

OGRE®

All-out war against a
juggernaut fighting
machine on the
nuclear battlefields
of tomorrow!



 **ORIGIN**
SYSTEMS INC.

OGRE[®]

Game Design by Steve Jackson

Original computer version (Apple II) designed & programmed by Steve Meuse

Ogre Intelligence designed & programmed by Dallas Snell

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HISTORICAL PERSPECTIVE

The tank-type vehicle, considered obsolete by the end of the 20th century, ruled the battlefields of the 21st.

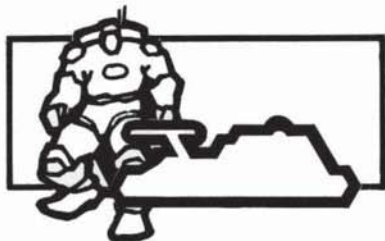
Several factors led to the reappearance of mechanized warfare. The first was the development of biphasic carbide armor (BPC). Stronger than any steel, it was also so light that even an air-cushion vehicle could carry several centimeters of protection. The equivalent of a megaton of TNT was needed to breach even that much BPC armor—which meant that, in practice, nothing less than a tactical nuclear device was likely to be effective.

Infantry, which had for a time eclipsed the tank, declined in importance. Although an infantryman could carry and direct a tactical nuclear missile, he had to be extensively (and expensively) protected to survive the nuclear battlefield. Thus, the "powered suit" was developed. Four cm of BPC, jet-equipped, it could guard a man for about a week (in increasing discomfort) from shrapnel, background radiation, and biochem agents. However, the cost of equipping infantry reduced their value. They were still more flexible and maneuverable than armor, and now they were almost as fast—but they were no longer cheaper.

Long-range nuclear missiles, which had been expected to make a mockery of "conventional" operations, likewise declined in value as jamming technology and laser countermeasures improved. Without satellite guidance, no missile could hit a less-than-city-sized target at more than 30

km—and no combatant could keep a spy satellite operational for over an hour. Missiles big enough to carry jam-proof guidance systems were sitting ducks for the big laser batteries—for, although lasers had proved too temperamental and fragile for battlefield use, they were fine as permanent anti-aircraft units.

Thus, the tank-type vehicle—fast, heavily armed and armored, able to break through enemy positions and exploit disorganization—returned to wide use. And once again, planners fretted over priorities. More guns? More armor? More speed? Increase one, and lose on the others? Increase all, and build fewer units?



Some interesting compromises appeared. The 21st-century infantryman, especially with the later "heavy powered suit," was a tank in his own right, at least by 20th-century standards. The armed hovercraft or ground effect vehicle (GEV), equipped with multi-leaf spring skirts for broken ground, could attain speeds of 120 kph on any decent terrain, and 150 on desert or water. Conventional tanks were slower but tougher. All fired tactical nuclear shells.

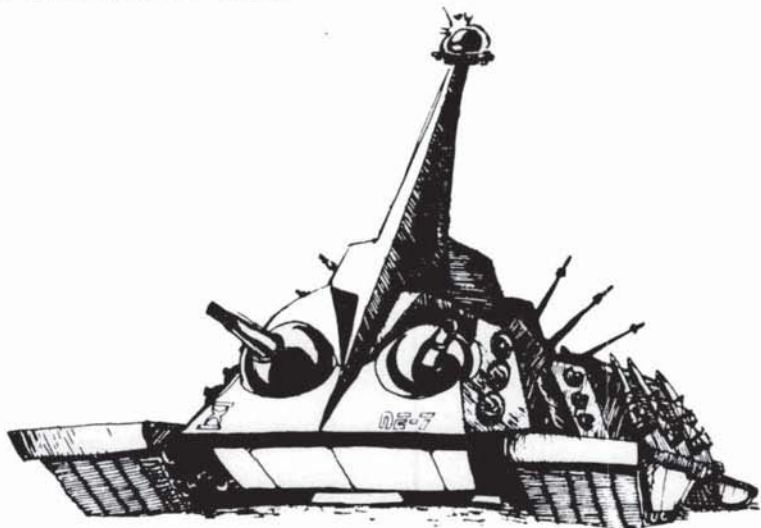
The ultimate development of the tank-type weapon, though, was the

cybernetic attack vehicle. The original tanks had terrorized unsophisticated infantry. The cybertanks terrorized *everyone*, and with good reason. They were bigger (up to 50 meters), faster (hovercraft models proved too vulnerable, but atomic-powered treads moved standard units at 45 kph or better) and more heavily armed (some had firepower equal to an armor *company*). And two to three *meters* of BPC armor made them nearly unstoppable. What made the cybertank horrifying, though was its literal inhumanity. No crew was carried; each unit was wholly computer-controlled. Although true mechanical intelligence had existed as early as 2010, and fully automated factories and military installations were in wide use by the middle of the century, the cybertanks were the earliest independent mobile units—the first true war “robots.”

Once the first cybertanks had proved their worth, development was rapid. The great war machines aroused a terrified sort of fascination. Human warriors devoutly hoped never to confront them, and preferred to keep a respectful distance—like several kilometers—even from friendly ones. They were just too *big*.

One fact, more than anything, points up the feeling that developed toward the cybertank. Unlike other war vehicles, they were never called “she.” Friendly units of the speaker’s acquaintance were “he;” others were “it.” And the term “cybertank” was rarely used. People had another name for the big war machines—one drawn from the early Combine units and, before that, from dark myth.

They called them Ogres . . .



THE GAME

OGRE is a game of mechanized tank warfare set in the 21st century. A cybernetic fighting unit—the Ogre—has been sent to destroy the opponent's strategic Command Post, which is guarded by an armor battalion. The Ogre's primary objective is to destroy the Command Post; destruction of all other units is its secondary objective. The armor battalion has but one objective: Defend the Command Post. To do so, they must destroy the Ogre.

Making Choices. Choices are made in **OGRE** through the use of the **pointer**, a black, triangular object that can be moved around with a mouse, joystick or keyboard.

Clicking. Some selections in **OGRE** are made by first moving the pointer to the desired object or option, then pressing and quickly releasing the button. This is referred to as **clicking**.

Dragging. Another method of designating choices is by **dragging**. Dragging is accomplished by placing the pointer over the desired object then pressing **and holding** the button while moving the pointer to another location. Releasing the button completes the drag.

Pulling down the Menu. In the upper right corner of the screen are two **menus** that can be **pulled down**. The first is titled 'Menu' and the second is 'OSI'. To pull down either menu place the pointer over the desired title and press and hold

the button. The selected menu title will become highlighted and a list of **commands** will appear beneath the title. Releasing the button without moving the pointer will cause the menu to disappear.



Choosing Menu Commands. Menu commands are chosen by using the **dragging** technique. Position the pointer over the selected menu title and pull down the menu by pressing the button. While holding the button down, drag the pointer to the desired menu command. As the pointer moves through the menu, each command is highlighted in turn. When the desired command is highlighted, releasing the button selects it. If you change your mind about choosing a command, move the pointer off the menu, or back up to the title, then release the button. Nothing is chosen unless you release the button while one of the commands is highlighted.

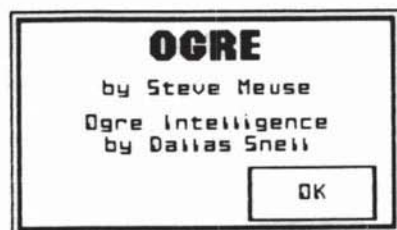


Using the keyboard. A mouse (if available) or joystick is highly recommended for playing **OGRE**. **OGRE** can be played using the keyboard to move the pointer and to simulate 'clicking' or pressing a button, or it can be played entirely with 'pointing', 'clicking' and 'dragging' techniques using a mouse or joystick. The instructions and examples in this manual refer to 'pointing', 'clicking' and 'dragging' without reference to the various input devices. See **Keyboard Shortcuts** on the PLAYER REFERENCE CARD for complete information on how to use the keyboard to play **OGRE**.

Dimmed Commands. When 'Menu' is pulled down, some of the commands are less distinct than others. These less distinct commands are referred to as **dimmed**. Dimmed options are ones that cannot be used at that time.

Dialogue Boxes. Whenever

additional information is required to complete a command, a **dialogue box** appears. Dialogue boxes usually have special areas called 'buttons' to click, such as 'OK' or 'Cancel'. Sometimes they present further options for selection. Dialogue boxes are also used to warn you if you're about to do something that is irreversible. For an example of a dialogue box with general information, select 'About Ogre' from the 'OSI' menu. Clicking the 'OK' button removes the dialogue box.



THE BATTLEFIELD

General. The defender's Command Post has been located in the most defensible terrain available—a battered stretch of land 22.5 kilometers (14 miles) wide by 33 kilometers (20.5 miles) long, bounded on three sides by impassable swamp and on the fourth by a very deep, wide river.

A map representing the standard

battlefield is displayed on your computer screen. The map is divided into hexes, each representing an area 1500 meters (0.93 miles) across.

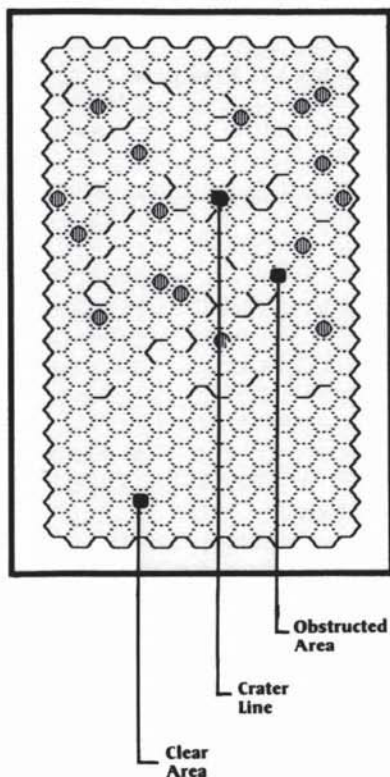
Viewing the map. Only half of the map can be viewed at one time. The map can be moved vertically by clicking on one of the arrows positioned at the four corners of the map. At the upper left and lower left corners of the map are arrows with horizontal bars at their tips. These arrows are used to display the top or bottom half of the map. Clicking on arrows in the upper right and lower right corners moves the map up or down one hex at a time.

Craters. The battlefield is scarred with craters from past nuclear detonations. Craters are represented on the map by solid circles. Nothing may move into or over a crater. It is possible, however, to fire across craters.

Rubble. The battlefield is further obstructed by great piles of earth and rubble. These piles of rubble are represented on the map by solid black lines along the edges of hexes. Only the Ogre and infantry are capable of moving across this rubble. Other armor units cannot cross. Any unit can fire across rubble.

Areas. The standard battlefield is divided into two basic areas. The majority of the map (the top 16 rows of hexes) is referred to as the 'obstructed' area. This is the area containing all of the craters and rubble.

The bottom 6 rows of hexes, free of craters and rubble, are referred to as the 'clear' area. Both the left-most and right-most column of hexes contain only one crater. These craters are located in the 7th hex down from the top. A line drawn between these two crater hexes is referred to as the 'crater line'. The obstructed area, clear area, and crater line are referred to during initial deployment of the defensive forces.



THE COMBATANTS

The combatants are rated by COMBAT FACTORS. The main combat factors are a weapon's ATTACK STRENGTH, ATTACK RANGE and DEFENSE STRENGTH. Attack Strength reflects a weapon's destructive power. The effective distance a

weapon can reach is its Attack Range, and a unit's capability to withstand an attack is referred to as its Defense Strength. These factors will be further expanded upon when discussing combat.

OGRE

There are two types of Ogres, the Mark III and the Mark V. The Ogre is a cybertank, approximately 30 meters in length, equipped with guns, missiles, antipersonnel weapons and 3 meters of biphase carbide armor. An

undamaged Ogre can travel at about 45 kph, i.e., 3 map hexes per turn. The Ogre's goal is to destroy the defender's Command Post and, if possible, the entire defensive armor battalion.

OGRE MARK III ATTRIBUTES				
PART	QUANTITY	DEFENSE STRENGTH	ATTACK STRENGTH	ATTACK RANGE
MISSILES	2	3	6	5
MAIN BATTERY	1	4	4	3
SECONDARY BAT.	4	3	3	2
ANTIPERSONNEL	8	1	1	1
TREADS	45	1	0	0

The Mark V is a larger, more formidable version of the Mark III.

OGRE MARK V ATTRIBUTES				
PART	QUANTITY	DEFENSE STRENGTH	ATTACK STRENGTH	ATTACK RANGE
MISSILES	6	3	6	5
MAIN BATTERY	2	4	4	3
SECONDARY BAT.	6	3	3	2
ANTIPERSONNEL	12	1	1	1
TREADS	60	1	0	0

COMMAND POST



ATTACK STRENGTH : 0
ATTACK RANGE : 0
DEFENSE STRENGTH : 0
MOVEMENT : 0

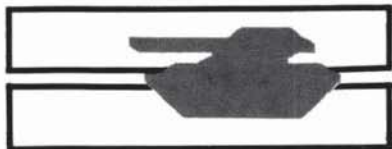
This is the defender's strategic communications center. The Command Post, once positioned, cannot be moved. The Command Post is incapable of attacking the Ogre, or of defending itself. An attack from any of the Ogre's weapons automatically destroys the Command Post. At times the Ogre will, with seeming cruelty, elect to destroy a Command Post, not quickly and mercifully with one of its nuclear weapons, but instead by crushing it and its inhabitants beneath the cybertank's massive treads.

Armor units. There are four types of defensive armor units: the heavy tank, the missile tank, the howitzer and the Ground Effect Vehicle (GEV).

HEAVY TANK

ATTACK STRENGTH : 4
ATTACK RANGE : 2
DEFENSE STRENGTH : 3
MOVEMENT : 3

This is the defender's main battle tank. A heavy tank is big, powerful and heavily armored. Its speed is such that it can keep pace with the Ogre, except when maneuvering around rubble. Unfortunately, a heavy tank must get within 3 kilometers (2 hexes) of the Ogre in order to fire upon it. This leaves the heavy tank vulnerable to almost all of the Ogre's weapons, including the possibility of being crushed beneath the Ogre's treads.



