

OPERATION WHIRLWIND

by Roger Damon

Two river crossings and fifteen kilometers away, your primary objective lies waiting. Your orders are clear—take the city and hold it. Operation Whirlwind is about to begin!

INTRODUCTION

Operation Whirlwind puts you in command of a reinforced infantry battalion. Your job, as Battalion Commander, is to smash through enemy lines, mop up any resistance you encounter, and secure the town at the far right edge of the map.

Opposing you will be the computer's forces; a rag-tag mix of infantry and armor, all bent on stopping you. You will also be harassed by enemy mines and long ranged artillery. You will have a limited amount of time in which to accomplish your objective.

If you seize the city on schedule and hold it against counterattack, your victory could provide a breakthrough in the war. If you fail, the entire front may collapse.

May your forces fare well.

GETTING STARTED



LOADING

DISK VERSION – Turn on the disk drive, turn on the computer, insert the disk, then type: **LOAD "WW";8** and press RETURN. When Ready appears type **RUN** and press RETURN.

CASSETTE VERSION – Turn on your computer. Insert cassette into cassette player. Press **SHIFT** and **RUN/STOP** together. Press **PLAY** on tape. At 'found' press SPACEBAR. Your screen will remain blank during loading.

– Your battle map is included on page 23.

GAME CONTROLS

Plug your joystick into control port 2. Your joystick will control the movement of the cursor and the scrolling of the screen. The fire button initiates movement, firing, and assaults. The only other input the game will require will be from the keyboard. The FUNCTION (f) keys at the right of the Commodore keyboard will be used to set up the difficulty level. The SPACEBAR is used to take you from one game phase to the next and to access the disk for saving and retrieving games.

Immediately following the initial title screen, you will see a reminder, or "prompt," telling you to hit the SPACEBAR to continue an old game or to hit the joystick button to start a new game. Hit the joystick button for now.

LEVEL OF DIFFICULTY

Next you will see a prompt asking you to select a level of difficulty. There are four different levels of difficulty in OPERATION WHIRLWIND:

- 0 Introductory joystick button
- 1 Beginning f1
- 2 Intermediate f3
- 3 Advanced f5

Pressing the joystick button will start the game at Introductory Level. Hitting the f1 key will begin the game at the Beginning Level. Hitting the f3 key will begin the game at the Intermediate Level. Hitting the f5 key will begin the game at the Advanced Level.

Levels 0 and 1 are good for beginners while level 2 is definitely more difficult and a preparation for the extremely difficult level 3.

Hit the fire button (level 0) for now.

SAVE GAME

At the completion of each "turn" (i.e. at the end of each cycle of the five "phases") you have the option of saving the game-in-progress to disk only.

When you see the prompt to save the game, you may save it to disk by pressing the SPACEBAR. This takes you to the save routine, which allows you to save the game on a separate data disk. Your data disk must be a formatted, blank disk with nothing else on it. Do not use the disk for any other purpose. Insert the save disk into the drive and hit the SPACEBAR when prompted. The game will be saved at that turn. After the save, the game will continue.

To enter a previously saved game, load the program as described earlier. You will see the prompt "HIT SPACEBAR TO ENTER OLD GAME." After you hit the space bar, follow the prompt that reads "INSERT DATA DISK HIT SPACE BAR AGAIN."

When you enter an old game in progress, it will resume play at the difficulty level originally chosen. You cannot change the difficulty level in midgame.

PLAYING OPERATION WHIRLWIND



OVERVIEW

After you have followed the previous instructions, you will see a portion of the battlefield with a text area below it. There will be a white square on the battlefield. This is the cursor, which you control with the joystick. Moving the stick will cause the cursor to move in the appropriate direction. When the cursor reaches the edge of the screen, the map will scroll in the direction indicated until the map edge is reached. Below the map is the text area. The first item indicated is the phase you are in.

Phases:

There are five phases in each game turn:

- A. COMMAND PHASE
- B. MOVEMENT PHASE
- C. COMBAT PHASE
- D. ASSAULT ORDER PHASE
- E. ASSAULT PHASE

Hitting the SPACEBAR takes you from one phase to the next.

You can only encounter these phases in the above order. After the Assault Phase comes the Command Phase of the next turn.

In brief, the phases are used for the following purposes:

Command Phase: Orders units to dig in or become combat ready.

Movement Phase: Moves your individual units.

Combat Phase: Sights and fires on enemy units; takes enemy fire.

Assault Order Phase: Orders close in assaults, overruns, and bridge reconstruction.

Assault Phase: Carries out assault orders and enemy counter attacks.

Victory Level and Save Game:

At the end of the Assault Phase, you will see the present level of victory your forces have achieved. This will be displayed briefly, followed by a prompt asking if you want to save the game at this point. Hitting the SPACEBAR at this time will save the game onto a data disk of your own. (See p. 4, "Save Game," for details.) Pressing the joystick button will take you to the Command Phase of the next turn. The present turn will be displayed at the bottom of the screen.

Turns:

There are up to 35 "turns" in a game (that is, up to 35 sequences of these five phases). The game ends when either of two conditions is met: 1. Turn 35 is reached, or 2. The human player has units in the town and no enemy units remain in the victory area for two consecutive turns. The victory point area is the shaded area of town on the map.

