
EMPIRE
II
The Art Of War


EXPERT
SOFTWARE

EMPIRE II: THE ART OF WAR TACTICAL TEAM

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EMPIRE II: INTRODUCTION

Empire (and **Empire Deluxe**) were games of world conquest and domination. With the focus on the entire world, the games were tests of your strategic skills in quickly spreading out, exploring and gaining control of the world. In this sequel, we are allowing much more flexibility and variety in the details.

Empire II allows you to experience the challenge of managing battle planning and execution throughout history. The scale is best described as Grand Tactical — your objective is to win the battle, not the War.

The game is based on pre-defined Scenarios. While many Scenarios come with the game, the Game Editor allows you to create your own scenarios and to modify those provided. The Scenario defines the forces involved in the battle, the technology (types of units and their abilities) available to these forces, the area (map) in which the battle occurs, the Victory Conditions for the battle, and the initial allocation and placement of the units available to the forces.

Each battle is two-sided, although there may be up to four forces involved. Forces on the same side are allies working to achieve a common goal. Commanders (human or computer-controlled) are assigned for each force, adding conflict to the game. A single commander may control more than one force on a side, however.

After selecting a Scenario to play and assigning commanders to the forces, choose one of the two game play modes supported by **Empire II** — **Sequential** or **Parallel**. Each of these modes has its advantages and disadvantages, depending on the number and types of players involved and on personal preferences. The two modes were designed to address specific playing configurations. Sequential mode is primarily for the Single Human Player versus the Computer player. Parallel mode is primarily for multiple Human commanders (either on a single system or via remote connection). However, both modes of play are available for all playing configurations.

Sequential Mode provides for an "I go, you go" play sequencing. The first commander gives orders to all of his units and the orders are executed. The next commander does the same for his units. This repeats until all commanders have had this opportunity once. This constitutes a "turn", after which Victory Conditions are evaluated. The game will continue in this manner until the Victory/Endgame conditions of that particular scenario are met.

Parallel Mode separates the process of giving orders to units from the execution of those orders. In Parallel mode, orders are first given to units of all forces for the turn. The orders are then carried out in the time span known as a "turn". This mode of play requires more anticipation on your part, as situations may have changed between the time you gave an order and the time an order is actually executed. It is recommended that novice players use the Sequential play mode until they are comfortable with the game system.

Now that you have a general overview, let's take a quick look at the game by walking through a short Tutorial scenario — we'll worry about the details later.

Mouse

To select a unit, menu, or button move the cursor to it and "click". Clicking is pressing and releasing the left mouse button (or the only mouse button for Macintosh computers). If you need to use the right mouse button, the manual will specify "Rclick" (or -click for Mac users). Macintosh users will need to hold down the key, click their mouse button, and then release the key.

At times, you may need to use the "drag" technique. For example, click on a unit and while still holding the button down, move the cursor to the desired location, and then release the button.

Empire II Installation Instructions and Reference Guide

You may wish to review the guide enclosed in the game box. It includes pertinent information on installation, configuration, hardware support, hot keys, mouse use, other platform-specific issues, and short synopsises of the historical-based scenarios.

EMPIRE II: A QUICK TUTORIAL

Refer to the Quick Reference card for instructions on How to Install and Run **Empire II** and for platform specific information. Run the game. The first time you run the game, you will be taken to the Configuration screen, where you can set the game up for your specific system hardware and Game Preferences. Set up according to your system and select **Exit**. You can return to this section from the **Main Screen** any time you need. This tutorial assumes you have a mouse, and it is written with this in mind.

When you run the game, you are presented with the **Main Screen**, as pictured below. This is your gateway to battle!

Point the cursor at the **Play Game** button and click. From the **Game Startup Options**, select **New Game**. You will be presented with the **File Selector**, showing the available scenarios. Scroll up and down the **File Selector** by either clicking on the arrow buttons, or by clicking and holding the mouse button down on the slider bar to scroll through the scenario list. In the list of file names shown, highlight the name **TUTORIAL.SCN**. Click on the **Preview** button. A short description of the scenario will be shown here. Clicking on the **Technology** and/or **Map** buttons will also show you short descriptions of the technology and map portions of the scenario. Selecting the **Details** button will show you a report of the active "section" of the scenario (Scenario, Technology, or Map). When you are done looking at this information, select the **Done** button, which will return you to the **File Selector**. Since this is the scenario you wish to use at this time, select **OK**.

You may have noticed while previewing that this scenario includes two forces, the "Good Guys" vs. the "Bad Guys". We now have to assign the Commanders for these forces, and the game options we wish for this game. This is done in the **Game Setup Options** window, pictured below.

You will be commanding the first force ("Good Guys"), so enter your name in the first **Cmdr Name** entry. Leave the **Cmdr Type** set to Person and the **System** set to Local. We will leave the second Commander (controlling the "Bad Guys") as Comp/Easy, meaning that force will be computer controlled, using the easiest setting. We will leave the other options set at the default — **Sequential Mode** with both **Logging** and **Autosave** active. Click on the **OK** button to accept the game setup.

You will be presented with the main game screen where all the action will take place. The **Intelligence Briefing** screen is displayed over the main game screen. On it is information saying when the scenario ends, points scored, supply, weather, and replacement and reinforcement status. Look it over then click on **OK** when ready. Along the top of the display, you will find the menu bar, containing pull-down menus. The main portion of the screen display is taken up by the **Map Window(s)**. There can be more than one map window opened, overlapping or not, depending on your personal preferences. The map windows are both movable and sizable. Each map window also has a **Map Window Menu**. To open, position the cursor on the title bar of the window and Rclick (-click). It will allow you to zoom in or out and alter what information is displayed in the window.

The window on the right edge of the screen is the **Toolbar Window**, which contains four separate sections. The topmost section contains a small window showing the entire scenario map. The white square on this map

shows which map section is currently showing in the active map window. You can scroll to a new area in the map by placing the cursor inside the white square, clicking and dragging the white square to a different area. Clicking on the small scenario map will cause the map window to be repositioned to that area of the map.

Below the scenario map are three text windows. The top one shows the date and time of the current turn. The other two show each sides victory points total.

Below the text windows are 13 buttons, laid out in three groupings. When you move the cursor over the buttons, a short description of the button will appear on the right side of the grey message line at the bottom of the screen. More detailed information on the buttons will be discussed later.

The bottom of the **Toolbar Window** is an information display area. By default, this area will display the information for the "current" (blinking) unit. It will also display information on any other unit stacked at the same location and what type of terrain the unit is in. Over the course of the game, other information will be displayed here.

The grey message line is divided into three sections along the bottom of the screen. As you move the cursor around the map window, the left section will display the map coordinates of the location pointed to by the mouse.

As you move the cursor around the map area, the right side of the grey message line displays the type of terrain that the cursor is currently on. As mentioned earlier, the right side of the grey message line also provides a brief description of the 13 buttons in the **Tool Window** display when the cursor is pointing at them.

The mechanics of playing **Empire II** involve two elements: giving orders to units, and the execution of those orders. This tutorial game was set

up to play the game using sequential cycling. With sequential cycling all of the units for one side are given orders and must execute those orders before the units for the other side are processed. A unit's orders may span several turns, and you are given the option to change the orders each turn.

To give a unit an order, the player must select the appropriate button in the **Tool Window**. If the current unit has any remaining movement points for the turn, orders for that unit will be executed. The player will then be prompted for the next unit's orders.

NOTE: The game will automatically cycle to all units controlled by the current commander, although the player can at any time select the next unit they wish to assign orders to by clicking on that unit.

Now let's take a look at our objectives in the tutorial scenario. To look at the **Victory Report**, select **Intelligence/Reports/Victory** from the pull-down menu. This will give us an overview of the victory objectives from which we can determine our primary goals. Victory points are awarded for two things: controlling locations and eliminating the enemy units. In the tutorial there is one victory point location at D-23, and points are awarded at the end of each turn. Note the slider bar and scroll arrows on the right. Use these to check all the information available if it can't fit on one screen. Select the **Done** button to close the report.

To bring up the Technology Report select **Intelligence/Report/ Technology** from the pull-down menu. Notice the **Sighting Rule** is not in effect, meaning that all units and all supply/control information for all sides, will be fully visible. Also, the **Supply Rule** is in effect, which means that we must maintain paths to supply sources for our units. This also implies that one of our possible strategies will be to attempt to cut off the supply paths for enemy units, as this will significantly lower their effectiveness. That is all the information we currently need from the report. Close the report by selecting the **Done** button.

We can now get a good overview of the map. With just the single map window displayed, activate the map window's object menu by moving the cursor to the title bar area (containing the text **Primary Game Map**) and Rclicking (-clicking). From this menu, select **Zoom Out** so you can see more of the map area in the window. Also from the **Primary Game Map Menu**, select **Display Options**. This brings up a small window allowing us to turn on or off a number of elements. For now, click on **Map Labels** and **Control**. An "X" will appear next to the option indicating it has been turned on. Click on **OK**.

You will now see a little more information on the map display. First, find the city labeled Fairplay. To see the number of victory points Fairplay is worth, bring the **Map Window Display Options Menu** up again by Rclicking on the **Primary Game Map** bar, then click on **Display Options** and **Special Locations**. You will now see a flag symbol indicating a victory point location and the number of victory points that Fairplay is worth (note that this overrides the town's name). Moving the cursor over that location, note that the coordinates of that location are D-23, which conforms to the information noted in the **Victory Report**. You will also see that the city of

Breckenridge contains a crate symbol containing the letter "S", with a red background. This indicates that this is a supply location for the Red force (i.e., the "Good Guys"). There is a similar symbol in the town of Castle Rock, but here it has a green background, indicating this is a supply location for the "Bad Guys".

The final thing to note in this display is the myriad of push-pin symbols in both red and green. These indicate controlled locations, which is an important concept in this game. A force gains control of a location by moving a unit into the location. Victory points may be awarded for controlled locations, or to the side that last had a unit pass through a location. It is not necessary to leave a unit in a location to retain control of that square.

Units not in supply are limited in their capabilities and more vulnerable. To be in supply, a unit must be able to trace a path between a source of supply and itself through locations controlled by the unit's side.

With this in mind, we can determine a plan of action for our scenario. Our primary objective will be to gain control of the Fairplay location, since that location will give us significant victory points for each turn it is controlled. A secondary goal will be to cut off the supply route for the majority of the enemy's units by advancing some of our own units along the eastern side of the mountain ridge between Breckenridge and Castle Rock. If possible, we will take control of Castle Rock, which is the actual supply source of the "Bad Guys". With the supply lines cut, the western flank of the enemy's units will be sitting ducks, allowing us to collect victory points as we pick them off. Of course, we must be careful to defend our own supply source, Breckenridge, and our supply routes.

