

Ancient Warfare

Battle Manual

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1. Introduction

Ancient Warfare is a series of tactical wargames depicting combat across the ancient world. Based on 15-minute turns and 20 metre hexes, the game's small scale and 3D capability bring the entire spectrum of ancient warfare into dramatic close-up. Primary emphasis has been placed on historical accuracy and the great battles presented in the series have been meticulously researched and re-created.

This manual details rules that are common to all games in the *Ancient Warfare* series as well as rules that are specific to particular titles. For a quick introduction to your game and basic instruction on how to play, see the Getting Started guide. Additional materials on Scenario Design and use of the Scenario Editor are included in the documentation, along with a FAQ and tactical advice.

More so than many games, *Ancient Warfare* requires attention to the manual, and players are urged to print it for ready reference. The manual has been made with simple formatting and as few graphics as possible to facilitate printing. In addition to study of the manual, time is required to master *Ancient Warfare*. Players, especially those used to wargaming modern conflicts, often find that coming to grips with a truly realistic depiction of ancient warfare requires a greater mental adjustment than they expected.

2. The Game Interface

2.1. The Menus

The pop-down menus of the Menu Bar and their commands are explained below along with tips regarding their use. Many (but not all) menu items can be accessed by the toolbar buttons as well.

The main (top level) menu contains the following items:

File Turn Units Reinforce Status Display Options Help

Commands available under each item are explained below.

File

This menu contains basic file-management commands for saving your battles.

Turn

- *Next* moves the game turn on to the next turn.
- *End Game Status* is only available at the end of a game and allows a player to view the status of each army. Once this option is chosen, the player chooses the army he wishes to examine and it goes to Menu – Status – Victory.
- *Army Command* moves all eligible units in the army forward one hex. The units move in the direction specified in the Scenario Header as the direction the army is facing. Units eligible are non-attacking, non-routing units, not fixed, with less than 3 commands allocated prior to the Army Command. Up to 3 such Army Commands can be issued by a player per turn. The Army command provides an efficient way to move large numbers of units and can be especially useful in the early stages of a scenario.
- *Cancel Army Commands* erases all Army commands. To cancel all commands in a multi-national army the cancel option needs to be used for each nationality separately.
- *Multi-Player Game* provides the facility to allocate units to different players on the same side. Details are given in *Multi – Player PBEM System*

Units

This menu may vary slightly depending on your game. Some games have a *Legionaries* command and submenu, while others contain the command *Pikemen Fall Back*. These commands refer to special units and are addressed from page 29 onwards.

Other Unit Menu Commands:

- *Divide Unit*: Splits the unit into smaller elements. See *Use of the Toolbar* below.
- *Combine Unit*: Allows smaller undisrupted units belonging to the same organization to recombine.
- *Formation Change*: See *Use of the Toolbar* below.
- *Limber/Unlimber Artillery*: Artillery cannot be moved unless in Limbered status. Artillery cannot fire unless Unlimbered.
- *Make/Destroy Assault Ladders* and *Climb Assault Tower* are described in *Fortifications & Siege Warfare* below.
- *Save Action Points for Firing*: Limits movement to ensure that enough APs remain to permit firing.
- *Save Action Point for Unloading*: Limits movement of limbered artillery to ensure that enough APs remain to allow unlimbering in the same turn.
- *Remove from Map*: Removes from play any unit adjacent to a map edge. Once a player moves a unit off the map he may not return it. However no victory points are lost as the unit is not considered destroyed.
- *Rally & Reform*: Units that have routed may in some cases recover and re-organise. Select the routed friendly unit and click on the pop-down menu item or toolbar button.
- *Artillery Dialog*: This command generates a listing of all available artillery units and their positions.
- *Next Unit to Move*: Locates the next unit eligible to move.
- *Create New Unit Group*: Once this option is clicked, left mouse click on each unit to be assigned to the new group. Once all units you require are in the group, click the option again to turn it off. This function will allow a player to make and break groups as required throughout the game, increasing his tactical flexibility and movement options. There is no limit to the number of groups a player may wish to create. Note: It is better to de-select the Command mode by clicking off the toolbar Eagle button before creating a new group.
- *Unit Joins Group*: Individual unit can join an existing group. Left click unit to join, go to menu – Units – Unit Joins Group, right click one unit of the group the unit is to join. To make a second unit join a group you have to go through this sequence again.

Reinforce

- *Scheduled*: displays the reinforcements that are scheduled to arrive during the current scenario and probability of arrival on a given turn.
- *Arrived*: shows the reinforcement groups that have just appeared on the map and their arrival hex.
- *Releases*: provides the release time of units fixed at the start of play.

Status

- *Strength* shows the number and types of units currently available to each side. The units listed on the left hand side of the Strength Dialog are the total number of men for each unit type

currently available. The right side of this dialog lists the number of men for each unit type eliminated thus far. The Strength of the opposing side is not available until that player turn.

- *Army Organisation* displays a list of units grouped by organisation and their corresponding manpower.
- *Command Report* will indicate overall army morale, number of improved positions built, and reinforcements arriving.
- *Intelligence Report* may reveal further information on the tactical situation.
- *Objectives* will show the number, value, and location of each Objective.
- *Victory* reveals the current level of victory and related items.
- *Removed Units at Exit Hexes* displays those units that have left the battlefield at a victory point exit hex. The points scored are also given.
- *Scenario Description* displays information on the scenario, including its title, historical background and the scenario's designer.
- *Scenario Information* reveals the time the battle started and the current time plus ground conditions, visibility, and weather.
- *Scenario Settings* shows the game settings chosen at the start of play for FOW, Command Control, Multiple Commanders, etc.

Display

- *Units Off* toggles (off or on) the on-map display of units. Useful to hide temporarily the unit icons so that the underlying terrain can be seen.
- *Units to Bottom of Stack* puts the activated unit at the bottom. This function has no impact on the game but may provide visual convenience.
- *Leaders to Top* moves each friendly leader unit to the top of its stack. This function has no impact on the game but makes Leaders more visible.
- *Unit Fly-by Box* gives a way to see quickly the strength of friendly units by passing the mouse over them.
- *Show Unit's Fatigue Level* changes each friendly unit icon colour to reflect the level of fatigue incurred by the unit. In 2D - Pale white for low fatigue level, tan for medium fatigue and red for high fatigue. In 3D – fatigue is seen as a coloured bar at the bottom of the unit - green for low fatigue, blue for medium fatigue, and red for high fatigue. This is a toggle (on or off) option.
- *Show Unit's Quality Level* changes each friendly unit icon colour to reflect the unit's experience level. In 2D - Pale white for militia and levies, tan for warband and experienced, and red for elite, veteran, fanatics and bodyguard. In 3D – the level is seen as a coloured bar at the bottom of the unit – black for militia and levies, green for experienced and warband, blue for veteran and bodyguard and red for elite and fanatics. This is a toggle (on or off) option.
- *Show Battle Losses* changes each unit icon colour to reflect the level of losses incurred the previous turn. In 2D - Pale white for low (<6) losses, tan for medium (>5 and <11) losses and red for high (>10) losses. In 3D, losses are shown as a coloured bar at the bottom of the unit - green for low losses, blue for medium losses and red for high losses. This is a toggle (on or off) option.
- *3D Unit Bases* shows the army colour identification on all units.
- *3D Unit Stack Level* reveals if more than one unit is on a hex. A light blue bar will appear at the base of the visible unit if 2 units exist on the hex, and a black bar if 3 units are on the hex.

- *Show Icons in 3D Forest* is useful to see units in forest, woods and buildings when in 3D view. Here the unit type is given as an abbreviation, e.g., Heavy Infantry are shown as HI on the army-coloured disc.
- *Objectives* toggles the display of Objectives and their Victory Point value on the map.
- *Locations* toggles named locations on the map.
- *Hex Contours* toggles a brown 'contour line' along all hexsides where an elevation change occurs.
- *Command Range* shows a selected Leader's command radius.
- *Fire Range* toggles a shade over all hexes that are not within the unit's fire range.
- *Line of Sight* toggles a shade over all hexes which are not in the LOS of the current Hot Spot hex.
- *Fire Arc* toggles a shade over all hexes which are not eligible hexes for the unit to fire at given the unit's facing.
- *Highlight* provides a sub-menu of unit types and units conditions that you may wish to highlight in red. The options in this sub-menu are toggles and are mutually exclusive. Note that the 'Highlight' function will only highlight enemy units that are Routing, Retreating or Disorganised.
- *Mini-Map* displays a miniature of the map. The main screen map will jump to any location a player clicks on the mini-map. This provides a fast way of moving around the battlefield.
- *Rotate Map by 180* is helpful to get a better view when in 3D mode.
- *View 2D Zoom-in* provides a close-up top-down view of events and will show on-map losses.
- *View 2D Zoom-out* provides the player with a more distant view of the battlefield and gives the bigger picture.
- *Army Colours Only* toggles on or off and when activated only shows the base army colour of all units instead of the troop type. This option is only available when viewing the battlefield in the 2D Zoom-out mode.
- *View 3D Zoom-in* provides the player with a close up three-dimensional view of events on the battlefield. (To activate a unit left click at the base of the unit).

Options

- *Hex Outlines* toggles display of the map's hex outlines.
- *Flash Hot Spot Position* enables the "Hot Spot" red hexagon. Units within this flashing hexagon are shown in the information boxes.
- *Unit Information* toggles display of the Unit Information Box.
- *Background Sound* governs the playing of background and weather sounds.
- *Battle Sounds* toggles 'clash of arms' sounds.
- *View Losses on Map* shows casualties inflicted during the Events phase on the map. If this option is not ticked casualties are reported through a pop-up dialog box that must be closed each time.
- *Computer A.I.* Controls the "Artificial Intelligence" (A/I) capabilities of the current scenario. Select "First Side" or "Second Side" if you want the programme to handle all decisions and actions for that side. Select "None" if you want the A/I switched off. You can change sides or switch the A/I off part way through a game but you cannot select the A/I to run a side which is part way through its turn. You must choose the presently non-active side for the A/I.

- *Auto Scroll to Action* moves the screen automatically to the action as it unfolds during the Events phase.
- *Mouse Scrolling* enables map movement using the mouse. Scrolling can also be achieved during a player's command phase by using the keyboard arrow keys.
- *Fast Action* allows choice of the speed at which combat events unfold. Movement of units in the Events phase is still conducted at normal pace.
- *Fast Movement* increases the speed units are seen moving on the battlefield. Helpful in larger scenarios.
- *Fast Computer Processing* enables rapid progress through the Events phase. This may be handy when playing large battles.
- *Auto Save* ensures that the game is saved at the end of each player turn.
- *Introduction Movie* reels the game credits whenever the program starts.
- *Screen Saver Timer Check* creates a pop-up message box periodically during the 'Events' phase requiring the player to click before the game continues. The result is to reset the timer on any active screen-saver. This avoids the screen saver taking over and disrupting the game, which may occur when playing large, time-consuming battles.
- *No Command Box* enables use of hot keys for commanding your units.
- *No Replay* bypasses display of the Events Phase and moves the game directly to the next turn. Helpful in the early moves of very large scenarios.
- *No Error Alert* toggles the 'ping' sound that alerts a player to check the Status Bar for comments or guidance. The default is ON.
- *Combat Box Timer*: Combat Info box seen during a combat phase (alternative to Unit Losses on Map) can now be set such that the dialog box closes after 2 seconds without clicking to close the box. The 2 seconds is hard-coded and cannot be altered. To set this mode – go menu – Options – View Losses on Map (click off) then menu – Options – Combat Box Timer (click on).

Campaign (Only functional for Campaign battles)

- *Load Campaign Army* places the player's army inside the set-up area.
- *Replacements* displays a dialog showing the choice of replacements available for purchase at the start of the new campaign battle.
- *Initial Set Up* allows movement of the player's units within the set up zone(s) highlighted. Click on a unit and while holding the left mouse button down drag the unit to the new location.
- *Rotate Unit in Campaign Set Up* permits a player to rotate the facing of a unit before the battle commences.
- *Campaign Set Up Complete* should be selected only when all the above are complete. A player cannot go back to the 'Set Up' phase once this option has been ticked.

Help

- *The About Dialog* displays a version number and copyright information.
- *Parameter Data* allows access to key information on:
 - ☐☐ Weapon Range
 - ☐☐ Weapon Effectiveness
 - ☐☐ Initial Troop Action Points

- ☐☐ Change in Formation Cost
- ☐☐ Terrain Cost
- ☐☐ Stacking Limits
- *What's New* describes the latest updates for the most recent version available

2.2. The Toolbar



The toolbar at the top of the screen is shown above. The number of icons that appear may vary with your screen resolution. All available icons are shown here. Note that if a button is not available on your screen all commands may still be found on the menus.



