will be given supply. The cursor will not supply a unit that is further than eight hexes from the supply source. The cursor may not enter hexes next to enemy units unless occupied by a friendly unit, enter hexes with enemy units or cross major river hexsides except at bridges. The cursor is also prohibited from moving off the map across border hexsides. You are allowed to accidentally move next to an enemy unit only once. The second time this happens the supply phase for that formation will be exited.

5.3 Supply States

A unit is SUPPLIED if it passes the ground supply trace. A unit that fails the ground trace, but is supplied by the airborne trace is considered OUT OF COMMUNICATIONS. A unit that fails both the ground and airborne traces is UNSUPPLIED. An UNSUPPLIED unit that attacks has a 50% chance of becoming ISOLATED and a 30% of becoming ISOLATED if defending. It is assumed in such cases that the unit has nearly exhausted its ammunition reserves.

5.4 Supply Effects

Units that are OUT OF COMMUNICATIONS have their operation point allowance reduced from 20 to 16. UNSUPPLIED units receive 10 operation points and have their fire strength reduced by 50% when they fire. ISOLATED units receive 5 operation points and have their fire strength reduced by 75%. UNSUPPLIED and ISOLATED units lose efficiency each turn.

6.0 REINFORCEMENTS

The computer will automatically enter reinforcements on the map according to the Order of Battle Chart at the back of the rulebook.

6.1 Entry Hexes

If the entry hex of a reinforcement unit is enemy occupied or its entry would violate stacking, the unit will enter a nearby entry hex unless the unit is airborne. Stacking is modified for incoming units in an entry hex in that up to four units may stack in the hex regardless of normal stacking restrictions. Entry hexes are listed on the Order of Battle Chart.

6.2 Delayed Arrival

Each side is allowed only so many units on the map at one time. The Allies may have sixty-five and the German sixty-two units. If a reinforcing unit would violate this limit then the unit's arrival is delayed that turn. The player would have to buildup units, or through combat or disbanding, lose a unit in order for the reinforcing unit to appear the next turn. A unit's arrival is also delayed if all available entry hexes are full (Allies have only three) or occupied by enemy units. An enemy controlled supply source hex results in reinforcing airborne units being delayed. Airborne units may also be delayed due to the weather.

7.0 UNIT BREAKDOWN/ BUILDUP PHASE

Units that plotted breakdowns and buildups during the previous turn will now execute that plot if eligible. Disbanding is also executed at this time.

7.1 Eligibility for Breakdowns and Buildups

Units with buildup plots will search their hex for units of their parent organization and will execute the plot if one or more are found. Units that contain component battalions or regiments and are plotted to break down will do so if the stacking limits or unit limits would not be exceeded. The Allies may only have sixty-five units on the map and the Germans sixty-two. The buildup or broken-down units will assume normal mode. German units off map and Allied units on reinforcement hexes will assume travel mode. The Order of Battle Chart displays all possible buildups and breakdowns.

7.2 Buildup/Breakdown Effects

A built-up parent unit has its strength increased by 15% when attacking or defending. Units with a stacking value above one have double the road costs when in travel mode.

8.0 OPERATION PHASES

During these phases players expend operation points performing actions that include: moving, changing mode, plotting combat, and fortifying.

8.1 Cursor Menu

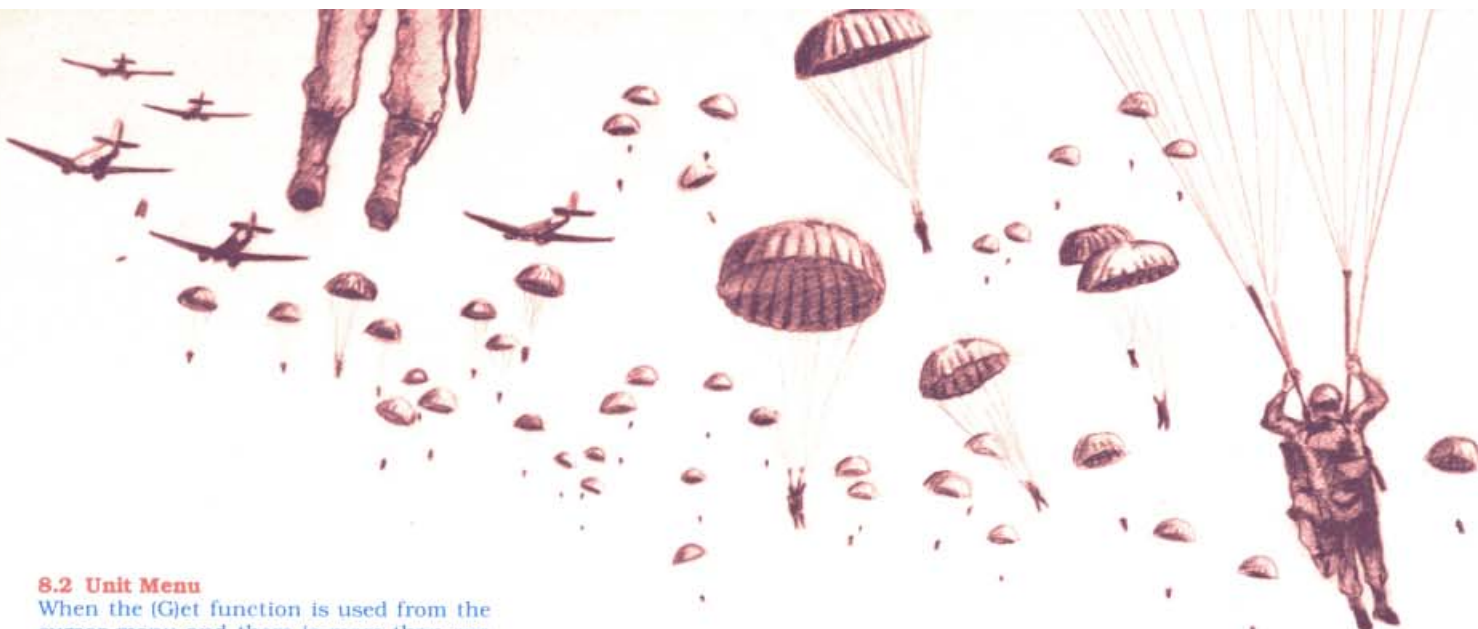
While in this menu a player may choose the following functions:

- (Ø-6): Ø centers the screen, and 1-6 moves the cursor in the indicated direction.
- (G)et: Accesses the unit(s) in the hex beneath the cursor. You may even access enemy units for examination only.
- (C)ombat: Exits the Operations Phase and activates combat resolution.
- (T)errain: Removes all unit shapes from the map to expose the terrain underneath. Press any key to return units.

ADVANCED GAME ONLY:

You may not access enemy units for examination.





8.2 Unit Menu

When the (G)et function is used from the cursor menu and there is more than one unit in the hex, a list of the units is displayed, numbered from one to two, three, or four. Pressing a number will access that unit while pressing (Q)uit will return to the cursor menu.

8.3 Command Menu #1

An accessed unit will have its name and a few of its statistics displayed. A directional compass is printed in the corner as an aid for movement. From this menu the player may execute any of the actions on the command list or access the Command Menu #2 by pressing "D", or the Command List by pressing "L".

8.4 Command Menu #2

When this menu is displayed all of the unit's statistics are shown at the bottom of the map. From this menu any of the actions on the command list may be executed. The Command Menu #1 may be accessed by pressing "D" and the Command List may be accessed by pressing "L". Below is an example of an accessed unit with an explanation of its statistics:

GE 9SS HQ DIV STACK:2
 CP:30 FORT:1 EFF:95 DB:N ART:95(1)S
 ORG:N-38 COMMAND:1 ADV:0 ATTACK
 CLEAR OP:2 NORMAL SUPPLIED

The above HQ unit of the 9SS division has a stacking value of 2, a combat strength of 30, a fortification of 1, an efficiency of 95, and is not plotted for disbanding. Its artillery fire strength is 95 (of which 100% would be applied as protective fire to the first unit attacked within range). The artillery is short ranged which means that the fire strength is halved at two hexes. The unit has no breakdown/buildup plot - the German player may add up to another 38 units on the map. The unit is in command control, has plotted an advance of zero hexes after combat, and has plotted an attack for this turn. It is in clear terrain, has 2 remaining operation points, is in normal mode, and is supplied.

8.5 Command List

The command list displays all the possible actions the unit may take with the required keystroke. Command Menu #1 may be accessed by hitting any key and Command Menu #2 by pressing "D". No other commands may be executed from this menu.

- (Ø-6): Centers and moves unit under the cursor in the indicated direction.
- (G)et: Accesses units in the hex.
- (N)ext: The next unit on the map in order of appearance is scrolled to and accessed.
- (Q)uit: Exits unit and enters Cursor Menu.
- (T)errain: Removes units from the map.
- (X)Disband: Unit is plotted to be removed from the map (DB:Y or DB:N is displayed). One third of its remaining combat strength is distributed among units in the same hex.
- (F)ort: Fortify one level. The number following is the current fort level.
- (M)ode: Changes mode. Letter indicates present mode (T = Travel and N = Normal).
- (B)uildup/Breakdown: Changes plot from N (no action) to D (breakdown) or U (buildup). N-38, D-38, or U-38 is displayed. The number equals unit slots available.

FOR ADVANCED GAME ONLY

- (A)dvance: Orders unit to advance after combat. The number may range from 0 to 2 indicating the extent of the desired advance. The program automatically determines this in the INTERMEDIATE game.
- (O)ffensive Barrage: Allows an artillery unit to plot a barrage. Move cursor to target and type "T".
- (P)rotective Barrage: Allows an artillery unit to plot its protective fire split among attacked units within range (1 = 100% to first unit and 2 = 50% for first unit and 50% for the second). The command toggles from Art(1) to Art(2) on the display.