The remainder of this tutorial will discuss the giving of orders to individual units. Since our opponent in this game is computer controlled, we will not be able to predict the actions and locations of opposing units. Consequently, we will not be providing specific orders for you to set or attempt to predict how the game will progress. Don't forget you can change the map window display options at any time from the **Map Window Menu**. For example, you could play the game with the control markers turned off so that the map is less cluttered.

The game automatically cycles through all units, but allows you to alter the order. The currently active unit is the blinking one. Selecting the **Next**

Unit control button will "skip over" the current unit and proceed to the next one. You can always go back to a skipped unit by pointing the cursor at it and clicking.

In the tutorial scenario, there are two cavalry units stacked just to the east of the city of Breckenridge. Click on this stack of units to select the topmost one. In the info box at the bottom right of the display, you will see the information for both units. If you want to activate the bottom unit, click again on the stack — this will cycle the stack so that the bottom unit becomes the active unit. (**Empire II** allows at most 2 units of the same force to occupy a single location at the same time.)

To order one of the cavalry units to move towards the city of Castle Rock, first, select the **Move To** button in the **Toolbar Window**. The cursor will change to the move arrow when positioned in the map window, except when it is over locations that are not valid destinations. Move the cursor to a location to the east of the selected unit, along the road, and hold down the mouse button. As you move the mouse, a series of arrows will appear calculating the "best" path for movement. If the distance you are moving is long enough, the color of the arrows changes from red to pale blue. This is an indication of projected movement that will occur in the current turn (red) and the steps that will be carried over to subsequent turns (blue). Orders can span turns — they will be remembered until they are completed, or until you order them to be cleared.

Release the mouse button when the path is long enough to go approximately two steps beyond the current turn, running along the road to the east. We have now set a "Move To" order for this unit. As the mouse button was released, the order was set and executed. Click on the unit you just moved. The remainder of the order we just set is displayed again. Note that when units have used all of their movement allowance they are displayed with a darker color.

Select the **Clear All Orders** button. This will discard all orders queued for the currently selected unit.

Now manually select the 256th Artillery unit, which is located in sector K-10. Note that the **Move To** button in the **Tool Window** is now ghosted, and that the button description in the message area shows "Move To (N/A)" when the cursor is placed over the **Move To** button. The Move To order is not available for this unit at this time. The attributes of artillery units can be found in the **Technology Report** (scroll down about two-thirds of the way through the report) — note that most terrain types are set to "Place-Only" (Pl) for this unit type. This means that the unit cannot move into these terrain types (but can be placed there when setting up the scenario or received as reinforcements). For the purposes of this tutorial, we will treat these units as unmoveable.

However, these artillery units are far from useless. This brings us to the topic of aggressive actions available in **Empire II**. There are two types of attacking actions available — Combat and Ranged Fire. Combat is a direct, confrontational act between units and will occur when a unit attempts to move into a location currently occupied by one or more units of the opposing side. Combat results in the damage (loss of strength) to the units involved — both attacker and defender. If enough damage is taken for a particular unit, that unit will be killed. Combat may also result in the defending unit's retreat from the occupied position.

Ranged Fire is a more indirect aggressive action. It does not require attempted movement nor close proximity of the involved units. This action takes place over a distance dependent on parameters defined for the firing unit type. Ranged Fire will not result in any damage to the attacking unit, nor will it result in a target unit's retreat from its occupied position but may cause damage to the defending unit. Not all units have ranged fire capability.

The astute player will now realize that we do have a use for these artillery units — Ranged Fire. Looking again at the **Technology Report**, note

that artillery units have a **Ranged Fire Range** of 8, and a **Ranged Fire Cost** of 1 movement point. Therefore, with a **Speed** of 2 movement points per turn, we know each artillery unit can fire twice per turn — as long as there is an enemy unit within 8 spaces of the artillery's location.

Back to our game, you should still have the 256th Artillery unit as the current (blinking) unit — if not, select that unit (located at sector K-10.) Now, select the **Ranged Fire** button in the **Tool Window** (or use the keyboard shortcut by pressing the letter "r"). When the cursor moves to a valid location it changes to the **Ranged Fire** cursor (cross-hairs). It will change to the universal "No" symbol when the cursor moves to an invalid location (eg., a target farther away than our range of 8). Also, the game does allow you to target one of your own units, although this is probably not a good idea. Select the location to target by clicking on it, and the order is then executed. The results will be shown in the **Info Box** at the bottom of the **Tool Window**.

As noted above, this shot constituted 1/2 of our movement points for this turn. This allows us to fire another shot this turn. Select another (or the same) target, and fire again.

Before we leave you to experiment with this tutorial scenario, let's look at a couple of alternative methods of setting orders for a unit. We have already seen two methods: selecting the appropriate order in the **Tool Window**, and using the keyboard hot-key, as we did above to select **Ranged Fire**. Select the remaining cavalry unit in sector C-5 (just east of Breckenridge). Point the cursor at the unit, press and hold down the mouse button, and drag. The game system assumes a click-and-drag operation on a unit as an implied move to order, and will remain in this mode until you release the mouse button. This action sets the order and executes it. Finally, select the 248th Cavalry (the unit in the City of

Breckenridge). Now, bring up the Object menu for this unit, point the cursor at the unit and Rclick (-click). You will see the available orders in the pop-up menu. Selecting an order here is the equivalent to selecting the appropriate button in the **Tool Window**.

If you start to move a unit with the click-and-drag method then realize you don't want to, with the mouse button still held down place the cursor over the unit and release the mouse button. The order was never recorded as being set.

This brings us to the end of our short tutorial, and the beginning of your adventure. Remember your objectives as you move your units around. To initiate combat against your opponents, attempt to move a unit into a location held by an opposing unit. Look at the various reports available from the pull-down menus. Explore the online help system. Then come back to this manual for an in-depth discussion of the game rules and variations. Good luck!

Overview

Because **Empire II** is so flexible, individual games will vary to a large degree based on the scenario being played. Consequently, it is important to understand the parameters of any given scenario.

A scenario consists of three basic elements:

The map defines the geographic area in which the battle will occur.

Technology defines:

- The types of units available and their attributes.
- Which game rules (sighting, supply, etc.) apply.
- How much damage occurs in combat.

The Scenario defines:

- The units available to each force.
- Victory point locations.
- Supply locations.
- Areas of initial control and the victory conditions for the scenario.

While battle strategy in **Empire II** can get quite complex, the individual actions of the units themselves can be explained as four basic options. Units can move from one location to another; they can engage in combat; they can perform Ranged Fire; and units can change modes.

Action Costs

Each basic action "costs" a given amount of movement points. The amount of movement points a unit has available each turn is listed in the **Technology Report**, under Speed. Since each turn represents the passage of a quantity of time (also specified in the **Technology Report** as Turn Length), the movement points can and should be considered to be further subdivisions of that block of time. For example, if a given scenario is set up with turns of "1 hour", and a unit type has a speed of 10, a movement step that costs 3 movement points implies that the move will

(symbolically) take 3/10's of a turn, or approximately 18 minutes. This conceptualization will be more important when we discuss the **Parallel** game sequencing option, where actions occur directly in a time-relative fashion.

Movement

One of the key actions taken by units is to move from one location to another. The game will calculate the least expensive path to take to get from a location to the destination. However, you can control the path taken more precisely by breaking down the movement order(s) into smaller segments. The actual movement costs calculated are a series of single steps, with each step always being from the current location to one of 8 adjacent locations. Costs are based on the terrain contained in the location being entered and the condition of the moving unit. Certain locations may not be entered, either because of the underlying terrain or because of the unit(s) currently occupying the location (specified in the **Technology Report**). Maneuvering a battleship over a mountain can be difficult!

At most, two units belonging to the same force may occupy a location at the same time. Units from different forces may never occupy the same location concurrently. If a location already contains two units from a force, a third unit from the same force may not enter. It must either move around the blocked location or wait until one or both of the blocking units move. If the location is occupied by a unit from an allied force, the moving unit must move around the location. If the blocking unit is an enemy unit, the moving unit will either move around the location, attack and possibly destroy the enemy unit or wait until the blocking unit moves.

Combat

If a unit attempts to move into the location occupied by one or more enemy units, combat will occur. There is one exception to this rule: If the moving unit is not permitted to enter the location due to the underlying terrain type, it will also not be permitted to attack the occupying unit (specified in the **Technology Report**). Combat will affect the unit(s) currently occupying that location (defender) and the unit initiating the combat (attacker). The effect is a reduction in strength for the affected units — the actual amount of damage inflicted is the result of a complex calculation. This will be discussed in detail in a later section of this manual. It will suffice at this point to explain that if a unit's strength falls below a

certain point, the unit could become demoralized (reducing its options, capabilities and effectiveness). If the strength becomes diminished below another point, the unit is considered "killed", ceasing to exist for the rest of the game.

Another possible result of combat is that the defending unit(s) may be forced to retreat from their occupied location. The attacking unit will not enter the attacked location as a result of combat, but may be able to advance to a location where the opposing forces have retreated or been destroyed if it has sufficient movement left.

Ranged Fire

Ranged Fire is the process of doing damage to an enemy unit at a distance. The Ranged Fire capabilities are specified in the Unit Type Details definitions in the **Technology Report**. Some unit types have the ability to perform Ranged Fire, while others do not. The type of Ranged Fire can vary — it could be artillery for one unit type and missiles for another, or rocks and arrows depending on the era. Unit types can also differ in the range (maximum distance) they can target.

Ranged Fire can result in damage to a targeted unit — the amount of damage inflicted is, again, based on a complex calculation involving a number of factors to be discussed later. Another possible result could be the attrition of Ranged Fire strength of the firing unit (analogous to a reduction in available ammunition or losses due to mechanical attrition).

Now that you have a basic understanding of the game, a more detailed discussion of the map, units, rules, events and orders can be investigated.

The Map

The map in **Empire II** is a two-dimensional grid of rectangular locations. The map size can vary from 10 to 100 locations both horizontally and vertically. The edges of the map do not connect (wrap). Each location is assigned a specific terrain type. In addition, locations can have two different network systems — roads and rivers/streams. The parameters defined for the unit types, as found in the **Technology Report**, will show the unit abilities, the terrain types, and movement costs. The result of Combat and Ranged Fire are also located here.

The game has one special location type, EDGE, that is different from the other location types. This type is limited to the outer border of the map, and serves as the boundary of the map area. Units may not enter EDGE locations, nor can these locations contain roads or rivers. They cannot be controlled.