The first toolbar button located on the far left is an hourglass and moves the game to the next player turn.



The second button deletes the previous command issued to a *group* of units.



This button deletes all commands issued to a *single* activated unit.



The fourth button highlights the next unit eligible to move. The button can be used to move sequentially through all units to verify that all have received their orders.



The next button allows a player to create a new group of units. Regrouping can increase tactical flexibility and make movement easier through use of the Group Movement option. Note that this button switches off the 'Eagle' command button.



This button is used to recover a friendly routing unit by issuing the Rally and Reform command. This command takes all of the unit's action points.



Divide Unit – This command allows a player to split a unit into smaller ones. A dialog box will appear giving a minimum and maximum detachment size permitted. There is also a group option so that all units in a command can be broken down quickly.



Campaign Initial Set Up – This command allows the player to move his units within the pre-defined set-up zone(s) before campaign battle commences.



The next symbol governs the 'Mini-Map'. The minimap provides a complete overview of the battlefield. Clicking anywhere within the minimap will jump the player to that location.



This button rotates the map by 180 degrees. Can be especially useful when playing in 3D.

The next eight buttons are mutually exclusive.



The 'Scroll' symbol highlights all units that have been assigned one or more orders.



The black circle with white 'F' highlights all units fixed in position.



The red 'D' highlights all disrupted units.



The red 'R' highlights all routed units.



The yellow 'R' highlights all units in retreat.



The yellow 'U' highlights all units in Uncontrolled Advance.



Highlights units that belong to the same tactical organisation. Helpful when planning Group Movement and determining the reach of a leader's command and control.



Highlights the position of all leaders.

The next five buttons are mutually exclusive.



The 'Roman Eagle' button establishes the "Command Mode". This button must be depressed if you wish to issue commands to your units.



Shows the hexes visible from the current position. Line of Sight (LOS) is blocked by any unit or combination of units in a hex with a strength greater than 20



Indicates the range of the selected unit's weapon.



Fire Arc –Shows the direction the unit can shoot. Any enemy units within the highlighted hexes are valid targets. Light infantry, light cavalry, elephants and chariots with missile weapons can shoot in any direction.



Command Range Highlights the limits of a selected leader's command radius.



Change to Line formation.



Change to Column formation.



Change to Wedge formation. Only high-quality units may do so.



Change to Cantabrian Circle (only Light Cavalry).



Change to Square formation. For infantry in an all-round battle.



Exit the Game.

2.3. The Status Bar

The status bar appears underneath the battle map at the bottom of your screen. It is divided into a number of boxes.

The first box indicates the current Player, and the next whether Command Mode has been engaged. If Group Command has been chosen, an indication will appear here as well. The third box shows cursor position, terrain, and elevation, while the fourth box indicates the current game turn. Next to that is a box indicating visibility. The sixth box is generally empty unless one is using the Countdown Timer option; if so, time remaining in the move is shown. The last box gives the name of the scenario or save file.

Program messages may occasionally displace the information held on the status line. Note that the final boxes may not be visible if you are playing at a lower screen resolution. These messages are designed to clarify why your command can not be given to a unit or provide helpful tips.

3. The Units

The units in *Ancient Warfare* vary widely from one scenario to another and include everything from civilians to elephants, from lightly-armed peasant infantry to massively armored cataphracts. When in 2D mode, the games use both color and conventional military symbology to identify units. In 3D, the stunning graphics provide a complete depiction of unit type. Please note that not all unit types listed below are present in each title in the *Ancient Warfare* series.

3.1. Definition of Unit Types :

Abbreviation	Symbol	Description	Typical Example
LI		Light Infantry	Javelin men / skirmishers
MI		Medium Infantry	Greek Hoplites / phalangites
HI		Heavy Infantry	Roman Legionaries
LMI		Light Medium Infantry	Peltasts
LHI		Light Heavy Infantry	Roman Auxiliaries
LC		Light Cavalry	Numidian cavalry

MC		Medium Cavalry	Hellenistic cavalry
HC		Heavy Cavalry	Roman cavalry
EHC		Extra Heavy Cavalry	Seleucid Cataphracts
SHC		Super Heavy Cavalry	Parthian Cataphracts
CM		Camelry	Parthian army
EI		Elephants	Carthaginian armies
LCh		Light Chariots	Britons
HCh		Heavy Chariots	Hellenistic armies
Art		Artillery – bolt shooting & stone throwing engines	Roman and Hellenistic armies
BT	BT	Baggage Train	Supplies - Wagons
BR		Battering Ram	Siege equipment
AT		Assault Tower	Siege equipment
P		Civilians	All nationalities
M		Mantlets	Portable wood shields

To clarify the types of infantry and cavalry the following colour code is used inside the icon symbol:

Colour	Unit Type Represented
Cream	LI, LC, LCh
Tan	MI, MC
Red	HI, HC, HCh
Pale Brown	LMI
Green	EHC
Brown	LHI
Pale Purple	SHC

Explanation of Unit Types: Medium Infantry (MI) are distinguished from Heavy Infantry (HI) chiefly by the amount of armor worn. Both types of infantry are closely formed – that is, they operate almost shoulder to shoulder – but Heavy Infantry are better protected by far. The difference in armor is reflected in differences in Movement Costs and Losses Factors. Light Infantry is distinguished from both MI and HI by its unformed state and lack of any armor. Some LI lack even a shield.

Light Medium Infantry (LMI) is like MI but does not operate in close formation. LMI fight as individuals. That they do not adhere to a rigid formation gives them advantages in movement. The same is true of Light Heavy Infantry (LHI). Such loose formations allow them to move through close terrain (woods etc)

The table below shows distinctions between units based on quality:

Discipline	Combat Effectiveness	Examples
Regular	A	Elite, Guard, Household troops
	B	Veterans
	C	Trained experienced
	D	Militia or raw, untrained recruits
Irregular	A	Fanatics
	B	Chieftain's Bodyguard
	C	Typical warrior (Warband)
	D	Levies

Leaders

Leaders	Leadership Rating	Examples
Legendary	A	e.g., Caesar, Hannibal
Experienced	B	Wing Commander
Mediocre	C	Unit Commander e.g. tribal chief

4. Commanding Your Forces

Generally, before your units can undertake action they must be issued orders to do so. Each unit is allocated a certain number of Action Points per turn to carry out those orders and may use some, all, or none of them. Unused action points may not be accumulated from turn to turn or transferred to other units.

4.1. Issuing Orders

Before orders can be issued the Roman Eagle button on the toolbar must be depressed and a unit must be selected. See the Getting Started document for instructions on how to select units and the role of the Unit Information Box.

Orders may be issued to units one at a time or by group. Any single unit may be given up to 4 orders while in Command mode if there are action points remaining.

If you use the Group Command function, all units of the same organisation will be given the same order. This can greatly simplify the task of commanding large numbers of units. Note, however, that if a Group Command is issued only one order can be placed on the units in the group. This command then overrides all other commands previously issued to any single unit in the same group.

Group commands only work with units that are not routing, in uncontrolled advance, retreating, fixed or in combat.

Hot Keys may be used as an alternative to the pop-up command box for issuing orders and are generally more efficient, especially in larger scenarios. To activate the set of Hot Keys click on Menu: Options: No Command Box. A complete listing of hot keys is provided at the end of this manual.

Player's Note: If the keyboard command key does not work – left click on the unit on the map then try the keyboard again. This takes the focus away from the unit information box and returns it to the battlefield map.

As specified in the Getting Started guide, the 8 different orders available are:

Move	Pause
Charge	Skirmish
Force March	Change Face
Hold	Change Formation

Each order is explained under its own heading below.

4.1.1. Move

Rules governing movement are fully explained in the Movement section below.

Movement varies widely depending on type of unit, its formation, terrain, and tactical situation. Right-clicking the unit information box in the game interface will bring up a listing that contains movement and terrain costs for that particular unit.

In some cases movement may not be possible at all, as across certain water hexsides, or it can be automatic. For example, routed units not performing Rally & Reform will automatically be moved away from enemy units.

A unit can always move one hex per turn if capable of travelling through that terrain even if doing so exceeds its initial number of action points. In such cases, however, the unit becomes disrupted.

To speed up play and reduce clicking, where there is only one unit in a hex, a player can click the hex, the unit is assigned a default command of 'Move' and upon right clicking the target hex the movement will be executed. For LI and LC the default command is 'Skirmish' The default command is replaced with a player's choice by **not** right clicking the map but left clicking the unit info box to call up the Command Option box. Only one default command can be issued to a unit in one turn.

4.1.2. Charge

Charging increases the number of action points available to a unit, typically by a multiple of 1.5. Once a Charge command is issued no further command can be given to that unit on the same turn.

Not all units are allowed to charge.

- LI are not allowed to Charge – they are ill-suited to close-combat and were trained to avoid it in most cases.
- Infantry armed with the pike or long thrusting spear cannot hold formation if they charge and therefore are not permitted to do so.
- For similar reasons, infantry in Wedge are barred from charging.
- Light Chariots cannot charge close formed units, e.g., Heavy Infantry.
- Before irregular units and militia cavalry can charge they must first pass a reaction test. Failure to pass may prevent the charge from occurring.

Other Limitations on Charging:

- When a unit charges its fatigue level increases by 2 for every quarter turn moved.

- Charging troops cannot change direction. This limited manoeuvring is due to their speed of movement whilst trying to hold a formation.
- Troops cannot charge through villages, special buildings, woods, rivers, vineyards, marsh or swamp.
- Medium or heavy and extra-heavy cavalry may not charge across streams, fords or other linear obstacles.
- A cavalry unit may not charge if its fatigue is High.
- Units can charge through skirmishers if they evade but not if they hold their ground.
- Units can not charge in thick fog.

Charging through for Elephants & Chariots

Elephants or chariots charging an enemy-occupied hex may in some cases pass straight through. Some units were trained to part formation when attacked in this way so as to limit the effect of the attack. The conditions are:

- There is only one enemy unit in the hex
- The enemy unit is a class 'A' or 'B' Regular unit
- The enemy unit is directly facing the charging elephants/chariots
- There is no unit to the rear of the enemy unit preventing the elephants/chariots from charging through
- The terrain to the rear of the enemy unit is Clear or Field only.

The combat effects and benefits of a Charge order are dealt with in the Combat: Melee section below.

4.1.3. Forced March

This command can only be used by infantry in column.

Forced marching increases the unit's action points by a multiple of 1.5. In the process of moving at double-time a unit will increase its fatigue level by 2 for every quarter turn moved and there is a 50% chance of suffering a loss of 2 men as stragglers per turn. No further commands can be issued in the same turn after a Forced March instruction is given.

A unit that is disrupted can not undertake "Forced March" movement.

4.1.4. Hold

This instruction prevents a unit from moving under local initiative. Local initiative means "acting without orders", e.g., spontaneously charging an enemy unit. This order can be especially useful for keeping cavalry reined in when close to the enemy. It can also prevent a unit from pursuing a retreating unit and losing the advantage of a good defensive position.

4.1.5. Pause

This delays movement of a unit for ¼ turn. Players may find this useful to avoid traffic and interpenetration problems.

4.1.6. Skirmish

Skirmishing is only permitted to LCh, LC, LI, or LMI/LHI not in Column. A skirmishing unit will automatically evade and escape contact when an enemy unit moves adjacent to it. A unit may skirmish forward or in its present position. If skirmishing in its present position, the player must right-click the unit's position as its final destination for the command to work.

- A skirmish order is the last order a unit can receive.

- A unit can not skirmish when in a palisaded hex.

4.1.7. Change Face

Clicking this option presents a dialog box allowing the player to rotate the direction an activated unit is facing. Changing Face is essential in a game; a formed unit can only combat an enemy unit it is facing and a unit attacked in its rear will suffer higher losses than one attacked in the front.

Click the button alongside the hexagon face you wish the unit to face. If the button is greyed out, that facing is not presently available to the unit.