8.6 Operation Point Allowances

Units of both sides receive operation points at the beginning of the turn and then again at the beginning of the second operation phase. The number of operation points received is dependent upon a unit's supply status. SUPPLIED units receive 20 operation points, OUT OF COMMUNICATION units receive 16, UNSUPPLIED units receive 10 and ISOLATED units receive 5. The first turn is an exception in that airborne units have a random subtracted and most German units have zero operation points. German units on turn two receive 15 operation points per phase. Unused operation points from the first phase are added to the second phase up to a maximum of ten. For example, a supplied unit could have 30 operation points to expend in the second phase, if only 10 or less points were expended in the first phase. Reinforcing airborne units have a random subtracted regardless of the turn. Reinforcing units may receive zero operation points the first phase of the turn they arrive on, representing the fact that those units arrived later in the day.

8.7 Moving a Unit

To move a unit simply press 1-6, corresponding to the direction you wish to move (as indicated by the compass on the display). Pressing "Ø" will center the unit on the screen. The operation point cost of the hex moved into will be subtracted from the unit's remaining operation points (see Operation Costs Table for complete list of costs).

If a unit has insufficient operation points to move into a hex it will not move unless the unit hasn't yet moved that turn and the hex being moved into is not adjacent to an enemy unit (note that this is per turn not per phase). The unit is then moved and its operation points is reduced to zero. Every time a unit fails to move into a hex it loses a random of one to three operation points.

8.8 Zones of Control, Movement Restrictions and Stacking

The six hexagons surrounding a unit constitute its zone of control (ZOC). Units must pay an additional operation point cost to enter or leave an enemy ZOC. Units moving in normal mode directly from one enemy ZOC to another have their operation points reduced to zero. Bridge building may not be conducted in enemy ZOC. Units that must retreat into an enemy ZOC lose extra casualties.

Allied units may not move off or attack across the border of the map. Allied ZOC do not extend across the border hexsides.

Units may not use road movement costs unless in travel mode. Units except for airborne and infantry may only cross a stream, canal, or river in travel mode at a bridge. Allied airborne units may cross rivers only with the aid of an engineer. Engineers may only transport one airborne unit per operation phase. The engineer must be in the same hex as the transporting unit or in the hex being moved into. One unit per combat phase may also advance (but not retreat) after combat across a river with the same restrictions. The engineer unit of the 1st British airborne has no river crossing capabilities.

Units have a stacking value of one to four. A parent unit has a stacking value equal to the number of units built into it. No more than four stacking points may be in a hex at any one time (except for incoming reinforcing units). Units in travel mode pay one more operation point to stack with friendly units.

The river hexside between hexes 10,4 and 10,5 is a ferry point that may be used by German units in travel mode at a cost of 10 operation points. Only one German unit per turn may cross the ferry. German units will not be allowed to retreat or advance after combat across the ferry.

ADVANCED GAME ONLY:

Units in travel mode may not stack together (except incoming reinforcements).

8.9 Travel Mode and Road Movement

A unit may change from normal to travel mode or from travel to normal mode at the cost of operation points (see Operation Costs Table). Units in travel mode change automatically to normal mode when retreated. Travel mode units have their modified combat strength reduced by 67%. Artillery units will not conduct barrages if in travel mode.

Units may only use road movement costs when in travel mode. Units in travel mode may only move into a hex that has a white hexside in common with its current hex. That white hexside represents a road connecting the two hexes. Travel mode units expend an additional point to stack. When playing the ADVANCED game units in travel mode may not stack together.

8.10 Command Control

In the INTERMEDIATE GAME all units are considered to be in command control and therefore do not suffer any out-of-command movement costs.

ADVANCED GAME ONLY:

Units that begin the turn in the same hex or next to the HQ unit of their formation are in command control. Command control of a unit is displayed as "T" for in command and "O" for out of command. Units out of command may incur an additional zero to three operation point cost when moving in normal mode or when executing combat.

8.11 Fortifications

A unit may fortify to five levels by expending the operation point cost (see Operation Cost Table). Fortification costs more when the unit is next to an enemy unit. Presence of an engineer unit decreases fortification costs. When a unit moves, its fortification level returns to zero. A unit's chances of retreating are decreased when fortified. A unit's losses are reduced by 5% per fort level.

8.12 Bridge Building and Blowing

When an Allied unit first attempts to cross certain bridges there is about a 30% chance that the bridge will blow. Levels of difficulty will modify this percentage. A bridge is checked only once per game. It either blows then or never blows. An Allied engineer unit that finds itself next to a blown bridge site at the beginning of its operation phase will automatically re-build it at the cost of 20 operation points. There are five bridges that will never be blown on the map. They are indicated on the laminated map card.

ADVANCED GAME ONLY:

An Allied engineer unit must be in normal mode to be eligible to build a bridge.

8.13 Artillery

Headquarter and artillery units contain artillery fire strength that may be applied to offensive and protective fire barrages. This fire is automatically applied to the target unit, provided the artillery unit is within range, is not in travel mode, hasn't plotted normal combat, and hasn't fired that phase. Some units have artillery fire that is limited to one hex, and some have their fire strength halved at two hexes. The units that fire at normal strength at two hexes have an "L" following their displayed fire strength. Those halved at two hexes have an "S", and those with the one hex range have a "D". Some units will receive additional artillery fire strength points as reinforcements if in ground or airborne supply according to the chart below:

UNIT	TURN #	FIREPOINTS
HQ/101	3	80
HQ/101	5	80
HQ/1	3	35
HQ/59	4	88

ADVANCED GAME ONLY:

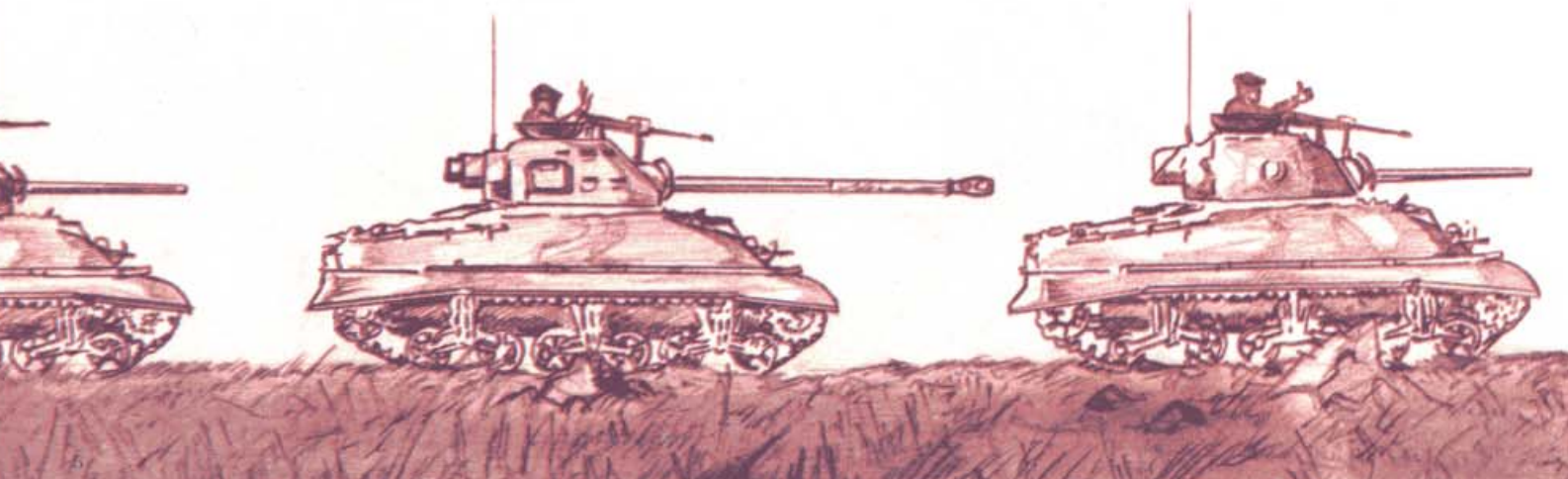
In the advanced game, players actually plot the target hex of the offensive barrage. Move the cursor to the desired hex and press "T". Protective fire is plotted to hit the first attack within range or the first two attacks (at 50% strength each), depending on the plot. The plot is toggled between Art(1) and Art(2) by pressing "P".

8.14 Engineers

Allied engineers have several important functions. They build bridges, facilitate fortification, transport airborne units across rivers, and give a combat bonus. See the appropriate sections for details.

8.15 Plotting Combat

Both the defender and attacker expend operation points in combat just before combat is resolved. A unit that attempts to move onto an enemy unit will plot combat against that hex. A unit with insufficient operation points will fail to attack when combat is resolved. The direction that the unit attacked will now be displayed in Command Menu #1 whenever the unit is accessed. The notation "ATTACK" will also appear in the Unit Menu. Combat plots may not be rescinded.



Battles are resolved in the order that they are initiated. In addition, the order that individual units are plotted to attack the same defender affects their impact on the battle. The first unit to plot the attack incurs no modification to its combat strength. The second unit attacks at 80% of strength, the third at 60%, and any unit thereafter at 40% of strength. Losses allocated to attacking units are also affected by the order of attack.

8.16 Plotting Advances After Combat

In the INTERMEDIATE GAME, advances after combat are automatically handled by the computer. The computer equally divides the available attacking units to advance among the attacking hexes, vacated hexes, and hexes in the path of retreat. The units who attacked the hex first will be the ones to advance the furthest.

ADVANCED GAME ONLY:

Players plot the number of hexes (0 to 2) to advance after combat for each unit. The advance will follow the path of retreat of enemy units.

9.0 COMBAT

When the Combat Phase is initiated, each combat plotted by the player is resolved in order of the actual plotting. For each battle, artillery protective fire on attacking units is resolved first, followed by offensive barrages on defending units. Defensive fire is then conducted against attacking units, followed by offensive fire by attacking units. Retreats and advances are then executed. Odds, losses, and retreat results are displayed on the screen. In addition, the approximate, unmodified combat strength and hex location of the defender are also displayed.