Terrain Types

The game supports twelve different terrain types, as follows:


• Deep Sea


• Shallow Sea


• City


• Village


• Clear


• Forest

• Broken Ground


• Mountain


• Desert


• Arctic


• Swamp


• Beach


Most of the terrain types are defined relative to the unit type attributes found in the **Technology Report**. The game makes a distinction between land types and sea types: sea terrain includes both Deep Sea and Shallow Sea. All other terrain types are considered land. This distinction is only used in a couple of places in the game rules.

Locations containing sea terrain types are never controlled by a force, unlike land terrain types. This affects the victory points awarded for controlled locations (refer to the **Victory Report**). It also affects the supplied or out-of-supply status of units (see the Supply Rules of the **Technology Report**).

Networks



Networks are roads and rivers placed on the top of other terrain. As specified in the **Technology Report**, networks serve two purposes — they are either transportation networks allowing units to move faster than they might otherwise or they act as barriers restricting (slowing) or

prohibiting movement.

Networks can connect to the same network type (i.e. roads or rivers) in either horizontal or vertical directions. However, they cannot connect in diagonal directions. In order to fully benefit from the transportation network, movement should be maintained as much as possible on the road network type. When used as a barrier, the effect occurs whether moving along the network or moving into the network.

River networks actually include two different types — rivers and streams. This allows the scenario designer to differentiate between deep water (river) and shallow water (stream). A land unit may be able to cross a stream but not a river, while a water unit may be able to move along a river, but not a stream.

In addition, networks may have an affect on combat results, as defined in the Unit Type Details definitions in the **Technology Report**.

City and Village locations are assumed to connect to any roads in vertical or horizontal locations — they do not have to be given a Road overlay, unlike other terrain types.

Map Labels

The scenario designer can place text labels on the map. Each label is associated with a specific location, and at the discretion of the designer, will appear either to the left or right of the location. These labels are useful to provide information about map locations to the player.

Unit Actions

Unit Movement

The movement of units needs to be examined from two perspectives. We will first cover the costs involved in moving a unit from one location to another. After this, the effects of the movement will be discussed.

Movement Cost

Unit movement always occurs as a series of one or more single steps, from the current location to an adjacent location. As indicated in the illustration above, a unit occupying the center of the illustration has exactly eight possible locations into which it can move — those labeled N, NE, E, SE, S, SW, W, and NW. A longer movement operation is evaluated as a series of single-step moves.

NW	N	NE
W	Unit	E
SW	S	SE

In a rectangular grid system such as this, the distance covered by a diagonal move (NE, SE, SW, or NW in the diagram) is longer than a move in the pure horizontal (E/W) or vertical (N/S) direction. The game system compensates for this disparity by treating a diagonal movement as 1.5 times as much as a horizontal or vertical movement. Thus, if a move in the east direction would cost 2 movement points, an equivalent move in the northeast direction would cost 3 movement points.

At any point in time, a unit will occupy one and only one location on the map. While movement can span turns, the unit is considered to be occupying the original location until it completes the move to the adjacent location. Any movement points remaining at the end of a turn, if insufficient to complete the next adjacent move, are carried over to the following turn. This occurs if and only if the unit is allowed to complete the move step initiated in the previous turn. As an example, if the unit had two movement points remaining and was instructed to move in the NE direction (at a cost of three movement points), the unit ends its turn in the current location and the two remaining points are carried over until the next turn. If the unit's orders are changed in the interim, then those two points will be lost. However, if it is allowed to continue with the current orders, the first step taken in the next turn will cost only one point (the two carried-over points plus the one additional point, for the total cost of three).

Two units of the same force can be stacked in the same location. However, stacking more than two units in a location is not permitted. Therefore, a location currently containing two units will block entry by a third unit of the same force, even if the third unit's final destination is another location. The moving unit will either have to move around the blockage or wait until it clears (due to the movement of at least one of the blocking units).

In the simplest case, the cost of movement is determined by the unit type's movement cost for the terrain type into which the move is attempted. The movement cost will either be a number of movement points or will not permit entry of this unit type into this terrain type. This is defined in the **Technology Report**. There are complications, however, to this simple calculation.

One consideration is the presence of network (roads/rivers) overlays in the destination location. As we have seen, the network attributes may be defined as either barriers, transportation networks, or no effect. These network effects are separately defined for each unit type in the **Technology Report**.

Barrier networks will either slow or block movement. If the effect is defined to be a slowing effect, then the barrier's value (in movement points) is added to the cost of moving into the underlying terrain type. If the barrier blocks the moving unit, then the movement will not be permitted.

Transportation networks operate differently. In order for the movement to be considered under the transportation rule, the current location and the target (adjacent) location must contain the same overlay (road or river) and must be connected. Remember that transportation networks can only connect in horizontal and vertical directions. If transportation rules do not apply, then the overlay in the target location is ignored. When they do apply, the movement cost will be the lower of the network cost for the unit's type or the cost to enter the underlying terrain.

Some unit type's movement costs will not be affected by a network (as defined in the **Technology Report**). Even when a network is present, movement costs will be based solely on the underlying terrain type.

If a location has both types of network overlays (road and river), both are considered. Again, the lower of the network cost would apply. Therefore, if a river was defined as a barrier to land units and the road was defined as a transportation network, the transportation network cost would probably apply.

If the move being evaluated is a diagonal move, the calculated cost is now multiplied by a factor of 1.5.

Movement cost is modified if any unit type has their Zone of Control (ZOC) enabled in the **Technology Report**. Locations adjacent to that unit

type are considered to be within the Zone of Control of that unit. If the movement is into or from a location within the Zone of Control of an enemy unit, the movement cost is doubled.

The ZOC adjustment is further modified if the Morale Rule is also enabled in the **Technology Report**. If the moving unit is currently demoralized, then movement into the ZOC of an enemy unit is blocked, rather than being slowed.

Additional considerations are performed, based on the enabling of two rule options in the **Technology Report**. If either the Supply Rule is in effect and the moving unit is currently out-of-supply or the Morale Rule is in effect and the moving unit is demoralized, the calculated movement cost for the step is doubled.

Movement Effects

As a unit moves into a land-based location, it is marked as being controlled by the unit's force. If the unit type has a ZOC, then (land-based) locations adjacent to the location occupied may also be set as being controlled by the force. The meaning of this control will vary, depending on which rules are in effect.

If the Supply Rule is active, then controlled locations are used for calculating supply paths to units on the same side.

Locations controlled may also be a factor in the victory points calculation, as specified in the **Victory Report**. If this is the case, the points are adjusted and awarded as units move and location control changes.

If the Sighting Rule is active, every time a unit moves, two tests are performed. The game determines if its sighted status changes relative to any or all units of the opposite side. The game then tests to determine if the sighted status of any opposing unit changes. Note that a unit's visibility status will only increase during unit movement. Units whose visibility is reduced as a result of movement will only have this status changed at the beginning of a side's turn.

Combat

Combat occurs when one unit tries to move into the location of another. The moving unit is considered the attacker while the non-moving unit(s) is considered the defender. There will only be one attacking unit at a time although there may be up to two defending units (since two units of the same force may occupy a location).

When combat occurs, the attacker and defender will each have an opportunity to fire upon and damage the opposing unit(s). The basic damage a unit will inflict on an opponent is the unit's strength times the Combat Damage Effectiveness value for the technology. For example, if a unit has a strength of 10 and the technology Combat Damage Effectiveness value is 50 (percent), it will do a basic damage on the opposing unit of 5 strength points (10 x 50%).

If there is more than one defender, the attacker's basic damage on the defender will be split equally between both units.

This basic damage is modified by a number of other factors. These factors are calculated separately for each defender against the attacker and the attacker is evaluated against each defender. They are described as follows:

- Handicap Modifier
- Force Combat Modifier
- Opposing Unit Combat Modifier
- Defending Terrain Combat Modifier
- Defending River Combat Modifier
- Defending Movement Mode Modifier
- Defender Out of Supply/Demoralized Modifier
- Weather Combat Modifier
- Attacker Fatigued Modifier
- Defender Fatigued Modifier
- Combat Variance Modifier

Modifiers normally have a value of -10 through +10. A value of -1 would indicate a 10% reduction in damage while a value of +1 would indicate a 10% increase. All modifiers are weighed together and then applied to the basic damage. For example, if there was a -2 and -3 modifier to our base damage of 5, the weighted modifier would be -4.4 with a resulting damage of 3. Note that all final damages are rounded to the nearest value. Walking through the math calculation above, we see that the -2 value corresponds to a 20% reduction, or 80% result, while the -3 value is a 70% result. Combining these through multiplication, we have a 56% value

(or a -4.4 value). Note that a modifier of -10 will result in no damage under all circumstances.

Individual descriptions of each modifier follows:

Handicap Modifier

In order to balance out unequal players, each commander may be assigned a handicap. This handicap modifies the effectiveness of fire for every unit under his command. A value of 0 means no handicap. Negative values would mean the player will attack less effectively than his opponents. Note that a value of -10 means he cannot attack at all or do damage and would have to win through maneuver only. A commander may have a positive handicap giving an advantage over other players.

Force Combat Modifier

Different armies vary in their ability to do battle. This is reflected in their morale, their training and the general state of their equipment. For example, an American division in the Gulf War was much more effective than the equivalent Iraqi division.

As such, each force may have assigned in the **Technology Report** a modifier to reflect this. Efficiency values between -10 thorough +10 are possible with 0 being the normal default (no modification).

Opposing Unit Combat Modifier

Different types of units vary in their effectiveness against different types of opposing units. For example, an anti-tank unit is much more effective against armor than it is against infantry. In addition, some unit types just cannot do damage to other unit types. Again, an example, a submarine probably could not hurt an airplane.

Each unit type has a modifier assigned to it with respect to every other unit type. This modifier may be NO (may not attack or do damage) or -9 to +10. They are set in the **Technology Editor**.

Defender Terrain Combat Modifier

Different types of units normally vary in their effectiveness when attacking into different types of terrain. In addition, there are other types of terrain into which a unit could not attack. For example, an armored unit would be very effective attacking a unit in clear terrain. However, it would be less effective attacking a unit in a city, and would find it impossible to attack a unit in the ocean.

This modifier only applies to the attacker and is based on the terrain the defender occupies. Each attacking unit type has a modifier assigned to it with respect to each terrain type. This modifier may be NO (may not attack or do damage) or -9 to +10. They are set in the **Technology Editor**.

Defender River Combat Modifier

Different types of units may vary in their effectiveness when attacking across a river or stream. Some units just might not be able to attack across a river.