There are time limits involved. Each level has a turn number that, if the player exceeds that turn, points are taken away. For levels 1 and 2, this happens from turn 20 on. In level 3 it is turn 25. There is no such turn limit in level 0. To achieve a decisive victory, it is important to take your objective within the designated number of turns.

Messages:

Between the phase indicator and the turn indicator in the test area there will appear various messages relating to activity on the map.

These messages will help you get used to the game and will carry such information as; 1. What type of unit you are moving, firing, or assaulting with along with its Movement (M), Firepower (F), and Range (R) capabilities. There is also a rating of its current Strength (S). 2. Whether or not enemy units are on the move. 3. Whether or not one of your units is combat ready (activated) or digging in. 4. Whether or not a unit is firing outside its range or out of its line of sight. 5. When mines have been encountered by one of your moving units, and other such events that are mainly self-explanatory and are explained in the table below.

You may freeze all but three of these messages by pressing the joystick fire button and holding it down. The message will remain on the screen until you release the button.

The three messages that may not be held in this manner are: 1. The message indicating mines have been encountered. 2. The message indicating that a firing unit cannot sight the target, and 3. The victory level.

MESSAGE	MEANING
****MINES****	The unit you are currently moving has encountered enemy emplaced mines and is temporarily disrupted.
UNIT COMBAT READY	Seen in the Command Phase when the cursor is placed over a friendly unit and the fire button is pressed. It indicates that that unit is active and can perform all of its activities.
DIGGING IN	Seen in the Command Phase when the cursor is over a friendly unit and the fire button is pressed. It indicates that the unit is regrouping and setting up a temporary defense and awaiting supplies and orders.
SIGHTING IS BLOCKED TO THAT AREA	Seen during the Combat Phase when a unit not capable of sighting through woods or town attempts to fire through those areas. The cursor will be halted and the fire aborted.
TARGET AREA IS OUT OF RANGE	Seen during the Combat Phase when a unit attempts to fire at a target that is beyond its range. The firing attempt will be aborted.

CURSOR IS NOT ON A FRIENDLY UNIT

This happens in any phase in which you try to move, fire, or order an assault and the cursor is not positioned directly over one of your units.

CURSOR IS ON A FRIENDLY UNIT

This message occurs when you try to fire on one of your own units. The fire will be aborted.

Your Forces:

Your units will be visible at the start of the game. They will be black on a white square, represented on the battle map by the following symbols:

Battalion H.Q.
M = F F = M R = 09



Recon Unit
M = F F = S R = 05



Infantry Company
M = S F = S R = 02



Engineer Company
M = S F = M R = 02



Light Tank Platoon
M = F F = M R = 09



Heavy Tank Platoon
M = M F = H R = 11



Artillery Battery
M = M F = H R = 40



During the game, when you highlight a unit with the cursor, the text area will display the type of unit it is along with its Movement (M), Firepower (F), Range (R) and Strength (S). (See M, F and R values above):

M (Movement) will either equal an S (Slow), M (Medium), or an F (Fast).

F (Firepower) will either be an S (Small arms), an M (Medium arms), or an H (Heavy arms).

R (Range) will be given as a number from 02 to 40.

S (Strength) will be given as a number from 4 (maximum strength) to 1 (minimum).

Movement (M) and Firepower (F) are relative values and will depend on the unit, the terrain it is crossing, its level of depletion, and any enemy fire it encounters.

Range (R) is more exact and does not change. It is given as the number of squares (a square being equal to the size of one unit) a unit can fire, maximum. A unit with a range of 09 can fire at an enemy that is up to nine squares away.

Strength (S) is a rating of the current condition of a unit. Each of your units (except the Battalion HQ) also has a Strength Bar on the lower edge of the symbol. This Strength Bar visually indicates the general shape that unit is in. As it gets shorter, a unit becomes less effective. A unit's strength is only decreased when it takes hits from enemy fire or artillery. To recover some of this lost strength, a unit must remain dug in for a number of turns.

Enemy Forces:

The enemy has armor and artillery units. All of the enemy units start the game hidden and will only appear on the screen if they fire or move. Once they appear, they will remain visible for the remainder of the game, represented on the map by these symbols:

Enemy Infantry Company



Enemy Tank or
Assault Gun Platoon



The enemy also has land mines in place. When your units encounter mines, your units will flash and the message window will inform you that mines have been encountered. Mines do not hurt a unit directly. The most they can do is stop a unit in its tracks. Their main purpose is to disrupt your movement. How often you hit them and how they stop you depends on the level of difficulty selected.

COMMAND PHASE

Object: Order your units to dig in or to become combat ready.

This is the first phase of each turn. The cursor will be a square, white box. In this phase, you can move the cursor around the map with the joystick and scroll the map by taking the cursor to the map edge and holding the stick in the direction you want the map to scroll. The map will no longer scroll when the edge of the map has been reached. If you place the cursor over one of your units and press and hold down the fire button the text area will display the type of unit it is and indicate whether or not the unit is combat ready or digging in. Releasing and then pressing the button again will change this state for that unit.

Digging In:

When you dig a unit in, what you are doing, in effect, is ordering that unit to halt and collect and recover from its disarray. While it remains dug in over a few turns, its Strength Bar will increase toward full strength, simulating scattered forces rejoining their unit while the unit itself is resting.