- LI and Leaders are in a 'loose' formation and have no clear facing. They can change face without penalty.
- LI, LC, elephants, and chariots with missiles can shoot in any direction but with the exception of LI facing remains important for melee purposes.
- Pike infantry in Line formation cannot do an about-face or rotate within a hex due to the difficulty of maintaining formation while carrying the long pike. To turn they must change face while moving from one hex to another.
- Infantry units armed with the pike or long thrusting spear cannot manoeuvre when hit in the flank and therefore are not permitted to change face unless in Column formation.
- Elephants, chariots, limbered artillery, and wagons cannot do an "about face" in a hex.
- Changing face by 120 degrees takes 2 commands of 60 degrees rotation.

4.1.8. Change Formation

Clicking this option presents a dialog box allowing the player to change a unit's formation to Circle, Wedge, Square, Line, or Column. Choosing the right formation at the right time is critical to getting the best performance from a unit. If the unit is irregular, a change of formation will consume all of a unit's action points. If the unit is regular, half of a unit's actions points will be taken.

- *Circle* is the Cantabrian circle, a formation used exclusively by Light Cavalry armed with missile weapons.
- *Wedge* is available to Elite and Veteran cavalry and infantry and enhances combat power by a factor of 1.5
- *Line* is the standard fighting formation for most infantry and cavalry.
- *Square* is used as a defensive measure against all-around attack.
- *Column* is available to enhance movement when away from the battle line and is very poor for combat.

A command to change formation overrides all other commands previously issued to the same unit.

More on formation change:

- Leaders do not change formation.
- LI cannot change formation.
- Disrupted and routed units can not change formation. Exception: Disrupted Regular Elite and Veteran units can change formation.
- Units cannot change formation when adjacent to an enemy unit.
- siege equipment & wagons do not change formation . .
- All units using the 'Wedge' formation have their left flank secure and right flank unsecured. (See Reaction Test modifiers).

- Elephants and chariots only operate in Line formation.
- Pike units can not use the Wedge formation.
- Only units in Clear terrain / ploughed fields can change formation.

4.1.9. No Orders

If units have received no orders during the planning phase they are governed by these defaults:

LI & LC :-	Skirmish with any enemy unit within 4 hexes. If no enemy present– no order given for missile troops, Hold present position for non-missile troops.
All other cavalry and camelry :-	Attack any enemy within 4 hexes unless in Column then no order given. If no enemy present – no order given for missile troops, Hold present position for non-missile troops.
All other infantry, Elephants, Chariots :-	Hold present position for non-missile troops, no order given for missile troops.

5. Movement

5.1. Effect of Terrain on Movement

Terrain is the single biggest variable affecting movement. The effect is not limited to action point costs. Moving through some kinds of terrain can cause disruption as well. Disruption is a loss of cohesion and is treated under its own heading later in this manual.

- Any unit except a leader, LC or LI become disrupted when moving over a stream, ford or gully. Moving over these obstacles also costs action points in addition to the adjacent hex terrain cost. Moving over a hedge or low wall costs extra action points but does not cause disruption to the unit. Movement over a palisade wall costs action points and causes disruption.
- A change in elevation costs 10 action points for every 10 meter increment.
- Only Leaders, LI / LMI / LHI can enter a 'Forest' or 'Rocks' hex.
- Rivers can only be crossed by Leaders, Elephants, LC or LI. All other unit types must use a bridge or ford. A bridge can only be crossed when the unit is facing the bridge entrance directly.
- Stakes and pits delay infantry movement (2 x Clear terrain cost) and cause a strength loss of 2 on entering the hex. Any infantry unit entering the hex is also disrupted. Only infantry and foot leader units are permitted to enter these hexes.
- Caltrops delay all movement (2 x Clear terrain cost) and cause a strength loss of 2 to any infantry, cavalry or chariot unit entering the hex. All units entering the hex are also disrupted.
- Only infantry, elephants and leader units can move across a palisade unless it is a palisade gate. Cavalry and chariots cannot occupy a palisade hex.
- Light Chariots cannot move adjacent to close formed units, e.g., HI.
- Heavy Chariots and Light Chariots cannot cross a low wall, hedge, gully, or stream or enter an orchard hex.

5.2. Interpenetration

In the course of movement units will tend to intermingle. In many cases this contact can cause disorder. Avoiding unnecessary disorder from interpenetration is a key part of planning a move and maintaining effective formations.

In ordinary movement, interpenetrations do not cause disorder when:

- LI moves through any kind troops who are in good order and stationary.
- LC moves through LI or LC who are in good order and stationary.
- Any unit moves through a unit of the same type who is in good order and stationary.

Note that in all these cases the penetrated unit *must be stationary*.

5.2.1. Interpenetration When Charging

Troops can charge through a friendly unit who is not disordered, forced to recoil by combat, or moving in the following circumstances:

- LC through LI
- Elephants through LI
- Chariots through LI or LC
- LMI through artillery
- MI, HI through a unit of the same type

Troops cannot charge through a friendly unit engaged in combat. But they can charge *into* its hex.

All other interpenetrations result in both parties becoming disrupted.

More on Interpenetration:

- Movement of any unit into or through a hex occupied by a battering ram or assault tower does not disrupt the ram or tower but does disrupt the unit.
- LI are in a 'loose' formation and are not disrupted by any interpenetration.
- Two different cavalry types using Column formation can occupy the same hex without disruption but different cavalry formations, irrespective of the type, cannot.

5.3. Effect of Zones of Control on Movement

Any unit other than artillery, siege equipment and wagons has a Zone of Control (ZOC) to its front and flanks. A unit (except Leaders, LI & LC) may not move directly from one enemy ZOC to another.

Generally, Infantry (except LI), EHC & SHC, elephants & chariots once in an enemy Zone of Control cannot move away (disengage) until the enemy facing them has recoiled or routed. However this rule only applies when the enemy strength is greater than 49 infantry or 24 cavalry or 2 elephants / chariots. The size of the enemy unit determines if it can pin down a friendly unit.

5.4. Effect of Unit Formation on Movement

Column

- Infantry in Column and cavalry in Column moving from road hex to road hex have their movement cost reduced and do not suffer penalties for terrain or for a change in direction (facing). Regardless of terrain, disciplined infantry and all cavalry in Column remain in good order if following continuous road hexes. Absent a road hex, infantry in column will become disrupted if moving through rough, woodland, orchard, village, building, marsh or swamp hexes.

- Basic movement cost of infantry and cavalry is reduced by 5 action points when in column irrespective of the terrain. This reduction does not apply if a unit is moving in Group Command mode.

Line

- Infantry in line formation moving through rough, woodland, orchard, village, building, marsh, or swamp hexes become disrupted.
- An infantry unit in line formation moving at night immediately becomes disrupted.

Wedge and Square

- Movement cost of infantry is increased by 5 action points when in wedge formation and by 10 when in square.
- Movement cost of cavalry is increased by 10 action points when in wedge formation.

Cantabrian Circle

- Units in a cantabrian circle can only move at ½ speed.

5.5. Movement Sequence

When the computer runs the events for a turn and two units move / charge against each other, there is a priority to type based on the following hierarchy:

1 – MC	9 – LHI	17 - Mantlets
2 – HC	10 - LMI	18 – Stone throwing engine
3 – MI	11 – LCh	19 – Battering Ram
4 – EHC	12 – LI	20 – Assault Tower
5 - SHC	13 – LC	21 – Leader
6 – HI	14- Civilians	22 - Camelry
7 - HCh	15 – Bolt shooting engine	
8 – EI	16 – Wagons	

5.6 Pinning

Normally, at the start of a turn, units are given their maximum number of action points. This is often not the case if the unit is in contact with the enemy. Any infantry, EHC, SHC, Elephant, or Chariot unit that has its front or flank adjacent to an enemy unit will have sufficient action points only to change facing. They are pinned. This rule reflects historical reality. It was very difficult to regain freedom of movement once engaged.

Exceptions to Pinning:

- LI, LC, MC, HC, or leaders. These units are either trained to avoid being pinned, like LI, or are mounted and can more easily slip away.
- Any unit in contact with an enemy artillery unit, civilian, siege weapon, or wagon. These ancillary units do not have the capacity to pin.
- Any unit in contact with an enemy consisting of less than 50 infantry, 25 cavalry, or 3 elephants or chariots is not pinned and will receive its full share of action points.

5.6. Other Limitations on Movement

- Light Cavalry may move adjacent only to routed units, LI, LMI, LHI, Leaders, LC, LCh, wagons, artillery, and unmanned siege equipment. *To move adjacent to other enemy units Light Cavalry must have twice their strength, or move to contact the enemy's rear.*
- Facing Pikes: Cavalry refuse to charge the front of units armed with pikes. Pike units can still be joined in combat at the front through normal movement. This rule is designed to reflect the visual impact created by a solid wall of spear points. Cavalry can always move toward and charge the front of pike men who are in Column formation.
- Horse units can not move voluntarily adjacent to the front or flank of an enemy camel or elephant unit.
- Movement into or through hexes containing other friendly units can in many cases cause Disruption. See *Interpenetration* below.
- Only LC can do an about-face in their hex when attacking.

5.7. Moving Units Off the Map

Some scenarios require units to exit the map to score victory points. In other cases, a player may want to remove them to avoid losses.

To move off the map, a unit must first be adjacent to the map edge. A left-click calls pop-down menu containing the Remove Units From Map option. Clicking it will remove the unit from the field of play.

Once a player moves a unit off map he may not return the unit. However no victory points are lost for the absence of the unit, as it is not considered destroyed.

5.8. Stacking

Stacking considerations affect whether a unit is able to move into or through a hex containing other forces. There are two considerations: total number of unit counters, and total number of men present.

The maximum number of unit counters that can stack in one hex is three dependent upon terrain.

The total number of men that can be present in a hex is shown in this table:

Unit Type	Numerical Limit
HI,MI	400 (512 for pike men)
HC,MC	120
LMI,LHI	180
LC,LI	80
EI, Art, LCh, HCh	8
Wagons	8
Battering Ram	1
Assault Tower	1
Mantlets	1

Effect of Terrain on Stacking: for any close terrain (defined as other than a Clear or Field hex) the stacking limit is $\frac{1}{2}$ of the maximum number tabled above *except* for Light Infantry. Light infantry does very well in close terrain.

When playing in 2D the number of units in a stack is marked by a red bar on the right hand side of the unit. The thicker the bar the more units are stacked together.

In 3D stacking is seen as a coloured bar at the bottom of the unit – black for 3 units, pale blue for 2 units, no bar for 1.

Stacking Limit Calculation: Where differing unit types exist on the same hex, the stack value will be determined by the sum of the fractions of each unit type. If the stack value plus that of the unit attempting to move into the hex exceeds 1.0 then over-stacking would occur and the unit is prevented from moving into or through the hex.

Example –

HI may stack to 400 in clear terrain or 200 in close terrain. Assume 200 HI are stacked in clear terrain. The unit would have a stack value of .5. If an LMI unit attempts to move in with strength of 90 (also with a stack value of 0.5) it can do so. But LMI with a strength of 100 (stack value of $100/180 =$ a stack value of .55) cannot because the combined stack value would exceed the stacking limit of 1.0.

Note that Routed pike units lose their pike and are only allowed a sword for the remainder of the game. This feature can result in a routed or rallied pike unit having greater than 100% shown in its stack value. The same applies to units with the long thrusting spear.

More on Stacking

- If routing and retreating units have no hex to move to without overstacking they surrender and the whole unit is lost.
- Leaders do not count towards the stacking personnel limit. However, they still count as a unit and are tallied against the 3-unit-counter maximum.

5.9. Overruns

Overruns may be considered a special kind of movement. An enemy hex may be entered if it contains only leaders, wagons, siege equipment and/or artillery. To achieve such an overrun, the friendly unit must have a strength of 50 or more. The cost to overrun a unit is that of the terrain the enemy unit is on.

6. Combat

Combat is of two types, Ranged Fire and Hand-to-Hand, called Melee. There are up to 4 rounds of combat per turn. The army assigned by the Scenario designer as the First Player strikes first in rounds 1 and 4 and the opposing army strikes first in rounds 2 and 3. The game provides two ways to view the results, the pop-up Combat Result report box and Show Losses on Map, available under the Options menu. (Note that when using the pop-up Combat Results box a result of zero losses is not reported.)

6.1. Melee Combat

Melee Combat occurs automatically during the Events phase when the front of a friendly unit is adjacent to an enemy unit. Formed units will combat any enemy in the three hexes directly to their front. They are most effective combating the unit that is in the single hex directly to their front. Unformed units can combat in any direction.

Determining the result of a melee begins with determining the number of men eligible to attack. When a unit is directly facing the enemy hex, that number is found by the simple formula of “number of eligible ranks in a formation” multiplied by the number of men per rank. If the unit 's flank rather than front is facing the enemy, the number of eligible attackers is multiplied by .5 instead.