This modifier only applies to the attacker and is based on whether the defender occupies a river location, not the attacker. Each attacking unit type has a modifier assigned to it with respect to each river type. This modifier may be NO (may not attack or do damage) or -9 to +10. They are set in the **Technology Editor**.

Defender Movement Mode Modifier

Certain unit types may go into an entrenched or transit mode. When in entrenched, it is assumed the defender has had time to prepare defensive positions and will be more effective. Therefore, when attacked, the attacker will normally do less than normal damage while in return the entrenched unit will do more than normal damage.

The opposite is normally true for transit mode. When in transit, the unit is assumed to be totally unprepared for combat. When attacked, the unit in transit mode will suffer more than normal damage and will inflict less than normal damage.

There is an entrenched modifier and transit modifier assigned in the **Technology Editor**. Values of 1 to 10 are possible for entrenched. Values of -10 to 0 are possible for transit. Again, increasingly positive values are helpful to entrenched units, and increasingly negative values are harmful to units in transit mode.

Weather Combat Modifier

Weather can modify a unit's ability to engage in combat. For example, rain may make it much more difficult to engage in an attack.

Possible modifiers are -10 to +10 and are assigned in the weather event specified in the **Scenario Editor**. The modifiers may be different for the attacker and defender.

Attacker and Defender Fatigued Modifiers

As units engage in combat (defending or attacking) and suffer Ranged Fire, they become fatigued and are much more vulnerable to enemy attacks. This modifier increases based on the number of enemies a unit has engaged in battle through the game. However, the modifier may decrease at the start of each turn, representing the recovery from this fatigue.

Possible modifiers are 0 to -10 and are handled automatically by the game. They are applied negatively when accessing a unit's damage to an opponent and positively when assessing a unit's damage by an opponent.

Combat Variance Modifier

When entering battle, no matter how good one's plans are, random events change the final results. This modifier is based on the variance value specified in the **Technology Editor**. This value may be between 0 and 10. The resulting modifier is a number randomly selected between -[variance] to +[variance]. Note that a variance of 0 removes all random elements to combat and makes it deterministic.

Effects of Combat

Once the final damage is calculated for each unit, the unit will have its current strength reduced by that amount. If the strength is reduced near or below the unit's Morale Break Point and the Morale Rule is in effect, the unit may be demoralized. This is actually a function of both combat variance and the amount below the break point. If the strength is reduced to the unit Kill Break Point, the unit is destroyed and removed from the game. Both the Morale Break Point and the Kill Break Point are defined separately for each unit type in the **Technology Report**.

Defending units may retreat as a result of combat. If a unit is demoralized it will always retreat. Upon retreat, the unit will move into an adjacent location, vacating the location that was the target of the combat. If the retreating unit was in Entrenched mode, it will revert to Standard mode upon retreat.

The attacking unit will not automatically move into the attacked location, however. This will require an extra move step to accomplish (assuming the location is now free of enemy units).

Cost of Combat

The cost (in movement points) for the attacker to initiate combat is the same as the movement cost of moving into the target location. There is no cost assessed to the defending unit(s), even if a retreat is forced.

Ranged Fire

Ranged Fire-capable units have a separate Ranged Fire Strength value. This is the strength used in calculating damage. However, the formula is a little more complex than with normal combat.

First, the computer checks to see if the Ranged Fire attack actually hits its target. The chance of hitting a target is the Ranged Fire Accuracy for the unit type. If a unit misses its target and there is a second unit in the target square, it may hit the second target. As a result, you have a greater chance of hitting something if a location has two units in it.

Second, the unit's Ranged Fire Strength is modified by the unit's Combat Strength relative to its Maximum Combat Strength. For example if a unit's Ranged Fire Strength was 10, Maximum Combat Strength 25, and its current Combat Strength is 20, the effective Ranged Fire Strength is 8 (10 x 20 / 25).

From this point, actual damage is calculated like combat. The effective Ranged Fire Strength is multiplied by the Combat Damage Effectiveness value to get the basic damage. The basic damage is modified by the following modifiers to get the final damage:

- Handicap Modifier
- Force Modifier
- Target Unit Range Fire Modifier
- Target Terrain Range Fire Modifier
- Target River Range Fire Modifier
- Target Movement Mode Modifier
- Target Out of Supply/Demoralized Modifier
- Weather Ranged Fire Modifier
- Firing Unit Fatigued Modifier

- Target Fatigued Modifier
- Variance Modifier

These modifiers are the same as the combat modifiers except that the opposing unit, defending terrain, defending river and weather modifiers are separately defined in the **Technology Editor** for Ranged Fire.

Damage is then inflicted on the unit as in Combat except that a unit will not retreat due to Ranged Fire.

Mode Change

Units can be in one of three modes: Standard, Transit, and Entrenched. Standard mode is always available for all unit types. The other two modes are specialized states that may or may not be available for a given type of unit — they are enabled or disabled in the **Technology Editor** definitions for the unit types.

Transit mode is designed to allow for rapid deployment of units over a distance. If available, separate parameters are specified for a unit's Speed (movement points per turn), and the cost for moving into the various terrain types. It is possible for a unit in Transit mode to be able to enter terrain types into which it cannot move in Standard mode. For example, a unit may not normally be able to cross bodies of water, but could be enabled in Transit mode. This added mobility does have its price, however. Units in Transit mode are more vulnerable to damage from attack via both Combat and Ranged Fire. They also are not permitted to initiate Combat, nor may they perform Ranged Fire.

A unit in Transit mode may switch to Standard mode. However, it cannot switch directly to Entrenched mode.

Entrenched mode allows a unit to bolster its defensive capabilities (i.e., to fortify itself). Like Transit mode, it is available only to unit types that have the attribute enabled in the **Technology Editor**. When in Entrenched mode, a unit cannot move, nor can it engage an enemy unit in Combat (since this involves implied movement). Ranged Fire is allowed for an entrenched unit.

The advantage to units in Entrenched mode is that, when engaged in Combat by an enemy unit, their damage level is reduced. Also, the amount of damage inflicted by them is increased. When fired upon by Ranged Fire, entrenched units will receive less damage if hit. The amount of this advantage is defined in the **Technology Report**: the combat

Entrenchment Modifier applies to all units that are attacked (either via Combat or Ranged Fire) when in Entrenched mode.

If an entrenched unit is forced to retreat in combat, it is automatically switched back to Standard mode as a part of the retreat.

A unit that is currently entrenched is allowed to switch back to Standard mode. It may not switch to Transit mode, even if that mode is allowed for the unit's type.

The process of switching modes is a relatively expensive act — it costs a full turn's movement points to complete the mode switch. As with all orders, the action may span turns. Part of the action can occur during one turn (using whatever movement points remain for the turn). The balance of the cost will be assessed on the following turn. A unit attacked in the middle of a mode switch will be considered to be in the most vulnerable mode when assessing the results of the attack.

Rule Options

The **Technology Report** has three rule options that have a significant effect on the game play: Supply, Morale and Sighting. Each of these options can be set either ON (rule is in effect) or OFF (the rule does not apply). These are included as a part of the **Technology Report** because they were factors that applied to certain technological eras more than others. We will examine the specifics of these rules and their effects on the processing of events during the play of the game.

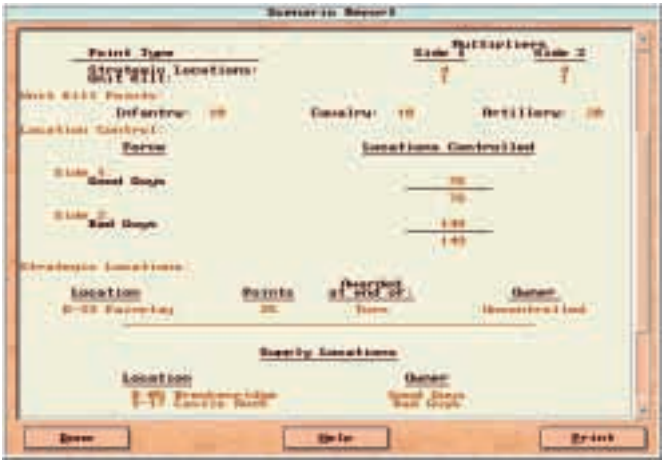
Supply Rule

In many military campaigns, it was crucial for commanders to be able to maintain lines of supply for the troops on the front lines. **Empire II**'s Supply Rule attempts to address these concerns.

The Supply Rule differentiates between units that are considered to be supplied and those that are out-of-supply. Units that are out-of-supply are disadvantaged in a number of ways. The supplied attribute is determined by two factors: Supply Sources and Supply Routes.

Supply Sources exist in two varieties: Supply Locations and units whose types are defined to be supply sources. Supply Locations are defined in the **Scenario Report**, and designate specific locations on the map as being capable of providing supply to units on either side. In order for any of

these supply locations to actually function as a supply source to units of a side, the location needs to be controlled by one force on that side.



Supply units can always provide supply to units on their side, unless they are killed or demoralized (Refer to the Morale Rule concerning the demoralized status).

Supply Routes are the routes in which supplies can get from the Supply Sources to individual units. Rules for Supply Routes are different from those for movement paths. Supply Routes only make a distinction between Land and Sea terrain classes. A Supply Route may cross both land and sea. When crossing land-based locations, the route can only cross locations controlled by a force for the side being considered. Since the concept of control only applies to land-based locations, the crossing rule for sea-based locations is different. In order for a supply route to cross a sea-based location, the location cannot be occupied by a unit of the opposite side. Also, the location may not be adjacent to a location occupied by an enemy unit, unless the adjacent location is itself occupied by an allied unit.

If a Supply Route exists between a Supply Source and a unit, that unit is supplied, otherwise, it is out-of-supply, and its capabilities are reduced:

- Ranged Fire is not permitted by units out-of-supply.
- Combat may not be initiated by such units.
- When defending in an enemy-initiated combat, out-of-supply

units are more vulnerable to receiving damage and less likely to inflict damage than normal.

- When moving, such units move half as fast (movement costs are doubled).
- Out-of-supply units may not enter locations within the Zone-of-Control of an enemy unit.
- These units will never claim a Zone-of-Control.
- Units out-of-supply may not change modes.
- Units that are in Entrenched mode automatically revert to Standard mode upon loss of supply status.
- Out-of-supply units are not eligible for Replacements (refer to the Time-Based Events discussion that follows).

Note that a unit's status regarding supply is only evaluated at the beginning of a turn for that unit's side. A unit can never change such status in the middle of a turn, regardless of where it may move.

Morale Rule

Battle outcome throughout history has been as dependent on the human factor as much as the hardware factor, particularly when less-advanced technological factors were involved. While the troops in World War II had things like the USO available, **Empire II** includes no dancing girls or Bob Hope.