9.1 Efficiency

Each unit has an efficiency that ranges from 40% to 100%. A unit's combat strength is directly modified by its efficiency (a combat strength of 50 with 90% efficiency would have a modified strength of 45). Efficiency represents fatigue and disruption incurred by a unit from movement and combat. A unit loses efficiency for every hex it moves into (except when in travel mode). A unit loses efficiency in battle according to its losses. Attacking units will lose more efficiency than defending units on a per loss basis. Isolated and unsupplied units lose efficiency at the beginning of each turn.

Units in supply regain some efficiency at the beginning of each turn. Any unused operation points from the previous movement phase recover efficiency on a point for point basis at the beginning of the turn.

9.2 Fire Strength Modifiers and Bonuses

A unit will start with a fire strength equal to its combat strength. It is subsequently modified by a series of factors that include order of attack, supply status, unit type, and battle time. Battle time is the amount of actual time the unit spent assaulting the position. This is determined by checking how many operation points it had remaining before subtracting the cost for attacking. A list of such modifiers and bonuses are located on the Fire Strength Modifiers and Bonuses chart.

9.3 Casualties

Every ten fire strength points (after modification) applied against a target results in a loss of one combat strength point. These losses are further modified by a series of factors that include terrain, fortification, and unit type. These modifiers are located in the Casualty Modifier chart.

9.4 Retreats and Advances

Retreats are based on the percent of casualties lost, unit efficiencies, fortification levels, and a random. Units in cities and units without retreat routes will not retreat.

The computer will automatically retreat and advance units. Generally, units will retreat toward friendly lines away from the attacking force, following roads where possible. Advancing units will follow the retreating unit's path. The first unit to plot the attack will advance first if eligible. Units will not advance or retreat where normally prohibited in regular movement. Units expend operation points when retreating or advancing (except ZOC costs). A unit will advance or retreat even if it has insufficient operation points.

10.0 VICTORY CONDITIONS

The Allied player gains victory points for controlling and keeping in supply objective hexes. They lose points for overrun airborne supply source hexes and German controlled town/city hexes. The Allied score is used to determine the level of victory.

10.1 Victory Points

The Allied unit receives victory points at the end of the game per controlled, supplied objective hex. The hexes adjacent to the objective hex must also be controlled and in supply in order to receive the victory points for the objective hex. The objective hexes and their point values are listed below:

HEX	POINTS
10.4	25
8.4	10
12.9	20

The Allied player loses three points the instant the 1st Airborne's supply source is overrun. He loses two points each for the supply hexes of the 101st and the 82nd when overrun.

The Allied loses one point per German controlled town/city hex at the end of the game.

10.2 Victory Levels

The Allied score at the end of the game is compared to the chart below for the level of victory.

SCORE	LEVEL OF VICTORY
42 +	Allied Strategic
20 to 41	Allied Tactical
13 to 19	Draw
1 to 12	German Tactical
0 and less	German Strategic

11.0 STRATEGY AND TACTICS

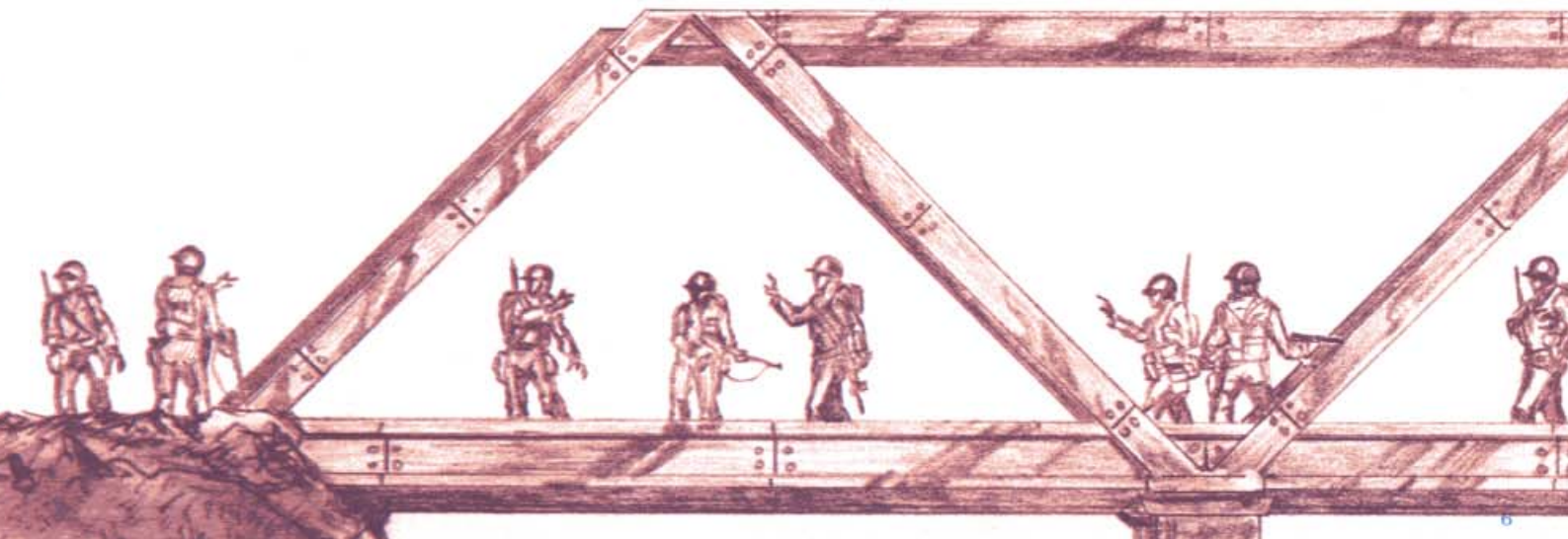
After playing the game several times, the designers and playtesters give the following suggestions:

11.1 Allied Player

You will find that you have several different pockets of troops that need to be linked up. Your paratroopers must open the way for the 30th Corps units to roll through to Arnhem and also hold that narrow corridor open to supply.

The 1st British Airborne division, landing near Arnhem, must move quickly to capture the bridge at Arnhem. It must also protect its source of supply which is unfortunately far away from the bridge. The mounting German resistance will make this a challenge.

The American 82nd Airborne, landing near Nijmegen, must capture the bridges near Grave and Nijmegen and at the same time defend their supply source, which from the outset may be under attack. The bridge at Nijmegen is crucial to the whole operation and will be difficult to capture.



The American 101st Airborne, landing near Best, must clear the bridges at Veghel, Best, and Zon. Taking Eindhoven and the bridge there is essential to breaking the way open to the 30th Corps. German forces will threaten your lines of communications from the east and the west.

The 30th Corps has the challenge of piercing the German line as quickly as possible and drive up the highway to Arnhem. Its narrow avenue of assault and stiff resistance will invariably slow it down. Good weather and well placed air strikes should ease the way to relieve the waiting paratroopers.

11.2 German Player

Your forces outside Arnhem are strong enough to isolate and batter down the British 1st Airborne division. It would be wise to send units of the 10 SS division across the ferry to reinforce your token forces at the Nijmegen bridge. The gathering forces at Kleve should march on the 82nd airborne's supply source. The 107 Panzer formation coming in from the east should move across the map and cut the highway at Zon, Vegal, or Uden. The units arriving at Best should dig in and threaten the highway. The units in front of the 30th Corps advance should delay until the last man. As you can see the German player has an assortment of side actions to be fought all with the single purpose of slowing down and halting the Allied advance along that highway leading into the heartland of Germany.

An alternate strategy to the above would be to send all available units to the Arnhem area to contest Allied advances across the Rhine river.

11.3 Tactical Hints

1. When making a determined assault, buildup your units and attack with your strongest unit first. Take special note that armor is significantly reduced when firing into rough and forest hexes. It may be better to attack with an infantry unit.
2. Be aware of the potential hitting power of air strikes, especially those delivered by the Allies. Air interdiction is an effective way of slowing down German forces on the second and third days.
3. As the Allies, be sure to breakdown most of your airborne units to battalions, enter travel mode, and check out all bridges in the area. Start early in establishing a protective corridor centered on the highway to Arnhem.
4. The Allies should keep engineer units at the front of the 30th Corps advance, placing them at blown bridge sites.
5. HQ units are valuable in that most contain a powerful artillery contingent and provide command control.

6. Keep in mind the variety of tasks that engineers perform: bridge building, aiding fortification construction, combat bonus, and river crossings.
7. Be aware of the movement bonuses and restrictions of units in travel mode. Most units can cross a river or stream only at a bridge in travel mode.
8. Take note that units in cities are never forced to retreat. They fight to the bitter end.
9. As the Allies, be very protective of your airborne supply sources. Losing a supply source will effectively neutralize that division as a fighting force.
10. Take note that the Allied airborne forces are the only units able to transport across rivers with the aid of engineers. This makes them invaluable in the last half of the game when the Rhine river line must be breached.

12.0 HISTORICAL COMMENTARY

On September 10, 1944 Field Marshal Montgomery proposed an ambitious plan that involved a massive combined airborne and armored assault to get across the Rhine river and strike at the industrial center of Germany in the Ruhr valley. The plan encompassed the dropping of more than three airborne divisions and the front line breakout of a full armored corps. The airborne divisions would secure the highway and bridges between the front lines and the city of Arnhem, the back door to the Ruhr valley. The armored corps would roll up the highway and over the bridges into the heart of industrial Germany. An astute observation by General Browning, overall commander of the airborne units, that they might be going a bridge too far proved all too prophetic.

September 17, saw a near perfect dropping of the three airborne divisions. With good weather and air superiority, the Allies enjoyed minimal scattering and casualties.