ATTACK STRENGTH : 3
ATTACK RANGE : 4
DEFENSE STRENGTH : 2
MOVEMENT : 2

A missile tank is smaller and less heavily armored than a heavy tank. The broad, sturdy surface from which the missile tank commander fires long-range missiles sits atop a

set of wide crawler treads that move the missile tank slowly across the battlefield. The missile tank cannot keep pace with the Ogre, thus requiring the missile tank commander to continually anticipate the Ogre's movement in order to keep it within range of his missiles. The missile tank's saving grace is that it can fire upon the Ogre from 6 kilometers away (4 hexes), allowing it to pound the Ogre while staying out of range of most of the Ogre's weapons.

HOWITZER



ATTACK STRENGTH : 6
 ATTACK RANGE : 8
 DEFENSE STRENGTH : 1
 MOVEMENT : 0

The howitzer is the defender's hardest hitting and longest range weapon. A howitzer can reach an Ogre up to 12 kilometers away (8 hexes). This allows a howitzer to get 2 to 3 shots at an Ogre before the Ogre can get within striking distance. Howitzers are permanent installations and cost twice as much as any other armor unit. The fact that a howitzer cannot move is its greatest weakness. In addition, it is all but

defenseless. The defenders must try to buy a howitzer time with the mobile armor units so that the howitzer may wreak considerable damage upon the Ogre.

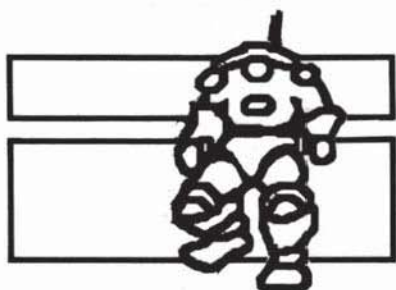
GROUND EFFECT VEHICLE (GEV)

ATTACK STRENGTH : 2
 ATTACK RANGE : 2
 DEFENSE STRENGTH : 2
 MOVEMENT : 4, 3

Propelled by air-cushion suspension, the GEV is the defender's fastest moving vehicle. It can move more than twice as fast as any other unit, including the Ogre. GEVs move once in the defender's regular Movement Phase—and again, after firing, in the GEV Movement Phase. The seasoned GEV commander will swoop in close enough to fire at the Ogre and then dart away, just beyond reach of the Ogre's weapons.



INFANTRY



ATTACK STRENGTH : 1, 2 or 3
ATTACK RANGE : 1
DEFENSE STRENGTH : 1, 2 or 3
MOVEMENT : 2

Infantry travel in groups of one, two or three squads (6–8 men to a squad). Infantry are armed with conventional and anti-tank weapons and

use powered 'battlesuits' to greatly increase their mobility (allowing them to cross rubble that stops other armor units) and provide some protection from shrapnel and radiation. Infantry cannot move as fast as a fully functional Ogre, and a squad leader will, if not careful, find his squad falling behind the Ogre, unable to reach it before the Command Post is destroyed. Infantry must get within 1500 meters (1 hex) of the Ogre in order to fire at it. This makes them extremely vulnerable to the Ogre's antipersonnel weapons, as well as to being overrun by the Ogre. Many infantrymen swear the supposedly emotionless Ogre derives great pleasure from the feel of battlesuits being crushed beneath its treads.

DEPLOYMENT

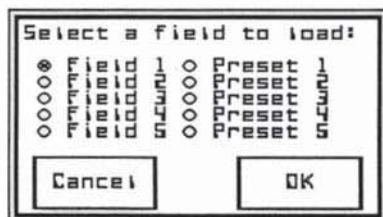
The defending player must deploy forces in anticipation of attack. Battlefield alterations and force deployment are controlled in the Field Editor. A detailed discussion of the Field Editor can be found in '**The Field Editor**' section. To quickly get started playing **OGRE**, use one of the predesigned fields or battles.

Loading/Saving Fields. There are five predesigned fields from which the player may choose. In addition to the five predesigned fields, the player may save five fields of original design (see **Saving Fields** in **The Field Editor** section).

To load a field, select "Load a Field" from the Menu.



A dialogue box will appear from which one of the original or preset fields can be selected for loading. Click on the field of choice and then click 'OK'. The selected field will be loaded in and displayed.



Loading/Saving Games. A previously saved game can be loaded at any time. If a battle is in progress when another game is loaded, the current game will be lost unless it is saved first. To load a game, select "Load a Game" from the Menu.

A dialogue box will appear from which one of five saved games can be selected. Select the desired game and then click 'OK'. The selected game will be loaded in and the battle will proceed from where it was saved.

The current status of a battle can be saved for continued play later. To save the battle status, select "Save a Game" from the Menu.

A dialogue box will appear, from which one of five games can be selected for saving. Select the desired game and then click 'OK'. The game will be saved and play can continue.

Alternate tactics for a given encounter can be explored by saving

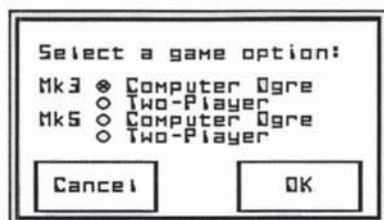
the battle status prior to performing the tactic in question. After the outcome has been determined the prior battle status can be loaded in, allowing an alternate tactic to be employed.

PLAYING OGRE

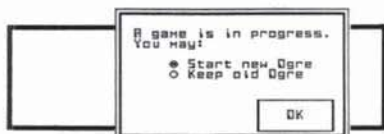
Starting a Game. Once the player chooses the field configuration and weapon deployment, then selecting 'Play a Game' from the Menu will start the actual battle.



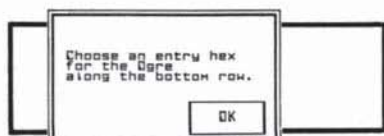
A dialogue box will appear asking which battle option the player desires. There are two battle scenarios: Mark III or Mark V. Either scenario can be played with two players or the computer can control the Ogre. Select the desired option and click 'OK'.



If this is a continuation of a previous game a dialogue box will ask whether to start a new Ogre or continue the game with the original Ogre. Select the desired option and click 'OK'.



When starting a new game under the two-player option, the player controlling the Ogre must select one of the hexes at the bottom of the map as an entry point for the Ogre. Click 'OK' on the dialogue box asking for an entry hex and then select an entry hex by clicking on it. Once it has entered, the Ogre can move two more hexes.



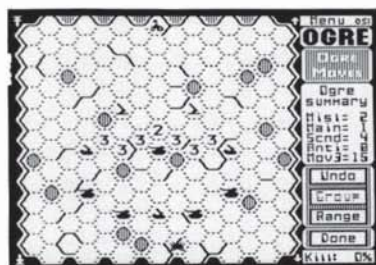
Most player options are locked out at this point until an entry hex has been selected for the Ogre. The map can be moved in order to scan the battlefield.

Changing Between One and Two Player Games.

It is possible to change from a one-player game to a two-player game and vice versa. To do so, enter the Field Editor by selecting 'Edit the Field' from the Menu, during actual game play. Select 'Play a Game' from the Menu. When the battle option dialogue box appears, select the desired scenario and click 'OK'. When the next dialogue box asks to start a new Ogre or continue with the old one, select the 'Keep old Ogre' option. This process allows the battle to continue but with someone (or something) else controlling the Ogre.

This operates somewhat differently when changing between Mark III and Mark V scenarios. If 'Keep old Ogre' is selected when changing between Mark III and Mark V scenarios then the number of players will change but the original Ogre type will be maintained. If 'Start new Ogre' is selected then the new Ogre type will enter at the bottom of the map with full weapons and no damage.

Game Phases. The Phase window near the top of the sidebar displays the current phase of game play.



The first phase is the 'Ogre Entry' phase which only occurs at the beginning of a game.

During a player's turn, that player may move any or all of his units, and fire with any or all of them. The phase sequence is:

1) Ogre enters

2) Ogre moves

3) Ogre fires

(After the Ogre fires, all armor units disabled the previous turn become active again.)

3) Defense moves

4) Defense fires

5) GEVs complete their movement

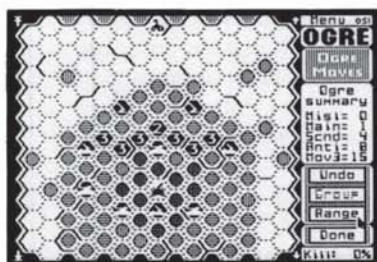
The Sidebar. The sidebar is different while playing the game than when in the Field Editor. The area directly beneath the OGRE caption is the Phase Window, which shows the current phase of the game.

Directly below the Phase Window is the Tactical Display. The Tactical Display is used to show the various attributes and conditions of the pieces. Clicking on a piece will display that piece's attributes. In addition, the tactical window is used to display messages in response to any erroneous actions performed by the player(s).

Beneath the Tactical Display are the command buttons. Just as in the Menu, if a button's text is dimmed then the button is inactive. The 'Range' and 'Done' buttons are always present (although not always active). During a Movement Phase the top buttons are labeled 'Undo' and 'Group'. During an attack phase the

same top buttons are labeled 'Clear' and 'Fire'. The buttons work as follows:

Range Button. The 'Range' command is used to view a piece's movement and attack range. To view a piece's range, select the piece by clicking on it; then click the 'Range' button. All of the hexes within a piece's movement value (disregarding having to move around rubble) are turned green. All of the hexes the piece could potentially fire upon (once again, disregarding having to move around rubble) are turned blue. Any piece that falls within this 'umbrella' is highlighted. Clicking anywhere on the screen will remove the umbrella.



Done Button. The 'Done' button is used to end a phase. If a player has not moved or fired all of his pieces when the 'Done' button is pressed, a dialogue box will require verification from the player before proceeding to the next game phase.

Undo Button. The 'Undo' button

allows any piece's move to be undone, or restarted at any time during the Movement Phase. To undo a move, select the desired piece by clicking on it; then click the 'Undo' button. The piece will move back to its original location. The 'Undo' button remains dimmed unless a piece that has moved is selected. If the Ogre has rammed or overrun a defender it can only be undone back to the hex where the ram or overrun occurred.

Clear Button. The 'Undo' button

changes to the 'Clear' button during an attack phase. The 'Clear' button is used to deactivate weapons that have been aimed at a target.

Group/Split Button. Explanation of this button is covered in **Grouping Infantry** and **Splitting Infantry** in the **Movement** section.

Fire Button. The 'Group/Split' button changes to the 'Fire' button during an attack phase. Once weapons have been aimed at a target, clicking the 'Fire' button fires them.

MOVEMENT

Moving a Piece. To move a piece, click on it, and while holding the button down, drag the pointer to another hex and release the button. If an illegal move is attempted (i.e., moving onto a crater, across rubble, off the map, moving a piece that has already moved, or moving a piece farther than it can) you will hear a beep and a message informing you of your error will be in the Tactical Display. Once a piece has moved at all, it appears dimmed (green). This alerts the player that any solid (black) pieces have not moved yet. A piece can move up to its maximum movement value. It is not necessary to move a piece at all if it is already well located.

Ogre Movement. The Ogre's movement depends on the number

of treads it still has intact. A Mark III starts with 45 treads; a Mark V with 60. When the Ogre's treads are reduced to $\frac{2}{3}$ their original total (30 for Mark IIIs and 40 for Mark Vs), the Ogre's movement value is reduced from 3 to 2. When the treads are reduced to $\frac{1}{3}$ their original total (15 for Mark IIIs and 20 for Mark Vs), the Ogre can move only 1 hex per turn. When the Ogre's treads are completely destroyed it can no longer move. *It can still attack anything within range.* Selecting the Ogre will display the 'Ogre Summary' in the Tactical Display and will show the Ogre's current movement value as well as the number of treads remaining.

Movement through Occupied Hexes. In general, only one unit at a

time may occupy a hex. Any unit may move *through* a hex occupied by a friendly unit. When moving onto a hex occupied by a friendly unit the top piece will be highlighted. Clicking on this hex brings the bottom piece to the top. One of these pieces must be moved before any other action can be taken. Attempting any other action (except moving the map, undoing, or moving one of the stacked pieces) elicits a beep and the message 'Please move from full hex'.

Grouping Infantry. The maximum number of squads of infantry that can occupy a single hex is three. Two 1-squad units may be grouped into a 2-squad unit. Three 1-squad units, or a 1-squad and a 2-squad unit may be grouped into a single 3-squad unit. To group two infantry units, move them to the same hex and click the 'Group' button.

WARNING: When two infantry units are grouped together the newly merged unit will have a remaining move value equivalent to whichever of the two original units has moved the farthest. Also, grouping infantry cannot be undone. Example: an INF1 uses its first move to move onto an INF2 that hasn't moved at all. At this point, the INF1 has moved 1 hex and has 1 move remaining. The INF2 has not moved at all, therefore, has 2 moves remaining. If so desired, the INF1's move can be undone at this point. Clicking the 'Group' but-

ton combines the INF1 and INF2 into an INF3. The tactical display will show a 3-squad infantry unit that has moved 1. Also, the 'Undo' button will be dimmed, indicating this piece cannot be undone. The piece can, however, be split.

Splitting Infantry. 2-squad or 3-squad units may be split into two infantry units. Whenever a 2- or 3-squad infantry unit is selected, and is not currently sharing a hex with another piece, then the 'Group' button will change to the 'Split' button. Clicking the 'Split' button will cause a 1-squad infantry unit to be split off and share the hex with the remaining squad unit. The two new infantry units will have the same 'moved' status as the original unit. (Example: If an INF2 is split after having moved 1 hex, then the two new INF1 units will both have moved 1 hex and can be undone back to the same hex as the original INF2). The 'Split' button will immediately change back to 'Group', allowing the two infantry units to be recombined if so desired.

Ramming. An Ogre can damage or destroy an armor unit by ramming it. This is accomplished by moving onto its hex.

Any *immobile* armor unit (i.e., a howitzer or any unit that has been disabled) is destroyed when rammed by the Ogre. Any *mobile armor unit* has a 50% chance of being disabled and a 50% chance of being de-

stroyed when rammed. The Ogre, however, pays a price. Ramming a heavy tank, the Ogre loses 2 treads. Ramming any other armor unit costs the Ogre 1 tread.