However, the morale of the units can be a factor if this rule is enabled. Morale is based on a unit's combat strength — as a unit becomes weaker, its chances of being demoralized become greater. For each unit type defined in the **Technology Report**, a Morale Break Point is specified as a value somewhere between the type's Kill Break Point and it's Maximum Combat Strength. Once a unit's combat strength value drops near the Morale Break Point, the unit may become demoralized. This determination is made based on a probabilistic function of the Combat Variance defined for the **Technology Report**. In a deterministic scenario (one in which the variance is set to zero), a unit would be demoralized when its strength reached the Morale Break Point.

Morale is evaluated whenever damage is inflicted as a result of combat, for both the attacking unit and the defending unit(s). It is also evaluated when damage is received during Ranged Fire. In addition, morale is evalu-

ated for all demoralized units at the beginning of a turn, since there is a chance that, due to the probabilities implied by the variance value, a unit may regain their morale.

Demoralized units are unable to initiate Combat or Ranged Fire. In fact, these units may not receive and execute any orders while demoralized. They will automatically seek the nearest source of supply and attempt to move towards that source or away from enemy units.

Units are more vulnerable to damage from combat and ranged fire when demoralized. They also move half as fast as they would normally move.

Sighting Rule

The game system tracks the visibility of all units. There are three possible values for a unit's visibility: unsighted, detected, and identified. This visibility is always a state relative to the unit's enemies. unsighted units are not seen by the enemy. If a unit is detected, enemy units will see that a unit exists in the unit's location, but will not be able to determine the type of unit, the mode of the unit, nor the unit's relative strength. When identified, the unit's type, strength, and mode are known to the enemy.

A unit that is detected by any unit on a side is considered detected to all units on that side. Similarly, a unit identified by any unit on a side is identified to all units on the side.

If the Sighting Rule is not in effect during a game, all units are considered to be identified at all times by all forces.

When this rule is enabled, there are two other parameters specified in the **Technology Editor** that determine how a unit's visibility is determined: the Sighting Range for Detection and the Sighting Range for Identification. These ranges are specified as a linear distance expressed in "location units" — the distance from one location to a horizontally or vertically-adjacent location. Remember that the distance between locations in the diagonal direction is equal to 1.5 times the horizontal or vertical distance.

Therefore, if a unit's distance from an enemy unit is less than or equal to the Detection Range, the unit would be detected by that enemy unit. Identified status would be similarly determined. However, there are a number of modifiers that apply to this simplified calculation.

The type of unit doing the sighting and the type of unit being sighted can modify the effective ranges for detection and identification. For each unit type defined in the **Technology Report**, a sighting modifier is specified for each possible unit type. This modifier value can vary from N0 (no detection) or -9 up to +100, and represents a modifier in steps of 10 percent that adjusts the sighting ranges when looking at the specific unit type being sighted. A value of N0 is a reduction of 100%, implying that the sighting unit will never be able to detect or identify the target unit. A value of +10 is an increase of 100%, indicating that this unit will be able to detect or identify the target unit at twice the normal range. You will note that the highest modifier, +100, is equivalent to a 1000% increase — a factor of 10 times the standard sighting ranges. The game will treat this value as a special value, indicating an all-seeing attribute regarding this specific target unit type.

The current weather conditions can reduce the defined effective sighting ranges. (Refer to the discussion of Time-Based Events that follow for details concerning weather events.) The weather's sighting effect is a value between -10 and +10, representing percentages (in steps of 10) of the full sighting range permitted for sighting under the current conditions. A weather sighting effect of -2 implies sighting ranges of 80 percent of the values defined for detection and identification. A weather sighting effect of +2 implies sighting ranges of 120 percent.

Finally, a unit's vulnerability in being sighted by an enemy is affected by its activity during the previous two turns. A unit is considered active if it moves, initiates or defends in combat, fires Ranged Fire, or begins a mode-change operation. If a unit has not been active in the previous two turns, the sighting ranges (both detection and identification) are reduced by a factor of 20 percent.

Visibility status is evaluated at two distinct points during the game. First, at the beginning of a side's turn, all units are evaluated, both in terms of enemy units' sighting of them and in terms of their sighting of enemy units. Second, as units move during the game, the units they are able to see and the units able to see them are evaluated. Note that once a unit is visible, it remains visible until the next side's turn.

Time-Based Events

The Scenario Report may have a number of events defined during the course of the scenario, each specified to occur on a specific turn or point in time. The game system supports three distinct types of such events: Weather, Replacements, and Reinforcements.

Weather

Weather conditions can have a major impact on the outcome of a battle. **Empire II** supports changes in these conditions via Weather Events, which define change in current conditions that are affected at the beginning of the specified turn. Types of weather events include:

- Day
- Night
- Fog
- Rain
- Snow
- Storm
- Other

The distinction between these types is relatively minor, and serve only two purposes. First, they provide guidelines to the scenario designer to suggest specific effects of the event. The actual effects are defined separately, as will be discussed here. Secondly, the type of weather event will affect the graphical display of the map.

Also specified by the Weather Event are the actual effects of the weather condition. Each of these effects is specified as a numeric value within the range of -10 to +10, with a value of 0 indicating "no effect". As discussed earlier, modifiers are expressed in steps of 10 percentage points, so a modifier of +2 is an increase of 20 percent. The following factors are specified:

- Attacker combat modifier specifies the advantage or disadvantage provided to the initiating unit in combat. A positive value increases the amount of damage that will be inflicted by an attacking unit during combat, while a negative value decreases the amount of damage inflicted.

- Defender combat modifier adjusts the damage inflicted by a unit defending in a combat during the current weather conditions. A positive value increases the amount of damage that will be inflicted by an defending unit during combat while a negative value decreases the amount of damage inflicted.

• The Ranged Fire modifier is used in the calculation of the results of Ranged Fire. The value specified is used to modify the amount of damage inflicted in a similar manner to that described under the combat modifiers.

• The Land Unit Movement modifier affects the movement speed (cost of movement) for unit types defined as Land Class units in their current mode. Unit types are defined as either Land Class or Sea Class. For units in Transit mode, a separate class designation is specified. A unit's current mode is used in determining which movement modifier applies. This modifier is used when allocating movement points to qualifying units at the beginning of a turn. A positive value will increase the allocated points per turn (allowing for faster movement) and a negative value reduces the allocated points.

• The Sea Unit Movement modifier is identical to the above parameter, except that it applies to unit types defined to the Sea Class units.

• The Sighting modifier is used when calculating the detection and identification ranges used in determining a unit's visibility when the Sighting Rule is in effect.

Weather events are processed at the beginning of a turn, and remain in effect until overridden by a later weather event.

Replacements

During the course of combat, units receive damage which diminishes their effectiveness in continued fighting. Replacements provide a means of rebuilding damaged units. As a "real world" example, an infantry squad may have ten soldiers, but because of combat results may be reduced to six active soldiers. The Replacement process would assign additional soldiers to this squad to bolster its capabilities.

The **Empire II** system doesn't specifically count soldiers in an infantry squad or tanks in an armored company. The Replacement event provides a means to bolster the combat strength of units whose strength level is lower than their maximum strength.

A single Replacement event specifies four items: the turn in which the Replacements are to occur, the force that is to receive the Replacements, the quantity of Replacement points (expressed as

Strength Points), and the type of Replacement points. Note that multiple Replacement events may be defined to occur in the same turn.

The type of points can be one of the following:

- General Replacement points can be given to any unit whose combat strength is below the maximum strength for the unit type.

- Land Replacement points can be given to any unit whose base class is "land" and whose combat strength is below the maximum strength for the unit type.

- Sea Replacement points can be given to any unit whose base class is "sea" and whose combat strength is below the maximum strength for the unit type.

- Ranged Fire Replacement points are a little different than the above types. These replacements are applied to a unit's Ranged Fire Strength instead of their Combat Strength. Eligible units must be Ranged Fire capable, and has a current Ranged Fire Strength less than the maximum RF strength for the unit type.

Units that are currently out-of-supply, are not eligible for replacements. Note that for unit class-based replacements, a unit type's base class is considered, whether or not the unit is in Standard or Transit mode.

Once the unit's eligibility for replacements are identified, the Replacement points to be allocated are distributed one at a time to the eligible units in a weighted random manner. Units whose strength is lower (relative to the corresponding maximum strength value) have a greater probability of receiving the Replacement points than less diminished units. Any excess Replacement points will be lost and not carried over to the next turn.

Replacement events are processed at the end of a side's turn for the forces on that side.

Reinforcements

As we have seen, Replacement events provide a means of rebuilding the strengths of existing units. In contrast, Reinforcement events provide a way to bring new units into the game at a particular point in time. Reinforcements are always specified in relation to a map location — this

location is used in two ways. First, the Reinforcement event has the option of specifying that the Reinforcements will only enter the game if the location specified is controlled by the side receiving the Reinforcement units (Note that like the Replacement events, the Reinforcement events are side-oriented.) Because this "control-required" option is not always set, it is possible that the Reinforcements can occur unconditionally, at the discretion of the scenario designer.

The Replacement events include a list of units that are to be placed for the force. When processed, the game system will automatically place these units into play in the closest position that is a legal location to the Replacement location.

If Reinforcement events are not eligible to be processed because they require (non-existing) control of a location, they are lost forever. They will not be considered for subsequent processing, should the control be gained.

Reinforcement events are processed at the beginning of a side's turn, for the forces on that side.

Game Sequencing

Empire II provides for two different methods in which a game can be played, differing only in the sequencing of the unit actions. The method to be used is established when starting a new game, and is available for any scenario and for any mix of player types (human or computer-controlled). These are referred to as the Sequential Ordering and the Parallel Ordering rules.

The Sequential system, as in **Empire Deluxe**, has one player complete a turn, followed by the next player completing a turn, and so on until all players have completed their moves for a turn (unlike **Empire Deluxe**, a player will never play multiple turns consecutively before the next player plays).

Under the Parallel rules, all commanders will set the orders for their units for a turn. After all orders are set, the orders for the turn are all executed in a simulated time-sequenced fashion. Note that the setting of orders can occur for all forces at the same time (i.e., in parallel), except when more than one commander requires the use of the local keyboard/mouse to give orders. Therefore, the computer-controlled players and any human commanders playing on a remotely-connected system

(modem or network) can be setting their orders at the same time as you are setting the orders for your units. The only need for player sequencing arises when there is more than one human commander playing the game on the same system.

This section of the manual will discuss the various steps that the game system cycles through during the course of play. Separate discussions of the order of processing that will occur under the two sets of ordering rules follow.

Sequential Ordering Rules

Beginning of Turn

The current turn, date and time are updated.