To find the number of ranks and the number of men in each rank in a particular formation, refer to the Battle Charts at the end of this manual. Examples: Heavy Infantry after the first turn of contact and attacking straight ahead have 1 rank eligible and 24 men in that rank. $24 \times 1 = 24$ men eligible for

combat. Pikemen in good order have 3 ranks, and though Pikemen actually have 32 men in each rank they are for combat purposes given only the equivalent of 24. So $24 \times 3 = 72$ men eligible for combat.

As casualties occur, the rear ranks fill the gaps to ensure the maximum number of men are always fighting.

Unit formation can have a major effect on the number of men in combat.

- Infantry or cavalry in a wedge formation have 1.5 ranks eligible for combat.
- The number of combat-eligible infantry or cavalry when in Column is 1/2 that for Line.
- The number of combat-eligible infantry when in Square is 1/4 that for infantry in Line.
- The number of combat-eligible cavalry when in Circle is 1/2 that for cavalry in Line.

Factors limiting Melee combat:

- The loss of strength of a leader unit in combat is a maximum of 5 per quarter turn.
- Leaders cannot attack independently of a non-leader unit.
- Only infantry, elephants and leader units can attack a defended watch tower or across a defended palisade hexside.
- No unit may move into combat if its fatigue level is HIGH. If a unit is already in a melee then it continues.
- Routed units cannot inflict losses on the enemy.
- Units fighting from a bridge hex can only combat enemy units directly to their front.
- Units in a tight wedge formation may not throw the javelin or use the pilum.
- Light Chariots: LCh can attack only LHI, LMI, LI, LC, LCh, wagons and artillery but will fight back if contacted by others.

6.1.1. Melee Combat Modifiers

Player's Note: Awareness of these factors can greatly enhance one's game play. This section repays study.

The "plus" or "minus" below refers to calculation of the Losses Factor. Modifiers are cumulative. Once the final Losses Factor is found, the game engine correlates it with the Number of Men Eligible For Combat in any particular instance to come up with the actual losses inflicted. See the combat examples below.

- For a friendly unit, except elephants and chariots, facing pikes or long-thrusting spears of infantry who are not disordered and have not been pushed back in the same turn;
 - 3 where the enemy has pikes at least 6 ranks deep (strength of >191) and the friendly unit does not have pikes or long spears.
 - 2 where the enemy has pikes at least 6 ranks deep (strength of >191) and the friendly unit does have long spears.
 - 2 where the enemy has pikes 3 - 6 ranks deep ($95 < \text{strength} < 192$) and the friendly unit does not have pikes or long spears
 - 2 where the enemy has long spears at least 3 ranks deep (strength > 71) and the friendly unit does not have long spears.
- -1 if infantry fighting to cross a defended linear obstacle such as a stream, hedge etc.
- -1 if a commander is defending.

- -1 if a unit is attacking across a palisade wall.
- -1 if a unit is attacking into a wood, shallow water, orchard, rough, marsh or swamp.
- -1 if the attacking unit's fatigue is medium
- -1 if unit is disrupted
- -1 if unit is militia or levy class
- -1 if militia or levy troops charging in
- -2 if a unit is attacking into a building, village, rocks or forest.
- -2 if cavalry fighting to cross a defended linear obstacle.
- -2 if the attacking unit's fatigue is high.
- +1 if following up opponents who are falling back in a melee.
- +1 if up slope of opponents..
- +1 if enemy is shieldless.
- +1 if attacking the right flank of a shielded non-LI infantry unit
- +1 if attacking the rear, right rear or left rear of a non-pike / non-long thrusting spear unit.
- +1 if opponents are MI or LMI who have no shields.
- +1 if unit is Elite or Bodyguard.
- +1 if Thracian / Illyrian army units with a fatigue value <10. This represents the initial tribal Ferocity Impetus.
- +1 if troops armed with long thrusting spears with 8-12 ranks deep (that is with a unit strength of >191 and <288)
- +1 if troops armed with pike with 8-12 ranks deep (that is with a unit strength of >255 and <385)
- +1 if troops not armed with pike or long thrusting spears with 10-15 ranks deep (that is with a unit strength of >239 and <360)
- +1 if charging in or subject to uncontrolled advance to the front of a unit.
- +2 if fighting against the flanks or rear of elephants.
- +2 if attacking routed enemy troops.
- +2 if charging in or subject to uncontrolled advance to the rear of a unit.
- +2 if unit is Fanatic
- +2 if troops armed with long thrusting spears with >12 ranks deep (for 24 men per rank that is with a unit strength of >287)
- +2 if troops armed with pike with >12 ranks deep (for 32 men per rank that is with a unit strength of >384)
- +2 if troops not armed with pike or long thrusting spears with more than 15 ranks deep (that is with a unit strength of >359)
- +2 if HC charging in.
- +3 if EHC charging in.

- +4 for SHC charging in
- +3 if attacking the rear, right rear or left rear of a pike or long thrusting spear unit.
- +3 for Legendary Leaders, +2 for Experienced Leaders, +1 for Mediocre Leaders attacking

More on Melee

- If LI are attacking elephants with javelins, an additional random factor of 1-6 is added to the modifiers.
- If there is more than one unit in defence the losses are taken by the largest unit, which is assumed to be the front unit. The exception is when civilians are present. A civilian unit does not count in this regard if there are non-civilian units in the same hex.
- Units armed with the axe will automatically attempt to destroy an adjacent palisade when attacking through a palisade hex side.

6.1.2. Surrender

A unit may surrender when in combat and pushed back whilst surrounded by enemy units and/or impassable terrain. If the unit is other than Light Infantry, Light Cavalry, Elephants or a Leader, the surrendering unit loses its Standard or Banner to the enemy. Any captured Standard or Banner scores 10 extra Victory Points.

6.1.3. Examples of Melee Combat Calculation

To get a combat result, we have to find first the Losses factor, apply all the relevant modifiers to it, and then turn to the Combat Losses Chart. There we cross-reference the modified Losses Factor to the Number of Troops Attacking. The final number represents the actual number of men lost in that round of the melee.

Example #1

A force of 40 HC charge downhill into the rear of a force of disrupted Light Cavalry.

The Melee Effectiveness Chart tells us that HC armed with light spears attacking LC create an initial Losses Factor of 6. We next apply modifiers to that number to reflect the particular circumstances of this melee. Attacking Downhill provides a +1 modifier, so we now have $6+1=$ a modified Losses Factor of 7. We add 2 more points for charging in to the rear of a unit, and 2 more for "HC charging in". Note that the enemy's Disrupted status does not give us an extra point. Our final Losses Factor is $7+4=$ 11.

We next turn to the Combat Losses table and find the row for 11. We want to Cross-reference that row to the column corresponding to the number of troops we're attacking with. That number is 16; though there are 40 HC in the attacking hex, only one rank of 16 men is "eligible for combat". Thus we come up with an actual casualty total of 10.

Example #2

90 LI attack 50 HI directly. The Combat Losses factor drawn from the Melee Effectiveness Table is 2. As there are no modifiers to consider in this hypothetical, we turn to the Combat Losses Table immediately. The number of LI "eligible to attack" is 1 rank (the total # of ranks able to attack) times 12 (the total number of men per rank.). Cross-referencing the Combat Losses factor of 2 with the column denoting 12 men in the attacking hex, we find an actual loss to the HI of 1.

The HI attack the LI in their turn. Assuming this is not the first turn of contact, HI attacking LI generate an initial Loss Factor of 3. The number of HI eligible to attack is 1 rank times 24, the number of men per rank. We turn to the Combat Losses table and cross-reference the final Losses Factor of 3 with 24 men attacking and find the actual loss to the LI to be 3.

6.2. Ranged Fire Combat

Like Melee, Ranged Fire takes place automatically during the Events Phase. Units eligible to undertake Ranged Fire are various type of light infantry and cavalry armed with bow or javelin, slingers, some chariots, and artillery such as stone-throwing and bolt-shooting engines.

A missile unit can fire when it has enough Action Points remaining, has a line of sight to its target, and its target is within range. A Range Chart is provided at the rear of this manual. Examples: Mounted Archers have a range of 6 hexes, foot archers short bow 6, composite bow 9, slings a range of 5 (7 for lead shot), javelins 2, and stone-throwing engines 20. A unit may never fire at a unit directly adjacent to it.

Foot archers armed with the composite bow (only) can do indirect fire as long as the enemy is visible to some part of the friendly army. The range of bow indirect fire is 6 hexes as the arrows are fired high in the air.

When using the pop-up Combat Result report box instead of the option Show Losses on Map, the player will see the firing unit highlighted with a red hot spot and the target unit highlighted with a blue hot spot.

Troops eligible to fire:

- Mounted troops – 1 rank unless in Cantabrian circle then equivalent to 2 ranks.
- Foot archers – 2 ranks.
- All others – 1 rank only.

If the firing unit is infantry in square, the fire is at 1/4 strength.

6.2.1. Ranged Fire Modifiers

- -1 if infantry move then fire, or fire a second volley in the same turn
- -2 if the firing unit is disrupted
- -1 if the firing unit has HIGH fatigue
- -1 if the target unit has shields
- +1 if the target hex contains > 100 men.
- +2 if the target hex contains > 200 men.
- +3 if the target hex contains > 300 men.
- -1 if firing uphill; an additional -1 is calculated for each increment of elevation change.
- -1 when firing into forest, rocks, village, or special building.
- -2 when firing into a mantlet, palisade, watch tower, or fort.
- +1 if the firing unit has an experience level of A or B.
- -1 if the firing unit is a horse or foot archer targeting Extra Heavy Cavalry.
- -1 for foot archers target range more than 5 hexes, -2 when the target range is more than 7

Limitations on Ranged Fire

- Only one missile unit may fire from each hex.
- A fire unit stacked with infantry in Line cannot fire. It is assumed that the firing unit is positioned “behind the Line” and can't fire without endangering the Line as it moves forward. Accordingly the firing unit's action points are reduced to zero.

- A unit can not fire if charging, on a forced march, retiring, evading, recoiling, following-up or in uncontrolled advance.
- Infantry or cavalry in Column or Wedge can not fire.
- A unit in a river, sea, or lake hex cannot fire
- Disrupted artillery is not permitted to fire.
- Troops may not fire at an enemy unit adjacent to a friendly unit for fear of hitting their own men.

6.2.2. Examples of Ranged Fire Combat Calculation

Example #1

A group of 40 LI armed with Javelins attack a unit of 150 HI. Turning to the Missile Weapon Effectiveness Table, we cross-reference the Defending Unit Type (HI) with “Light Hand-Hurled Weapons”. This gives a Losses Factor of 3. Because the target has more than 100 men present, we apply a modifier of +1 to this factor for a total of 4. But, the defending unit also has Shields, resulting in a -1 modifier. So we remain at 3.

Turning to the Combat Losses chart, we cross-reference 3 with the number of troops attacking. There are 40 LI present but not all are eligible for combat. With the exception of foot archers, only 1 rank of LI can fire, and the charts indicate that 12 men are in that rank. So we cross “3” with “12” to find an actual loss of of 2.

Example #2.

A group of 60 archers armed with composite bow fire on a unit of 80 Light Cavalry. The Missile Weapons Effectiveness Table gives archers a Losses Factor of 3 against LC. Assuming there are no modifiers, we go straight to the Combat Losses chart. To find the final casualty figure, we have first to determine the number of archers firing. Archers are the only LI that have 2 ranks eligible for combat. With 12 men in each, we have 24 archers in combat. Cross-referencing 3 with 24, we find the final toll on the LC is 3.

7. Reaction Testing, Unit Status, and Overall Army Morale

7.1. Reaction Testing

Reaction Tests are used to determine the behaviour and status of units during the battle – whether units halt or go into an uncontrolled advance, become disrupted, retreat, or rout. They are executed automatically by the program and may occur many times during the course of a single move.

Player’s Note: An adverse reaction test is the chief reason units may fail to follow a player’s commands or otherwise behave in unexpected ways.

Occasions for testing:

- If a unit is in contact (melee) with an enemy unit. The reaction test is conducted before the combat result is determined.
- If a unit is irregular or militia cavalry and charging.
- If a unit is hit by missiles
- If a unit is below 1/2 original strength and a enemy unit is within 5 hexes of the unit.
- If a unit is within 5 hexes of a routing friendly or unfriendly unit.
- When the player uses the ‘Rally & Reform’ command for a routed unit and the unit is not within 5 hexes of an enemy non-routed unit.