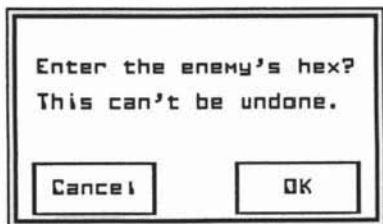
An Ogre can completely destroy the Command Post with a single ram at no tread loss to itself.

If the Ogre disables a piece when ramming it, then the Ogre will be highlighted to indicate that a piece is underneath it. If the Ogre has any movement left it can ram the piece again, thus destroying it. If the Ogre moves off the disabled piece, the piece will be dimmed (blue) as an indication that it is disabled.

THE OGRE CAN ONLY RAM TWICE IN ONE TURN.

Armor units may, in turn, ram the Ogre. This ram, however, is sacrificial and destroys the ramming armor unit. The Ogre loses 1 tread due to this. This play is not recommended except in dire emergencies.

WARNING: A Ram cannot be undone. Therefore, any time a piece moves onto an opponent's hex a dialogue box appears requesting verification of the ram. Clicking 'OK' allows the ram to proceed. Clicking 'Cancel' will abort the move.



Overruns. Infantry are not rammed by an Ogre, but overrun. If an Ogre moves onto a hex occupied by infantry, that infantry is reduced by one squad **if the Ogre has any antipersonnel weapons left**. If the Ogre does not have any antipersonnel weapons, the infantry is not reduced. There are no limits on overruns; the Ogre can overrun for as many moves as it has. In addition, overruns do not cause the Ogre any damage.

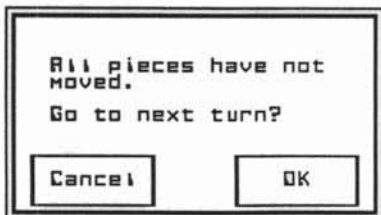
An infantry unit may move onto a hex occupied by an Ogre without any immediate effects. The infantry will, however, be reduced by one squad at the beginning of the Ogre's Movement Phase, providing the Ogre has any antipersonnel weapons, *without the Ogre having to expend movement points to do so.*

WARNING: Overruns cannot be undone. Therefore, any time an Ogre moves onto a hex containing infantry, a dialogue box appears requesting verification of the overrun. Clicking 'OK' allows the overrun to proceed. Clicking 'Cancel' will abort the move.

GEV Double Movement. A GEV may move twice per turn—once (up to 4 hexes) during the defender's Movement Phase, and again (up to 3 hexes) during the GEV Movement Phase following the defender's attack phase.

Ending Movement. To end the Movement Phase, click the 'Done'

button. If all of a player's pieces have not been moved when the 'Done' button is clicked, a dialogue box appears requiring verification to end the Movement Phase.



One-player Ogre Movement.

During the Ogre Movement Phase in the one-player game, the pointer will disappear while the Ogre is thinking about where to move. When done, the Ogre automatically moves. If the Ogre rams a piece, the results will be displayed in the sidebar. If the Ogre destroys the piece, there may be another pause while the Ogre considers a different move.

COMBAT

A Combat Phase occurs after each Movement Phase (except for GEV second-phase movement). During a Combat Phase, the 'Undo' and 'Group/Split' buttons in the sidebar change to 'Clear' and 'Fire', respectively. These buttons are dimmed initially, and remain so until weapons have been aimed.

Weaponry. Most weapons are heavy rapid-fire cannon using tactical nuclear shells, capable of fire in any direction. Each unit may apply its attack strength once per turn. Each intact Ogre weapon may apply its attack strength once per turn, with the following exceptions:

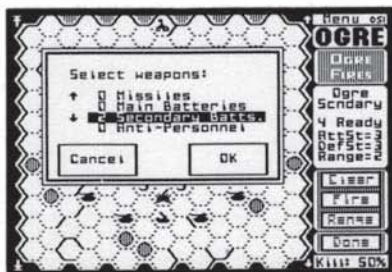
Antipersonnel. The Ogre's antipersonnel weapons are effective only against infantry and the Com-

mand Post. No infantry unit may be attacked more than once per turn by antipersonnel. When all antipersonnel weapons are gone, an Ogre can no longer reduce an infantry unit's strength by overrunning it.

Missiles. Each of the Ogre's missiles are one-shot weapons. Once fired (or destroyed before firing), they are gone.

Ogre Attacks. An Ogre may attack an enemy unit by dragging from the Ogre's hex to the enemy hex. If the Ogre has any unfired weapons that can reach the enemy, a dialogue box will appear offering the available weapons. Weapons that have been fired, destroyed, or are out of range will be dimmed and cannot be selected. Clicking on the

desired weapon highlights it and displays the weapon's attributes in the sidebar. Clicking on the up arrow in the dialogue box will increase the number of the selected weapon to be fired (up to the maximum number of this type of weapon available). Clicking the down arrow will decrease the number.



At the very bottom of the sidebar is a window displaying the probability of killing the target with the selected weapons. Any number and type of weapons can be fired in combination to increase this chance. The probability of killing *will not always be increased by combining weapons*. This

probability is derived from the ratio of the total ATTACK STRENGTH of the attacker(s) to the DEFENSE STRENGTH of the target. Sometimes the combined attack strengths are not enough to reach the next highest ratio. The following table contains the probabilities for all the possible ratios.

If, for example, the Ogre was firing a main battery at an active missile tank, the ratio would be an attack strength of 4 to a defense strength of 2. This gives a 2-1 ratio, which would give the Ogre a 50% probability of destroying the missile tank (or an 83% probability if the missile tank were disabled). A more complete discussion of this can be found at the end of this manual.

If 'Cancel' is clicked no weapons are selected.

Once the desired weapon(s) have been selected, clicking 'OK' removes the dialogue box. The kill percentage remains displayed and the 'Clear' and 'Fire' buttons become available. Clicking the 'Clear' button clears the selected weapon(s) and the current target. Clicking the 'Fire' button fires the selected weapon(s) at the chosen

Ratio of Attack Strength to Defense Strength	Probability of Killing an Active Piece	Probability of Killing a Disabled Piece
less than 1-2	0%	0%
1-2	17%	33%
1-1	33%	67%
2-1	50%	83%
3-1	67%	100%
4-1	83%	100%
greater than 4-1	100%	100%

target and the results of the attack (hit, miss or disabled) are displayed at the bottom of the sidebar.

Disabling. When the Ogre attacks a defender it has an additional chance to DISABLE that defender; this is not reflected in the kill probability displayed at the bottom of the sidebar. A disabled piece will appear dimmed (blue), and will not be able to move or fire during the defender's next turn. Due to the tremendous strength of the Ogre's three-meter-thick biphase carbide armor, defenders do not, unfortunately, have any additional probability to disable the Ogre. When a defender's shot gets a result that would have been a "disable" on a normal unit, the sidebar will display the result "Glanced". This has no effect on the Ogre.

A "disable" result against infantry is shown as "reduced". One squad of infantry is destroyed whenever the Ogre gets a "reduced". Any remaining infantry squads in the unit are capable of normal actions during the defender's next turn.

One-Player Ogre Attacks.

During the Ogre Fire Phase in the one-player game, the Ogre will automatically fire its weapons at the defenders. The selected target becomes highlighted while the target's name and the weapon the Ogre is using is displayed. The Ogre then fires and the results are displayed. The pauses while the messages are displayed can be changed (see PREFERENCES) and can be bypassed by clicking or pressing a key.

Defender Attacks. A defender attacks the Ogre by dragging from the defender's hex to the Ogre's hex. A dialogue box appears, permitting the attacking unit to specify which of the Ogre's remaining weapons or treads to target. Those parts of the Ogre that are destroyed will be dimmed and cannot be selected. When a particular weapon or treads are selected, the probability of killing (destroying) them is displayed at the bottom of the sidebar. Once the desired target is chosen, click 'OK' to exit the dialogue box, or click 'Cancel' to abort the command.



Once a target has been selected, other defender units can be aimed at the Ogre by dragging from their hex to the Ogre's hex. Combining weapons may increase the probability to destroy the selected target (i.e. a higher ratio of Attack Strength to Defense Strength is reached). Clicking the 'Clear' button clears the selected weapon(s) and the current target. Clicking the 'Fire' button fires the aimed unit(s) at the chosen target and the results of the encounter (hit or miss) are displayed at the bottom of the sidebar.

As soon as a piece fires it will appear dimmed (red) to indicate that it has fired.

Attacking Treads. If the Ogre's treads are targetted, the attack always has a 33% probability of success. With the exception of infantry, multiple units cannot be combined against treads. If the treads are hit, the number of treads destroyed is equal to the attacker's Attack Strength.

Infantry Attacks. A 2-squad or 3-squad infantry unit is treated as a

group of individual units when attacking the Ogre's weapons. If the defending player wishes to attack an Ogre's weapon with all of the infantry in a unit, the player must drag from the infantry's hex to the Ogre's hex once for each squad. Infantry also have the ability to combine attacks on the Ogre's treads. This does not increase the 33% probability of hitting, but it does allow more treads to be damaged when a hit occurs. This is the only situation where more than one defending unit can target the Ogre's treads at the same time.

ENDING THE GAME

The game is over when: a) all defending units are destroyed; b) the Ogre escapes off the bottom of the map; or c) all of the Ogre's weapons and treads are lost.

Six formal levels of victory are possible:

Complete Ogre Victory. The Command Post and all defending units are destroyed.

Ogre Victory. The Command Post is destroyed and the Ogre escapes from the bottom of the map.

Marginal Ogre Victory. The Command Post is destroyed, but the Ogre is destroyed (all of its weapons and treads destroyed) before it can escape.

Complete Defense Victory.

The Command Post is not destroyed and the Ogre is destroyed and at least 30 attack points (Mark III scenario) or 50 attack points (Mark V scenario) of the defensive force survives.

Defense Victory. The Command Post is not destroyed and the Ogre is destroyed.

Marginal Defense Victory. The Command Post is not destroyed but the Ogre escapes.

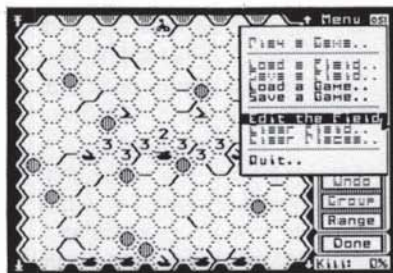
Leaving the Map. The Ogre is the only piece that may leave the map. To do so it must be on the bottom row of the map with at least one move remaining. Clicking anywhere off the map, but not in a legal

command area (i.e., the command buttons, menu bar or the map arrows) will produce a dialogue box asking if the Ogre should leave the

map. If 'OK' is selected, the battle results are analyzed and the appropriate victory conditions are displayed in a final dialogue box.

THE FIELD EDITOR

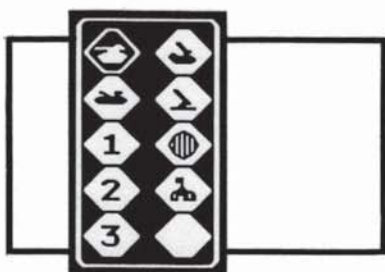
The Field Editor lets the Post Commander deploy the defensive forces and alter the battlefield terrain. The Field Editor is active when you start OGRE. During a battle, the Field Editor can be entered by selecting "Edit the Field" from the "Menu".



Creating/Clearing Rubble.

Clicking on a dotted line at the edge of a hex places a pile of rubble at that location. Clicking on an already existing pile of rubble (a solid line) removes it.

Selecting Pieces. A window in the sidebar on the left side of the screen contains 10 hex shaped pieces that can be selected by clicking on them. When selected, a piece becomes highlighted.



Drop/Drag. Directly beneath the selection window is the mode window. The two choices in the mode window are Drop and Drag. The mode is set by clicking on either of the two choices.



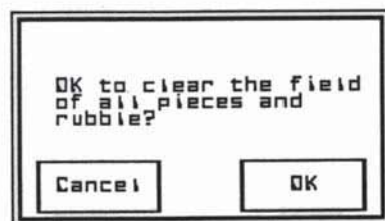
Clicking on a map hex while in the Drop mode 'drops' the currently selected piece onto that hex. If the hex is occupied, the piece occupying the hex is replaced with the selected piece. If the hex is already occupied by the currently selected piece, clicking on it removes it. Pieces can also be removed from the map by selecting the blank piece from the selec-

tion window and dropping it onto occupied hexes.

The Drag mode is used to move pieces about the map. To move a piece, first select Drag from the mode window. Position the pointer over the desired piece and press the button. Continue to hold the button while moving the pointer to the desired hex. When the desired hex is highlighted, release the button and the piece moves from its original hex to the new hex. Dragging a piece onto an occupied hex removes the piece from the occupied hex and replaces it with the piece being moved. Dragging from an empty hex onto an occupied hex also removes the piece.

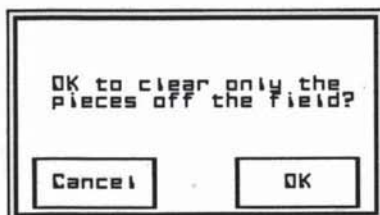
Clear Field. The entire field can be cleared of all rubble, craters and pieces by selecting 'Clear Field' from the Menu.

A dialogue box will ask for verification before the action is performed.



Clear Pieces. The entire field can be cleared of all pieces while leaving the rubble and craters intact by selecting 'Clear Pieces' from the Menu.

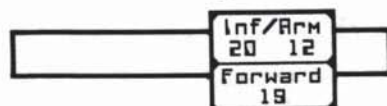
A dialogue box will ask for verification before the action is performed.



Setup. All defender setups require a command post (usually placed somewhere on the highest row of hexes). The defender's initial force depends on the type of Ogre that will be attacking. If the attacker is a Mark III, the defender gets 12 armor units and 20 squads of infantry. If the attacker is a Mark V, the defender gets 20 armor units and 30 squads of infantry.

When requisitioning armor units, bear in mind that a single howitzer costs twice as much as any other armor unit. This means that if only twelve armor units are available, the maximum number of howitzers that can be used is six.