The 1st British Airborne division landed about seven miles west of the Arnhem bridge. The jeep recon unit, along with three battalions of paratroopers, moved quickly toward the bridge. Two of the battalions and the recon unit were stopped by an SS Training battalion between them and the bridge. The other battalion slipped by along the river and took the northern approaches to the bridge at Arnhem, but were prevented from capturing the southern end by a German unit.

The American 82nd division got off to a good start by taking the bridge at Grave and clearing the area around Groesbeek. Although a crossing was taken over the Maas-Waal Canal, the all important bridge at Nijmegen was left in German hands.

The American 101st Airborne division took the bridge at Veghel, but had the bridge at Zon blown up in their faces. Movement toward capturing the bridge at Best resulted in a heavy contest with German units in the area.

The 30th Corps was nearly stopped dead in its tracks by unexpected resistance, covering only half the distance to Eindhoven by the end of the first day despite massive air strikes and artillery barrages.

On the second day, September 18, the weather was cloudy, interfering with the planned airlifts. The 1st Airborne continued its struggle to reach the Arnhem bridge in force. The lone and isolated battalion at the bridge gallantly fought off German attacks. German units from the 9th SS division and independent units from the west steadily squeezed the airborne units out of their initial drop and supply zones. Communication problems prevented the higher command in Britain from knowing what was going on.

The 82nd captured another bridge across the Maas-Waal Canal, but attempts to clear the southern approaches of the bridge at Nijmegen failed. The 82nd was also involved in heavy fighting to protect its supply drop zones.

The 101st fought its way to the bridge at Best, only to have it destroyed. Units of the 30th Corps reached the blown bridge site at Zon at the end of the day.

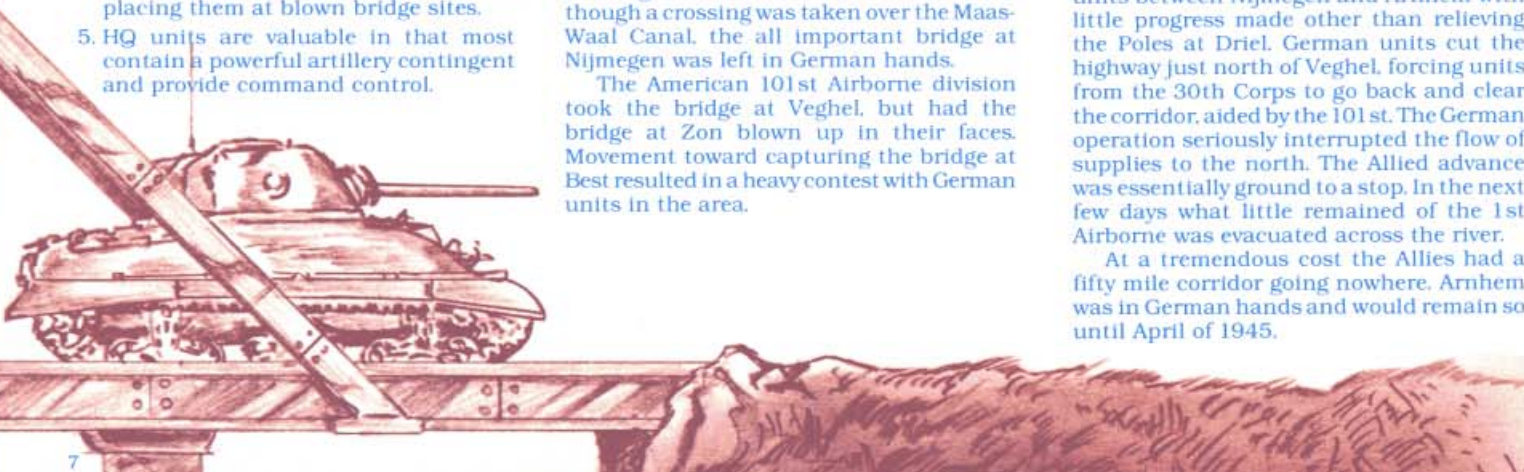
On the third day, weather prevented the Poles and airborne reinforcements from making air drops. The British battalion at the Arnhem bridge still hung on. The tanks of the 30th Corps rolled across the constructed bridge at Zon and reached Nijmegen by noon. Determined attacks by the 82nd and the 30th Corps failed to dislodge the Germans at the Nijmegen bridge. The 101st, aided by armor from the 30th Corps pushed the Germans out of Best. The 107th Panzer Brigade, striking out from the east nearly captured Zon before being stopped.

On the fourth day, the 1st Airborne was forced to retreat into the Osterbeek area, abandoning their supply drop zones. The Poles were again prevented from dropping due to bad weather. The Germans recaptured the Arnhem bridge in the late afternoon, but were unable to clear the wreckage until the next day. Also in the afternoon a battalion of the 82nd, aided by 30th Corps engineers, amphibiously assaulted across the Waal River. British tanks forced their way across the Nijmegen bridge which failed to blow, linking up with the airborne battalion by the end of the day.

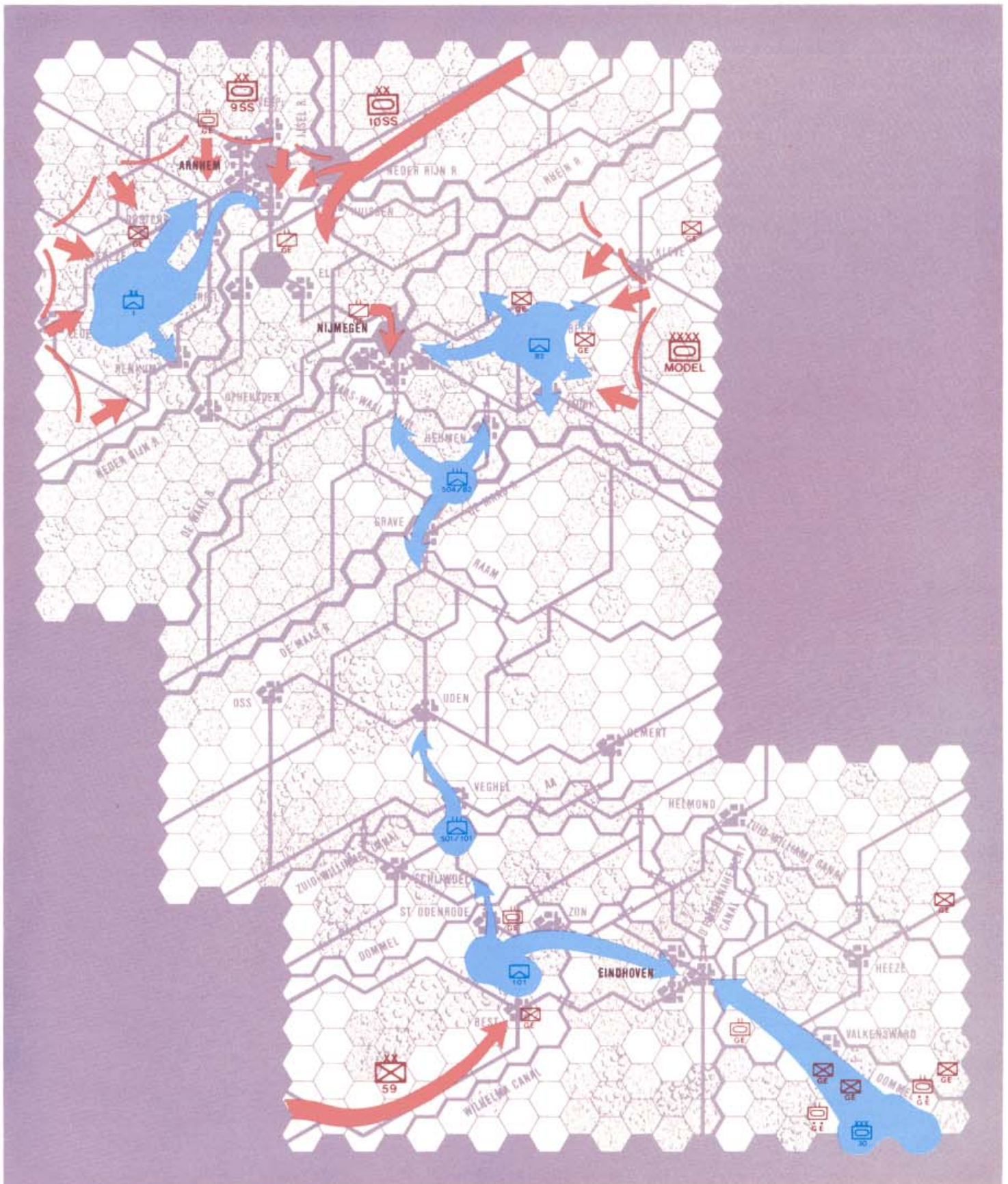
On the fifth day the weather cleared, allowing the Poles to drop near Driel. The British tanks of the 30th Corps were stopped about six miles from Arnhem on the narrow raised highway from Nijmegen.

The sixth day saw the 1st Airborne dwindling in strength and supplies. Units of the 30th Corps grappled with German units between Nijmegen and Arnhem with little progress made other than relieving the Poles at Driel. German units cut the highway just north of Veghel, forcing units from the 30th Corps to go back and clear the corridor, aided by the 101st. The German operation seriously interrupted the flow of supplies to the north. The Allied advance was essentially ground to a stop. In the next few days what little remained of the 1st Airborne was evacuated across the river.

At a tremendous cost the Allies had a fifty mile corridor going nowhere. Arnhem was in German hands and would remain so until April of 1945.