Procedure: A random number generated by the computer is adjusted according to the following factors and the result is checked against the table given in the Battle Charts appendix. For units above 2/3rds of their original strength the sum of 3 random numbers is used. For units below 1/3rd of their original strength only 1 random number is used. For all other units the sum of 2 random numbers is used. For Regular armies, the random numbers are between 2 & 5 and for irregular armies the random numbers are between 1 & 6.

Add 1:

- If there are more non-routed friendly units than non-routed enemy units within 5 hexes of the unit under test.
- If testing unit status is 'Normal' i.e. not disrupted, routing etc.
- If any enemy troops within 5 hexes are routing.
- For each secure flank (i.e. adjacent hex is occupied by a non-routed friendly unit. A square has no flanks. A cantabrian circle and shielded troops in a wedge formation have 1 secure flank)
- If the unit's rear hex is occupied by a friendly unit.
- If both rear left and rear right flank hexes are occupied by friendly units.
- If a friendly leader is within 5 hexes of the unit.
- If there is a friendly civilian unit within 5 hexes resulting in the need for desperate defence.

Add 2:

- If there are at least twice as many friendly non-routed troops than enemy units within 5 hexes
- If the testing unit or any friendly unit within 5 hexes is charging, following-up or in uncontrolled advance
- For each enemy unit within 5 hexes which is in rout.
- If in cover or in square.

Deduct 1:

- If there are fewer non-routed friendly units than non-routed enemy units within 5 hexes of the unit under test.
- If there are any enemy uphill of the testing unit within 5 hexes.
- If within 5 hexes of unfriendly cover (i.e. occupied woods / buildings)
- If the testing unit has troops who are not carrying shields.
- If testing unit or any friendly unit within 5 hexes is recoiling as a result of a melee.
- For each unsecured flank (i.e. adjacent hex is not occupied by a non-routed friendly unit.) Left flank is not unsecured if unit has shields.
- If shot at by missiles other than artillery engines.
- If the testing unit has 'Medium' fatigue level.
- If the testing unit is disrupted.

Deduct 2:

- If there are only half as many or fewer non-routed friendly units than non-routed enemy units within 5 hexes of the unit under test.
- For each non-routed enemy unit adjacent to the testing unit and behind the testing unit's flank.

- If there are any non-routed enemy elephants within 5 hexes.
- If testing unit is armed only with bow and normal sword. (Such units try to avoid combat).
- For each friendly unit routing within 5 hexes of the test unit.
- If shot at by engines.
- If the testing unit has 'High' fatigue level.

Deduct 3:

- If there are no non-routed friendly units within 5 hexes.
- If the testing unit contains horses who are within 5 hexes of non-routed enemy elephants.
- If the testing unit contains elephants that have suffered casualties

The possible results of a reaction test are shown in the Appendix Battle Charts and explained here:

Uncontrolled Advance results in the unit moving to contact with the enemy. The unit will not be eligible to receive orders.

- Units in a Palisade or Fortification hex will not suffer an 'Uncontrolled Advance' reaction test result.

Halt results in the unit failing to execute the rest of its order.

Retreat causes the unit to fall back (away from the local enemy) up to 4 hexes during the Events Phase. The unit will not be eligible to receive orders.

Recoil will cause the unit to fall back one hex but still face the enemy.

- Only cavalry and infantry can recoil. Other units are eliminated.

Rout and *Disruption* are explained in detail below. Though both can result from a failed reaction test, they arise from other causes as well.

As noted, units that are retreating or in an uncontrolled advance cannot be given commands. The same is true of routed units. To flag this status the unit info box unit and 2D view show these units with no formation or direction. These units will be moved automatically by the computer based on the presence of the enemy around them.

7.2. Fatigue

Battle fatigue is a combination of physical exhaustion and declining morale. It occurs when a unit suffers casualties, charges, or undertakes a Forced March. A unit's combat effectiveness may dwindle rapidly under the effect of fatigue and so too may an army's overall morale.

Units with a low fatigue have a fatigue value of <30. Medium fatigue = 30-50; high fatigue is between 51 and 70. The maximum fatigue level is 70 and if reached the unit automatically routs. A routed unit may recover and be re-organised. However, routed units are moved automatically toward the map edge, and should they exit before rallied they are for all intents and purposes eliminated.

Fatigue increases at the following rates:

- +2 per quarter turn moved if units are charging.
- +2 per quarter turn moved if units are undertaking a 'Forced March'.
- +1 for each casualty suffered.
- +1 per quarter turn in combat for barbarian units without sufficient numbers to encourage those in combat to continue (LMI unit below a strength of 120 and for MI below 200)

Rate of increase in fatigue is reduced for a large unit with many ranks:

For a unit strength of 350 – 449, increase in fatigue of 4 is reduced by 1.

For a unit strength of 350 – 449, increase in fatigue of 5 or more is reduced by 2.

For a unit strength of 450 or more, increase in fatigue of 4 is reduced by 1.

For a unit strength of 450 or more, increase in fatigue of 5 is reduced by 2.

For a unit strength of 450 or more, increase in fatigue of 6 or more is reduced by 3.

Note especially that in the case of casualties suffered the fatigue factor is subject to a multiplier:

- If the initial strength of a unit is 20 or less then this factor is multiplied by 5.
- If the initial strength of a unit is 21-30 then this factor is multiplied by 4.
- If the initial strength of a unit is 31-40 then this factor is multiplied by 3.
- If the initial strength of a unit is 41-50 then this factor is multiplied by 2.
- If the initial strength of a cavalry unit is >50 then this factor is multiplied by 2.

Leader Loss and Fatigue:

- If a Legendary leader is destroyed, all units that are not classed as Elite or Fanatic suffer a large increase in fatigue: +15 for regular units, +20 for irregulars. This effect is instantaneous across the entire army no matter how large the map.
- Loss of Mediocre leaders increases fatigue by 5 for all units, and loss of Experienced leaders causes a +10 increase, but in these cases the increase occurs only in the units they directly command.

Note that the Leader counter must in all cases be completely destroyed for these effects to take place.

A unit's fatigue level is shown numerically in the Unit Information Box. It can also be shown graphically in both 2D and 3D. In 2D, the option "Show Unit Fatigue Level" under the Display menu will change the unit colors to match fatigue levels. In 3D the same may be seen as a coloured bar at the base of each friendly unit. The table below shows the differing colors and their corresponding fatigue levels:

2D view Colour	3D view Colour	Unit Fatigue Level Represented
Cream	Green	Low
Tan	Blue	Medium
Red	Red	High

The impact of Fatigue:

If a unit has Medium Fatigue:

- 1 is subtracted from its Reaction Test result.
- 10% is subtracted from the unit's melee strength.
- 10% is subtracted from its missile strength when the unit fires

If a unit has High Fatigue:

- 2 is subtracted from its 'Reaction Test' result.
- 20% is subtracted from the unit's melee strength.
- 20% is subtracted from its missile strength when the unit fires

- Will not follow-up recoiling enemy unit in combat.

Units that suffer casualties due to Ranged Fire or Combat with a fatigue rating of more than 50 are liable to retreat and should be considered unreliable.

Fatigue Recovery:

At the end of each turn, a unit may recover from fatigue and/or improve its status from disrupted to organised. The probability for success depends upon its troop class; e.g., elite troops have a better chance than low-quality levies.

To be eligible for fatigue recovery, the unit must not move, fire or be fired upon, charge or melee that turn. It must also not be building or destroying a bridge or creating a palisade wall. The rate of fatigue recovery is between 0 & 12 depending on troop quality and probability. The best way to ensure a unit recovers from fatigue is to assign it a 'Hold' command.

7.3. Disruption

Disruption is loss of unit formation and cohesion. It has a negative effect on combat effectiveness and the ability to pass subsequent reaction tests. Disruption is represented by a red "D" icon at the bottom of the unit information box. It happens under the following circumstances:

In Combat:

- Having evaded a charging enemy unit
- If in an uncontrolled advance.
- Having been contacted in the rear by an enemy unit.
- Having been contacted in the flank before completing a formation change.
- If forced to recoil by cavalry charging into melee that turn.
- If infantry moving at the moment they are contacted by charging cavalry
- Having failed a reaction test (possible result is Disruption)

In Movement:

- Troops other than LI, LMI, LHI passing through close terrain, i.e., other than a clear or field hex
- Been interpenetrated by a friendly unit other than those permitted to do so, e.g., move different unit types into the same hex
- Any cavalry within 5 hexes of elephants from the other side.
- Any unit except a leader, LC or LI moving over a stream, ford or gully.
- Moving over a palisade wall.
- Any infantry unit in line formation moving at night.
- Any unit constructing palisades or making ladders.
- If moving through a hex containing caltrops, stakes or pits.
- If MI or HI moving through tents.
- Any unit except a Leader, LI or LC moving across a long bridge (spanning a full hex) not in Column formation.

The effects of disruption are:

- -1 in Melee

- -2 when shooting
- -1 on Reaction Test
- Inability to change formation.

Recovery from disruption may occur at the end of a turn when a unit is not in contact with the enemy, has undertaken no action, and is not on a full-hex bridge. A random die roll is made by the computer. For a Regular unit the die role is between 2 & 5, for an Irregular unit the die role is between 1 & 6. If the random number is greater or equal to the troop quality then the unit recovers.

'A' class troop quality value = 2

'B' class troop quality value = 3

'C' class troop quality value = 4

'D' class troop quality value = 5

A friendly leader within 5 hexes helps the recovery by adding 1 to the die roll.

LI, LMI, LHI and LC can not be disrupted by terrain or movement given their open, loose formation.

7.4. Rout

Rout is the collapse of a unit's morale and ability to function as a combat entity. A routed unit may not move autonomously nor engage in combat (though it may suffer casualties when attacked). Routed units are moved automatically by the program toward the edge of the board. Rout may result from a failed reaction test or overwhelming fatigue. Rout is denoted by a red "R" on the Unit Information Box.

Elephants routing: Elephants that rout are said to be rampaging, or charging any unit in its way. When an elephant unit routs, the computer determines events by generating a random number between 1-9. If the number is:

- 1 – The unit heads in the direction of the nearest friendly unit
- 2-7 – The unit rampages in the direction of one of the hex faces.
- 8 – One rampaging elephant from the unit is killed by its mahout (driver).
- 9 – Half the number of rampaging elephants are killed by the mahouts.

A rampaging elephant also attempts to use the maximum number of action points in a straight line. If a rampaging elephant unit moves to a map edge hex it is immediately taken off the map and for all intents and purposes is eliminated.

Other Routing Rules:

- A routing unit of less than 20 men does not disrupt other units as it passes through the same hex.
- Heavy Chariots do not rout but are eliminated instead.

7.4.1. Rally & Reform

This order takes all of a unit's action points and is the only order that can be issued to a routed unit.

A unit can only rally if there is no enemy unit visible within 4 hexes and the rallying unit has a strength of 10 or more.

A routed unit can attempt to rally if it has greater than zero action points. Only one attempt to rally per turn is possible. A unit has a 1 in 4 chance of successfully rallying. However if a leader (of any nationality on the same side) is within command range of the unit then the probability of rallying improves. A leader who is the commander of the unit being rallied has an additional effect on the rallying attempt.

After a successful rally the icon of a routed unit changes to one of a unit in line for infantry and in column for cavalry.

7.5. Overall Army Morale

At the start of every turn the Command Report appears. At the bottom of the report the Army's Overall Morale rating is shown. This rating is a key index; if it falls below 33% your army may rout from the field, bringing immediate defeat and an end to the scenario. See "How to Win" for more information.

How Overall Army Morale is Calculated.

Simply put, Army Morale is the sum of the morale of the units comprising it, calculated thus:

$$\text{Army Morale} + [(70 - \text{Unit Fatigue}) \times \text{Unit Strength} \times \text{Unit Class}]$$

Overall Army Morale as a percentage is obtained by dividing the current army morale by the initial army morale.

8. Command & Control

Command and control is an optional rule chosen at the start of a game on the Scenario Options Screen. If in effect, all friendly units are checked at the start of a player's turn to determine if they are in range of their group commander or legendary leader. If so, they are in command control and will respond normally. If a unit is not in range of the appropriate commander then the unit is 'Fixed' until the start of a turn when it is within range.

A Fixed unit shows a black "F" icon in the unit information box. Fixed units cannot move and use the same defaults as units that have received No Orders. A unit will not be fixed if it is in a melee or was shot at during the previous Events Phase. A fixed unit may always change facing.