A unit that's dug in is indicated by the addition of an extra bar just below its strength bar. This bar is not altered due to strength and it always stretches the whole way across the bottom of the unit. You have total freedom in digging units in or not in the Command Phase and may do it as often as you wish.

Units that are left dug in will not be able to move or assault for the remainder of the turn. They will be able to fire in the Combat Phase. If a unit that has a

noticeable loss of strength is dug in, it remains dug in. This is how you build depleted units back toward full strength, though no unit will be rebuilt to full strength once it has taken some losses.

Units must remain dug in for a complete turn to regain strength. They can remain dug in for an indefinite number of turns, regaining strength for each turn they do so. The rate of recovery a dug in unit will encounter will depend on what difficulty you are in and whether or not that unit has come under fire while it is dug in.

MOVEMENT PHASE

Object: Move your units. Draw enemy fire.

When you have finished with the Command Phase, press the SPACEBAR. When the cursor turns violet, release the SPACEBAR. The cursor will then turn black and you will be in the Movement Phase. You may now move all of your units which are not dug in.

To move a unit, place the cursor over it and press the fire button. The cursor will change to a light green, indicating that the unit has been "picked up." You may now move that unit with the joystick. No diagonal moves are allowed. You can only move a unit vertically or horizontally.

When a unit is "picked up," the text area will display the type of unit it is along with its Movement (M), Firepower (F), Range (R) and Strength (S).

Red Cursor Warning:

As you move a unit, or sometimes when you pick up a unit, the cursor will turn red. This is a warning indicator to inform you that the unit has done just about all it can do for the turn, that it has used up all, or almost all, of its Activity Points. Activity Points keep track of how much any one unit can do in a single turn. The red cursor warns you that a unit can not be pushed much farther that turn.

If all of a unit's Activity Points are used, you will see the message "ACTIVITY DEPLETED" appear in the text area when you do try to move it. The cursor will then turn black and the unit will no longer be "picked up."

If a unit is moved until its Activity is depleted, it will not be able to fire in the following Combat Phase. If a unit is moved until it is only partially depleted or until the cursor turns red, it may still fire once in the Combat Phase. A unit that only moves a little, or not at all, may fire twice in the Combat Phase.

Range of Movement:

Each unit is limited as to the number of squares it can be moved in a Movement Phase. Under ideal conditions and across clear, open (not road) terrain, each unit has a starting or base movement allowance:

BASE MOVEMENT ALLOWANCE

Recon Unit	26 squares	Engineer	15
Battalion HQ	16	Artillery	9
Light Tank	15	Infantry	9
Heavy Tank	12		

These base values will change as the battle progresses. If a unit loses strength, its base will decrease accordingly.

The base will also not apply if a unit moves over varying terrain types. Units moving through woods, buildings, or crossing streams will not move as far as over clear terrain. Units moving on roads will move farther than on clear terrain. Generally, roads double movement while woods, buildings, and the streams halve it.

Completing a Move:

After you have finished a unit's move for the turn or only for the time being, you may "put it down" by hitting the fire button. The cursor will turn black and you may move another unit or move that unit again, providing it still has Activity Points. You may move all, some, or none of your units in a Movement Phase.

Restrictions to Movement:

There are some restrictions to movement:

Your light and heavy tanks will not be able to enter full woods squares, though they may move on the outskirts of the woods.

Units may not be moved into a square containing another unit, friendly or enemy.

Units may not be moved onto the blown bridges.

Units may not be able to cross a stream on their first try. If a unit fails on its first attempt to cross a stream, you will see the message "UNIT UNABLE TO CROSS STREAM." You may continue trying to cross that unit until it actually does cross or until its activity is depleted. Generally, infantry has the best chance of crossing an unbridged stream and tanks have the worst chances.

You may not move a unit off the map or off the screen. If you reach the screen edge while moving a unit, press the fire button to put it down and then scroll the screen in the desired direction. Then, pick the unit back up with the fire button and continue its move.

Units may stop moving if they encounter mines or if they come under heavy enemy fire. If this happens, the computer will automatically "drop" the unit and the cursor will turn to black.

Enemy Fire:

As you move your units, hidden enemy units may suddenly appear on the map and open fire on your moving unit. It is when this fire is intense enough or accurate enough that your unit may be halted.

When an enemy unit fires (hidden or visible), you will hear a "bang" and see an "F" (for Fire) appear on the screen. The "F" indicates the location of the firing enemy unit. If the unit was hidden, it will appear on the screen after it fires and will no longer be hidden. If nothing else happens after the first "bang," then the shot was a miss. If your unit flashes with an explosion, then that indicates that the shot was a hit and that casualties were taken. You may continue moving a unit that has taken a hit as long as its activity was not depleted by the hit.

COMBAT PHASE

Object: Order Your Units to Fire

When you have finished moving your units, press the SPACEBAR. The cursor will again turn violet. When it does, release the SPACEBAR. You will now enter the Combat Phase.

In the Combat Phase, things start hopping. Enemy artillery, originating from miles behind enemy lines and off the map, may start to fall among your forces. You will see the flashes and hear the boom as it hits here and there. This artillery is not particularly devastating to your forces, though it does have some effect on their strength when it hits a unit directly. The more time you take between moves, the heavier the attack.