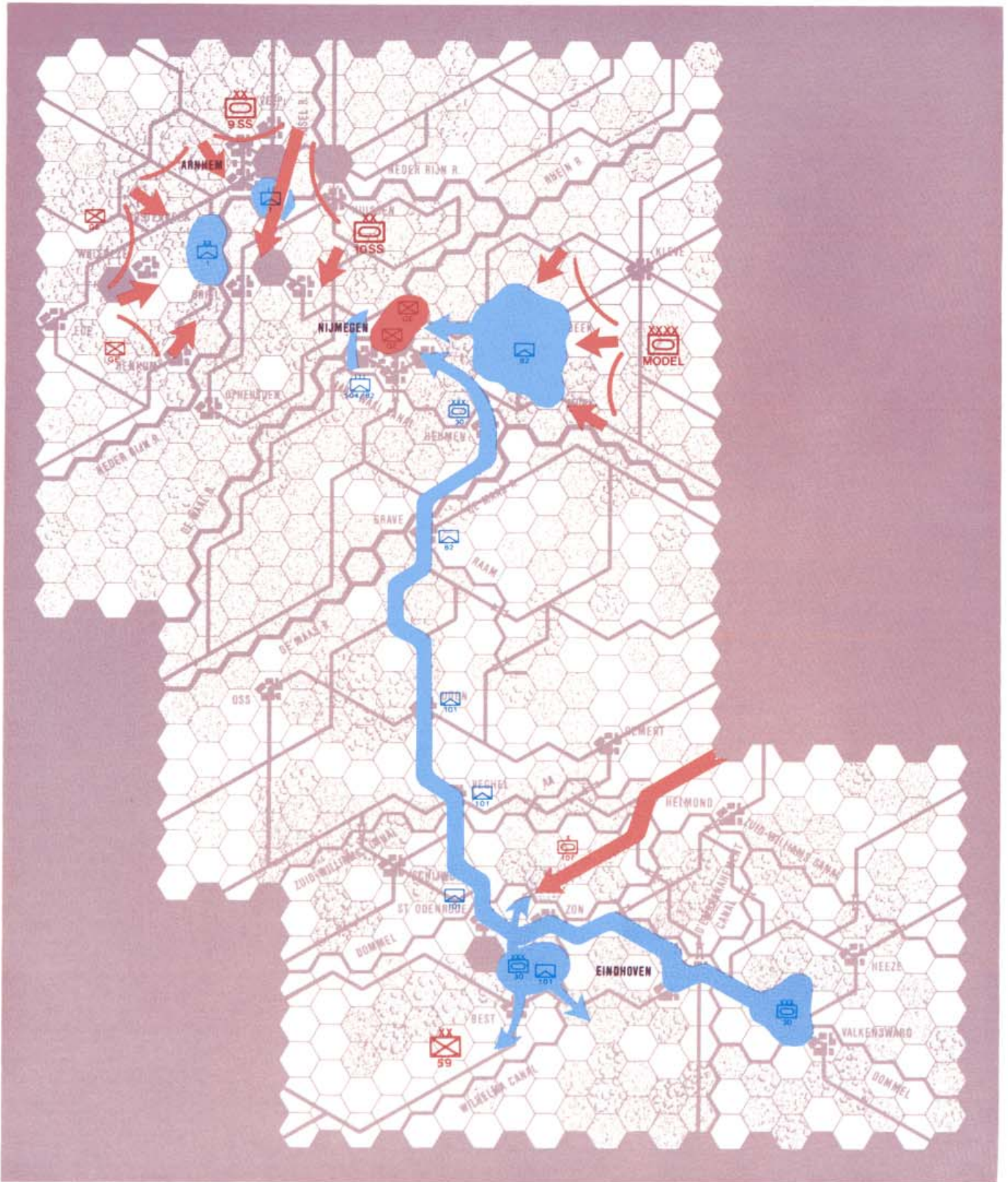


HISTORICAL SITUATION MAP



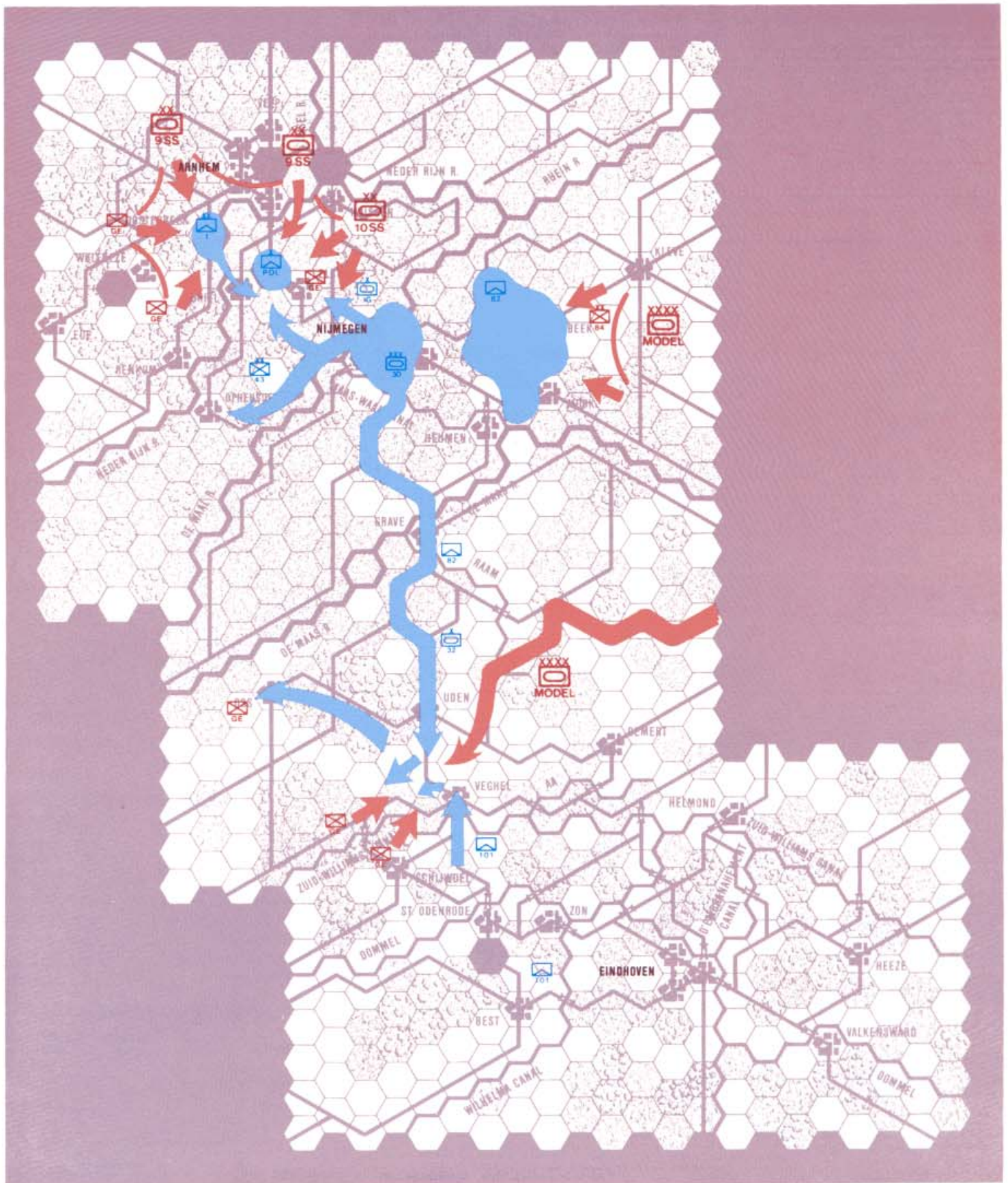
FIRST TWO DAYS
SEPT. 17-18

HISTORICAL SITUATION MAP



SEPT. 19-20

HISTORICAL SITUATION MAP



SEPT. 21-26

APPENDIX A: Abbreviations

BR = British
 US = United States
 POL = Polish
 GE = German
 COMM = Communications
 BATT = Battalion
 REG = Regiment
 DIV = Division
 BRIG = Brigade
 FB = Flak Brigade
 AT = Anti-Tank
 MG = Machine Gun
 M = Marine
 T = Training
 ROCK = Rocket








INF = Infantry
 FJ = Fallschirmjaeger
 ARM = Armored
 AIRB = Airborne
 GL = Glider
 AL = Airlanding
 R = Reconnaissance
 RCN = Reconnaissance
 CAV = Cavalry
 ENG = Engineer
 PZGR = Panzergrenadier
 GP = Glider Pilots
 HQ = Headquarter
 ART = Artillery
 GDS = Guards

PZ = Panzer
 K = King's Own South Borderers
 S/1 = South Staffords
 B = Borderers
 IG = Irish Guards
 GG = Grenadier Guards
 CG = Coldstream Guards
 WG = Welsh Guards
 W/32 = Welsh Guards
 H/GDS = Household Cavalry
 R/43 = Reconnaissance
 S/129 = Somerset Light
 W/129 = Wiltshire
 H/130 = Hampshire


D/130 = Dorsetshire
 C/214 = Duke Of Cornwall Light
 W/214 = Worcester Rifles
 S/214 = Somerset Light
 1D/231 = Dorsetshire
 2D/231 = Devonshire
 H/231 = Hampshire
 15-19 = 15/19 Kings Royal Hussars
 SICH = Sicherheits
 FLT = Flottenstamreg
 HG = Herman Goering
 S-F = Schorken/Fliegerhorst

APPENDIX B

Operation Costs Table

ACTION	  	 	 	COMMAND CONTROL	
				IN	OUT
ENTER OPEN HEX	4	5	3	+0	+1, 2, 3
ENTER ROUGH HEX	7	16	7	+0	+1, 2, 3
ENTER FOREST HEX	10	16	10	+0	+1, 2, 3
ENTER TOWN HEX	3	3	3	+0	+1, 2, 3
ENTER CITY HEX	3	7	3	+0	+1, 2, 3
ENTER OFF-BOARD HEX	5	5	5	+0	+0
ENTER ENEMY ZOC	2	2	2	+0	+0
ENTER ENEMY CONTROLLED HEX	+1	+1	+1	+0	+0
CROSS STREAM/CANAL	P	P	6	+0	+1, 2
CROSS RIVER	P	P	10	+0	+1, 2
CROSS ROAD HEXSIDE: 1 STACKING POINT	1	1	1	+0	+0
CROSS ROAD HEXSIDE: 2+ STACKING POINTS	2	2	2	+0	+0
CROSS GERMAN FERRY	10	10	N/A	+0	+0
LEAVE ENEMY ZOC (TRAVEL)	3(5)	3(5)	3(5)	+0	+0
FORTIFY (ENG. PRESENT)	15(10)	15(10)	15(10)	+0	+0
OFFENSIVE FIRE	7	7	7	+0	+1, 2
DEFENSIVE FIRE	5	5	5	+0	+1, 2
MOVE ZOC TO ZOC	ALL	ALL	ALL	+0	+0