8.1. Leaders

Command Range: A commander has a leadership rating equivalent to his experience level. A leader's command range is equal to his leadership rating. The command range determines how far his influence reaches when issuing orders and determines which units are fixed or not at the start of a player's turn. The command range is reduced as a leader unit suffers fatigue but does not fall below a 'C' leadership rating.

	Leadership Rating	Command Range (in hexes)
Legendary	A	18 for Regular Leader, Irregular 15
Experienced	B	12 for Regular Leader, Irregular 10
Mediocre	C	6 for Regular Leader, Irregular 5

Note – Foot Leaders can only issue commands to infantry units and siege equipment, never to cavalry.

9. Special Units and Special Unit Commands

9.1. Legionaries

Legionary units are Roman Heavy and Light Heavy Infantry only. A number of commands are uniquely available to them.

Retire Front Line: Legionary units had a special tactic to ensure that the cutting edge of the battle line was kept continually sharp. This tactic is reflected in the game through the command Menu: Units: Legionaries: Retire Front Line. This command will take all of a Legionary's Action Points and will result in the unit falling back one hex while retaining the same facing. The player may then instruct a fresh HI

unit to move into the hex to be vacated by the retiring unit. (Note however that as the retiring unit is in combat it may fail a Reaction Test and thus fail to execute the order.)

Palisades: Legionaries may attempt to build “Palisades”, a defensive structure. Typically, the Roman army constructed palisades when creating a night camp during its march through enemy territory. The act of constructing palisades is known as “digging-in”. Digging-in requires all the initial action points each turn it is attempted and the unit must be in Line formation. A Legionary unit has a one-in-six chance of succeeding each turn it is digging-in. Once successful, the owning player chooses which palisade graphic appears on the battlefield. Palisades reduce the effective fire on units in such a hex and assist in defence. The Legionary unit must have strength of 50 or more to construct a palisade on one hex side, more than 100 to construct on 2 hex sides at once and more than 200 to construct palisades on 3 sides at the same time. Palisades can not be constructed in close terrain or hexes containing streams, hedges, walls or gullies. Palisades can not be constructed in sand or snow terrain.

Bridges: A Legionary unit can build small wood bridges to cross streams and gullies but not rivers or lakes. Building a bridge uses the same procedure as that to construct palisades except when the “Build Bridge” command is triggered the Legionary unit must be facing the hex side where the stream is located. A Legionary unit has a one-in-three chance of succeeding each turn it is “bridge building”.

Destroy Bridges: Legionary units may destroy small hex-side bridges but not full hex-length bridges. To do so the Legionary unit must be located on the same hex as the bridge and will need all its initial action points to destroy the bridge. This destruction is deemed to be automatically successful at the start of the player’s next turn by virtue of the axes always carried by a Legionary unit. There is no limit to the number of bridges a Legionary unit can destroy. To destroy a small bridge activate the unit and go to Menu: Units: Legionaries :Destroy Bridge. The actual destruction is conducted during the Events Phase.

9.2. Phalangites

Pikemen Fall Back: Phalanx units are LMI, MI or HI armed with the 15-24 ft pike. Some phalangites were especially well drilled and able to ‘Fall Back’ under command while still maintaining a solid wall of spear points facing the enemy. During the Command Phase a player may apply the Pikemen Fall Back command to a Macedonian Regular veteran or elite MI unit in combat. This command is found under the Units menu and takes all the unit’s action points. When executed the command will cause the phalangite unit to fall back one hex whilst still facing the same way. Note - If the unit conducts a Reaction Test during the Events Phase it is always possible it will not follow the assigned order.

9.3. Artillery

Special Rules:

- Captured artillery cannot be used.
- Artillery units overrun are automatically destroyed.
- It costs 30 action points for an unlimbered bolt-shooting engine to change facing. For a stone-throwing engine, the cost is 60.
- Artillery strength is given as the number of pieces, not the number of men manning them.
- Artillery has a 1 in 20 chance of setting afire any building or village hex it targets. If the hex is afire, the units within are forced to retreat one hex.

9.4. Wagons, Civilians, and Unreliable Units

Unreliable Units: This status is usually associated with levy units but any unit can be declared such in the Scenario Editor. These units are shown as Fixed and have no release turn specified. They cannot move until the enemy is within 7 hexes at which time a reaction test is conducted. The result is either that the unit is released and behaves as normal or it immediately routs. This test is a one-off and will not be repeated as more enemy units approach.

Wagons represent an army's baggage train. Wagons cost no points when building an army in the Scenario Editor. However, any army in possession of wagons must protect them as any losses will score at 25 per wagon for Regular armies and 15 points per wagon for Irregular armies. Wagons cannot defend themselves and if occupying a hex alone can be overrun by an enemy unit of 50 men or more.

Civilians are the untrained, unarmed population. These units combat with no sword, no missile weapon, no shield and as irregular levies. They move as a massed body and at the pace of heavy infantry. Therefore they have 60 action points and can stack to a limit of 400 in a Clear hex. Losses score at 1 victory point per casualty.

10. Weather, Visibility, and Line of Sight (LOS)

Visibility varies depending on weather, time of day, and line of sight. The table below depicts the visibility restrictions for particular conditions. The weather can vary from turn to turn and the immediate conditions are given in Menu: Status: Scenario Information.

Weather Condition	Visibility
Clear	20 and over
Overcast	18-19
Slight Haze	15-17
Light Rain	10-14
Light Fog or Squalls	8-9
Heavy Rain	6-7
Fog	5
Thick Fog	4
Dawn / Dusk	3
Night	2
For Desert terrain - Dust clouds / sand squalls / sand storms where wind speed > 10mph	4 to 8

Notes on Weather:

Thick Fog: Generally winds above 10mph can blow thick fog away and increase the visibility during a game. A random number from 1-9 is chosen each turn. If the result is 1 through 7, visibility remains at 4 hexes; if the number is 8 or 9, visibility remains the same but Thick Fog becomes "normal" Fog.

Fog: In cases of normal Fog, the same random number selection is made. 1 through 7 results in visibility remaining the same; if the number is 8 or 9, all fog is cleared and visibility becomes normal.

Desert Conditions: Sand storms or dust clouds will arise if the wind is set at >10mph in a scenario. Visibility will vary according to a random number between 1 and 20. If the number chosen is < 4, visibility remains at 4 hexes. If the number is between 4 and 6, visibility will improve to 5 hexes. If the number is 7 or 8, visibility increases to 6. Numbers 9 or 10 will increase it to 8 hexes. Above 10 there is no change in visibility.

Wind speed itself will not vary in the course of a scenario

Line of Sight (LOS) is blocked by any terrain feature other than rough ground, tents, hedges, low walls, gullies, streams or rivers. Line of Sight is also blocked by a unit of 20 men or more. LOS is determined by using the toolbar Eye button. This button can be used to determine the LOS from any hex when the FOW mode is off but with FOW on a player can only determine the LOS when clicking on a hex containing a friendly unit.

11. Fortifications & Siege Warfare

Fortified hexes are usually found around permanent military bases or walled towns. They may be made of wood or stone and can consist of walls, towers, and gates. Fortified hexes have a defense (strength) value of up to 200. This strength value is only known to the occupying player and can be seen by clicking Menu: Display: Flyby Box and moving the cursor over the fortified hex.

Fortified hexes are different than palisades. Palisades are temporary defenses and much less formidable. Note that “guard towers” are not the same as fortified towers. The former are in the same class as palisades. Unlike palisades, fortifications cannot be created during the course of a scenario.

A fortification is considered Close terrain and equivalent to one unit for stacking purposes. Thus no more than 2 different units can be on the same fortification hex.

Only infantry and foot leaders can move into a fortified hex. Movement into a fortified hex costs 30 action points. Any unit that moves in to a fortification hex is Disrupted. A unit that is in a fortification has the castle symbol at the bottom of the Unit Information box.

Other Fortification Rules:

- Infantry units on a fortification hex cannot combine but one unit can split into two units.
- Disrupted units cannot recover from disruption in a fortified hex.
- Units may not retreat, recoil, or rout into a fortified hex.
- A fortified hex blocks Line-of-Sight.
- A unit on a fortification cannot go into an uncontrolled advance.

A Zone of Control does not extend into or beyond a fortified hex.

Effects of Fortifications

On Melee

- Other than troops on assault towers, only infantry and foot leaders with assault ladders can attack into a fortified hex. Infantry can however attack independently from one fortification hex to another.
- When attacking into a fortified hex, a modifier of -1 occurs unless on an assault tower.
- Infantry with ladders, on a fortification hex, or on an assault tower can only combat with the sword and not with any other weapon they may normally carry.

On Ranged fire

- Fire range is extended by one hex when firing from an assault tower or fortified hex against enemy units on the same or lower ground elevation.
- When firing at units on an assault tower or fortified hex, a modifier of minus two for cover is applied.

Attacking Fortifications

Siege equipment in *Ancient Warfare* consists of stone-throwing engines (catapults), assault towers, battering rams, assault ladders, and mantlets, a moveable protective wall. Mining operations, tunnelling

and other protracted techniques cannot be included in a game where one turn is equivalent to only 15 minutes.

Use of Assault Towers

Only infantry and foot leaders can use assault towers. Non-infantry units in the same hex as an assault tower are assumed to be alongside.

To climb an assault tower, a unit must start in Line formation. Climbing costs 20 action points and is achieved by highlighting the unit and choosing Menu: Units: Climb Assault Tower. A unit that is in an assault tower has the assault tower symbol at the bottom of its Unit Information box. A unit that has just climbed an assault tower has its action points reduced to zero.

The number of men on an assault tower is dependent on the stacking limits. An assault tower is equivalent to 200 HI. Note however that units on board an assault tower do not count against stacking limits in the hex itself.

- Any unit in an assault tower is disrupted and cannot recover from disruption so long as it remains on board.
- When moving from an assault tower into a fortified hex, a unit may move only in the direction the assault tower is pointing and not to any other adjacent hex.
- An enemy unit cannot occupy a hex containing an assault tower when friendly forces occupy the tower. It is assumed that part of the friendly unit is at ground level fighting the enemy.
- If a friendly unit is in an assault tower and one or more enemy units are adjacent to the tower the friendly unit cannot fire missiles.

Use of Assault Ladders

Ladders must be made in the course of a scenario. Any Foot Leader or non-disrupted infantry unit in Line formation not engaged in combat can make assault ladders. Once the unit is selected, choose Menu: Units: Make Assault Ladders. A unit requires all its initial action points to undertake this action and will cause Disruption. A unit with assault ladders has a ladder icon in the Unit Information Box and is eligible to attack a fortification hex.

- A unit with ladders can combat only with the sword. This reduces combat effectiveness.
- Infantry moving with ladders must pay an additional 10 action points per hex.
- Any unit with assault ladders in combat and forced to recoil or retreat loses its ladders and must make more before assaulting a fortification.
- A charging unit will lose its ladders.
- Any unit with ladders can choose to destroy them to enhance its movement and combat ability. No cost in action points is incurred.

Infantry and foot leaders can be on an assault tower, on a fortification, or carrying ladders. They can be in only one of these states at any one time. Units which have been attacking a fortification using assault ladders and move in to the fortification hex lose their 'carrying ladders' status. They do not regain their ladders until they make more and can only do so when not on a fortification hex.

Battering Rams

Battering rams can create a hole in a fortification that will allow units to pass through. To attack a fortification hex, a battering ram must be adjacent. Battering rams attack once per turn and each time reduce the strength of the fortified hex by 20 plus a random number between 0 and 10. Thus it can take up to 10 turns to destroy the heaviest fortifications. Once the strength of the fortification is reduced to 0, the fortification graphic is removed, indicating that a breach has been made.

- Battering rams can attack a fortified hex even if a friendly unit is in the same hex.

- Battering rams cannot attack if disordered.

Stone-throwing Engines

Like battering rams, stone throwing engines can create a hole in a fortification that will allow units to pass through. Each hit reduces the strength of a fortified hex by a random number between 0 and 10. Once the strength of the fortified hex drops to zero the fortification is destroyed. Stone-throwing engines can also have an effect on enemy personnel.

As with all Ranged Fire, fire from stone-throwing engines is automatically resolved. These engines are inaccurate and stones may land one hex in any direction from the intended target.