In Combat Phase, the cursor will change to a crosshair, allowing you to fire at enemy units.

How to Fire:

To fire a unit, place the crosshair over the unit by moving the joystick and press the fire button. You will either hear a "beep" along with the message "ACTIVITY DEPLETED" appearing in the text area, in which case the unit may not fire, or the cursor will turn white and you will see the unit type and capabilities in the text area. If the latter is the case, then a firing is initiated. Move the crosshair to the target with the joystick. It should twinkle as it is moved, indicating that a shot is being ranged in on a target, press the fire button again. Your unit will then automatically fire at the target. If, when you press the fire button, you hear a "beep" and the message "TARGET AREA IS OUT OF RANGE" appears in the text area, then you must shoot at something closer with that unit as the target is not in its range.

When moving the crosshair through woods or buildings, it may stop moving. This will be accompanied by a "beep" and the message "SIGHTING IS BLOCKED TO THAT AREA." This means that your unit cannot see the firing unit. This will not happen if the firing unit is Artillery.

When one of your units does fire, it will be temporarily replaced by an "F," indicating that it is firing. The target will then explode. However, you will not know for sure if you have hurt the target until you have hit it enough to render it totally ineffective. At that point, it will disappear and the message "UNIT ELIMINATED" will appear in the text area.

Each of your shots has a varying degree of impact on the target depending on the types of units involved, the strength of the units, the terrain the target is in, and the range. Though each shot will appear to hit, not all of them do. Depending on the difficulty level you choose, an enemy unit can sustain from three to twenty hits (not just shots) before it is eliminated.

If you are about to fire a unit and want to change your mind and fire another unit, then place the crosshair (it must be activated and "twinkling") on any friendly unit and press the fire button. You will see the message CURSOR IS ON A FRIENDLY UNIT and the shot will be aborted. You cannot shoot your own units.

ASSAULT ORDER PHASE

Object: Order close in assaults, overruns, bridge reconstruction.

When you have fired all of your units that you wish to fire, push the SPACEBAR. The cursor will again turn violet. When it does, release the SPACEBAR. You will now enter the Assault Order Phase. The cursor will change to an arrow and turn red. Enemy artillery will stop falling.

In this phase, you will give orders to your units to assault enemy units that are right next to them. Infantry and Engineers can assault. Tanks can overrun. And Engineers can build blown bridges. If you want to assault or overrun an enemy unit, the unit you want to perform this task must be right next to the enemy unit. You must then give the order to assault or overrun.

To order an assault or overrun, place the arrow over your unit and press and hold the fire button. Then, holding the button down, move the joystick in the direction of the enemy unit to be assaulted or overrun. The arrow will turn blue and point in that direction. Then release the button and go on to other units with which you wish to assault.

If an Engineer unit is right next to a blown bridge, you may order it to try to rebuild that bridge. Place the arrow over the Engineer and, holding the fire button down, move the joystick in the direction of the bridge. The process is identical to assaults.

Engineers may also assault enemy units much like Infantry, with the exception that they will have a more likely chance of dislodging the enemy unit than Infantry has due to their contingent of flamethrowers and demolitions charges.

ASSAULT PHASE

Object: Carry out assault orders.

After you have given all of your orders in the Assault Order Phase, push the SPACEBAR down. When the cursor turns violet, release it. The cursor will disappear and you will enter the Assault Phase.

Infantry and Engineers that have just received assault orders will attempt to assault their targets. Tanks will attempt to overrun their targets.

Engineers given the orders will attempt to repair bridges. If they succeed, the unit will move onto the bridge. If they fail, they will remain in place and must be given the order to rebuild the bridge again in the next Assault Order Phase.

Losses:

In assaults and overruns, losses are inflicted and incurred at a greater rate than in normal fire, and noticeable changes in your unit's Strength Bars may appear.

Losses in assaults, unlike losses in normal fire, are taken in full strength losses rather than gradual reductions in strength. What this means is that, in normal fire, a unit may take a few hits before its strength bar begins to shorten. In assaults, any hit taken, either by your assaulting unit or by the defender, is a full step in reduction. Assaults are close fighting and, at the ranges represented, losses are more severe than ranged fire.

Enemy Fire:

After all of your assaults are resolved, the computer, in the interest of fair play, will move any of its units that it has "decided" to move and fire one shot at any of your units that are in range. You will hear these shots, if the screen is not scrolled to the specific area. You will then see the current Victory Level followed by the Save Game prompt in the next area.

Enemy Withdrawal and Counterattack:

After all of your units have assaulted (or immediately after entering the Assault Phase if you have no assaults), the enemy units may move, (a series of "thumps"). This is either the withdrawal of all enemy units toward the final defense of the town, or it is the counterattack. If no units are entering from the top and bottom screen edges, then it is the withdrawal. Otherwise, the counterattack has begun and you best brace your forces for some intense fighting.

ENDGAME

Your Objective—The Town:

The town is your main objective. To win decisively, you must have at least one unit in the town proper by game's end and no enemy units can be east of the final stream and south of the forest above the town. This indicates that the town is secured.

Taking the town is not an easy task. There are sighting problems and, often, the defender will be tough to eliminate. Assaults help, but your main weapon will be your artillery.