P = Prohibited; N/A = Not Applicable

 = Panzergrenadier
 = Mechanized Infantry
 = Engineer
 = Armor
 = Recon
 = Artillery
 = Headquarters
 = Infantry
 = Airborne
 = Glider
 II = Battalion
 III = Regiment
 XX = Division
 X = Brigade

Fire Strength Modifiers

Effectiveness:	.01 * EFF
Supplied Status:	1.00
Out of Communications Status:	1.00
Unsupplied Status:	.75
Isolated Status:	.25
Engineer Bonus:	+15
Parent Unit:	1.15
Travel Mode:	.33
Short Range Artillery at 2 hexes:	.50
Artillery Protective Fire #1:	1.00
Artillery Protective Fire #2:	.50
Armor Fire in Rough:	.50
Armor Fire in Forest:	.33
Offensive Fire Across Rivers:	.30
First Attacking Unit:	1.00
Second Attacking Unit:	.80
Third Attacking Unit:	.60
Fourth Attacking Unit:	.40
Random Modifier:	.80 to 1.20
Battle Time:	ROP/OP

ROP = Remaining Operation Points
 OP = Operation Points

Casualty Modifiers

Target in Open Terrain:	+20%
Target in Town:	-10%
Target in Forest:	-20%
Attacking Units Located in City:	+25%
Attacking Units Across River/Bridge:	+25%
Target in Travel Mode:	+20%
Target is Armor:	-30%
Firing Unit is Artillery:	-40%
Per Fort Level:	-5%

Weather Effects

CONDITION	ALLIED AIR	GERMAN AIR	AIRBORNE REINF
Clear	8	2	10
Cloudy	4	1	5
Overcast	0	0	0

Supply Effects

STATUS	OPERATION ALLOWANCES	FIRE POINTS
Supplied	20	1.00
Out of Communications	16	1.00
Unsupplied	10	.75
Isolated	5	.25

APPENDIX C: Order of Appearance

ALLIES

September 17		September 19	
HQ/82	16.9	1/POL	8.7
504/82	14.13	2/POL	8.7
3/504/82	14.13	3/POL	8.7
505/82	17.9	44	29.31
3/505/82	17.9		
508/82	17.8		
3/508/82	17.8		
501/101	14.23		
3/501/101	14.23		
502/101	15.26		
3/502/101	15.26		
506/101	16.27		
3/506/101	16.27		
HQ/1	3.7		
1/1	4.8		
3/1/1	4.8		
1/1	4.7		
1B/1/1	4.7		
1/GP/1	5.7		
ENG/1	3.8		
RCN/1	5.7		
GDS/HQ	28.31		
2IG/5/GDS	28.31		
3IG/5/GDS	28.31		
2D/231/50	27.31		
1D/231/50	27.31		
1H/231/50	29.31		
15/19/-	29.31		
September 18		September 20	
HQ/101	15.26	1/43R/43	28.31
1/327/101	15.26	2/43R/43	28.31
2/327/101	15.26	3/43R/43	28.31
10/4/1	3.7	7H/130/43	27.31
11/4/1	3.7	4D/130/43	27.31
156/4/1	3.7	5D/130/43	27.31
3/GP/1	3.8	5C/214/43	29.31
2GG/5/GDS	28.31	1W/214/43	29.31
1GG/5/GDS	28.31	7S/214/43	29.31
2H/GDS	28.31	ENG/43	29.31
1CG/32/GDS	27.31	HQ/43	27.31
5CG/32/GDS	27.31		
1WG/32/GDS	27.31		
2W/32/GDS	27.31		
ENG/1/GDS	29.31		
INF/30XXX	29.31		
ART/30XXX	29.31		
ENG/30XXX	29.31		
September 17		September 21	
HQ/9SS	3.0	1/325/82	16.9
I/9/9SS	6.3	2/325/82	16.9
II/9/9SS	24.28	3/325/82	16.9
I/20/9SS	8.0	3/327/101	15.26
II/20/9SS	29.30	4S/129/43	29.31
PZGR/9SS	4.0	4W/129/43	29.31
RCN/9SS	11.8	5W/129/43	29.31
I/22/10SS	8.0		
II/22/10SS	26.31		
I/6	27.30		
II/6	26.30		
I/2/-	27.30		
16/7	30.30		
I/1034/59	16.28		
II/1034/59	16.28		
-/1222/180	30.25		
60	23.5		
1/189	15.25		
100T	23.8		
1/406	16.8		
2/406	18.9		
3/406	22.6		
16SST	4.6		
HQ/180	30.25		
RCN A/10SS	8.6		
September 18		September 22	
I/19/9SS	3.0	17/7	23.8
II/19/9SS	3.0	KNAUST	8.0
HQ/10SS	17.0		
I/21/10SS	17.0		
II/21/10SS	16.0		
I/10/10SS	16.0		
II/10/10SS	16.0		
PZGR/10SS	8.0		
RCN B/10SS	8.0		
I/1035/59	8.31		
SS ROCK/FB	4.0		
ART/FB	4.0		
85	23.3		
88	23.3		
101T	23.3		
4-12SST	0.3		
42-408 SICH	0.9		
BOCHOLT	8.0		
BRAHAMS	3.0		
S-F	0.13		
FLT	0.5		
I/1036/59	8.31		
RCN/59	8.31		
2/189	23.5		
3/189	23.5		
HQ/59	8.31		
502	4.0		

GERMANS

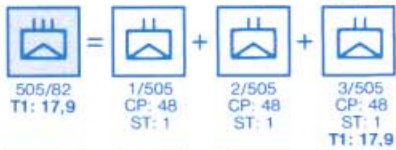
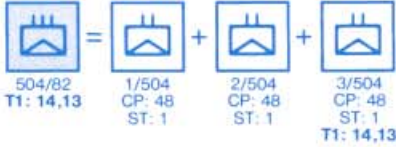
September 17		September 19	
HQ/9SS	3.0	II/1036/59	8.31
I/9/9SS	6.3	2107P/107	23.20
II/9/9SS	24.28	2107/107	23.20
I/20/9SS	8.0	280/107	23.20
II/20/9SS	29.30	II/1035/59	8.31
PZGR/9SS	4.0	19-102 SS/FB	3.0
RCN/9SS	11.8	1AT/FB	3.0
I/22/10SS	8.0	2AT/FB	3.0
II/22/10SS	26.31	3AT/FB	3.0
I/6	27.30		
II/6	26.30		
I/2/-	27.30		
16/7	30.30		
I/1034/59	16.28		
II/1034/59	16.28		
-/1222/180	30.25		
60	23.5		
1/189	15.25		
100T	23.8		
1/406	16.8		
2/406	18.9		
3/406	22.6		
16SST	4.6		
HQ/180	30.25		
RCN A/10SS	8.6		
September 18		September 20	
I/19/9SS	3.0	HQ/85	8.30
II/19/9SS	3.0	ART/6	23.7
HQ/10SS	17.0	I/7	23.8
I/21/10SS	17.0	18/7	23.8
II/21/10SS	16.0	1053/85	8.31
I/10/10SS	16.0	1054/85	8.31
II/10/10SS	16.0	105T	23.8
PZGR/10SS	8.0	HQ/7	23.8
RCN B/10SS	8.0		
I/1035/59	8.31		
SS ROCK/FB	4.0		
ART/FB	4.0		
85	23.3		
88	23.3		
101T	23.3		
4-12SST	0.3		
42-408 SICH	0.9		
BOCHOLT	8.0		
BRAHAMS	3.0		
S-F	0.13		
FLT	0.5		
I/1036/59	8.31		
RCN/59	8.31		
2/189	23.5		
3/189	23.5		
HQ/59	8.31		
502	4.0		
September 17		September 21	
HQ/9SS	3.0	47MG	3.0
I/9/9SS	6.3	HG	0.13
II/9/9SS	24.28	642M	3.0
I/20/9SS	8.0		
II/20/9SS	29.30		
PZGR/9SS	4.0		
RCN/9SS	11.8		
I/22/10SS	8.0		
II/22/10SS	26.31		
I/6	27.30		
II/6	26.30		
I/2/-	27.30		
16/7	30.30		
I/1034/59	16.28		
II/1034/59	16.28		
-/1222/180	30.25		
60	23.5		
1/189	15.25		
100T	23.8		
1/406	16.8		
2/406	18.9		
3/406	22.6		
16SST	4.6		
HQ/180	30.25		
RCN A/10SS	8.6		
September 18		September 22	
I/19/9SS	3.0	17/7	23.8
II/19/9SS	3.0	KNAUST	8.0
HQ/10SS	17.0		
I/21/10SS	17.0		
II/21/10SS	16.0		
I/10/10SS	16.0		
II/10/10SS	16.0		
PZGR/10SS	8.0		
RCN B/10SS	8.0		
I/1035/59	8.31		
SS ROCK/FB	4.0		
ART/FB	4.0		
85	23.3		
88	23.3		
101T	23.3		
4-12SST	0.3		
42-408 SICH	0.9		
BOCHOLT	8.0		
BRAHAMS	3.0		
S-F	0.13		
FLT	0.5		
I/1036/59	8.31		
RCN/59	8.31		
2/189	23.5		
3/189	23.5		
HQ/59	8.31		
502	4.0		