The bottom of the sidebar displays the total number of infantry and armor units deployed so far. The total number of attack points deployed in front of the crater line is displayed in the forward window. This information assists in remaining within the recommended force guidelines.



Deployment Restrictions.

Essentially, there are no restrictions forcibly imposed when deciding where to deploy the defensive forces. But, in order to play a standard game, the following restrictions must be followed:

- 1) All units must be deployed in the OBSTRUCTED area, and
- 2) All but 20 attack strength points for the Mark III scenario, or 40 for the Mark V, must be deployed ON OR BEHIND the crater line.

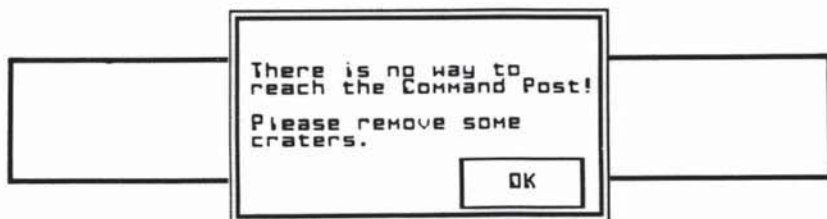
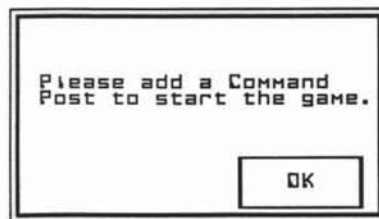
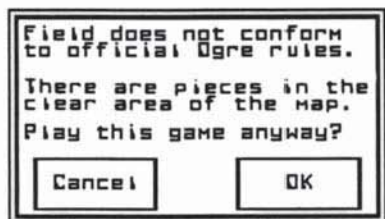
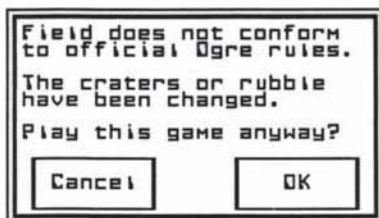
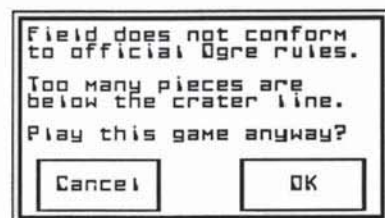
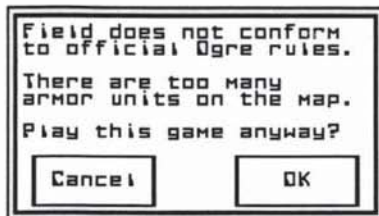
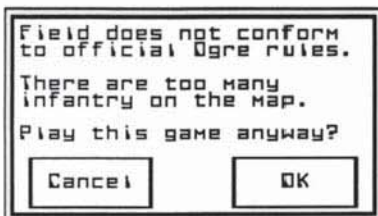
Balance. The player may exercise individual initiative in deploying forces. If the player-designed scenarios are unbalanced, then more, or fewer, defensive units can be used to offset the imbalance. Note that victory levels as cited above cease to be valid once the deployment of forces varies from the standard conditions.

Saving Fields. It is possible to save a field for future use. (Note that the Save a Field option differs from Save a Game option described earlier in this manual). Saving a field saves the positions of all the craters, rubble and defensive forces displayed on the map. If the editor was entered from a battle in progress and the Ogre is still on the map, the Ogre's position is not saved as part of the field. To save a field, select "Save a Field" from the Menu.

A dialogue box will appear asking for the field number to save this field under. Click on the field of choice and then click 'OK'. The displayed field will be saved under the specified field number.

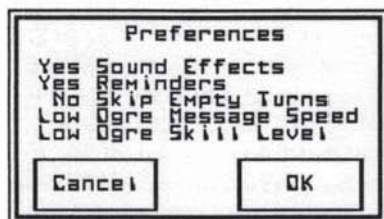


DEPLOYMENT ERROR MESSAGES



PREFERENCES

OGRE lets you customize various game features to suit your own taste, and can be used before or during a game. Selecting 'Preferences' from the 'OSI' menu will display the **Preferences** dialogue box. This presents you with five options to modify. Clicking on an option will change it. If an option has more than one choice, click on it until the desired choice is displayed.



The Options are:

Sound Effects. The default is 'Yes' (meaning sound effects will be heard). Turning sound effects off not only makes **OGRE** play more quietly (in case someone in the house is trying to sleep), but also causes the program to operate a little faster.

Reminders. During play, various dialogue boxes will appear as reminders that you have not performed all of the actions available to you, or that you are about to perform an irrecoverable action. If, for example, 'Done' is clicked during the Defender Move phase and all of the defenders that can move have not done so, then a reminder dialogue box appears. There is a reminder for

the end of each game phase as well as reminders for ramming and over-running. The default for reminders is 'Yes'.

Skip Empty Turns. There are times when there is no possible action during a phase. If, for example, the Ogre has had all of its weapons destroyed, then there is nothing for the Ogre to do during the Ogre Attack Phase. Nonetheless, the Ogre Attack Phase appears and 'Done' must be clicked to go on to the next phase. These 'empty' turns can be bypassed automatically by setting 'Skip Empty Turns' to 'Yes'. The default for skipping empty turns is 'No'.

Ogre Message Speed. During the one-player game where the Ogre is controlled by the computer, various messages will appear informing the player as to what the Ogre is doing. The time that these messages remain visible can be modified with "Ogre Message Speed". The choices are 'Low', 'Med' and 'Hi'. The default is 'Low'. This option appears dimmed during a two player game.

Ogre Skill Level. This option allows the player to modify the level of intelligence with which the Ogre plays during the one-player game. The levels are 'Low', 'Med' and 'Hi'. The default is 'Low'. This option appears dimmed during a two player game.

DETERMINING COMBAT RESULTS

Here is how combat results are determined in the original OGRE as designed by Steve Jackson. The computer version of OGRE computes combat results in the same fashion, but in a manner totally transparent to the player.

In general, each attack is resolved by comparing attack and defense strengths of the units involved, and then rolling a die. Specifically: For each attack, all attack strengths involved are totaled, and then compared with the defense strength of the target in ratio form. This ratio is then rounded off *in the defender's favor* to one of the ratios shown on the COMBAT RESULTS TABLE. In other words, the *target* of the attack, be it Ogre or standard unit, gets the benefit of the rounding-off. Exam-

ples: 2 attack points against 1 defense point would be a "2 to 1" attack. 2 attack points vs. 2 defense points = 1 to 1; 3 attack points vs. 2 defense points = 1 to 1 also; 2 attack points vs. 3 defense points = 1 to 2; 6 attack points vs. 1 defense point = 6 to 1 (treated as 5 to 1; see the Combat Results Table). Once the ratio is determined and rounded off, the attacker rolls the die and consults the proper column of the Combat Results Table to find the result. Results are applied immediately.

COMBAT RESULTS TABLE COMBAT ODDS					
Die roll	1-2	1-1	2-1	3-1	4-1
1	NE	NE	NE	D	D
2	NE	NE	D	D	X
3	NE	D	D	X	X
4	NE	D	X	X	X
5	D	X	X	X	X
6	X	X	X	X	X

Attacks at less than 1 to 2 are always NE.
Attacks at 5 to 1 or better, are an automatic X.

Explanation of Symbols

NE: "No Effect." The unit attacked is undamaged.
D: Four possible results, depending on the unit attacked.

- 1) An *Ogre* is undamaged. (This shows as "Glanced" in the sidebar.)
- 2) An *infantry* unit has its strength reduced by 1.
- 3) An *armor* unit is *disabled*. The unit can neither move nor fire next turn. An armor unit remains disabled until the end of the enemy's *next* Combat Phase.
- 4) A *disabled armor* unit is destroyed if it receives a second 'D' result while disabled.

X: If the unit attacked is an *Ogre*, the part of the Ogre that was attacked is destroyed. If the defender is any unit other than an Ogre, it is destroyed.

FIELD EDITOR MESSAGES

The following messages appear whenever the player attempts an action not within the scope of the game.

Command Post already present. Appears when the player attempts to put more than one Command Post on the field.

Can't combine with craters.

Appears when the player attempts to move the Ogre onto a crater.

Please stay on the map.

Appears when a click occurs anywhere except in a legal area.

GAME MESSAGES

2 units in hex Please move 1.

When two defenders are in the same hex one of them must be moved off before any action may be taken elsewhere. This message appears if any action is attempted with a defender other than the two residing in the same hex.

Can't move onto a crater.

Appears when attempting to move a piece onto a crater.

Can't move that far. Appears when attempting to move a piece more than its movement allowance.

Command posts can't attack.

Appears when the player attempts to target the Ogre with the Command Post.

Disabled Can't attack this turn. Appears when the player attempts to target the Ogre with a disabled piece.

Disabled Can't move this

turn. Appears when the player attempts to move a disabled piece.

Entire squad has aimed or fired. Appears when the player attempts to target the Ogre more frequently than the number of units in a squad.

No attacker. Appears when the player attempts to target opponent by dragging from a hex that doesn't contain a piece.

No clear path. Appears when the player attempts to move a piece from one hex to another, and there is no path of empty hexes short enough to complete the move.

No combined attacks on treads. Appears when the player attempts to combine pieces in an attack against the Ogre's treads.

No target. Appears when the player attempts to target the opponent by dragging from a piece to a hex that doesn't contain an opponent.

No treads left! Appears when the player attempts to move an Ogre that has no treads.

Not enough treads to ram. Appears when the player attempts a ram that will cost the Ogre more treads than it has remaining.

Ogre can't enter on a crater. Appears when the Ogre player attempts to enter the field on a hex that contains a crater.

Ogre enters on bottom row only. Appears when the player attempts to bring the Ogre onto the field on any row other than the bottom one.

Only two rams per turn. Appears when the Ogre player attempts to ram more than two pieces in one turn.

Piece cannot move. Appears when the player attempts to move the Command Post or a howitzer.

Please move a piece. Appears when the player attempts to move a crater, an opponent's piece, or from a blank hex.

Please stay on the map. Appears when a click occurs anywhere except in a legal area.

Target one unit at a time. Appears when the Ogre attempts to target more than one defending unit at a time.

Target out of attack range. Appears when the Ogre is beyond the range of the attacking piece, or when the Ogre attempts to target a piece beyond the range of its available weapons.

This hex is full. Appears when the player attempts to move a defending unit onto a hex that already contains the Ogre and another defending unit.

This unit has moved. Appears when the player attempts to move a piece that has already moved its full movement allowance.

Unit already aimed this turn. Appears when the player attempts to target the Ogre with a piece that is already aimed at the Ogre.

Unit already fired this turn. Appears when the player attempts to target the Ogre with a piece that has already fired.

USE OF RADIATION DETECT BADGES:

The radiation detecting badge found in your **OGRE** game is a **real** one. The yellow stickers found in the photo-black plastic bag will detect a wide range of energy stimuli, but is designed primarily to respond to gamma radiation from cobalt 60 and electron beam radiation. The primary industrial use of these detection dots is in medical, pharmaceutical, and food processing—fields where sterilization via gamma radiation is becoming increasingly common.

Indirect sunlight will cause the detection dot to change color from yellow to red in approximately 3–4 weeks. Keep them in the protective bag when not actually using one on a badge.

The detection dots are designed to detect radiation in doses between 0.1 and 10 megarads. There is not a significant difference in rate of color

change between those levels. Much larger doses of radiation may cause the red color to disappear entirely.



ACKNOWLEDGEMENTS FOR OGRE

The Author would like to thank the following persons for their help:

Chuck Bueche, Paul Neurath, and Dallas Snell for programming assistance;

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Dave Albert & Steve Jackson for editing the manuals;

Lori Ogwulu for graphics and design of manuals;

Denis Loubet, Peter Diaglio and Winchell Chung for illustrations used in manuals;

Marsha Meuse for game graphics

Richard Garriott for making a general nuisance of himself (creative suggestions);

The Playtesters: Jeff Hillhouse, Donna Gagne, Paul Neurath, Dale Nichols, Kurt Boutin, and Creede Lambard, Norman Banduch, Ray Greer, Steve Jackson, and Scott Haring from Steve Jackson Games.

Dave Albert & Marsha Meuse for moral support.

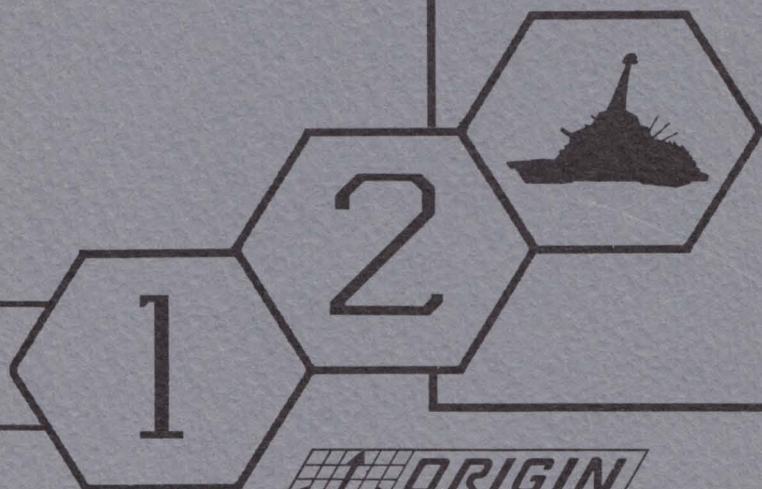
A handwritten signature in black ink that reads "Steve Meuse". The signature is written in a cursive, flowing style.

Steve Meuse

STRATEGY

AND

NOTES



 **ORIGIN**
SYSTEMS INC.

Encounter

The Command Post was well guarded. It should have been. The hastily constructed, unlovely building was the nerve center for Paneuro-pean operations along a 700-kilometer section of front—a front pressing steadily toward the largest Combine manufacturing center on the continent.