Any Weather Conditions set for this turn are processed, adjusting the weather-related modifiers accordingly.

Process Turn for Side 1:

All units on Side 1 have their Movement Points reset to the speed of their respective unit type definitions, modified by any applicable weather-related movement modifier.

All units have their visibility tested and set/reset accordingly.

For all forces on Side 1:

Supply status is checked and updated (if the Supply Rule is in effect).

If the Morale Rule is enabled, all demoralized units are re-evaluated and possibly rally (depending on the Combat Variance).

Any Reinforcement events scheduled for the force this turn are processed.

The reinforcement location is tested for control, if required by the event specification. If allowed, all units specified in the event are placed in the nearest legal location to the specified location.

The first force commander for Side 1 is given control of the game. This commander will be able to process any Side 1 forces that he/she controls (if multiple forces exist on Side 1).

Process Turn for Side 1, Commander 1:

Orders for units controlled by this commander are set, cleared, etc. They are also executed and the results evaluated.

This will continue until all units controlled by this commander have used up their movement points for the turn, or otherwise skipped by the commander for the turn.

The next force commander for the Side 1 force (if any) is then given control, to repeat the above steps, until all forces on Side 1 have processed their turn.

If any replacement points are defined for the Side 1 force this turn, they are allocated to the eligible units.

Process Turn for Side 2:

The above steps are repeated for the Side 2 forces.

End of Turn Processing:

The Endgame Conditions defined in the scenario are tested. If these conditions are met, the game is declared to be complete and the winner is determined (based solely on the Victory Points).

If the game is not over at this point, any Victory Points indicated to be awarded at End of Turn are added to the score. The game then cycles back to begin the next turn, repeating the sequence as outlined above, starting with the Beginning of Turn.

Parallel Ordering Rules

Beginning of Turn

The current turn, date and time are updated.

Any Weather Conditions set for this turn are processed, adjusting the weather-related modifiers accordingly.

All units have their Movement Points reset to the speed of their respective unit type definitions, modified by any applicable weather-related movement modifier.

All units have their visibility tested and set/reset accordingly.

For all forces:

Supply status is updated (if the Supply Rule is in effect).

If the Morale Rule is enabled, all demoralized units are re-evaluated and possibly rally (depending on the Combat Variance).

Any Reinforcement events scheduled for each force this turn are processed.

The reinforcement location are tested for control, if required by the event specification. If allowed, all units specified in the event are placed in the nearest legal locations to the specified locations.

All computer-controlled commanders and all commanders connected via a remote system are asked to process their respective forces. In addition, the first human commander on the local system is given control of the system's interface to do the same.

Process Turn Commander:

Orders for units controlled by this commander are set, cleared, etc. No orders are executed, however. The interface will automatically cycle from unit to unit, giving preference for those units whose orders are projected to result in left over movement points. The commander must specifically declare that they have completed setting the orders for the turn unless the Timed Turn Option is in effect.

If any other Commanders are waiting for access to the game's interface, they are, in turn summoned to complete their orders for the turn.

Once all Commanders have been permitted to set their orders, the Order Execution begins.

Order Execution:

Orders are evaluated and scheduled in steps. Many orders result in a unit trying to move from one location to another over a distance — this movement is broken down into distinct steps of movement into a series of adjacent locations. Each step of this movement is treated separately by the execution module. Other orders, such as Ranged Fire or a Mode-Change, cannot be broken down into smaller steps.

Costs (in movement points) are calculated for the next step to be executed by each unit. This cost is then translated into an elapsed time, based on the fractional portion of that cost relative to the speed of the unit type (i.e., the total movement points available to the unit in one full turn). Thus, a moving unit whose first step cost is 2 and whose total

turn speed is 8 would complete (execute) that movement step 1/4th of the way into the turn.

Once all of the first steps are scheduled, they are executed in this time-relative manner. As a unit's step is executed, the action ensues, and its next step is calculated and scheduled. Movement paths for movement over a distance are re-evaluated (for "best" path) at each step, as conditions can (and will) change as other units are moving.

One major difference regarding movement in Parallel mode (versus Sequential mode) should be noted. In Sequential mode, combat will only occur if a unit is ordered directly to move into a location occupied by an enemy unit — otherwise, the "best route" pathing will attempt to move around the blocked location. However, under the Parallel execution module, units will not attempt to move around locations occupied by enemy units unless they are not allowed to initiate combat. Two enemy units unintentially crossing paths will engage in battle.

Orders continue to be scheduled/executed in steps until the next step for all units is projected to be beyond the end of the current turn.

End of Turn Processing:

The Endgame Conditions defined in the scenario are tested. If these conditions are met, the game is declared to be complete and the winner is determined (based solely on the Victory Points).

If the game is not over at this point, any Victory Points indicated to be awarded at End of Turn are added to the score. The game then cycles back to begin the next turn, repeating the sequence as outlined above, starting with the Beginning of Turn.

Orders System

Units act based on the orders given to them. Orders can span turns. Orders, once given, will be retained until they are either executed or until cleared by the commander. Individual orders cannot be changed — they can only be cleared and re-issued.

As orders are executed, it is possible that a unit's movement points remaining are insufficient to complete the next step of the order in the current turn. Any remaining movement points are carried over into the next turn as a part of the order — if that order is cleared at the beginning of that next turn, those carried-over points are lost. Otherwise, if the order is allowed to continue, those carried points will be used to reduce the cost of the first step of execution.

The following orders are supported:

Move To

This option will allow you to order a unit to move to a particular location, using the calculated "least expensive" path. Note that this path will move around all blocked locations (with the single exception of locations blocked by enemy units in Parallel Order mode where combat is permitted). The best path to use is determined at the time the order is executed (although it is estimated at the time the order is given).

If the destination location contains one or more enemy units, combat will occur (unless the moving unit is prohibited from engaging any of those enemy units in combat).

This order will not be completed until the unit occupies the destination location, or is demoralized or killed. If the order cannot be completed because all available paths are blocked, one of two events will occur depending on whether the game is operating under the Sequential or Parallel ordering systems. In Sequential mode, the order will be held, allowing the commander to clear the order or wait until the blockage clears during the turn. The Parallel system doesn't allow for such manual intervention, however, the unit will automatically stall for 1 movement point's time interval and retry the order's execution.

The costs for this order are explained in the Unit Movement discussion in the Unit Actions section of the manual.

Pursue/Escort Unit

This order instructs a unit to move towards the location held by the specified unit. This target unit can either be an allied (friendly) unit or it can be an enemy unit.

If the target is an allied unit, the unit will follow the subsequent movement actions of the allied unit. This order is considered to be "never ending", although it will in fact be considered "complete" if the target unit is killed.

"Pursue" may only be specified for an enemy unit if that unit's visibility is identified. Assuming the ordered unit is allowed combat against the target, combat will occur as a result of the pursuit if the pursuing unit can reach the target's location before the targeted unit moves. This order is

considered to be "never ending", although it will in fact be considered "complete" if the target unit is killed or if the visibility of the target unit drops below the identified level.

The costs for this order are explained in the Unit Movement discussion in the Unit Actions section of the manual.

Patrol

This is another specialized movement order. "Patrol" allows a unit to move in a circular fashion in search of the enemy. Patrol supports up to 4 legs of movement (the corners or vertices), and will repeat limitlessly. This command never completes.

When being executed, each leg of the patrol is treated as a separate Move To order. When executed under the Sequential Ordering system, combat will only occur if one of the anchor points (vertices) is occupied by an enemy unit. Otherwise, the execution will attempt to move around a blocking enemy unit.

The costs for this order are explained in the Unit Movement discussion in the Unit Actions section of the manual.

Guard Location

This order tells the unit to do nothing, other than to defend itself if attacked. This is a permanent order which will remain until cleared by the commander. It will be retained from turn to turn until cleared. A unit with a Guard order will never be cycled to by the game system when prompting for orders, although it can be explicitly selected by the user. Just click on the guarding unit to change it's orders.

Executing this order uses up a unit's movement points for the turn.

Hold Position This Turn

This is similar to the Guard order, except that it automatically expires at the end of the turn. This order will cause the game system to no longer prompt the commander for orders for this unit again during the current turn. Note that this order is only available explicitly to a commander under the Sequential Ordering system. It is made available under the Parallel system by simply not giving a unit any more orders for a turn, even if all available movement points have not been accounted for.

Executing this order uses up a unit's remaining movement points for the turn.

Delay

This is an order that only has meaning under the Parallel Ordering system. This order instructs the unit to wait for the equivalent of 1 movement point's time value before attempting to execute the next order. It is completed after that time span has elapsed.

Executing this order costs 1 movement point.

Ranged Fire

This order is only available to unit types that have a Ranged Fire Type defined. Ranged Fire allows you to fire at the target specified. This target, depending on the defined RF Type, will either be a map location or a unit. In Sequential play, this target is always the map locators.

Note that distinction between targeting a unit or a location only has meaning during Parallel sequencing. In Parallel play, the player may choose to target either the map location or one of the units in that location. If a unit is targeted, the firing unit will try to fire on the location that the targeted unit is in at the time of firing.

The cost for this order is defined by the Ranged Fire Cost element for the unit type, as specified in the **Technology Report**.

Switch to Transit Mode

This order is only available to units that are in Standard mode and Transit mode is defined as available for the unit type. The unit must be in a map location in which entry is permitted in both modes. After completing this order, the unit will be in Transit mode when subsequent orders are executed.

Note that once this order has begun execution, the unit will be considered to be in Transit mode if and when it is attacked (via combat or ranged fire), even if the order has not yet completed.

This order has a cost of one full turn's movement points, based on the unit type's speed in Standard mode, as specified in the **Technology Report**.

Switch to Entrenched Mode

This order is only available to units that are in Standard mode and

Entrenched mode is defined as available for the unit type. After completing this order, the unit will be in Entrenched mode when subsequent orders are executed.

Note that the unit will be considered to be in Standard mode if and when it is attacked (via combat or ranged fire) until the order has been fully completed.

This order has a cost of one full turn's movement points, based on the unit type's speed in Standard mode, as specified in the **Technology Report**.

Switch to Standard Mode

This order is only available to units that are in either Transit or Entrenched modes. When switching from Transit mode, the unit must be in a map location in which entry is permitted in both modes. After completing this order, the unit will be in Standard mode when subsequent orders are executed.

The unit will be in the most vulnerable mode if attacked while this order is being executed. Switching from Transit mode, the unit will be considered to be in Transit mode until the order completes. Switching from Entrenched mode, the unit will be treated as if it were in Standard mode as soon as the execution has begun.

This order has a cost of one full turn's movement points, based on the unit type's speed in Standard mode, as specified in the **Technology Report**.