Remember, to attain victory you must have at least one unit in the town proper and no enemy units can be east of the final stream and south of the forest above the town. You must maintain this condition against counterattack for two consecutive turns.

Victory Levels:

There are five levels of victory that can be achieved. From worst to best they are:

Questionable
Marginal
Tactical
Strategic
Breakthrough

These levels may change during the game as your fates change. You will receive points and your level will rise for eliminating enemy units and building bridges. It will decline as your units are eliminated by the computer's forces. You will also lose a substantial number of points that will generally result in a drop of at least one victory level if you lose your Battalion HQ.

The last turn of the game will affect your final victory rating in additional ways. You will receive points for each of your units occupying the Objective town and you will lose points for each enemy unit in the town. You will also receive a substantial number of points if your Battalion HQ occupies the town at game's end.

The highest level that can be achieved is a Breakthrough in Level 3 with no indications of strength loss on any of your units. A mighty task indeed.

DESIGNER'S NOTES

by Roger Damon



INTRODUCTION:

Modern Wargames have been around for over two decades. Until recently, their popularity has been hampered by the incredible amount of rules that have accompanied each wargame. With the advent of the home computer and computer wargames, the rules are still there, but the bulk of them are taken care of by the computer and lengthy pages of manuscript need not be retained for one to enjoy the unique interest wargames generate.

The following notes are intended for those of you interested in exploring further some of the design features and strategies of Operation Whirlwind. These notes assume no prior knowledge of wargames, and the old hats among you may find that you have already covered some of this territory.

TERRAIN

There are six basic types of terrain represented on the game map: Clear, Woods, Road, Buildings, Crest lines, and Streams. Each feature, except for the crest line, affects play in its own particular way.

Clear:

The clear terrain is the bulk of the area and is featureless. It is the standard by which other terrain is measured. It represents open fields, does not hamper movement, and offers no extra defensive benefits. Units that are in the open and under fire are in the worst possible terrain for survival. As far as the game is concerned, crest lines are treated the same as clear.

Woods:

Woods are obvious hiding places for enemy units. They hamper movement a great deal. A unit that may move 10 squares in the clear will only move two or three squares through the woods. Tanks can go into the edges of a clump of woods, but you will not be able to move them into full woods squares. When ground needs to be covered in a hurry, stay out of the woods, as they will slow you down.

Defensively, woods offer some cover to friendly and enemy units alike. Overall, a unit in the woods will be harder to eliminate than if it were receiving the same punishment in the clear. Woods also hamper fire by blocking direct sight to a target. You may take the crosshair around a set of woods, but this takes time. And the time it takes allows more enemy artillery to fall amongst your units.

Roads:

Roads can really increase the distance your forces can cover in a turn. They effectively double the ground a unit can cover, if it stays on the road during its entire movement. Roads do not offer any particular defensive benefit.

Buildings:

Buildings hamper movement similar to woods, though not as severely. Units in squares containing buildings receive a defensive bonus and can, at time, be very

difficult to eliminate, sometimes taking two or more turns of intensive fire from many units.

Streams:

Streams severely hamper movement unless engineers have built bridges across them at the roads. Often times, a unit will fail in its first attempt to cross a river. If a unit does enter a river square, its movement will be very limited for the remainder of its move. You may repeatedly attempt to cross a river with a unit that has initially failed to cross until it actually does get across or until its activity is depleted. Attempting to cross in this manner does deplete a unit's activity for that turn, whether it is successful or not. Rivers offer some defensive benefits similar to woods.

YOUR FORCES

A thorough understanding of your own units' strengths and weaknesses will allow you to utilize your forces effectively.

Armor:

The meat of your force is your armor. They pack the most wallop and cover ground fairly rapidly. You can use them to bypass enemy units and explore deep into enemy territory or you can keep them back to help the slower infantry wipe out any enemy resistance encountered. Armor will fire to a respectable range and does damage when it hits. Enemy armor is not as effective. Its range is less than your armor, and, with this in mind, you can always stay beyond an enemy unit's range and still fire at it.

Infantry:

Next is the infantry. Along with the armor, these two unit types make up the bulk of your striking force. However, infantry has a much shorter range than armor and its firepower has less of an impact. This, coupled with their slow speed, makes infantry a candidate for eliminating bypassed enemy units and forming the final defensive line in front of the city to thwart the counterattack that comes in the upper three levels of play. Infantry is best for close in fighting and its strength comes to a peak in assaults.

Recon Units:

The rest of your forces are specialized in one way or another. First is the speedy and elusive recon. An unhindered recon unit can move across half of the map, using roads. Their purpose, however, is not just to move around. Their main purpose is to go out ahead of the main pack and seek out hidden enemy units by drawing their fire. Recon units, due to their speed, are hard for the enemy units to hit and they will generally take as much punishment as a tank. They do have some firepower to boot, which, sometimes, is all that is needed to wipe out an enemy position.

Engineers:

Engineers are very useful and powerful in close fighting. They rebuild the blown bridges on the map, they can move fairly far, they have respectable firepower, and they are devastating when they assault. Take care not to let them come under fire too often as they are almost invaluable for a decisive victory plan.