Therefore, General DePaul had taken no chances. His command was located in the most defensible terrain available—a battered chunk of gravel bounded on three sides by marsh and on the fourth by a river. The river was deep and wide; the swamp, gluey and impassable. Nothing bigger than a rat could avoid detection by the camera icons scattered for sixty kilometers in every direction over land, swamp, and river surface. Even the air was finally secure; the enemy had launched at least fifty heavy missiles yesterday, leaving glowing holes over half the island, but none near the CP. Now that the jamscreen was up, nothing would get even that close. And scattered through the twilight were the bulky shapes of tanks and Ground Effect Vehicles—the elite 2033rd Armored, almost relaxed as they guarded a spot nothing could attack.

Inside the post, too, the mood was relaxed—except at one monitor station, where a young lieutenant watched a computer map of the island. A light was blinking on the river. Orange: Something was moving out there where nothing should move. No heat. A stab at the key-

board called up a representation of the guardian units . . . not that any should be out **there**, thirty kilometers away. None were. Whatever was out there was a stranger—and it was actually **in** the river. A swimming animal? A man? Ridiculous.

The lieutenant spun a dial, moving a dot of white light across the map and halting it on the orange spot with practiced ease. He hit another key, and an image appeared on the big screen . . . pitted ground, riverbank . . . and something else, something rising from the river like the conning tower of an old submarine. But he knew what it really was, he just could not place it . . . and then it moved. Not straight toward the camera icon, but almost. The lieutenant saw the "conning tower" cut a wake through the rushing water, bounce once, and begin to rise. A second before the whole shape was visible, he recognized it—but for that second he was frozen. And so thirty men with their minds on other things were suddenly brought to heart-pounding alert, as the lieutenant's strangled gasp and the huge image on his screen gave the same warning. . . .
"OGRE!"



Less than three minutes had passed. After the initial seconds of panic, the Command Post had settled down to business. Instead of masterminding an attack, it was fighting for its own life. Men spat orders into throat mikes, eyes on the big screen. The orange dot that was the Ogre was six kilometers closer, but green sparks were moving out to meet it—the men and machines of the 2033rd.

The general entered at a run. "Get me a picture!" he ordered. The screen flickered; moving dots gave way to an image. The huge machine rumbled over the landscape, incredibly fast for something so huge. Guns bristled. The tower on top rose twenty meters high.

"A Mark V," said the general. "They really want us, all right. **Who had the watch?**"

"I . . . I did, sir."

"**Where'd it come from?**"

"Sir, the river. I got a movement indication from the center of the river—I saw it come up. **Nothing** before that. I swear it, sir."

The general started to reply, then checked himself. Suddenly, he stepped to the keyboard. The map reappeared (the orange dot was closer) and shrank. They saw their island from fifty—a hundred—kilometers in the air.

The general traced the river-course. "Here . . . and here. Yes, they could have done it."

"Sir?"

"Underwater. It went into the ocean **here**. Through the delta—up the river and out. Very clever. I wonder . . . No, they just outfoxed us. As you were, son."



The Ogre was twenty kilometers away. On the big map, a ring of green around it showed missile tanks ready to move in; more green dots, visibly moving, were GEVs harassing the enemy machine. As they watched, one GEV light went out. Another stopped moving and began to blink plaintively. The Ogre moved toward it.

Twelve minutes since the shooting had started. The Ogre was fifteen kilometers away. Faced by eight missile tanks, it had slipped to the side; three of the tanks were gone, and

two others had never gotten in range. But the Ogre had paid; it was moving slowly now. On the big map, three more green dots moved toward it. The heavies were going in.

"Mercier to CP. We've spotted it." The general punched for an image. There it was. Four of the six missile tubes were empty; two of the "small" guns along one side were scrap. Loose tread flapped; damaged motors sparked. Its guns moved and flashed. Then the screen dimmed as a nuclear warhead hit the Ogre. The image returned. There was a new crater along one of the armored sides—nothing more.

"Get those guns, Commander." The general's voice was calm; Mercier's reply was equally mild. "Trying, sir. It ducks." Then jubilation. "Good shot, Fair! You got it. **Hit** the misbegotten pile of junk." The big screen was completely dark. It came on again, from a different angle. The Ogre was hurt. One of those big front guns was gone—completely. The other was clearly wrecked.

"Good man, Mercier! Who did that? Commander Fair? . . . Mercier? . . . Fair? . . ."

"This is Kowalski in 319. It got Fair about three times. I can't find Mercier."

On the screen, one heavy tank faced the Ogre. Two GEVs swept in and out. Missile tanks and infantry moved closer—too slowly.

"Here it comes." Kowalski—commander of the last heavy. "You'll have to shoot better than that, you gadget. GOTCHA! Took out its . . ."

Static. Then a new voice. It sounded quite human. And amused. "Gotcha."

The Ogre rolled on. It was within howitzer range now, and the big missile cannon were scoring on it. Its missiles were gone, but it still had guns. The infantry had met it—finally—but powered armor notwithstanding, they were dying as fast as they came in.

"It's committed," said a big major, his eyes on the screen. "It can't afford to stop now." The general nodded. "Get behind it," he said into his mike. "It's after the howitzers. They're killing it."

In the flame-lit darkness, men heard the scrambled transmission. Men, and one other. The Ogre took in the surrounding terrain, considered the location of the Command Post and the howitzers, watched the movement of its enemies, weighed the order it had decoded. **Behind**, it thought. **They have made a mistake.**

It was very close now. Had the Command Post had windows, the men inside could have seen the explosions. The Ogre was moving very

slowly now, but two guns still spoke. It no longer dodged; it was a juggernaut, coming straight for its target.

Inside, the general's face was gray. He spoke to no one in particular "Smart. That thing is smart." A scream still echoed in the big room—the scream from the last missile tank commander. Out of Ogre's path, safe behind a three-meter ravine, lashing out at the metal giant—and the thing had changed course, ignoring the howitzers, walking over the gully like it wasn't there, crushing the smaller tank. Two GEVs had died a second

later; their speed was their best defense and the Ogre had outguessed them. The side trip had given the howitzers a few more minutes; then they, too, had died.

The screen showed the Ogre grinding on—a shambling monster, barely able to move. "The treads . . . hit the treads," whispered the general. "Stop that thing." The image changed, and he saw what was left of his force: three GEVs and a handful of infantry.

The Ogre rolled on . . .





Strategic Suggestions For Alliance Commanders

Basic Strategy

The harsh truth is that you must **always** take whatever steps are necessary, no matter how drastic, in order to hold your ground and to preserve your Command Post. If your Command Post is lost, battle statistics suggest that the remainder of your force will also be lost, as will the Conflict Zone itself.

Successful defense against an Ogre means meeting two basic goals: **Disarming** the Ogre, and **Immobilizing** the Ogre. Any plan which meets these goals is a **good** plan! Alliance commanders have devised a wide variety of battle plans which both disarm and immobilize Ogres. Though battle plans or strategies have almost limitless variety, most successful plans have certain basic features in common. For simplicity's sake, three basic defensive points your plan should observe are:

Delay the Ogre As Soon As Possible: As it starts its invasion, an Ogre is as fast or faster than all Alliance infantry squads, missile tanks, and heavy tanks. There is a very real danger of the Ogre **outrunning** the first wave of defenders it meets. If this happens, second wave forces will have to bear the brunt of a full-strength Ogre attack. To prevent this sort of Ogre maneuver, most suc-

cessful defense strategies call for forces to strike early and hard at the Ogre's tread sections (giving secondary attention to knocking out the Ogre's longer range weapons). We must be candid; opening attacks against the Ogre's mobility will cost you casualties. Failure to slow the Ogre early on, though, will cause even heavier losses later on.

As a general rule, try to slow the Ogre's speed before it has progressed more than $\frac{1}{3}$ rd to $\frac{1}{2}$ of the distance to your Command Post. To let the Ogre proceed at full speed beyond this point is to invite disaster.

Eliminate Major Ogre Weapons Systems: As the Ogre approaches the midpoint of the Conflict Zone, Alliance commanders usually concentrate on knocking out its most powerful weapons. The rationale is that, from the midpoint of the Conflict Zone, the Ogre's longer range weapons are almost within range of your Command Post. You need to prevent a long range attack, and instead force the Ogre to travel the full length of the Zone in its attempt to destroy your Command Post. In this way, you force the Ogre to expose itself to defensive fire which it cannot easily return. Appropriate targets would be (in descend-

ing order of importance) Ogre missiles, main batteries (if any remain), and secondary batteries. While your forces "whittle away" at the Ogre's weapons, it is important to continue your attack against the Ogre's treads. Remember, the Ogre can hurt you both with its weapons **and** its bulk.

Bring the Ogre to a Standstill:

When an Ogre is slowed and mostly disarmed, commanders usually make an immediate and concerted effort to shoot away the Ogre's remaining tread sections. Naturally, the idea is to bring the Ogre to a halt before it has a chance to roll over your Com-

mand Post. Oddly enough, inexperienced commanders sometimes overlook this point; it seems they become so preoccupied with fighting the Ogre's weapons that they forget the machine is about to crush them. This is a fatal mistake.

A key point to remember is this: An utterly disarmed but mobile Ogre can **still** accomplish its combat mission (i.e., destroying your Command Post). The same is not (usually) true of a completely immobilized Ogre. Let these simple truths guide you as you set your combat priorities.

Three Approaches to Defense

As mentioned above, Alliance commanders have been inventive in creating defenses which can defeat Ogres. We hope you will carry on in this tradition of creativity. However,

we feel your training will not be complete until you are exposed to what we feel are the three "classic" Alliance defense strategies.



The Multiple Howitzer Defense

The basic concept behind this defense is easy to grasp. You build your entire defense around a sizeable number of our most powerful

and longest range weapons; namely, the howitzers. By placing three, four, or more howitzers so that their fields of fire overlap and reinforce each

other, you create a "Howitzer Wall" through which the Ogre must pass if it hopes to reach your Command Post. The theory is that the Ogre can reach your Command Post only by exposing itself to punishing fire from several sides. Naturally, the Ogre will try to eliminate your howitzers as quickly as it can. If your howitzers are correctly placed, though, the Ogre will have to knock out **more than one** howitzer in order to clear a path toward your Command Post. In the time it takes the Ogre to do this, the outlying Howitzers and supporting mobile armor and infantry should have a chance to harass the Ogre and, it is hoped, bring it to a standstill.

Key Points: Three key points determine the success of the Multiple Howitzer Defense.

First, supporting mobile armor (and infantry) must eliminate many of the Ogre's longer range weapons **before** the Ogre reaches the howitzer field. If this point is not observed, the Ogre will have a relatively easy job of rupturing your howitzer wall. If the wall collapses too quickly, your Command Post will soon be destroyed.

Second, proper placement of howitzers is **critical**. You must be careful to make sure that the howitzer wall **surrounds** your Command Post with a thick, dense cushion of defensive fire. If you inadvertently leave a gap or thin spot in the wall, the Ogre will spot this flaw and take advantage of it. You must also design your wall so that all howitzers share

an equal part of the wall's defensive load. If you happen to overload a single howitzer, the Ogre will recognize the imbalance and focus its attack on the overstrained howitzer. When that howitzer falls, your entire defense collapses.

Finally, your reserve support armor and infantry must be prepared to augment (and to complete) the howitzer's attacks. Ogres are enormously sturdy vehicles, and it is foolish to believe that howitzers alone can stop them. As the Ogre and howitzers lock in battle, it is imperative for support forces to press home the attack (especially the attack against the Ogre's tread sections). If support forces hang back, they are likely to be overrun by a badly damaged but still mobile Ogre.

Comments: The Multiple Howitzer Defense can be used against both Mk III and Mk V Ogres, but it is much more likely to succeed against the Mk III version. This is true primarily because of the Mk III's relative shortage of long range weapons (the Mk III carries only one main battery and two missiles, while the Mk V carries two main batteries and six missiles). Against a Mk V Ogre, the multiple howitzer defense does not fare so well. The larger tank is all too likely to evade or out-gun your first wave defenders, and then is apt to approach your howitzers with full speed and a full complement of long range weapons (**not** a desirable scenario).

Be aware that howitzers are very expensive weapons. Thus, when you

choose to use a multiple howitzer defense, you must be ready to accept a tradeoff in the size of your mobile

armor support force. You must also be prepared to manage that small support force with consummate skill.



The GEV-Centered Defense

The GEV-centered defense is built around a mobile armor force composed primarily of GEVs (some commanders go so far as to use nothing but GEVs!). The GEV may seem an unlikely vehicle upon which to base a defense, but we must not sell the GEV short. While it is not heavily armed nor heavily armored, the GEV has a tremendous advantage in sheer **speed**.

A basic axiom of defensive warfare is that the defender must somehow direct more fire toward an opponent than the opponent can return. With this simple axiom in mind, the importance of the GEV's speed advantage over the Ogre becomes clear. Swarming GEV attack groups can close on the Ogre, fire their weapons, and then escape to relative safety—all within the time it takes a conventional vehicle to close and fire. At first, not all GEVs will escape the Ogre's pursuit. But if GEV attacks are concentrated early enough, the Ogre's ability to pursue will soon be cut down. Once the Ogre's maneuvering speed is cut back, its weapons systems become fairly easy prey for the remaining GEVs (and other support forces). Finally, when the Ogre is

disarmed (or all but disarmed), remaining Alliance forces can attack the Ogre's tread sections without facing much return fire. If the attack sequence is well-timed, the Ogre will be brought to a halt before it can touch the Command Post.

Key Points: By attending to several key points you can help your chances of making a successful GEV-based defense.

The Defensive "Scramble:" To prepare for Zone defense, your GEVs should be spread evenly across an intercept line placed fairly close to the mouth of the Conflict Zone. We stress the need for **even** distribution of forces on the line. If you leave thin spots in your defensive line, the Ogre will discover and take advantage of them. Instead, your aim should be to place your GEVs such that most of them can intercept an encroaching Ogre soon after an invasion begins.

Early Attack: When your frontline GEVs make initial interceptions, their fire should be directed almost exclusively toward the Ogre's tread sections (with perhaps a bit of fire aimed toward the Ogre's main batteries). During these early attacks, your GEVs' primary goal must be to re-

duce the Ogre's speed by one third (or more). Attacks on treads will be costly in terms of lost GEVs; however, failure to slow the Ogre early on can prove much more costly in the long run. Resist the temptation to make premature attacks on Ogre weapons. Once an Ogre's pursuit speed is cut down, it is much easier for GEVs to eliminate weapons without facing severe return fire.