APPENDIX D: Order of Battle — Allied

82nd U.S. Airborne Division



82 HQ DIV
ART(250)S
CP: 21
ST: 2
T1: 17,8



British Guards Armored Division



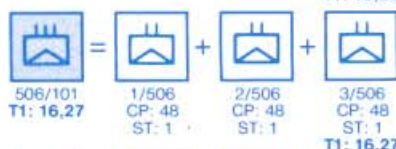
Gds HQ
ART(170)L
CP: 30
ST: 2
T1: 28,31



101st U.S. Airborne Division



101 HQ DIV
ART(80)S
CP: 21
ST: 2
T2: 15,26



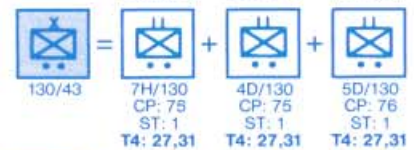
43rd British Motorized Infantry Division



43 HQ
ART(255)L
CP: 30
ST: 2
T4: 27,31



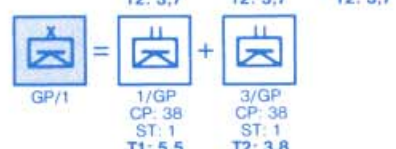
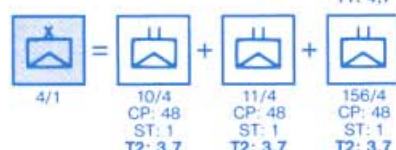
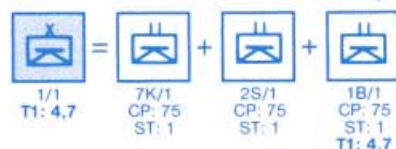
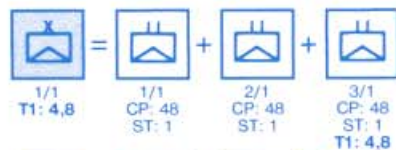
ENG/43
CP: 56
ST: 1
T4: 29,31



1st British Airborne Division



1 HQ DIV
ART(70)S
CP: 21
ST: 2
T1: 3,7

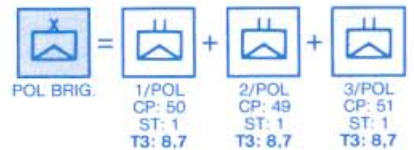


ENG/1
CP: 23
ST: 1
T1: 3,8



RECON/1
CP: 23
ST: 1
T1: 5,7

Polish Airborne Brigade



231st Motorized Infantry Brigade



Miscellaneous 30 XXX Units



APPENDIX D: Order of Battle – German

9SS Panzer Division



HQ/9SS
ART(31)D
CP: 35
ST: 2
T1: 3,0



PZGR/9SS
CP: 40
ST: 1
T1: 4,0



RCN/9SS
CP: 39
ST: 1
T1: 11,8



9/9SS



I/9
CP: 56
ST: 1
T1: 6,3



II/9
CP: 58
ST: 1
T1: 22,27



19/9SS



I/19
CP: 32
ST: 1
T2: 3,0



II/19
CP: 33
ST: 1
T2: 3,0



20/9SS



I/20
CP: 31
ST: 1
T1: 8,0



II/20
CP: 38
ST: 1
T1: 29,30

10SS Panzer Division



HQ/10SS
ART(122)L
CP: 21
ST: 2
T2: 17,0



RCN A/10SS
CP: 39
ST: 1
T1: 8,6



RCN B/10SS
CP: 39
ST: 1
T2: 8,0



PZ GR/10SS
CP: 39
ST: 1
T2: 8,0



10/10SS



I/10
CP: 58
ST: 1
T2: 16,0



II/10
CP: 38
ST: 1
T2: 16,0



21/10SS



I/21
CP: 57
ST: 1
T2: 17,0



II/21
CP: 56
ST: 1
T2: 16,0



22/10SS



I/22
CP: 48
ST: 1
T1: 8,0



II/22
CP: 50
ST: 1
T1: 26,31

59th Infantry Division



HQ/59
ART(44)S
CP: 25
ST: 2
T2: 8,31



RCN/59
CP: 33
ST: 1
T2: 8,31



1034/59



I/1034
CP: 48
ST: 1
T1: 16,28



II/1034
CP: 49
ST: 1
T1: 16,28



1035/59



I/1035
CP: 39
ST: 1
T2: 8,31



II/1035
CP: 48
ST: 1
T3: 8,31



1036/59



I/1036
CP: 38
ST: 1
T2: 8,31



II/1036
CP: 49
ST: 1
T3: 8,31

7th Fallschirmjaeger Division



HQ/7FJ
ART(40)L
CP: 19
ST: 1
T4: 23,8



7



16/7
CP: 49
ST: 1
T1: 30,30



17/7
CP: 50
ST: 1
T6: 23,8



18/7
CP: 39
ST: 1
T4: 23,8

84th Infantry Division



HQ/84
ART(48)L
CP: 25
ST: 1
T7: 23,7



84



1051/84
CP: 32
ST: 1
T7: 23,8



1062/84
CP: 39
ST: 1
T7: 23,8



1063/84
CP: 31
ST: 1
T7: 23,8

85th Infantry Division



HQ/85
ART(32)L
CP: 15
ST: 1
T4: 8,30



85



1053/85
CP: 49
ST: 1
T4: 8,31



1054/85
CP: 38
ST: 1
T4: 8,31

180th Infantry Division



HQ/180
ART(65)L
CP: 23
ST: 1
T1: 30,25



180



1221/180
CP: 38
ST: 1
T7: 23,13



1222/180
CP: 39
ST: 1
T1: 30,25



1223/180
CP: 40
ST: 1
T7: 23,13

107th Panzer Brigade



107



2107P/107
CP: 130
ST: 2
T3: 23,20



2107/107
CP: 48
ST: 1
T3: 23,20



280AT/107
CP: 38
ST: 1
T3: 23,20

Flak Brigade



SS ROCK/FB
ART(49)L
CP: 10
ST: 1
T2: 4,0



ART/FB
ART(150)L
CP: 30
ST: 2
T2: 4,0



FB



19-112SS/FB
ART(32)D
CP: 10
ST: 1
T3: 3,0



1AT/FB
ART(31)D
CP: 10
ST: 1
T3: 3,0



2AT/FB
ART(32)D
CP: 10
ST: 1
T3: 3,0



3AT/FB
ART(33)D
CP: 10
ST: 1
T3: 3,0

189th Panzer Regiment



189



1/189
CP: 23
ST: 1
T1: 15,25



2/189
CP: 32
ST: 1
T2: 23,5



3/189
CP: 23
ST: 1
T2: 23,5

406th Landschutzen Regiment



406



1/406
CP: 23
ST: 1
T1: 16,8



2/406
CP: 24
ST: 1
T1: 18,9



3/406
CP: 21
ST: 1
T1: 22,6

6th Fallschirmjaeger Regiment



6



I/6
CP: 48
ST: 1
T1: 27,30



II/6
CP: 49
ST: 1
T1: 26,30



ART/6
ART(75)S
CP: 10
ST: 1
T4: 23,7

APPENDIX D: Order of Battle – German (cont.)

Independent Units



I/2
CP: 65
ST: 1
T1: 27,30



I/7
CP: 23
ST: 1
T4: 23,8



80
CP: 57
ST: 1
T1: 23,5



85
CP: 38
ST: 1
T2: 23,3



88
CP: 48
ST: 1
T2: 23,3



100T
CP: 31
ST: 1
T1: 23,8



101T
CP: 32
ST: 1
T2: 23,3



105T
CP: 33
ST: 1
T4: 23,8



4-12 SST
CP: 56
ST: 1
T2: 0,3



16 SST
CP: 48
ST: 1
T1: 4,6



42-408 Sich
CP: 48
ST: 1
T2: 0,9



FLT
CP: 23
ST: 1
T2: 0,5



47MG
CP: 65
ST: 1
T5: 3,0



BOCHOLT
CP: 56
ST: 1
T2: 8,0



502
CP: 23
ST: 1
T2: 4,0



506
CP: 56
ST: 1
T8: 4,0



642M
CP: 56
ST: 1
T5: 3,0



BRAHAMS
CP: 48
ST: 1
T2: 3,0



KAUER
CP: 22
ST: 1
T5: 3,0



KNAUST
CP: 170
ST: 3
T6: 8,0



HG
CP: 48
ST: 1
T5: 0,13



S-F
CP: 38
ST: 1
T2: 0,13

T = Turn # CP = Combat points ST = Stacking value

CREDITS

Game Design
Chuck Kroegel

Programming
David Landrey

Development
David Landrey and Chuck Kroegel

Customized Disk Operating System
(Apple version)
Roland Gustafsson

Art & Graphic Design
**Louis Hsu Saekow,
Kathryn Lee & Dave Boudreau**

Typesetting
Abra Type

Printing
A&a Printers and Lithographers

AIR MISSION MENU (Air Strike Phase)

- (0-6):** 0 centers the screen. 1-6 moves the cursor in the indicated direction.
- (Q)uit:** Exits the menu.
- (I)nterdiction:** Adds an air point to interdiction of enemy movement.
- (G)round Attack:** Executes an attack on the hex beneath the cursor.

CURSOR MENU (Operation Phase)

- (0-6):** 0 centers the screen, and 1-6 moves the cursor in the indicated direction.
- (G)et:** Accesses the unit(s) in the hex beneath the cursor. You may even access enemy units for examination only.
- (C)ombat:** Exits the Operations Phase and activates combat resolution.
- (T)errain:** Removes all unit shapes from the map to expose the terrain underneath. Press any key to return units.

For Advanced Game only:

You may not access enemy units for examination.

UNIT MENU (Operation Phase)

When the (G)et function is used from the cursor menu and there is more than one unit in the hex, a list of the units is displayed, numbered from one to two, three, or four. Pressing a number will access that unit while pressing (Q)uit will return to the cursor menu.