Artillery:

The artillery units are purely offensive. They pack the most firepower of any units on the map and they have a range that covers an entire screen. They should

not come under enemy fire at all. They should be kept well behind your lines and offer your front line units support when needed. Protect them in the latter stages with your infantry. Rarely will an enemy unit withstand four artillery hits in a row in the lower levels of play.

Battalion HQ:

Last is your Battalion HQ. Do not lose this unit. Keep it out of danger whenever possible. You get extra victory points if this unit is in the town on the last turn of the game. Sometimes this will make a difference between one victory level and another. It will definitely make a difference, and not in your favor, if you lose it before game's end. You will have to decide if, and when you should send this unit into town. They do have some firepower due to a contingent of mortars, small field artillery, and anti-tank guns.

THE ENEMY

The enemy has only armor and infantry. Their infantry can fire at a range similar to your infantry, but their armor is outgunned. You can occasionally take advantage of this. The enemy units will fight tough. They will pop out of nowhere and take their shots. And they will shoot again at the end of each turn if you have units in their range. Don't count on getting them with a few shots. Some seem to hang onto their position after an incredible pounding. Unlike your armor, the enemy armor can and will go into the woods.

INITIAL SETUP

There are four basic defensive setups you may encounter against the computer. One of these defenses is slightly randomized around particular areas. There is also a standard defense with strong points across the map, a river line defense with the two streams being the main areas of contact, and a delaying action where you will encounter sporadic resistance until you reach town.

LEVELS OF PLAY:

Operation Whirlwind has four levels of play, 0, 1, 2 and 3. There are 15 variables that are changed from level to level. The first eight cover the firepower effects of the units of both sides. As the levels increase, your units will have less impact and the computer's units will have more.

The remaining changes include the rate at which your dug in units will rebuild, the strength at which the counterattacking units enter the game, the turn the counterattack is triggered, the turn on which you start losing victory points due to slow progress, how often a firing unit will hit, the frequency of mines, and the intensity of mines.

Level 0, is the Introductory level and heavily favors the human player. There is no counterattack in this level. All you need do is get to the town and take it.

Level 1 is similar to level 0, with the main difference being the inclusion of the counterattack and the appearance of mines. In this level, it is possible to get to the town and win the game before the counterattack is triggered. If the counterattack does arrive, it will be composed of a lot of weakened units, many of which can be eliminated by one hit.

Level 2 is the game of fair play. It offers the best balance between the two sides. Skillful play and more than a passing familiarity with the game are needed here to pull off a major victory. A noticeable difference in the quality of the troops opposing you will be apparent in this level.

Level 3 is not for the weak hearted. There will be no major advances in this level as the enemy units are in top notch form and are ready for you. If you get a Breakthrough in this level, you have pulled off a major accomplishment.

Due to the differences in the levels, your strategy should also differ from level to level. Level 0 is an all out dash for the town. Get there fast and take it. Don't worry too much about bypassed enemy units. Your infantry should be able to deal with them when they withdraw toward the town. Level 1 is also a dash for the town. The main difference in Level 1 will be the counterattack, which you should prepare for if you are beyond turn 10 and haven't taken the town yet.

Levels 2 and 3 are where the true test of the challenge lies. The dash for the town that can work in Levels 0 and 1 becomes suspect in the upper two levels. Any rapid advance will be seriously curtailed by the increased effectiveness of the enemy units encountered. There will be little room for careless use of your units. Your preliminary objective should be to get to (not across) the far stream in force, and to get there not too far beyond turn 10. If you can achieve this, then your infantry and a few armor units should set up a defensive line to the left of the final stream. Get the bridges built and send one or two small armor task forces across the stream and into the town. You will meet stiff opposition and things should be taken slowly. A suggested task force would be a recon unit, two heavy tanks, two light tanks, and possibly an engineer for assaults. The defensive line of infantry should be dug in. If you have some extra units, put them behind the line to fill any holes that the enemy may create.

When you finally have units in town and there are no enemy units remaining there, the enemy will stop sending in reinforcements from the board edges. The remaining enemy units will still attempt to break through, and, if they succeed, reinforcements may again appear in support of the breakthrough. Once you claim the town with your units, don't abandon it entirely. You may need to send some units back across the river to help hold off the counterattack. But don't send everyone back. Leave some units behind in the town. Remember to send a recon unit through the town to shake out all enemy units and to assure you that you do indeed hold the town.

THE COUNTERATTACK

Your forces represent one battalion. The game situation assumes that your forces are not on their own but are supported by a battalion to the north and another battalion to the south. Both of these battalions are off the map and play no direct part in the game. However, under certain conditions, either one, or both, of their attacks will fail and the enemy units they were to handle attack you instead.

The forces counterattacking will enter from the top and bottom map edges. Their main task is to relieve the town. If a counterattack comes, you must keep the units from getting to the town as this will severely curtail any plans you have for a quick and decisive victory.

For the most part, the units entering in the counterattack will be at some level of reduced strength. Their main weapon is their relentless attempt to get to the town. The strength at which these units arrives depends on the level of play. The lower the level, the weaker they will be when they arrive.

GENERAL STRATEGY:

There are several tactical maneuvers and some strategic considerations that are involved with the way the game works and the way certain events affect the course of a battle.