Middle Phase of Attack: After the Ogre's speed has been cut by $\frac{1}{3}$ rd, your forces should shift the focus of their attack to the Ogre's weapons systems. The aim of the middle phase of attack is to eliminate almost all of the Ogre's weapons systems (leaving it armed with nothing more than its antipersonnel guns and perhaps one or two secondary batteries). The idea is to prevent the Ogre from destroying your Command Post with a "cheap shot" taken at long range; instead, you need to force the Ogre to expose itself to a prolonged attack from your GEVs and infantry.

Final Phase of Attack: When the Ogre approaches your Command Post, it is time to redirect your focus of fire once again. Whether or not your middle phase attack on the Ogre's weapons was successful, you must now throw all the firepower you can muster against the Ogre's tread sections. Recognize that a disarmed but mobile Ogre is still a formidable weapon. If, at this stage in a battle, you have lost a great number of GEVs, infantry forces become critical. Infantry must present solid resistance to the approaching Ogre, and must press home the attack against its treads. Infantry casualties will likely be very high. A spirit of sacrifice is essential. In fact, if your situation becomes desperate, you may need to sacrifice GEVs or other vehicles by ramming the Ogre (to destroy its final few treads). If you must use (fatal) sacrificial maneuvers, make sure they prevent the Ogre from crushing your Command Post. Otherwise, we suggest you preserve your armor units in the hope of destroying the Ogre before it can escape.



Comments: the GEV-centered defense is built on three distinct phases: First, slowing the Ogre somewhat; second, disarming the Ogre almost completely; and third, bringing the Ogre to a complete standstill. It is very important to execute each phase in a crisp, disciplined way. When GEV-centered defenses fail, it is often because the defensive commander fails to pay attention to the basics. For example, the commander fails to slow the Ogre early on, and hence loses too many GEVs to follow through with later phases of his attack. Or the commander continues the middle phase of his attack too long, only to see a disarmed but quite mobile Ogre flatten his Command Post. If you use the GEV-centered defense, do your best to complete each phase of your attack **in the proper sequence.**

Commanders should be wary of the Ogre's attack algorithms. We have reason to believe the Ogre can recognize a GEV-centered defense, and that it is programmed to do all it can to disrupt early phases of the GEVs' attack. For example, an Ogre may respond to early GEV attacks by moving **laterally or rearward** to pursue escaping GEVs. If the Ogre

employs these tactics, it is important for you to regroup your forces and calmly proceed with your battle plan. If you let yourself be thrown by unpredictable moves on the Ogre's part, you are apt to lose sight of your combat goals. Steady nerves and sound tactics can help prevent this from happening.

On a tactical level, we suggest you pay close attention to the escape paths your GEVs take after they first fire on the Ogre. All too often, commanders take the unsophisticated approach simply of ordering their GEVs to get as far from the Ogre as possible. The problem with this approach is that it also tends to leave small groups of GEVs isolated far **from each other.** This approach can even leave GEVs trapped **behind** the Ogre. Beware such "divide and conquer" ploys on the part of the Ogre. When your GEV's escape, they need to think not only of temporary safety, but also of second and third attacks to come!

The GEV-centered defense can be very successful against both the Mk III and Mk V Ogres. Be aware, though, that the defense requires discipline, insight, and a keen sense for split-second timing.





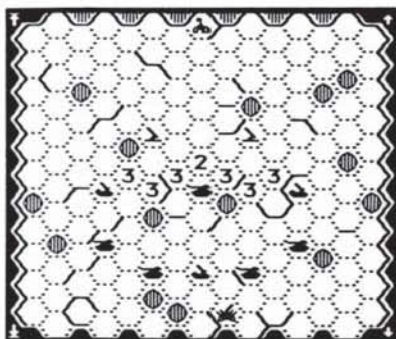
The Mixed Defense

The Mixed Defense does not rely on any one class of armor or artillery; instead, it is built around a **varied** armor force. Like the GEV-centered defense, the Mixed defense calls for initial intercept forces to slow the invading Ogre. Once the Ogre is slowed, though, the Mixed defense adopts a unique attack style of its own. The Mixed defense's flexibility allows it to throw a variety of weapons at the Ogre **simultaneously**.

Typically, defensive actions start with a group of GEVs attempting to shoot away about one third of the Ogre's tread sections (the "slow the Ogre" phase of the attack). The first wave(s) of GEVs are backed up by a mixed force of heavy tanks (placed closer to the Combine lines) and missile tanks (placed closer to the CP). This mixed force is very flexible and can attack both the Ogre's weapons systems and its tread sections. Finally, the "front" mixed force is backed by an additional "rear" mixed force, typically formed of missile tanks, missile howitzers, and infantry (some commanders choose additional armor vehicles in lieu of howitzers). The "rear" mixed force surrounds the Command Post with a protective ring of fire, and does its best to stop and/or disarm the (presumably) badly damaged Ogre as it lumbers toward the Command Post.

The precise strategy of the "rear" mixed force is to some extent deter-

mined by the condition of the Ogre as it draws close to the Command Post. If the Ogre has few tread sections remaining, the "rear" force can attack the Ogre's weapons first, and then attack tread sections at the penultimate moment. More typically, the Ogre arrives with few weapons remaining, but with a (fairly) healthy complement of tread sections intact. In this case, the "rear" force throws almost all its firepower at Ogre tread sections, addressing Ogre weapons later on.



The Mixed Defense relies on the same principle which makes the GEV defense work; namely, striking the Ogre with a greater level of fire than the Ogre can return. The GEV defense accomplishes this goal by using fragile but fast vehicles which can fire on the Ogre and then escape beyond its range. The Mixed defense accomplishes this goal by using all

available units which may vary in defensive firepower and firing range. Just as the GEV defense forces the Ogre to decide which group of GEVs to pursue, the Mixed defense forces the Ogre to decide which types of vehicles to pursue. The main idea is to force the Ogre to make so-called "no-win" decisions, and to hit the Ogre with crippling fire in the process.

Key Points: Many of the comments made about the Howitzer- and GEV-centered defenses apply for the Mixed Defense. We mention a few specific items the Mixed defense commander must watch.



Early Attack: It is very important to slow the Ogre before it crosses too deeply into the Conflict Zone. The Mixed defense is in some ways more sensitive to this problem than the GEV defense. If the Ogre runs into your "front" mixed force at full speed, there is a real possibility that it will sweep past your heavy tanks and then win the "footrace" to your Command Post. Placement of the "front" mixed force is critical. If the force is placed too far forward (toward Combine lines), your first wave

of interceptors will not have enough time to slow the Ogre. If your "front" mixed force is placed too far to the rear (toward your Command Post), you will miss valuable opportunities to make the Ogre pay for every one of its forward movements. Experienced commanders try to arrange the first, second, and third wave forces so that the Ogre is under **continuous** attack (i.e., there are **absolutely no** moments of respite for the Ogre).

Middle Attack: it is important to keep your "front" and "rear" mixed forces truly **mixed**. While we do not fully understand the Ogre's attack algorithms, we believe the Ogre usually has a harder time dealing with **varied** types of vehicles as opposed to clusters of **identical** vehicles (GEVs excepted). The Mixed defense derives much of its flexibility from striking the Ogre simultaneously with short and long range weapons. Don't lose this advantage when you don't have to. Be wary of Ogres which seem to break off their attack and instead maneuver diagonally across the Conflict Zone. Experience has shown that this is often an Ogre ploy calculated to draw out your forces, **separating them** into groups of fast, faster, and fastest vehicles. Once the Ogre separates your force into distinct classes of vehicles, it has a much easier time methodically eliminating one class of vehicle at a time.

Final Attack: As mentioned under other defense sections, above, you must have a keen sense of timing to know when to begin your all out drive to immobilize the Ogre. Infan-

try are again required to play a critical, and sadly, self-sacrificial role in shooting away Ogre tread sections. As the Ogre closes on your Command Post, you must make sure that your infantry squads are in correct position to intercept the Ogre. We remind you once again that a disarmed but mobile Ogre is a **deadly weapon!**

Comments: The Mixed defense is effective against both Mk III and Mk V Ogres. Of the "classic" defense

schemes mentioned here, the Mixed defense is probably the easiest for an inexperienced commander to master. This is true mostly because the Mixed defense offers extra flexibility in selecting targets (at the mid-point of an invasion, both Ogre weapons and tread sections are suitable targets), and because the mixed armored force tends to help the commander recover from (small) tactical mistakes.





Strategic Suggestions For OGRE AI Programmers

Basic Strategy

This manual addresses the particular type of cybertank mission where a **single** "Ogre-class" cybertank invades an Alliance-occupied Conflict Zone on its own. In such a mission the cybertank's prime directive is to **eliminate** the Conflict Zone Command Post. As a secondary priority, the cybertank should strive to eliminate all (or almost all) Alliance ground forces. As a final priority, the cybertank should return to a friendly service center after clearing the Zone.

Given these priorities, the cybertank's basic strategy revolves around a deceptively simple question:

"How should the cybertank destroy the Alliance Command Post?"

The cybertank's attack algorithms must continuously review and reassess this question as the attack proceeds. Ultimately, the cybertank's options will be to take the Command Post either by firing weapons or by ramming the Post directly. But this is a complex decision, a decision the

cybertank can make only in the later stages of its attack.

Experience has shown us a potential problem. Cybertanks can sometimes be diverted from their primary goal (destruction of the Command Post) if they are offered enough enticing opportunities to pursue secondary goals (e.g., destruction of Alliance ground forces). While reaching secondary goals **is** important, pursuit of secondary goals **must never** prevent the cybertank from fulfilling its prime objective. As you prepare cybertanks for combat missions, we suggest you install strong "initiative refocusing" blocks which prompt the system to look again and again at the unit's primary objective. This should help keep the cybertank focused on the task at hand.

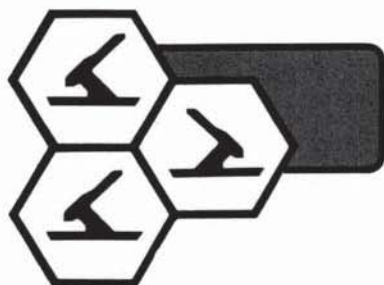


Assessing Alliance Defenses

Alliance defense strategies are as numerous and varied as are our own attack plans. However, experience has shown that Alliance defense strategies usually fall into three fairly distinct categories. We describe

these categories, below. We believe these descriptions will be useful for you as you refine the cybertank's pattern-recognition and strategy-planning algorithms.

Howitzer-Centered Defense



Basic Characteristics: Howitzer-centered defenses arrange three or more Howitzers as a protective screen shielding an Alliance Command Post. Usually, the howitzers are placed a good distance forward of the Command Post, and are arranged so that their circles of fire overlap. This overlap creates a broad, deep area which the cybertank can penetrate only by exposing itself to concentrated fire. The theory is that the cybertank will lose all of its weapons and most of its mobility (or vice versa) as it struggles to break through the howitzer line. Although the cybertank will eventually knock out the howitzers, it will be so badly damaged in the process that it will become easy prey for Alliance ground forces.

Response Strategy: The cybertank should determine early on if howitzer-centered defense is being used. If so, the cybertank has several options. One of the best is to enter the Zone only part way, then to spend time moving laterally, thus drawing out Alliance mobile ground forces. The key here is to deal with mobile armor units while they are **outside** of the howitzer defense circle (if possible). Once a number of mobile units are eliminated, the howitzers' "ring of fire" becomes much easier to penetrate.

The cybertank must study the arrangement of the howitzers, probing for weak spots. In some cases, for example, the cybertank can all but bypass a howitzer defense simply by taking a roundabout route to the Command Post. If there are no apparent weak spots, the cybertank should, all other things being equal, strive to attack whichever howitzer appears to form the cornerstone for the entire line. The attack should be as simple and direct as possible, minimizing the cybertank's exposure to fierce howitzer fire.



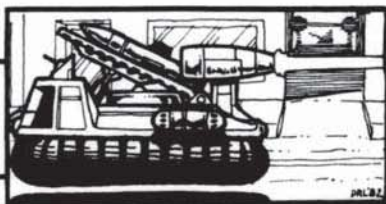
GEV-Centered Defense

Basic Characteristics: In a GEV-centered defense, the defending commander may well select GEVs as the **only** armor units he places in the field. Even if he adds other types of units for balance, GEVs will be the dominant element of his defense. The case for the GEV-centered defense is nearly an inverse of the argument for the howitzer-centered defense. The howitzer defense relies on tightly **concentrated** fire coming from a small number of stationary units; the GEV defense relies on broadly **distributed** fire coming from a large number of extremely mobile units.

At the start of a typical defensive "scramble," GEVs make individual "hit and run" attacks on cybertank treads (with perhaps a few joint attacks on main batteries). In theory, this approach enables GEVs to overwhelm the cybertank with their superior speed, movement range, and numbers. The intent is to trade off a few GEVs early on for a **dramatic** and **swift** cutback in the cybertank's mobility. If the cybertank can be

slowed, GEVs and Infantry have much more time to stop the cybertank (and attacks will be safer since the damaged cybertank can't give pursuit). The GEV defense is based on the assumption that GEVs can attack cybertanks and then escape to positions of safety. As we shall see, this assumption is not always sound. . .

Response Strategy: The cybertank has the advantage of knowing where GEVs are stationed **before** deciding where to enter the Conflict Zone. If possible, use this advantage to enter the Zone at a point where GEV coverage is thin. Once under attack, the cybertank must maneuver to cut off and eliminate small groups of fleeing GEVs. This may entail lateral (or even reverse) movement for the cybertank. This is one situation where it is unwise for the cybertank to press straight toward the enemy's Command Post. Instead, a zig-zag path enables the cybertank to trap fleeing GEVs before they can turn around to make repeat attacks.