Mantlets

Mantlets are a moveable, wheeled wall that provides cover for assault troops. They may also be used to provide cover for friendly fire units. Mantlets have 40 action points and can move two clear hexes in a turn. If they move two hexes, however, they may not be able to provide complete cover. Slower is safer behind a mantlet. Mantlets are of no value in melee.

Destruction of assault towers, battering rams, and mantlets

Destruction occurs when:

- The tower, battering ram, or mantlet is hit by a stone-throwing engine. If the tower is occupied when hit the occupying unit remains but the tower is removed from play.
- The hex is occupied by enemy forces. The tower, battering ram, or mantlet is automatically destroyed in the same manner as an overrun.
- The tower, battering ram, or mantlet is alone in the hex and meleed.

Caltrops, Pits and Stakes

Stakes are impenetrable to all but infantry units and foot leaders and cause a loss of 2 strength points. Caltrops cause a strength loss of 2 to any infantry, cavalry or chariot unit entering the hex. Pits require the expenditure of 40 APs, as do stakes and caltrops.

12. How to Win

There are 2 ways to win in *Ancient Warfare*: amassing Victory Points or causing your enemy to rout from the field.

An army will rout from the field when its overall morale falls below 33% (40% for the Thracian army) and the other side has an overall morale of over 43%. When one side routs from the field the game is over immediately. The winner is the opposing side irrespective of the game turn reached, ground occupied, or men lost during the scenario. Often this can be a kind of "Sudden Death".

If this situation arises a Game End box will appear on which there is a 'Continue Game' button. This option is available only when playing against the computer.

If one army does not rout, the final victor is determined by tabulating points.

In any scenario, one may see a Major or Minor Victory or Defeat, or a Draw. The point totals defining these levels are set by the scenario designer.

A scenario does not end when one side achieves a Major Victory (or Major defeat); the level of victory may change during the course of play as casualties occur and Objectives change hands. Only the level that exists at the end of the scenario applies.

Victory Points are scored in 4 basic ways:

- 1) Control of Victory Point Objectives. Points are scored from these hexes in two ways. Control at the end of a scenario awards the hexes' point value to the controlling player. But points may

also be scored by controlling them at the end of each Events Phase during the course of the game. See "Occupying Victory Hexes" below.

- 2) Elimination of enemy units. Victory points are scored for every 10 men eliminated from the opponent's army. To view the current number of VPs scored in this fashion select "Victory Level" from the "Status" menu or press the short-cut key 'V'. For a more precise breakdown of the exact type of losses inflicted select "Strength" from the "Status" menu or press the short-cut key 'S'. The windows on the right hand side of the dialog list the losses.
- 3) Exit Objectives . An objective hex showing a value of "0" is an 'exit objective' for the side corresponding to the colour of the objective. Each unit exited from the map at an objective hex scores victory points for that side equivalent to their strength multiplied by their victory point value (per 10 men). Not all scenarios contain Exit Objectives.
- 4) 'Looting' hexes. Units on a 'looting' hex score 10 victory points at the end of each full turn. Not all scenarios contain Looting hexes. See below for more on Looting.

Occupying Victory Hexes (Objectives): *Ancient Warfare* has a unique scoring system for victory hexes. Points are scored depending on whether one is playing against the AI and how far the game has progressed, not just on the hex value displayed. *The hex value counts only at the very end of the game.*

If the game is not yet half-way over, each occupied Victory Hex scores 2 points at the end of the current move when playing against the AI, and 1 point when playing against a human opponent.

If the game is more than half way over but there are still more than 3 turns to the end, each occupied Victory Hex scores 5 points at the end of the move when playing against the AI, and 2 points when playing a human opponent.

If there are fewer than 3 moves remaining to the end, each occupied Victory hex scores 10 points when playing against the AI, and 5 when playing against a human opponent.

These points are added to the opposing side Total Point Loss. Note that the hex value score awarded at the end of the game is the same regardless of whether one plays against the AI or a human opponent.

When seen in 3D, the victory hex flag is red if the hex is occupied by a First Side unit. A Bird symbol appears if the hex is occupied by a unit from the Second Side. If the victory hex is unoccupied, there appears a pole without an emblem.

Looting: Any objective hex with a value of 10 is a Looting hex. As the term implies, a Looting hex is assumed to contain items of plunder.

Any unit except Leaders, wagons, battering rams, assault towers, civilians and routed units can loot an objective hex. Normally such hexes will be found in a camp, fortification or building. To score, a unit must be on the hex in question at the end of the Events Phase. 10 points will then be added to the opposing side Total Point Loss. Point score here is not dependent on whether one is playing the AI or a human opponent.

13. Campaign Play

The Campaign feature is not available in all titles in the *Ancient Warfare* series. Campaigns are played only against the AI. Campaigns allow a player to take a given force across a linked series of battles in pursuit of enough Campaign Points to be declared the final victor. Losses to the core army are recorded and, depending on how the campaign develops, replacements may become available to keep the force going forward. Campaigns place a priority on careful management of resources.

To play a campaign, choose the 'New Campaign' button on the Start-up Screen. Campaigns are usually found in their own sub-folder within the Scenarios folder. All campaign battles are designated with a file extension of ".cmp".

The player must choose the army (side) specified in the Campaign battle description and can not change sides during the campaign.

Initial Set Up

When the battle is loaded all hexes are shaded except a certain area. This area – there may be more than one – is the Set-Up Zone. On the first battle of a campaign, a player's units are already present within this zone. These units may be moved at will within their zone limited only by stacking and terrain restrictions.

To move a unit click Initial Set Up under the Campaign menu. Once a unit is activated, drag it using the right mouse button to the destination hex. There is no limit to the number of times a unit can be moved. The Initial Set Up option can also be toggled using the toolbar button 'Initial Set Up' found near the middle of the toolbar (8th button from the left).

On subsequent battles of the campaign, the player must first load his campaign army before undertaking the initial set up.

In addition to moving his units a player may wish to change their facing. To do so click Rotate Unit in Campaign Set Up under the Campaign menu. Left-clicking a unit will bring up a Change Face dialog.

When satisfied that all units are in the correct position and facing the correct direction click Campaign Set-up Complete in the Campaign menu. At this point no further movement or rotation of a player's units can occur prior to commencing the battle.

From this point the battle is played as a regular scenario.

At the end of the battle the usual End Game report is followed by a Campaign Report. After every battle the player receives Campaign Points and Replacement Points based on the level of success he has achieved.

Battle Result	Campaign Points
Major Defeat	0
Minor Defeat	1
Draw	2
Minor Victory	3
Major Victory	4

Scoring 10 or more Campaign Points wins the campaign and the player is declared the victor.

If after 3 battles if the player has not earned 4 or more Campaign Points the campaign is automatically over and the player has lost.

The number of battles available depends on the campaign designer.

Loss of Campaign Points:

- If 4-8 wagon strength points are lost in a battle supplies for the campaign are considered affected and the player loses 1 Campaign Point. If >8 wagon strength points are lost the player loses 2 Campaign Points.

Once the Campaign report is closed at the end of a battle a ".cob" file is created. This file records losses and Campaign Points and governs set-up in the next battle.

To start the next battle in the campaign, choose New Campaign again from the opening game menu (“new” refers not only to starting a new campaign but also a new battle within an existing campaign). Then select the next battle in the sequence created by the designer.

When the battle loads the Set-Up Zone will appear. It is empty. From battle 2 onwards, the Load Campaign Army function of the Campaign menu must be used before the set-up process described above can be undertaken. The Load Campaign Army command brings up a dialog box. Select the previously saved .cob file. Once selected, all units in the saved file will be placed within the Set-up Zone.

Before setting up, however, Replacements may first be allocated to bring your force back up to strength. Click Replacements under the Campaign menu to bring up the Replacements dialog.

A listing of units in your army will appear as well as the strength of each. Note that replacements may be added in increments of 10 points.

Replacement points are earned based on the Campaign points accumulated at the start of a new battle.

Accumulated Campaign Points	Replacement Points earned per battle
1, 2 or 3	1,000
4, 5 or 6	2,000
7, 8 or 9	3,000

Replacement points can be saved for future battles.

In assessing your progress toward victory in the campaign, Campaign reports may differ from individual battle results shown in the conventional Victory dialog. The following table applies –

Accumulated Campaign Points	Battles Fought	Campaign Result
1, 2 or 3	>2	Major Defeat
1, 2 or 3	=2	Minor Defeat
1, 2 or 3	=1	Draw
4, 5 or 6	Any number	Draw
7, 8 or 9	Any number	Minor Victory
>9	>3	Major Victory
>9	=3	Major Victory

Note - The initial campaign game where both forces are available on the map can be converted to a standard scenario should the player so choose. This change requires only that the file extension be changed to '.scn'. before the file is loaded into the game.

14. How to Play by E-Mail (PBEM)

It is usually better for the player initiating the Play By Email contest to be First Side in the scenario. If the side you prefer is not the First Side, you'll find it more convenient to defer to your opponent to initiate the game file.

Assuming you are the First Side player, answer 'Yes' to the "Play by E-Mail" question after the game starts and 'No' to the Multi-Player Option. Once the main menu screen appears, click the 'New Battle' button and select your scenario from the list box.

The next screen will let you choose the key game settings such as Fog of War and Command Control.

Add your own password in the next window. Your password can be a combination of alpha and numeric characters but it can be no longer than 10 characters. It is not necessary to add a password.

The battle map now appears with the your army in full view. Depending on the Fog of War options, enemy units may also be in sight.

Once you have placed your orders and completed your turn press the Hourglass button at the far left of the toolbar. This action brings a pop-up box "OK to advance turn?" Click "OK" and follow the prompt to save your file. (Use "Save As" to avoid overwriting the scenario file.) The Save As dialog defaults to the file format *.emb, used solely for PBEM contests. In naming your file, you may want to add a prefix such as "!!!" to ensure that the file will appear conveniently at the top of your opponent's file listing.

Save the game turn and you are ready to send it to your opponent! Note that *.emb files in *Ancient Warfare* can be quite large, so it's generally best to compress the file using WinZip or a similar program.

Once your opponent receives the file, he has only to unzip it into his Scenarios folder and choose "Existing Battle" rather than "New Battle" from the dialog at the game's opening.

The sequence of phases for an e-mail game is

1. First player places commands for Turn 1 and e-mails the game to the second player.
2. Second player places commands for Turn 1 and e-mails the game back to the first player.
3. First player watches action phase of Turn 1 and e-mails the game to the second player.
4. Second player watches action phase of Turn 1 then places commands for Turn 2 before e-mailing the game to the first player.
5. First player places commands for Turn 2 and e-mails the game to the second player.
6. Second player watches action phase of Turn 2 and e-mails the game to the first player.
7. First player watches action phase of Turn 2 then places commands for Turn 3 before e-mailing the game to the second player

And so the sequence is repeated.

PBEM opponents can readily be found on the *Ancient Warfare* forum at the Blitz wargaming club and other wargaming venues on the internet.

15. Troubleshooting

If a battle will not load, check the 'Settings.dat' file exists. If this file is not in the 'Scenarios' sub-folder, a new file can be generated through the Scenario Editor pop-down menu. Click 'File' then 'Save Viewer Settings' this will create a dialog box allowing the preferred view settings to be set. This file is updated every time a player saves or exits from the game.

For further answers to commonly asked questions and issues see the FAQ document included with the game.

16. Credits

Publisher: Scott Hamilton

Developer: Paul Bruffell

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Terrain Graphics: Magnus Pettersson

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Punic Wars 300 - 200 BC

Scenario Designers: Al Amos, Rich White & Paul Bruffell

Project Coordinator: Rich Hamilton

Playtesters: Atle Jenssen, Dean Beecham, Glyn Hargreaves, Mike Cox

Gallic Wars 100 - 50 BC

Scenario Designers: Glyn Hargreaves, Rich White & Paul Bruffell

Playtesters: Arnaud Dessjamaux, Atle Jenssen, Glyn Hargreaves, Rich White, Dean Beecham, Dr Klaus Kuhlmann

Alexandrian Wars 400 - 300 BC

Scenario Designers: Glyn Hargreaves, Rich White, Peter Dawson & Paul Bruffell

Playtesters: Arnaud Desjumaux, Glyn Hargreaves, Rich White, Dean Beecham, Peter Dawson, Klaus Kuhlman and Atle Jenssen.

Greek Wars 500 - 400 BC

Scenario Designers: Glyn Hargreaves, Rich White, Peter Dawson & Paul Bruffell

Playtesters: Arnaud Desjumaux, Glyn Hargreaves, Rich White, Dean Beecham, Peter Dawson, Klaus Kuhlman and Atle Jenssen.