Strategically, there are a few choices. Looking at the overall situation, there are three phases to the battle. Phase 1 involves getting across the first stream in force. This should be accomplished as rapidly as possible in levels 1 and 2 as turns wasted early in the game can haunt your endgame. Level 3 involves more caution lest you deplete your primary attack forces too early. A necessary part in crossing the river is getting your engineers in place to reconstruct the blown bridges. This should not be done at the expense of hopelessly depleting your engineers just to build those first bridges.

They will be very helpful for building bridges on the final stream. Though all units will eventually be able to cross the stream without the bridges, this will consume much time and is not practical to the situation in the game. It is only a last resort.

After the first stream is crossed, the midgame begins as does the long haul across the screen to the objective. If you are inclined to bring your two forces together, then this would be the most likely place to do so. You can also choose to keep your forces split and hit the town with each one independently. This is entirely up to you.

The endgame involves taking the town proper and dealing with any counterattack that may occur. This can be tricky and involves some decision making. Each game will create its own unique endgame situation. The situation should dictate how much of your force will be occupied with the town and how much will be occupied with thwarting the counterattack. Keep in mind that victory points for holding the town are only accrued on the last turn of the game.

Another item for consideration is the cautious strategy versus the blitz. Cautious play involves a minimum movement of your units with maximum firing, close grouping of your forces, and keeping out of the line of enemy fire as long as possible. This strategy consumes time but keeps your forces at or near full strength.

The blitz involves sending the armor out ahead of the pack, blasting away at enemy units when they can, but, mainly getting them to the town as fast as possible. The infantry will lag behind with this strategy and should be used to mop up bypassed enemy units and for protecting the flanks against counterattacks.

There is also a third strategy which is a little of both of the previously mentioned strategies. It involves cautious moves with bold ones, with the infantry only lagging shortly behind. No one strategy is best. They are up to you.

Though having an overall strategy is good, it is tactics that accomplishes your strategy. Tactics involves such decisions as where to move, what to move there, where to fire, what to fire, and a host of other seemingly small details that, when performed together add up to either successful or unsuccessful play.

There are a few important points that may help you improve your chances of success. Try not to lose units. When a unit gets to a reduced strength, rebuild it. By all means, don't lose your artillery or HQ. Don't bypass enemy units unless you are hard pressed for time. You do have time to deal with what you encounter and should not feel pressured to get to the town as fast as possible. Plan your movement with the thought in mind as to which units will fire at what targets in the upcoming Combat Phase. Don't let the counterattack intimidate you. Keep cool and think out your defense. This is where the infantry can save the day. Save your engineers for building bridges. When the bridges are built, then you

can use their excellent assault capabilities in the final assault on the town. And, when you take the town, make sure it is clear of enemy units by sending a unit to check out uncovered area.

COMMAND PHASE STRATEGY

Command Phase is a "pause" phase. That is, the computer is doing nothing in this phase but waiting for your input. It is the first phase of each turn, so, you should use it to scroll around the map and check the overall situation. As you scroll around, check your units' Strength Bars. If any are at half strength or less, they should be dug in. A unit at half strength or less is fairly disrupted and, if it were allowed to continue moving and fighting, it would become less and less useful to you.

If you are in level 1, 2, or 3, and have set up a defensive line to repel the counterattacking enemy units, then digging in the units of the line will greatly increase their chance of surviving and holding off the enemy attacks.

MOVEMENT PHASE STRATEGY

You should have some kind of overall plan in mind, a general strategy, as to how you are going to get your forces across the map. You can be cautious or bold. You can move each unit a little each turn or move it as far as it will go each turn. You can keep your forces close together or you can split them up into task forces. You can stick to the road or you can head cross country. You can bypass enemy strongholds or you can deal with them head on. With all these options to consider, here are some helpful suggestions.

Keep your forces fairly close together to support each other. Initially, your forces are split into two parts, the northern and the southern. There is no reason to bring these two forces together early in the game as they are capable of dealing with any resistance they will encounter on their trek across the map. Later in the game, when the final assault on the town is near and with the enemy resistance coagulating and a counterattack looming, it is best to join your forces for a combined arms assault on the town, your main objective.

This does not mean you shouldn't bring the two forces together early in the game. There are some advantages to joining your forces. The main advantage is that, with all your forces in one area, they can generate an incredible amount of firepower that can hastily deal fatal blows to intervening enemy units. An alternative to this would be to combine only your armor into one spearhead while your infantry brings up the rear.

Once you have an overall plan, the question still remains—what units do you move first? A natural choice is the Recon units. Their main task is to probe out ahead of the main force and seek out enemy units. Once they discover an enemy position, you can continue moving them to try to discover more hidden units or you can stop them there and bring up some firepower to deal with the enemy. In any case, their movement range allows them to wander far from the main force and reveal the hidden enemy so that you can decide how you are going to approach them with your main forces.

After the recon has been sent out, the tanks might come next. They have the firepower to deal with discovered enemy units and they have the speed to close with the enemy. The infantry is slow and will simply get in the way if they are sent out first. Their main job is to bring up the rear and dissolve any bypassed resistance along with protecting the main force out ahead from any flanking counterattacks.

The engineers should keep up with the armor and build the bridges. It is hard to get armor across the streams without the bridges. The artillery should stay well behind the main forces. Their speed is slow but their range will allow them to support front line troops from a distance.