Main Screen

The first display that you see after the opening animation is the Main Screen.

Play Game Clicking on this button leads you through the process of actually setting up and playing the game.

Scenario Editor This button will take you into the **Scenario Editor**, in which you can create your own scenarios or modify existing ones.

Configuration This option allows you to specify various default values for both your system's hardware and your personal preferences regarding many of the game system's options.

Battle Record This button will take you to our **Records Room**, from which you can explore the statistics gathered through the course of your playing **Empire II**.

End Game This option will terminate the program, returning you to the operating system from which you started.

We will next discuss the various interface items related to setting up and playing a game.

Game Startup Options

Four button options are presented:

New Game Indicates that you want to start a new game. This game will either be a single-system game, a Play-by-Email game, or a multiple-system (modem or network) game where your system will be the master system. (Note that slave systems, which includes all other systems to be connected in the multiple-system game, will select the third option in this window, Setup from Master). Selecting this option will cause the standard **File Selector** to be presented, allowing you to select a scenario with which to play the game.

Reload Saved Game Allows you to restart a previously saved game, or to play your next turn in a Play-by-Email game.

Setup from Master Is the option to select if you are connecting your (slave) computer system to another (master) system via modem or

network, and the other system is setting up the game.

Cancel Allows you to return to the Main Screen instead of starting/restarting a game.

Game Setup Options

After selecting a scenario (New Game) or a saved game (Reload), you'll proceed to the **Game Setup Options**.

This window allows you to set (or change) the options under which the game you are (re)starting will be played. There are three separate sections to this window: **Commanders**, **Forces**, and **Game Play Options**.

The Commanders section of the window is used to define the players (both human and computer) that will be involved in the game. A minimum of two players are required to play any game — one commander for each side.

Since scenarios can be defined to include from two to four forces, the game can support a maximum of four players also. However, a given game cannot support more players than the forces defined for the scenario being played.

Note that a single commander is not allowed to control forces on opposite sides. If such a setup is desired, you must set up two separate Commander entries.

In the Commanders section, there are four items specified:

Cmdr Name – This specifies the name by which the commander will be known, and for whom history will be maintained. This only can be set for

human commanders — the computer-controlled commanders insist on naming themselves (for reasons unknown to the developers). If the commander type is set to Person, you can type in any name you wish up to 12 characters in length. Click on the appropriate Cmdr Name box if it is not already highlighted.

Cmdr Type – This determines whether the commander will be human (Person) or computer-controlled. In the latter case, you can also choose from three levels of opponent, from Easy to Difficult. Click on the appropriate Cmdr Type box for a drop-down menu to select the commander type. Click on your choice.

System – This specifies whether the commander will use your system on which to play the game, or will be using another system to which you will connect via either modem or NetBIOS Network, or with a Play-by-Email game. This choice is only available for Persons — computer-opponents will always play on your system.

Handicap – This permits you to give either an extra advantage or disadvantage to an individual commander. Handicaps will affect both Combat and Ranged Fire results. Values can range from –10 (maximum disadvantage) to +10 (maximum advantage), with a value of 0 (the default) indicating no advantage or disadvantage. Refer to the discussion of modifiers in the manual's discussion of Combat and Ranged Fire results calculations. Click on the arrow keys to change the handicap.

Forces – Here, you can see which commanders are assigned to the forces that exist in the scenario being played. A single commander can control one or more forces on the same side. Every force must have a commander.

In the **Game Play Options** section, the following may be specified:

Sequential or **Parallel** mode – This controls the sequencing of player turns during the game. Under Sequential play, a commander will give orders to his units and have those orders executed immediately. Once he has finished with all units for the turn, control will pass to the next commander who will then move his units.

In contrast, under the Parallel mode of play, the commander will give orders to his units, but those orders are **not** executed immediately. Once all commanders have been given the opportunity to set orders for their units, all orders will then execute in a time-sequenced fashion for the "time span" of the turn. Note that the giving of orders is separated from their execution, and more than one commander can be giving orders at

the same time, as long as they don't need to share the display or mouse/keyboard. This will speed up multiple-machine play considerably.

The next option, **Turn Time Limit**, allows you to set a maximum time that a human player can spend on a single turn. Values can range from 1 to 59 minutes — N/A indicates that the turns are not timed. This is the default.

If the **Logging Active** option is checked, then the game will keep track of all events (unit movement, combat, etc.) that occur for the entire game, allowing a playback of the full game at any point. You will also be able to save the log to a file for later viewing of the battle history. On restart of a saved game, this option can be turned off. However, once this option is off, it cannot be re-enabled during that game (Note that the game always keeps track of the events that occur in the previous turn, but doesn't retain the full history unless logging is activated). Logging will increase the size of saved games, which may be a factor in Play-by-Email games.

Autosave, if checked, causes the game to be automatically saved at the beginning of each Commander's turn, using a special filename of **AUTOSAVE.SVG** in your Save Game sub-directory. This option can also be turned on/off from within the game itself.

After selecting the **OK** button, the game can now begin.

Playing The Game

The display area during the game consists of a number of elements.

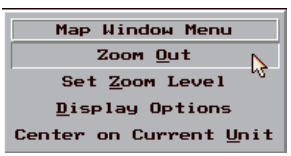
Along the top are the pull-down menus, which contain commands which control the whole game system. The right side of the display is dominated by the Toolbox, which contains a number of tools of both an informational and control nature. Along the bottom of the display area is the information bar, divided into a number of sections. This is used to display some quick information to you, in response to the location of the cursor.

The main portion of the display contains one or more map windows.

With multiple map windows opened, commands affect the active window, which is the window with the blue title bar. To change the active window, move the cursor to another map window and click the left button.

Your primary purpose while playing the game is to set orders for units. Commands to set orders affect the current unit, which is the unit icon that is blinking in the current map window. The tool buttons in the Toolbox assist you in setting these orders. Currently set orders are displayed in the Map Window as a series of images overlaying the map (arrows, etc.).

The interface also makes use of Object Menus to direct commands to specific objects. These menus are accessed by pointing the cursor to the object in question and Rclicking (-click for Mac). Object menus exist for controlled units and for the map windows. The map window's object menu is accessed by placing the cursor on the Primary Game Map title bar and Rclicking (-click for Mac).



Activating the object menu causes a drop-down menu list to appear, from which you can select the desired item by clicking on it.

Game Menu Help

The Menu Bar can be activated either with the keyboard or the mouse. With the keyboard, pressing and releasing the **ALT** key will activate the menu bar. You can then either press the appropriate highlighted letter key to select the desired item, or use the arrow keys to move the highlight, and press the **Enter** key to select. Pressing/releasing the **ALT** key again will deactivate the menu bar.

To active the menus with the mouse, move the cursor to the menu bar area, and click. You can either drag the cursor with the button down, releasing the button when the cursor is over the desired item, or release the button immediately, point to the desired item and click to select it. Pointing the cursor outside of the menu area and releasing will deactivate the menu bar without selecting anything.

The following Game Menu items are available:

File

Autosave – Allows the game to automatically save (to a file named **AUTOSAVE.SVG**), if checked. This menu item toggles this feature on or off.

Save Game – Saves the game, using the last used file name.

Save As – Prompts for a file name, and saves the game.

Resign Game – The opposing side is considered to have destroyed all your

units and captured all victory locations (based on the current turn). You get what points you currently have and that's it.

Exit Game – Terminates the game in progress and returns to the Main Screen.

Control

(Note: All these items will be remembered by the computer for future play sessions.)

Music – Toggles on or off the playing of the background music

Sound Effects – Toggles on or off the digital sound effects

Master Volume – Opens up a window, allowing you to turn the sound volume up or down.

Delays – Opens up a window, allowing you to speed up or slow down the display of unit movement and informational messages.

Show All Sightings – When selected, the map window will automatically scroll to display all newly-sighted units. When this option is not selected, only the newly-sighted units that are currently visible in the window will be shown.

Show All Movement – When selected the map window will automatically scroll to display all visible moving units. When this option is not selected, only the movement that occurs within the area shown in the Primary Map Window will be visible.

Show All Combat – Display all combat and ranged fire. When not selected, only the combat and ranged fire that occurs within the Primary Map Window will be shown.

Intelligence

Historian

Replay Turn – This will cause the game to display the events that have occurred during the previous turn (for all commanders), including unit movement, combat, and ranged fire. Note that this option is always available during the game (independent of the Logging option).

Replay Game – This option is only available if Logging was enabled during Game Setup. When selected, the entire game will

be replayed (similar to the above Turn Replay).

Stop Replay – When either Turn or Game replays are in progress, selecting this menu item will terminate the replay immediately, returning you to the current position in the game. Note that you will first have to pause the replay (using the wait button in the Toolbox) in order to be able to access the menus.

Charts

Movement – Displays the Terrain Cost chart for defined unit types.

Transit Movement – Displays the Transit-Mode Terrain Cost chart for defined unit types.

Unit Combat – Displays a chart of unit type vs. unit type combat modifiers.

Terrain Combat – Displays a chart showing the Terrain Modifiers for combat calculations.

Ranged Fire Terrain – A chart showing the Target Terrain modifiers used for Ranged Fire results calculations.

Ranged Fire Target – Shows the relative effectiveness of Ranged Fire by target unit type.

Sighting – The unit type vs. unit type sighting modifiers are displayed in chart form.

Reports

Map – Statistical characteristics of the current map are displayed.

Technology – Rules and capabilities for the current scenario's Technology are reported. This includes all of the defined unit types, and their attributes.

Scenario – Other definitions for the current scenario, including unit allocations, victory conditions, and events, including Weather, Reinforcements, and Replacements, are reported.

Units – Currently known units are reported. Current weather conditions, and a future forecast, are reported.

Morale – A list of currently demoralized units is displayed.

Supply – A list of currently un-supplied units is displayed.

Victory – A report showing the objectives (victory conditions) and the current status relative to these objectives.

Commander History – Shows a report detailing all human Commanders who have played the game on this system.

Scenario History – A report showing the cumulative history of the results that have occurred playing this scenario, as well as the most recent games completed with it.

Window

New Window – Opens an additional map window. Note that the game supports a maximum of five map windows concurrently.

Tile Windows – Causes the currently opened map windows to be automatically arranged to fill the display area in such a manner that the windows do not overlap.

Cascade Windows – Causes the currently opened map windows to be automatically arranged in a cascading, overlapping arrangement.

Help

About – Displays program credits and miscellaneous trivia.

Help Index – Displays a Table-of-Contents for the Help topics.

HotKeys – Provides a quick reference for special keyboard shortcuts available.

Game Help – Displays the "Playing the Game" help topic.