Roman Civil Wars 50 BC – 10 AD

Scenario Designers: Rich White, Peter Dawson & Paul Bruffell

Playtesters: Rich White, Peter Dawson, Klaus Kuhlman and Atle Jenssen.

17. Hot Keys

Key	Function
F1	2D zoom-out view
F2	2D zoom-in view
F3	3D zoom-in view
M	Move
C	Charge
S	Skirmish
H	Hold
F	Forced March
P	Pause
T	Change Face
Q	Change Formation
Z	Activate the 'Group Command' (toggle on and off)
E	Erases the Group Command
K	Erases the Unit Command
L	Highlights Legendary Leaders
Alt + F4	Closes pop-up dialog boxes
G	Assigns activated unit to new group
B	Battle Fatigue Level displayed on all units (toggle on and off)
O	Provides Hex Outlines on the map (toggle on and off)
I	Unit Information Box on the map (toggle on and off)
J	Displays the Mini-Map (also known as the Jump-Map) (toggle on and off)
N	Next unit available to assign orders
A	Army Strength dialog
V	Level of Victory dialog
U	Activates Fly-by box to determine unit strength (toggle on and off)
Shift	Highlights friendly 'Fixed' units
Tab	Highlights friendly units who have received an order.
Arrow keys	Scrolls the map in the direction of the arrow.
	Keys only active when menu – Options – No Command Box ticked:-
1	Activate unit 1 (top unit)

2	Activate unit 2
3	Activate unit 3

Note:- If the keyboard command key does not work – left click on the unit on the map then try the keyboard again. This takes the focus away from the unit information box and returns it to the battlefield map.

18. Battle Charts

18.1. Weapon Range

Weapon	Range in Hexes
Light Hand hurled weapons	2
Slings	5
Lead shot slings	7
Mounted archers /small bow	6
Foot archers composite bow	9
Bolt shooting engine	14
Stone throwing engine	20

18.2. Missile Weapon Effectiveness

Defending Unit type	Attacking unit type						
	Light hand hurled weapons	Slings	Lead-Shot Sling	Mounted archers / Composite bows	Small bow	Bolt shooting engines	Stone throwing engines
SHC	1	1	1	0	0	5	5
EHC	3	2	2	0	0	5	5
HC	4	2	3	4	2	5	5
MC/CM	6	4	4	4	3	5	5
LC	5	3	3	3	3	4	4
HI/LHI	3	2	2	4	0	4	5
MI/LMI	4	2	3	4	2	4	5
LI/Art	4	2	1	3	2	3	4
EI.	4	1	1	1	1	4	5
LCh	4	1	1	1	1	3	4
HCh	5	2	2	1	1	5	5

18.3. Melee Effectiveness

Defending Unit Type :-	R a n k s	S H C	E H C	H C	M C / C M	L C	H I / L H I	M I / L M I	L I / A r t	E I	L C h	HCh
Attacking Unit Type & Weapon												
Cavalry with 12' kontos / xyston during 1 st melee period	1	3	3	4	6	7	4	4	6	0	7	4
Cavalry with light spears during the 1 st , 2 nd or 3 rd melee period	1	2	2	2	4	6	3	4	6	1	2	1
Other cavalry	1	0	1	1	2	4	2	3	6	0	0	0
Infantry with 15 to 24' pike not forced to recoil	3	4	4	5	5	4	3	4	5	2	4	4
Infantry with 8 to 12' spear not forced to recoil	2	2	2	4	4	3	2	3	4	1	2	3
Infantry with heavy throwing weapon during 1 st phase	1 + 1/2	2	2	2	2	2	4	5	4	2	2	2
Infantry with lighter spears during 1 st contact turn	1 + 1/2	1	1	2	4	3	3	4	4	2	2	1
Infantry with long thrusting, lighter spear or throwing weapon in conditions other than above or with sword only	1	1	1	2	3	3	2	3	3	1	0	1
Infantry with sword & axe	1	3	3	3	3	2	3	3	4	1	1	1
Infantry with rhomphaia or 2-handed axe or 2-handed sword	1	5	5	5	5	4	5	5	3	1	1	1
Pike men who have been forced to recoil, archers, slingers & artillery men	1	0	0	0	1	1	1	2	2	1	0	1
Elephants	1	3	3	3	4	1	5	5	2	2	5	2
Light Chariots	1	0	1	1	2	2	3	4	2	0	3	2
Heavy Chariots	1	2	2	2	2	2	4	4	1	0	4	2

18.4. Combat Losses

Losses Factor	No. of troops attacking per hex				
	1-11	12-20	21-30	31-40	>40
<-3	0	0	0	0	0
-3	0	0	0	1	1
-2	0	0	1	2	2
-1	0	1	1	2	2
0	1	1	1	2	3
1	1	1	2	2	3
2	1	1	3	4	5
3	1	2	3	5	6
4	2	2	4	6	8
5	2	3	5	8	10
6	2	3	6	9	13
7	3	4	8	12	16
8	3	5	10	15	20
9	4	6	13	19	25
10	4	8	16	24	32
11	5	10	20	30	40
>11	6	13	25	38	50

Maximum stacking in 1 hex is 400 men except for pikes at 512 men

Elephants and chariots count as x4 the number for 'No. of troops attacking'.

Bolt shooting engines count as x3 the number for 'No. of troops attacking'.

Stone throwing engines count as x5 the number for 'No. of troops attacking'.

Losses on elephants and assault towers and battering rams are divided by 4 and rounded down.

Losses on Light and Heavy Chariots are divided by 2 and rounded down.

18.5. Initial Troop Action Points

Unit Type	Initial Action Points	Action Points when charging at the start of the turn	Action multiplier charging	Point for
LC/ Horse Leader	160	240	1.5	
HC,MC,LCh, CM	120	180	1.5	
EHC	100	150	1.5	
LMI,LHI,El, HCh, SHC	80	100	1.25	
HI,MI, Foot leader	60	80	1.5	
Art./Wagon	60	-	-	
LI	90	-	-	
Battering Ram, Mantlets	40	-	-	
Assault Tower	20	-	-	

Shooting costs 30 action points for each volley on foot and 60 action points for mounted troops.

Artillery can not move unless limbered but can change direction.

Bolt shooting engines shoot at 30 action points per volley, stone throwing engines at 60 action points per volley.

18.6. Formation Change Cost

Unit Type	Change in Formation	Action Point Cost
LI / Leaders / Civilians	About turn or 1 change of face	0
LMI / LHI	About turn or 1 change of face	5
All none light infantry	About turn or 1 change of face	10
All Cavalry	About turn or 1 change of face	15
Chariots / Elephants	1 change of face	15
Bolt shooting engine	1 change of face	30/20 if limbered
Stone throwing engine	1 change of face	60/40 if limbered
Wagons	1 change of face	25
Battering Ram / Assault Tower	1 change of face	Can only wheel to adjacent hex
Mantlet	1 change of face	20
MI, HI, MC, HC	Wedge (Elite & Veteran Regulars only)	½ initial total

	only)	
EHC,HC,MC,LC,HI, MI, CM LMI, LHI, SHC	Hollow square / Column / Line	For irregulars & militia - All of initial total. For regular units other than militia – ½ initial total.
LC	Cantabrian Circle	For irregulars & militia - All of initial total. For regular units other than militia – ½ initial total.
Infantry in square formation	About turn or 1 change of face	0

18.7. Terrain Costs

Sea and Deep Water movement costs are the same as Lake costs.

Large Rocks movement costs are the same as Forest costs.

Fortification movement costs are the same as building costs.

Movement cost through tents is the same as Clear terrain for infantry but not passable by other units.

NP = Not Passable

Unit Type	Field	Shallow Water	Lake/Sea/Deep water	Clear	Orchard	Rough	Swamp	Marsh	Major River	Village	Vineyard	Woodland	Forest	Building
EHC/SHC	25	60	NP	20	25	NP	NP	NP	NP	NP	NP	NP	NP	NP
HC	25	40	NP	20	25	40	NP	NP	NP	NP	50	NP	NP	NP
MC/CM	25	40	NP	20	25	40	NP	NP	NP	NP	50	50	NP	NP
LC	25	30	NP	20	25	30	50	50	160	20	40	40	NP	NP
HI	25	30	NP	20	25	30	NP	NP	NP	20	30	30	NP	30
MI	25	30	NP	20	25	30	NP	NP	NP	20	30	30	NP	30
LMI	25	30	NP	20	25	30	40	40	NP	20	30	30	40	30
LHI	25	30	NP	20	25	30	60	60	NP	20	30	30	60	30
LI	25	30	NP	20	25	30	40	40	80	20	30	30	40	30
EI	25	30	NP	20	25	30	80	80	80	20	40	40	NP	NP
LCh	25	40	NP	20	25	NP	NP	NP	NP	NP	NP	NP	NP	NP
HCh	25	60	NP	20	25	NP	NP	NP	NP	NP	NP	NP	NP	NP
Artillery	20	60	NP	20	30	NP	NP	NP	NP	20	NP	NP	NP	NP
Wagon	30	60	NP	20	30	NP	NP	NP	NP	20	NP	NP	NP	NP
Mounted Leader	25	30	NP	20	25	30	50	50	160	20	40	40	40	40
Foot Leader	25	30	NP	20	25	30	50	50	60	20	40	40	40	40
BR, AT, Mantlets	20	NP	NP	20	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Civilians	25	30	NP	20	25	30	40	40	80	20	30	30	40	30

All ground conditions are 'Firm' for troop movement.

Long bridges (full hex length) are considered as road movement for units in Column formation and as Clear terrain for other formations. Small (hex-side) bridges avoid hex-side terrain penalties for streams and gullies.

Units crossing over caltrops, pits and stakes expend 40 APs if the terrain is passable.

For every 10m elevation change a unit expends 10 Aps.

18.8. Reaction Test Results

		Troop Class and test result:			
Troops with active order(s)	Troops with no orders	A	B	C	D
Uncontrolled advance	Uncontrolled advance	Irr only >18	Irr only >17	>15	Irr >10 Reg >12
No Change	No change	Irr 8-18 Reg 8+	10 to 17	12 to 15	Irr 9 - 10 Reg 9 to 12
Disordered troops halt otherwise No Change	Halt immediately	4 to 7	4 to 9	6 to 11	7 to 8
Halt immediately except cavalry charging or units following up recoiling opponents	Halt immediately	0 to 3	2 to 3	3 to 5	4 to 6
Recoil if in melee otherwise retreat in disorder. Do not follow up recoiling opponents or pursue a rout. If in rout continue.		-5 to -1	-5 to 1	-3 to 2	Irr 0 to 3 Reg -1 to 3
If in rout, continue. Rout if in melee. Otherwise retreat in disorder.		<-5	<-5	<-3	Irr <0 Reg <-1

18.9. Points Value Calculation

To determine the number of points a unit will cost, use the following cumulative score. The points value of a unit is also given by right clicking the unit information box when playing a scenario.

1 point per 10 infantrymen

5 points per 10 cavalrymen & horses

+1 for Regular infantry +2 for Regular cavalry 0 for Irregulars

Civilians +0

LI +1

MI +3 LMI +3

HI +5 LHI +6

LC +3

MC +5

HC +7
 EHC +9
 SHC +11
 CM +5

Leader +6 Foot, +3 mounted.

'L' stands for Loose / open formation. In every other respect the man is the same as a formed body soldier.

Training Levels:

Class	Regular Troops	Irregular Troops
A	Elite +4	Fanatics +5
B	Veteran +3	Bodyguard +4
C	Experienced +2	Warband +2
D	Militia +1	Levies +0

Shielded +1 No shield +0

Weapon Categories:

- Sword +0 (All units are assumed to have sword/dagger or equivalent)
- Light Spear +1
- Sword and axe +2
- 2-handed weapon +2
- 8-12ft Spear +2
- Pike +2 (Pike units have significant disadvantages in this game)
- Heavy Throwing weapon (Pilum) +2
- Kontos +2

Missile Weapons:

- Javelins +1 Sling +2 Bow +2

Leaders – cost per man

Class	Regular	Irregular
Legendary	+20	+30

Experienced	+10	+15
Mediocre	+5	+8

10 points per Mantlet

15 points per Light Chariot

21 points per Heavy Chariot / Scythed Chariot

25 points per Elephant

20 points per Bolt shooting engine + 20 points for irregular unit

40 points per Stone throwing engine + 20 points for irregular unit

80 points per Battering Ram

160 points per Assault Tower