Your forces should remain close to roads most of the time. This greatly increases the amount of territory they can cover. Sending any major portion of your force across country can result in delays that may spell doom in the end game.

As you move your units, they will come under fire from hidden and revealed enemy units in range. When a unit you are moving does come under fire, you are faced with the choice of continuing to move that unit or stopping right there. Sometimes the choice is made for you as a unit will occasionally stop when it comes under fire. Keep an eye on the Strength Bar of the unit you are moving. If it reaches half, you should not push that unit further. If it is less than half, it is likely that the next shot may do it in, especially in the upper levels of play. If a unit you are moving gets attacked, it may not be hit directly. If it doesn't explode after the enemy fires at it, that means it wasn't a direct hit and very little, if any, casualties were inflicted.

If a unit uses all its activity moving, it will not be able to fire in that turn. When the cursor turns red while moving a unit, you should consider halting its movement if you still want it to fire. In most cases, it will still have a few moves left, even though the cursor is red. But, if you push it too far, its Activity will be depleted and its turn will automatically end.

COMBAT PHASE STRATEGY

Each unit has its own unique characteristics. This is most evident in the Combat Phase where range and firepower come into effect. For range and firepower, you can't beat your artillery. It is not often that an enemy unit can withstand four shots from artillery in one turn. Trouble is, you only have two artillery units. You will find that, in most cases, your armor is the meat of your firepower. Especially in the early going.

The primary decision in the Combat Phase is what do you fire and where do you fire it. This decision can become increasingly involved as the intensity of the battle increases. Two main ideas are: 1. Fire at least one shot at all units in range of your units, and 2. Fire at a particular unit until it is eliminated.

To help you make your decisions, here are some factors to keep in mind:

You will not eliminate an enemy unit with the first shot. Some units, especially in the upper levels, can really take a pounding. Remember, your units can also take a pounding, especially if they are dug in.

Fire your units with the lowest range first. It can be wasteful to fire your tanks at a target, and eliminate it, when your infantry could also have done this. Especially if there are other more distant targets for your armor and no other targets for your infantry.

Sometimes, it helps to fire your artillery first, firing each shot at a different target. This wears down a target fast and makes it more susceptible to smaller arms fire. However, you may instead want to save your artillery for the tough nuts or for the more important targets only.

The critical factors in deciding whether or not your firepower does damage are range to the target, type of unit firing, type of target, whether or not the firing unit has just moved, and the strength of the firing unit.

The farther your firing is from a target, the less likely it will do damage. Artillery is the only exception to this. This is further intensified if the target is in a woods or building square.

Infantry firing at armor is not as effective as armor firing at armor. Armor firing at infantry is the most effective combination.

The farther you move a unit in the Movement Phase, the less likely it is that it will do damage when it fires in the following Combat Phase.

The shorter a unit's Strength Bar is the less damage it will inflict.

Do not dally in this phase. Take your shots carefully and then get out.

These are rule of thumb guides. They do not mean that you can't hurt armor with infantry or you can't move a unit and inflict damage when it fires. The combat system is not a clear cut table of event comparisons. The above factors, when all invoked at once, can make a difference in the result of any attack, but it should not deter you from pursuing what you feel to be the best strategy. The important thing is, if you have a target, fire.

ASSAULT ORDER PHASE STRATEGY

Infantry and Engineers can assault any enemy unit next to them. Armor can only overrun enemy units that are not in woods squares. Engineers can only build bridges where there is a road going to a square with a blown bridge.

When an enemy unit is assaulted, it will reach a point where it will "decide" to pull back if it takes a loss. If you block its retreat route, which will always be in the direction of town, then it will not retreat. Instead it will take extra losses. This can often spell doom for an assaulted unit.

ASSAULT PHASE STRATEGY

Overruns are not as decisive as assaults as far as strength losses are concerned. Tanks in close, whether the target is infantry or armor, are especially susceptible to loss as they will be attacked at point blank range. Armor is best at a distance and should not be sent on overrun missions except when the taking of an area becomes critical.

FAIR PLAY

Designed into Operation Whirlwind are a series of checks and balances aimed at giving the player a fair chance. The mechanics of the computer's units are straightforward. They will move toward the town when they do move and will fire at units in their range. Simply knowing this gives you a slight edge on the computer. Especially since your armor can outfire the computer's armor in a ranged battle. What this boils down to is that the computer has relentless hordes with which to thwart your objectives while you have superior equipment.

Keep in mind that the computer is not that smart. You have the edge in intelligence. Use the lower levels to get used to the game mechanics. Then, careful, thought out play can be your gateway to victory.

OPERATION WHIRLWIND BATTLE MAP

TURN SEQUENCE		THE UNITS		TERRAIN EFFECTS	
A. COMMAND PHASE B. MOVEMENT PHASE C. COMBAT PHASE D. ASSAULT ORDER PHASE E. ASSAULT PHASE	    	    	   	TERRAIN	EFFECTS
				CLEAR	Standard terrain type, movement and defense normal
				WOODS	Movement limited; Defense increased
				ROAD	Movement increased; Defense normal
				BUILDING	Movement slowed; Defense increased
				STREAM	Movement severely limited; Defense increased
				THE CITY	Movement slowed; Defense increased; Victory points awarded for occupying it.
				THE CITY (YOUR OBJECTIVE)	