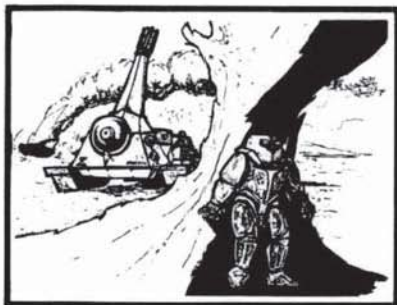




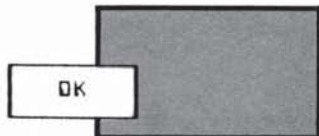
Standard Defense

Basic Characteristics: The standard Alliance defense deploys an even blend of different types of armor along with infantry. Typical forces to commit against a single Mk III cybertank might include: 20 Squads of Infantry, 2 Howitzers, 2 Heavy Tanks, 2 Missile Tanks, and 4 GEVs. The standard defense is very flexible, and enables the Alliance commander to resist the cybertank in several ways. The defense can be optimized to target either cybertank treads or weapons. The standard defense is perhaps the most difficult for the cybertank to "read," since the defense permits Alliance commanders to mask their intentions until the last moment before their units close on the cybertank. If skillfully managed, a standard defensive force can bring numerous types of weapons to bear on the cybertank **simultaneously**.

Response Strategy: Our cybertanks do quite well against the standard defensive force provided only part of that force is engaged at any given moment. It is often useful for the cybertank to play a waiting game, using some lateral movement to draw the Alliance's faster units forward. The main idea is to string out Alliance forces across the length of the Conflict Zone. In this way, the cyber-



tank can tackle separate groups of armor rather than attempting to forge its way straight through a highly concentrated group of armor units. As the cybertank encounters small groups of armor, it should, where possible, take the added precaution of "sideslipping" past the edges of groups. The sideslip maneuver helps keep the cybertank from being trapped, and helps ensure that the cybertank will arrive at the enemy Command Post with adequate mobility and firepower in reserve.



Entry to the Conflict Zone

Alliance commanders almost always locate Command Posts at the rear edge of the Conflict Zone, near the center. Thus, to minimize travel distance across the Zone, and to permit greater flexibility of movement within the Zone, the cybertank should usually enter from a central location. There are a few exceptions to this rule. Some Alliance commanders run the standard defense by

placing both their Command Post and the bulk of their defensive forces in a rear corner of the Conflict Zone. When facing forces deployed in this way, the cybertank might benefit from entering the Zone at the **opposite** front corner of the Zone. In this case, an entry from the opposite corner tends to lure Alliance forces away from their strong position near the Command Post.

Use of Missiles

Because missiles are the most powerful and longest range weapons in the cybertank arsenal, many AI programmers instruct cybertanks to hold at least a few missiles in reserve to handle contingencies arising late in the attack. On an intuitive level this strategy makes sense, but recent combat analysis by Combine intelligence indicates that the strategy simply does not work. In far too many cases, missiles are destroyed without ever leaving their launching tubes. Thus, the latest Combine doctrine holds that missiles should be held back only so long as the cybertank's "conventional" guns are

able to handle nearby Alliance armor units. In all other cases, the missiles should be treated like any other weapon in the cybertank arsenal, and should be used as needed. This does **not** mean that missiles should be used haphazardly (e.g., to attack a single squad of infantry). It **does** mean that missiles can and should be used on a wide range of appropriate targets (e.g., to destroy Command Posts, or to eliminate Howitzers or armor units blocking the cybertank's path). Over a century ago, the first builders of nuclear weapons said it best: "Use 'em or lose 'em."



Use of Terrain

Since both MK III and MK V cybertanks are free to move over all but the most difficult land surfaces, most AI programmers give little attention to terrain (apart from avoiding such obvious hazards as full-size bomb craters and swamps). To be blunt, this is a mistake. While terrain does little to affect the cybertank, it **does** affect the cybertank's enemies (in particular, very few vehicles can cross huge piles of battlefield rubble the way a cybertank can). In many cases, the cybertank can use rubble or bomb craters to block pursuit from Alliance armor units.

Some AI programmers send cybertanks along the very edges of impassable areas. The theory is that, in following this path, the cybertank can be attacked from one side only. This approach carries some merit. However, recent Combine combat analysis shows that "edge" movement is **not** a good solution. The cybertank must trade freedom of movement for (relative) safety. The tradeoff is not a good one. We suggest you program cybertanks to search for travel paths which lie somewhere between the center and the perimeter of the Conflict Zone.





OGRE

Artificial Intelligence

The first step in designing the Ogre's Artificial Intelligence (OAI), was to determine just what an Ogre should do. This required much research into how 'experts' played the game, in addition to many hours of game play to test various OAI concepts. The single most difficult aspect of designing the OAI was the fact that **OGRE** is a game based on probabilities. Every time the Ogre fires at a defender there is a chance of hitting, disabling or missing. Assessing all of these chances for every possible combination of targets the Ogre may have, for every possible move the Ogre can make, evolved into a monumental task.

The Ogre's ultimate goal is to destroy the Command Post (CP) and get away. Its highest priority is to destroy the CP. Its second priority is to get away. On its way to the CP, the Ogre will be trying to destroy as many defenders, while sustaining as little damage to itself, as it can. This means the Ogre must not blindly dog a path straight to the CP, or the defense would merely set up a gauntlet that would destroy the Ogre before it could reach the CP.

The Ogre employs two intelligence techniques: strategic and tactical. Ogre Strategy involves long-range targetting of howitzers and the CP and avoiding terrain traps created with the editor. Ogre Tactics involve short-range maneuvers while en route to its next long-range target.

At any given time, there is a limited number of hexes the Ogre can legally move to. Some of these hexes are more advantageous to the Ogre than others. The Ogre's tactical intelligence determines which hex has the highest value.

The factors that are involved in determining the value of a hex are:

- 1) the distance of that hex from the current long-range target (i.e. howitzer or CP)
- 2) the value of the defenders the Ogre can attack from that hex
- 3) the amount of damage the Ogre may suffer in that hex

The steps in determining the Ogre's best move look something like this:

- 1) Find a legal path to a target hex
- 2) Determine the value of the defenders the Ogre can attack from the target hex (henceforth referred to as **AttackVal**)
- 3) Determine the amount of damage the Ogre may suffer in the target hex (henceforth referred to as **DamageVal**)
- 4) Determine the value of the target hex using its distance from the current long-range target, and the hex's **AttackVal** and **DamageVal**

These steps are performed for every hex the Ogre can reach from any given position. The Ogre then moves to the hex with the highest value.

Each defender is assigned a relative value by which the Ogre assesses their worth. For each hex the Ogre can reach, every defender that can be fired upon from the target is assigned a percent chance of being hit (%HIT). As the Ogre rams, overruns, or hits the various targets, those target's %HIT will be increasing (usually). As soon as the Ogre has completed its simulated attack from the target hex, each piece will have its relative value modified by the Ogre's percent chance to hit it. The summation of the piece's modified relative values will be the target hex's **AttackVal**.

The same %HIT will be used to modify each piece's ability to damage the Ogre from any given target hex and the summation of these values will be the target hex's **DamageVal**.

The remainder of this section explains the techniques that are used in determining strategic targetting and in performing the four steps outlined above for computing the next best hex.



Strategic Long-Range Intelligence

Due to the long-range striking power of howitzers, it is necessary for the Ogre to be able to plan an overall strategy concerning howitzers. If it weren't for the howitzers, the Ogre could play a good game without looking more than 1 move ahead (except for being drawn towards the CP). Sometimes it is best to make the CP the only long-range target and disregard any howitzers. Other times it is necessary to target certain howitzers, or a sequence of howitzers, before heading for the CP.

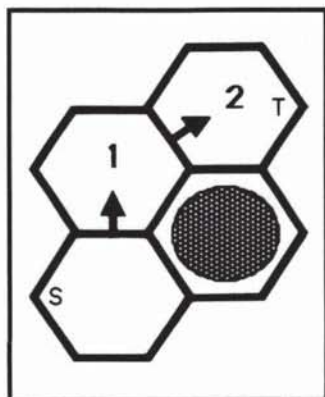
There are two main considerations when planning Ogre strategy strictly around howitzers and the CP: 1) getting to the CP in the least number of turns, and 2) suffering the fewest number of howitzer hits in the process.

The strategies the Ogre will consider will vary in value based on the defender's howitzer setup. One approach will be to target the CP alone. Another will be to target each howitzer, prior to the CP, in varying orders. The prime strategy will be the one that gets the Ogre to the CP in the fewest number of turns with the least number of hits.

The final long-range goal the Ogre will consider is leaving the map. This is a goal the Ogre will never consider unless the CP has been destroyed. Once the CP has been destroyed, the Ogre will try to leave the map as quickly as it can.

Tactical Short-Range Intelligence

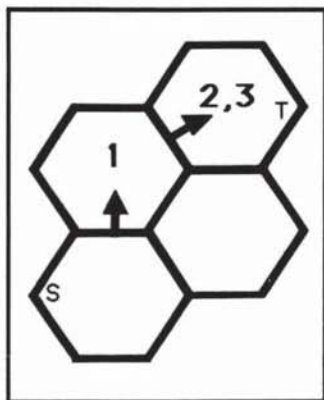
A finite number of PATHS are available to the Ogre and a complete list of these paths was compiled. The list consisted of 58 paths for any one of the six facings from a source hex.



Selecting a Path

In the path representation, the letter "S" denotes the SOURCE hex (or starting hex), and the letter "T" denotes the TARGET hex (or destination hex). The arrows show direction of movement. The numbers label each move. The shaded circles represent craters. The example below illustrates using two movements to go a distance of two hexes.

The Ogre will start looking at paths that have a distance of 1 and work up to paths that have a distance equal to its current movement value.



Certain paths are designated as RAM paths (Rpath). An Rpath is a path that does not use the direct route to the target hex. The purpose of an Rpath is to attempt to ram a defender (or overrun infantry) while en route to the target hex. Illustrated is an Rpath that is almost identical to the above path. Both paths have the same source and target hexes. The difference is that upon arriving at the target hex the Ogre expends a third move to potentially ram a defender a second time.

If no ram, or overrun, has occurred upon reaching the end of an Rpath, then no attempt is made to evaluate the target hex for its **AttackVal** and **DamageVal**, since the target hex will already have been evaluated by a previous, more direct path.

Actual game play allows a 50% chance of destroying a mobile armor unit with a single ram. For simulation purposes, however, if an active mobile armor unit

is rammed, it will be marked as disabled and assigned a 75 %HIT. If a disabled, or immobile, unit is rammed it will be assigned a 100 %HIT. If an INF1 is overrun it will be assigned a 100 %HIT. If an INF2 or INF3 is overrun it will be reduced to an INF1 or INF2, respectively, and **AttackVal** will be increased by the value of an INF1.

Ramming an armor unit costs the Ogre 1 tread unit. It was therefore necessary to assign a value to the Ogre's treads so that the **DamageVal** could be increased whenever the Ogre decides to ram. Decreasing this tread damage constant causes the Ogre to ram more frequently.

If, after all legal paths have been simulated and the Ogre is actually moving along the selected path, a single ram destroys an active, mobile armor unit anywhere before the end of that path, then the Ogre will re-evaluate a new path using the remainder of its movement value. This is necessary due to the fact that, in actuality, the Ogre has a 50% chance of destroying a mobile, active armor unit with one ram only, whereas the simulation logic always counts a single ram as a disable with a 75 %HIT.

The Ogre must have at least 3 treads to ram a heavy tank and 2 treads to ram all other armor units, except the CP (so it won't immobilize itself).

Evaluating a Hex's Attack Value

The "attack value" of a position to the Ogre is represented by **AttackVal**. Each defender will have a relative value assigned to it, referred to as **AttackVal(defender)**. These relative values look something like this:

1) CP	: 255	5) Heavy Tank	: 100
2) Howitzer	: 200	6) Infantry 3	: 60
3) GEV	: 100	7) Infantry 2	: 40
4) Missile Tank	: 100	8) Infantry 1	: 20

AttackVal will be based upon the cumulative **AttackVal(defender)** for each defender the Ogre can bring weapons against. The Ogre will deploy its weapons against all possible defenders and assess the potential value of those defenders. The weapons are deployed in this order:

- 1) Antipersonnel (**AP**)
- 2) Secondary Batteries (**SB**)
- 3) Main Batteries (**MB**)
- 4) Missiles (**MSL**)

If there are no defenders at exactly 3 hexes away from the Ogre's targetted hex then MB's will be processed before SB's. This is because there is no point in holding the MBs for a target out of reach of the SBs if there aren't any.

Each time the AttackVal of a hex is determined, every defender will be initially assigned a 0% chance of being hit (%HIT) by the Ogre. As the Ogre simulates a hit against a target, the target's %HIT will be increased. As soon as the Ogre has completed its simulated attack for all weapons, each piece will have its %HIT multiplied by its relative value. The summation of the piece's modified relative values will be the target hex's **AttackVal**.

In determining a target's %HIT for any given weapon, the ratio of the Ogre weapon's attack strength to the target's defense strength is used. The %HIT values for both enabled and disabled targets for each of the various odds are as follows:

ODDS	Percent Chance To Hit Enabled Pieces	Percent Chance To Hit Disabled Pieces
less than 1-2	0%	0%
1-2	25%	33%
1-1	50%	67%
2-1	67%	83%
3-1	83%	100%
4-1	92%	100%
better than 4-1	100%	100%

Infantry 1 targets are counted as disabled pieces.

1) Antipersonnel

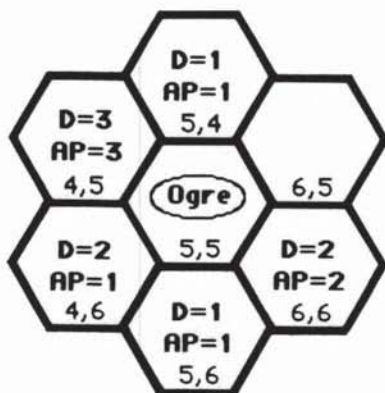
Since the Ogre only gets one attempt with antipersonnel (**AP**) against infantry, it must deploy its **AP** with optimum efficiency. The algorithm outlined below assumes optimum deployment consists of hitting as many pieces as possible. It, therefore, deploys starting with the lowest odds (1-2) and works its way up.