COMMAND MENU #1 (Operation Phase)

An accessed unit will have its name and a few of its statistics displayed. A directional compass is printed in the corner as an aid for movement. From this menu, the player may execute any of the actions on the command list or access the Command Menu #2 by pressing "D", or the Command List by pressing "L".

COMMAND MENU #2 (Operation Phase)

When this menu is displayed, all of the unit's statistics are shown at the bottom of the map. Any of the actions on the command list may be executed from this menu. The Command Menu #1 may be accessed by pressing "D" and the Command List may be accessed by pressing "L".

COMMAND LIST MENU (Operation Phase)

The command list displays all the possible actions the unit may take with the required keystroke. Command Menu #1 may be accessed by hitting any key and Command Menu #2 by pressing "D". No other commands may be executed from this menu.

- (0-6):** Centers and moves unit under the cursor in the indicated direction.
- (G)et:** Accesses units in the hex.
- (N)ext:** The next unit on the map in order of appearance is scrolled to and accessed.
- (Q)uit:** Exits unit and enters Cursor Menu.
- (T)errain:** Removes units from the map.
- (X)Disband:** Unit is removed from the map (DB:Y or DB:N is displayed). One third of its remaining combat strength is distributed among units in the same hex.
- (F)ort:** Fortify one level. The number following is the current fort level.
- (M)ode:** Changes mode. Letter indicates present mode (T = Travel and N = Normal).
- (B)uildup/
Breakdown:** Changes plot from N (no action) to D (breakdown) or U (buildup). N-38, D-38, or U-38 is displayed. The number equals unit slots available.

For Advanced Game only:

- (A)dvance:** Orders unit to advance after combat. The number may range from 0 to 2 indicating the extent of the desired advance. The program automatically determines this in the INTERMEDIATE game.
- (O)ffensive
Barrage:** Allows an artillery unit to plot a barrage. Move cursor to target and type "T".
- (P)rotective
Barrage:** Allows an artillery unit to plot its protective fire split among attacked units within range (1 = 100% to first unit and 2 = 50% for first unit and 50% for the second). The command toggles from Art(1) to Art(2) on the display.

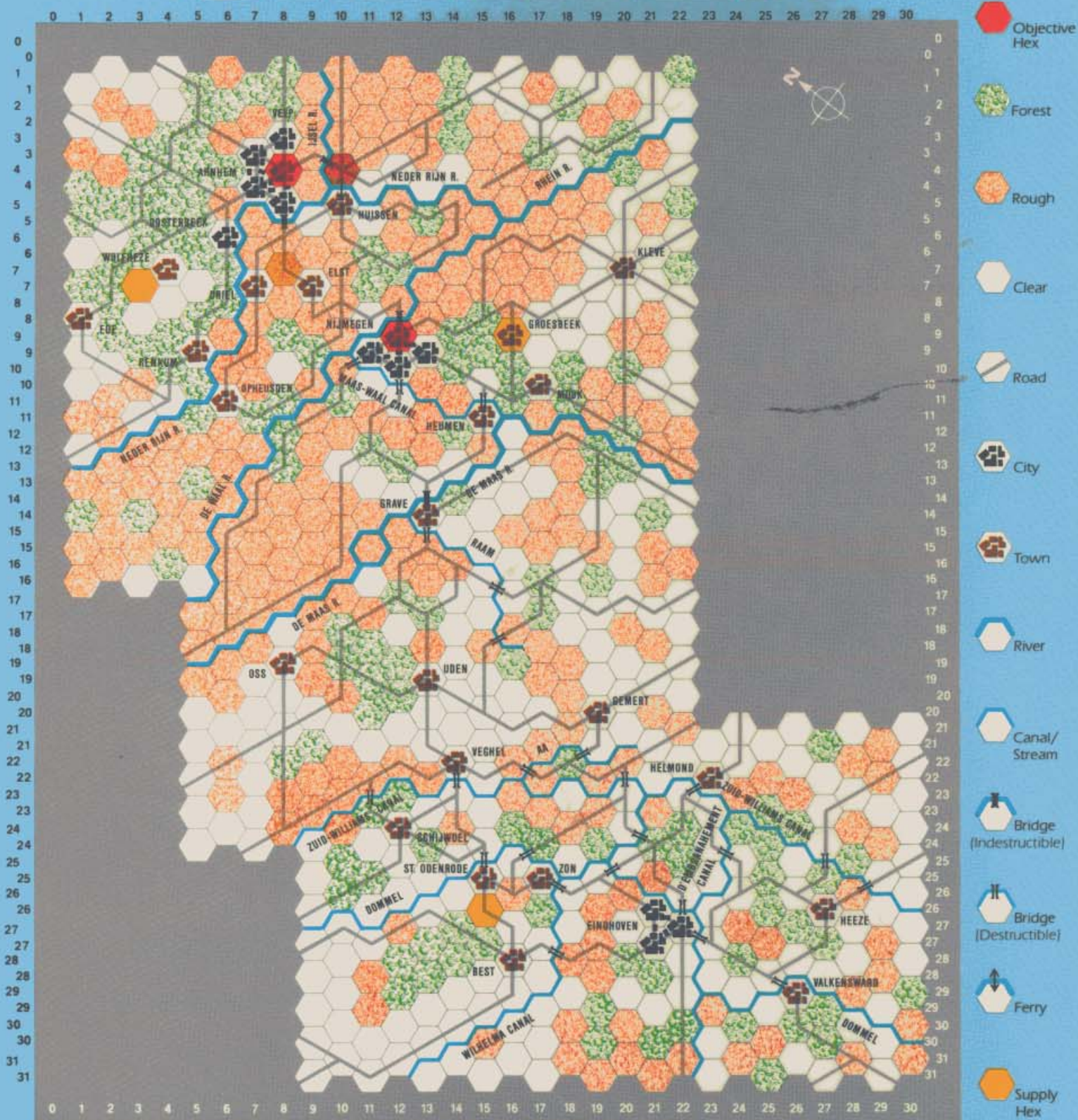


STRATEGIC SIMULATIONS, INC.

If you have any questions or problems regarding the program or game, please send a self-addressed, stamped envelope with your question to: STRATEGIC SIMULATIONS, INC., 883 Stierlin Road, Building A-200, Mountain View, CA 94043-1983.

Or call our Hotline Number: (415) 964-1200 every weekday, 9 to 5 (P.S.T.).

OPERATION MARKET GARDEN













OPERATION MARKET GARDEN™

OPERATION COSTS TABLE

ACTION	  	 	  	COMMAND CONTROL	
				IN	OUT
ENTER OPEN HEX	4	5	3	+0	+1, 2, 3
ENTER ROUGH HEX	7	16	7	+0	+1, 2, 3
ENTER FOREST HEX	10	16	10	+0	+1, 2, 3
ENTER TOWN HEX	3	3	3	+0	+1, 2, 3
ENTER CITY HEX	3	7	3	+0	+1, 2, 3
ENTER OFF-BOARD HEX	5	5	5	+0	+0
ENTER ENEMY ZOC	2	2	2	+0	+0
ENTER ENEMY CONTROLLED HEX	+1	+1	+1	+0	+0
CROSS STREAM/CANAL	P	P	6	+0	+1, 2
CROSS RIVER	P	P	10	+0	+1, 2
CROSS ROAD HEXSIDE: 1 STACKING POINT	1	1	1	+0	+0
CROSS ROAD HEXSIDE: 2+ STACKING POINTS	2	2	2	+0	+0
CROSS GERMAN FERRY	10	10	N/A	+0	+0
LEAVE ENEMY ZOC (TRAVEL)	3(5)	3(5)	3(5)	+0	+0
FORTIFY (ENG. PRESENT)	15(10)	15(10)	15(10)	+0	+0
OFFENSIVE FIRE	7	7	7	+0	+1, 2
DEFENSIVE FIRE	5	5	5	+0	+1, 2
MOVE ZOC TO ZOC	ALL	ALL	ALL	+0	+0

P = Prohibited; N/A = Not Applicable

- | | |
|--|--|
|  = Panzergrenadier |  = Artillery |
|  = Mechanized Infantry |  = Headquarters |
|  = Engineer |  = Infantry |
|  = Armor |  = Airborne |
|  = Recon |  = Glider |

FIRE STRENGTH MODIFIERS

Effectiveness:	.01 * EFF
Supplied Status:	1.00
Out of Communications Status:	1.00
Unsupplied Status:	.75
Isolated Status:	.25
Engineer Bonus:	+15
Parent Unit:	1.15
Travel Mode:	.33
Short Range Artillery at 2 hexes:	.50
Artillery Protective Fire #1:	1.00
Artillery Protective Fire #2:	.50
Armor Fire in Rough:	.50
Armor Fire in Forest:	.33
Offensive Fire Across Rivers:	.30
First Attacking Unit:	1.00
Second Attacking Unit:	.80
Third Attacking Unit:	.60
Fourth Attacking Unit:	.40
Random Modifier:	.80 to 1.20
Battle Time:	ROP/OP

ROP = Remaining Operation Points
OP = Operation Points

CASUALTY MODIFIERS

Target in Open Terrain:	+20%
Target in Town:	-10%
Target in Forest:	-20%
Attacking Units Located in City:	+25%
Attacking Units Across River/Bridge:	+25%
Target in Travel Mode:	+20%
Target is Armor:	-30%
Firing Unit is Artillery:	-40%
Per Fort Level:	-5%

WEATHER EFFECTS

CONDITION	ALLIED AIR	GERMAN AIR	AIRBORNE REINF
Clear	8	2	10
Cloudy	4	1	5
Overcast	0	0	0

SUPPLY EFFECTS

STATUS	OPERATION ALLOWANCES	FIRE POINTS
Supplied	20	1.00
Out of Communications	16	1.00
Unsupplied	10	.75
Isolated	5	.25



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