The algorithm goes as follows:

- Sort the infantry within 1 hex of the Ogre in descending order of defense points (**D**)
- Go 1-2 starting at the bottom of the list and working up
- Go 1-1 starting at top and working down
- Go 2-1 starting at top and working down, skipping 1s (**D** = 1)

- Go 3-1 starting at top and working down, skipping 1s
- Go 4-1 starting at top and working down, skipping 1s
- Go 2-1 starting at top and working down, including 1s
- Go 3-1 starting at top and working down, including 1s
- Go 4-1 starting at top and working down, including 1s
- Put remaining **AP** on lowest infantry

The diagram below depicts the Ogre surrounded by 5 infantry units that have a combined defense value (**D**) of 9. The following example uses the above algorithm to determine the **AP** values represented in the diagram.



1. Sort them in descending order:

D = 3 2 2 1 1

2. Deploy at 1-2 from bottom to top:

D = 3 2 2 1 1

A = 1 1 1 1 1

|

It defaults to 1-1 against **D** = 1 since you can't get a 1-2.

3. Deploy at 1-1 from top to bottom:

D = 3 2 2 1 1

A = 1 1 1 1 1

|

1 1

The last **AP** was deployed against the first '2' in the list, so the loop is exited.

The **AP** deployment now equals the values you see in the diagram above.

Once the **AP** are deployed, they will be used in a simulated attack against the selected targets. The ratio of **AP** to **DP** will be used to determine the %HIT used in modifying the **AttackVal(defender)** and the defender's damage potential next turn. If, for example, the Ogre deploys 2 **AP** against an infantry 3, then the ratio will give 1-2 odds which renders a 25% chance to hit the infantry.

2) Secondary Batteries

First, all targets within range (2 hexes) of the **SBs** are listed. Then, the cumulative %HIT for those targets is computed.

Deploy 1 **SB** against the defender with the most valuable target with the lowest cumulative %HIT. If there is a tie for the most valuable target, then the defender that is closer to the Ogre's current long-range target has priority. Using the ratio of the attack strength of the **SB** and the target's defense strength, determine the cumulative %HIT. Use the new %HIT to re-compute the target's value. Repeat the **SB** deployment until all **SBs** are used or until all targets have a 100 %HIT.

3) Main Batteries

This is done the same way as the **SBs**.

4) Missiles

Missiles will be deployed similarly to the main and secondary batteries but with a few modifications. It is desirable that missiles be reserved as long as possible for use against howitzers or the CP. The missiles will, however, be deployed if it appears they may be destroyed.

Once all weapons have been deployed, the targetted pieces will have their relative values modified by their %HIT and the total of these values will be assigned to **AttackVal**.

Evaluating a Hex's Damage Value

All of the defenders that can strike against the Ogre for a particular move contribute to a hex's **DamageVal**.

It was necessary to establish a meaningful relationship between **AttackVal** and **DamageVal**. The first step in doing this was to determine what the Ogre would consider an even trade of damage inflicted for damage received. A constant was arrived at that is multiplied by the total attack points of the defenders that can reach the Ogre in the target hex.

The formula to determine **DamageVal** for a particular hex looks something like this:

$$\text{DamageVal} = (\text{Defender Attack Points}) \times \text{Damage Constant}$$

Modifying the Damage Constant makes the Ogre play more aggressively or more cautiously.

All defenders are checked to see if they can strike the Ogre on their turn (taking into account the defender's attack range, movement value and terrain). The attack strength of each defender is modified by their %HIT computed by the attack evaluation logic.

Evaluating the Draw of a Long-Range Target

TargetVal is the variable that causes the Ogre to move towards the current long-range target (i.e. a howitzer or the CP). There are three situations when considering the Ogre's movement relative to its current target:

- 1) decreasing its distance (a positive effect)
- 2) not changing its distance (a negative effect)
- 3) increasing its distance (a strong negative effect)

When moving towards its current target, the best the Ogre can do is decrease the distance by the amount of its movement value. Anything less than this is suboptimal when considering movement only. If the Ogre can increase its advantage by not moving as close to its target as it can in order to destroy a defender(s), then it should do so.

The technique for determining **TargetVal** is to divide a constant by the Ogre's maximum movement value and multiply the result by the number of hexes that the Ogre moves towards its current target (a positive value) or away from its current target (a negative value).

Several factors may modify the attraction of a target. Some of the factors are:

- Often, it is desirable to move away from the current target in order to destroy a relatively defenseless defender(s). Thus, a path that shows a high attack value with little or no damage value is weighed positively, whether it is far away from the current long-range target or not.
- If the Ogre is in a howitzer umbrella, then the Ogre will have a greater tendency to move towards its current long-range target, thus keeping the howitzer from getting too many shots at it.
- If the current long-range target shows at least a 50% chance of being destroyed (which is also a sure disable), then the Ogre will be pulled to the next long-range target. This will keep the Ogre from getting closer to the current target than it has to in order to destroy it.
- In order to keep the Ogre from 'wimping out' (i.e., running scared), a path that moves away from the current long-range target that shows zero Attack Value, is weighted negatively.

Once all of the factors for a hex have been evaluated, they can be combined to arrive at the overall value for that hex.

The formula for determining the value of a hex is:

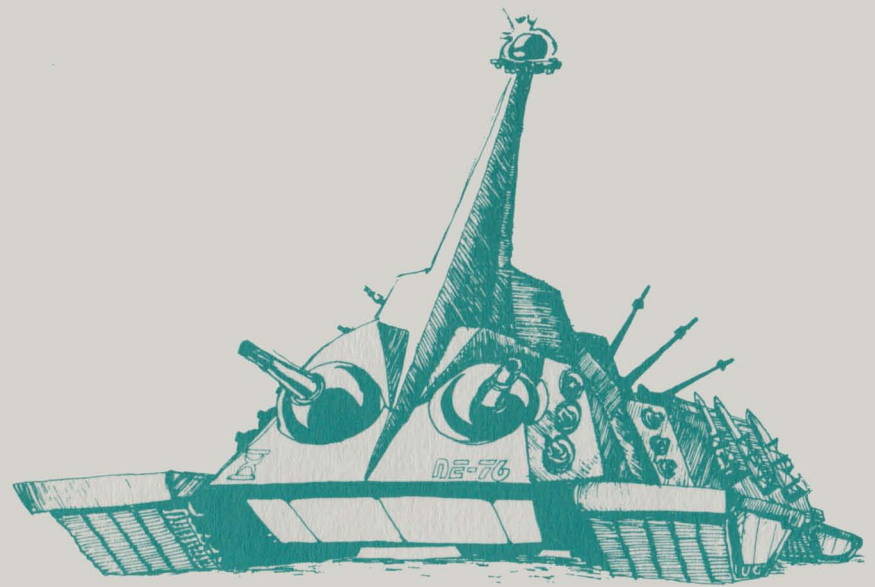
$$\text{HexVal} = \text{AttackVal} - \text{DamageVal} + \text{TargetVal}$$

The Ogre performs these computations for every legal move it can make from its current location, then selects the hex that has the greatest value.



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OGRE[®]



PLAYER REFERENCE CARD

ATARI VERSION

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TO BEGIN PLAYING OGRE

1. Place the OGRE disk, label side up, in the disk drive and turn on the power to your disk drive.
2. Turn on the power to your computer.

OGRE CONTROL

Making Choices. Choices are made in OGRE through the use of the Pointer, a black, triangular object that can be moved around with a joystick or the keyboard. A joystick is highly recommended for playing OGRE. OGRE can be played using the keyboard to move the pointer and to simulate 'clicking' or pressing a button, or it can be played entirely with 'pointing,' 'clicking,' and 'dragging' techniques using a joystick.

Clicking. Some selections in OGRE are made first by moving the pointer to the desired object or option, then pressing and quickly releasing the button. This is referred to as **clicking**. When playing with the keyboard, typing **RETURN** will simulate pressing or releasing the button.

Dragging. Another method of designating choices is by **dragging**. **Dragging** is accomplished by placing the pointer over the desired object then pressing and **holding** the button while moving the pointer to another location. Releasing the button completes the drag. If playing with keyboard control, typing **RETURN** will simulate holding the button down. When the pointer is in the desired location, typing **RETURN** again will release the button and complete the drag.

Pulling Down the Menu. In the upper right corner of the screen are two menus that can be **pulled down**. The first is titled 'Menu' and the second is 'OSI.' To pull down either menu place the pointer over the desired title and press and hold the button. The selected menu title will become highlighted and a list of commands will appear beneath the title. Releasing the button without moving the pointer will cause the menu to disappear. The menus can also be pulled down by typing 'P'.

Choosing Menu Commands. Menu commands are chosen by using the **dragging** technique. Position the pointer over the selected menu title and pull down the menu by pressing the button. While holding the button down, drag the pointer to the desired menu command. As the pointer moves through the menu, each command is highlighted in turn. When the desired command is highlighted, releasing the button selects it. If you change your mind about choosing a command, move the pointer off the menu, or back up to the title, then release the button. Nothing is chosen unless you release the button while one of the commands is highlighted.

Dimmed Commands. When 'Menu' is pulled down, some of the commands are less distinct than others. These less distinct commands are referred to as **dimmed**. Dimmed options are ones that cannot be used at that time.

Dialogue Boxes. Whenever additional information is required to complete a command, a **dialogue box** appears. Dialogue boxes usually have special areas called 'buttons' to click, such as 'OK' or 'Cancel.' Sometimes they present further options for selection. Dialogue boxes are also used to warn you if you're about to do something that is irreversible. If keyboard control is used, the pointer will automatically move to a dialogue box any time one appears. Typing **O** or **V** will move the pointer to the 'OK' button and typing **RETURN** will press it. Typing **CTRL-O** or **CTRL-V** will automatically invoke the 'OK' button.

Control Keys. In most cases, pressing single keys, such as **O** or **V** will move the pointer to a command area (i.e. the 'OK' button or the 'Menu') **without invoking that command**. The command must then be invoked by a second keystroke, such as typing **RETURN**. This two-step process is a safety precaution against accidentally choosing the wrong command. This precaution can, in most cases, be overridden by pressing the **CTRL** key while simultaneously pressing the desired command key. This will automatically invoke the desired command without requiring the additional keystroke.

LOADING and SAVING GAMES

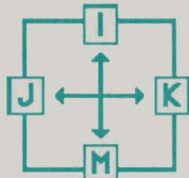
A previously saved game can be loaded at any time. If a battle is in progress when another game is loaded, the current game will be lost unless it was first saved. To load a game, select 'Load a Game' from the menu.

A dialogue box will appear, from which one of five saved games can be selected. Select the desired game and then click 'OK.' The selected game will be loaded in and the battle will proceed from where it was saved.

The current status of a battle can be saved for continued play later by selecting 'Save a Game' from the Menu.

A dialogue box will appear, from which one of five games can be selected for saving. Select the desired game and then click 'OK.' The game will be saved and play can continue.

MOVEMENT



 SLOW POINTER MOVEMENT

 FAST POINTER MOVEMENT

The movement keys are active only when the keyboard is selected for input. All other keyboard shortcuts are active at any time during play, except where noted.

OGRE MARK III AND V ATTRIBUTES

PART	QUANTITY III	QUANTITY V	DEFENSE STRENGTH	ATTACK STRENGTH	MOVEMENT
Missiles	2	6	3	6	5
Main Battery	1	2	4	4	3
Secondary Bat.	4	6	3	3	2
Anti-personnel	8	12	1	1	1
Treads	45	60	1	0	0

THE MARK V IS A LARGER, MORE FORMIDABLE VERSION OF THE MARK III

DEFENDER ATTRIBUTES

DEFENDER	DEFENSE STRENGTH	ATTACK STRENGTH	ATTACK RANGE	MOVEMENT
CP	0	0	0	0
Heavy Tank	3	4	2	3
Missile Tank	2	3	4	2
Howitzer	1	6	8	0
GEV	2	2	2	4-3
INF 3	3	3	1	2
INF 2	2	2	1	2
INF 1	1	1	1	2

GENERAL

D	Toggles Drop/Drag mode (active in Field Editor only)
1-0	Selects piece number 1-0 (active in Field Editor only)
U	Moves pointer to Undo button (Clear button)
CTRL-U	Invokes Undo function (when applicable)
C	Moves pointer to Clear button (or Undo button)
CTRL-C	Invokes Clear function (when applicable)
F	Moves pointer to Fire button
CTRL-F	Invokes Fire function (when applicable)
S	Moves pointer to Split button
CTRL-S	Invokes Split function (when applicable)
G	Moves pointer to Group button
CTRL-G	Invokes Group function (when applicable)
R	Moves pointer to Range button
CTRL-R	Invokes Range function
D	Moves pointer to Done button
CTRL-D	Invokes the Done function
E	Examine and/or select piece pointed to
T, SPACE BAR	Invokes targetting with/at selected defender

NOTE: TO CHANGE THE COLOR OPTION FROM THE STANDARD 800 TO THE XL SERIES, OR VICE VERSA, PRESS CTRL-X DURING THE BOOT UP SEQUENCE.

DIALOGUE BOX

NOTE: IF KEYBOARD IS BEING USED, POINTER GOES TO DIALOGUE BOX AUTOMATICALLY.

O, V	Moves pointer to OK button	CTRL-C	Invokes Cancel button
CTRL-V, CTRL-O	Invokes OK button		
C	Moves pointer to Cancel button		

USING the KEYBOARD SHORTCUTS

Here are some examples of how keyboard controls can be used to speed up game play.

Ogre attacking defender:

1. Move the pointer to the desired defender.
2. Press the **Space Bar**, or **T** to invoke the targetting dialogue box. If the defender is within range the dialogue box will appear.
3. Select the desired weapons then type **CTRL-O** for 'OK'.
4. Type **CTRL-F** to fire.

Splitting Infantry:

1. Move the pointer to the desired infantry.
2. Type **E** to examine the infantry's statistics. The main purpose in this is to select the infantry without having to type **RETURN** twice.
3. Type **CTRL-S** to split the infantry.

Ranging a unit:

1. Move the pointer to the desired unit.
2. Type **E** to examine/select the unit.
3. Type **CTRL-R** to view the unit's range.
4. Type another key to continue.

OGRE BATTLEFIELD AND MENU BARS