Toolbox and Unit Orders

The Toolbox contains 4 separate sections. The topmost section provides a small-scale view of the entire map, with an indication of the section of the world currently visible in the current Map Window. This world map can be used to reposition the contents of the current map window, as explained in the Map Window Manipulation help topic.

Below this world map view are two lines of text boxes. The first of these shows the date and time for the current turn. Below this, are two boxes showing the current score (Victory Points) for the two sides involved in this conflict.

The bottom section of the Toolbox contains an information window, which is used to show a variety of different information. When the game is prompting for orders for a unit, the unit's status and the terrain information about its location are displayed. This window is also used to show the results of Combat and Ranged Fire as orders are executed.

You can request information about other locations and enemy units by pointing at those locations with the cursor then click-and-hold. Dragging the cursor with the button held down will show the matching information for the location over which the cursor is moved.

The central portion of the Toolbox contains a number of buttons that are used in controlling the game and giving orders to units. The exact buttons that will appear at any given time will vary, depending on whether the game being played is a Serial or Parallel game, and on whether a local Human is currently giving orders or a Computer commander is giving orders.

The buttons that will be present at various times include:

The **Wait** button is available during a Sequential game when the computer-controlled commander is processing its turn. It is also available during the replay of prior actions. Selecting this will pause the action (Note that there may be some delay before things actually

pause). You can then look around the map and access the game menus.

The **Resume** button is available during a Sequential game when the computer-controlled commander is processing its turn. It is also available during the replay of prior actions. This will allow you to resume normal processing after you have paused the game using the (above) Wait button.

The **Execute** button is available only during a Parallel game and is used to signify that you are done giving orders to your units and are ready to proceed to the parallel execution of all orders. Note that if all other commanders are also ready to proceed, the execution will begin immediately. If the game is still waiting for other commanders, you will be allowed to continue examining the map and units, and can change orders as desired. Execution will begin when the last commander has indicated he/she/it is ready.


The **Execute Order** button is available only during a Sequential game, and is only enabled if the current unit has an order that was carried over from the previous turn. Selecting this button allows that order to be executed now.


The **End Turn** button is also available only during a Sequential game. Selecting this will end your turn immediately, skipping any units that have not yet used up their movement points.


Select the **Move To** button to give the current unit a Move To order. After selecting this button, select the destination location on the map using the mouse. Note that the computer will generate the "best" path for you (based on movement costs), except when the target location is adjacent to its current position, when the direct move is forced. Note that in sequential mode, a movement path will never go through an enemy unit — it will attempt to go around the enemy units that are in the way. In order to attack an enemy unit, that unit's location must be the destination of the move.


The **Pursue/Escort** order instructs a unit to either escort an allied unit or to chase an enemy unit. After selecting this button, click on the target unit (either friendly or foe) to set the order. Note that enemy units must be identified in order to be the target of this order. Once set, this order will be retained from turn to turn, until either the order is cleared or the target unit is either killed or moves beyond the range to

be identified (if an enemy unit).

 The **Patrol** button allows a circular (repeating) series of Move To orders to be set. The order system supports a maximum of 4 legs in the Patrol order.

 The **Ranged Fire** button is only enabled for units whose type indicates Ranged Fire ability. After selecting this button, you will need to indicate on the map the target of the ranged fire.

 The **Hold Position This Turn** order, which is only available in a Sequential game, instructs the unit to effectively ignore any remaining movement points for this turn, and for the game to consider the unit as having completed its turn.

 The **Delay 1 Movement Point** is only available in Parallel play, this order causes the unit to not do anything for the length of time equivalent to 1 movement point. This allows better synchronization of unit actions during the (parallel) play of a turn.

 The **Guard Location** order instructs a unit to remain where it is located. It is a "permanent" order, which will last until the order is cleared by the commander.

 For units in Standard mode, the **Entrenchment** order places them into Entrenched mode. For units that are entrenched, this order reverts them back to Standard mode.

 The **Transit** button orders units to switch to or from Transit mode.

 The **Combat Advisor** button allows you to preview the possible results from both Combat and Ranged Fire. When this button is depressed, moving the cursor around the map will show a quick estimation of the results of Combat by the active unit against the enemy unit(s) over which the cursor is positioned. Clicking on an enemy unit will open up a dialog showing the estimated results in detail, including the minimum, average, and maximum damage that could result and the factors involved in the calculations. You can also get a detailed report of the relevant results if the attack is made via Ranged Fire instead of direct Combat. When in Combat Advisor mode, you can click on another of your units to make it the current unit, allowing combat calculations from that unit's perspective.

 The **Radio Room** button is only available during a multi-machine

(modem and/or network) game. Selecting this button will open up a message window, showing messages received from commanders on remote machines. Typing into this window allows you to send a message, either to a specific commander or to all commanders. Note that you must hit the **Enter** key to send a message you've typed.

The **Clear All Orders** button will clear any/all orders pending for the current unit. Note that any movement points that were carried over from the previous turn will be lost.

The **Clear Last Orders** button is only available in a Parallel game. It will clear the last of a chain of pending orders for the current unit only, leaving any preceding orders intact.


The **Next Unit** button will cause the "current unit" to cycle to the next unit available for orders. The skipped unit will still be processed, but the "automatic" prompting for that unit will be deferred until later in the turn.

Map Window Manipulation

The main portion of the display contains one or more Map Windows.

These windows can be moved and/or resized, according to your preferences. To resize a window, point the cursor to the window border (left, right, or bottom sides) or corner, and click-and-drag the mouse. The window will resize according to your mouse movement while the button is held down. To move a window, point to the title-bar area, click and drag the rectangle to the new position, releasing the mouse button to place it.

With multiple map windows opened, commands affect the active window, which is the window with the blue title bar (Note that the title bar is red in the Map Editor when active). To change the active window, point the cursor to another map window and click.

The contents (portion of the entire map) of the current map window can be repositioned in a number of ways. First, positioning the cursor to the extreme edge (any of the 4 possible directions) of the screen and clicking and holding down will cause the current window to scroll in that direction until either the edge of the map is reached or the mouse button is released.

You can also position the area displayed using the small world-map view at the top of the Tool Box. Note that the white rectangle within the

world map represents the portion of the world currently displayed in the current map window. Clicking-and-dragging inside of this rectangle will scroll the current map window accordingly. Or you can point to any position in this world map and click to center that location in the map window.

Map windows also have an associated Object Menu, activated by either clicking on the button on the left side of the Title Bar or pointing anywhere in the Title Bar and pressing Rclick (-click for Mac). From this Object Menu, you can change the Zoom level in the window or change what information layers are displayed.

Getting Information

Empire II provides many ways of inspecting and evaluating information as you play the game. Most of this is done via reports and charts, obtained under the main Information menu within the game. Note that most of these reports and charts are also available from within the **Scenario Editor**.

The Reports provide textual descriptions of various elements that are pertinent to the scenario being played or edited. These reports may be printed, if desired. The following reports are available:

- Map Report.
- Technology Report.
- Scenario Report.
- Unit Report.
- Morale Report (only during Game Play).
- Supply Report (only during Game Play).
- Victory Report (only during Game Play).
- Weather Report (only during Game Play).

The charts provide a quick, graphical view of a number of the parameters in effect for the scenario being played or edited. The following charts are available:

- Unit Movement Terrain Costs.
- Unit Transit–Mode Terrain Costs.
- Unit Combat Terrain Modifiers.
- Unit Combat Defender Modifiers.
- Ranged Fire Terrain Modifiers.
- Ranged Fire Target Unit Modifiers.
- Unit Sighting Modifiers.

Reports

Map Report

The **Map Report** is designed to give a basic description of the characteristics of the map. It details the map name and dimensions, and then gives a breakdown of the terrain types contained and their relative predominance.

Finally, a list of the named locations in the map is displayed.

Note that you can click on these labels with the cursor to jump to that location in the map window (if a map window is currently displayed).

Click on **Print** to send a copy of the report to your printer or to a text file. Click on **Done** to close the report.

Technology Report

The **Technology Report** describes the component of the scenario that defines the military capabilities of the appropriate technological era in which the scenario is set. The report contains a number of sections.

The first section contains a name and short description provided by the scenario/technology designer.

Following this, the specific rules in effect for the scenario are listed.

The third section of the report describes the forces defined and their relative effectiveness.

Next, the type of units and a summary of their capabilities are listed, by land-based unit types followed by the sea-based types.

Finally, all of the details of the attributes are specified for each unit type.

Click on **Print** to send a copy of the report to your printer or to a text file. Click on **Done** to close the report.

Scenario Report

This provides the information specific to the scenario in question. Remember that a scenario consists of three parts: the Map, the Technology, and the Scenario Data. Information concerning the first two items is presented in the **Map Report** and the **Technology Report**, respectively. This report presents the scenario — specific data, as defined in the **Scenario Editor**.

The first section of this report contains the scenario name and the short description as provided by the scenario designer. It also indicates the starting date and time of the scenario, and the manner in which the scenario ends.

The next section describes the manner in which victory points are awarded to each side. For each of the three supported types of victory points, the multipliers are shown for each side. This is followed by the base points awarded for killing enemy units of each type.

Since location control is often factored in the awarding of victory points, the next section shows the number of locations controlled by each force involved in the scenario. During the game, this section will show the counts that are currently accurate. When you are in the **Scenario Editor**, or when previewing a scenario before the start of a game, these counts reflect the status of controlled locations at the start of the scenario.

Following this, Strategic Locations are listed, showing the coordinates, Victory Point Value, Frequency of the Awarding of Points, and the current controlling force.

The report then continues with a list of Supply Locations, showing the map coordinates and the current controlling force.

The next section reports the current counts of allocated units by type for each force.

This is followed by the defined Weather Events, if any, in chronological order.

Next, the defined Replacement Events are listed, again in chronological order.

Finally, any Reinforcement Events are listed in chronological order, showing the unit counts to be allocated when the event occurs, the location in which the units are to be dispatched, and the requirements (control) defined for the event.

Click on **Print** to send a copy of the report to your printer or to a text file. Click on **Done** to close the report.

Unit Report

This report lists the known units, providing their name, location, and strengths (both Combat and, if applicable, Ranged Fire). During the game, their current movement points are also listed.

When requested during the game, this report only lists units known to you (either on your side, or detected enemy units). For units that are detected but not identified, the only information shown is the location, since the other information is not known.

Click on **Print** to send a copy of the report to your printer or to a text file. Click on **Done** to close the report.

Morale Report

The morale of your units is reported here. If any units are currently demoralized, they will be listed. Clicking on a listed unit with the mouse will cause that unit to appear in the active Map Window.

Units that are demoralized cannot be given orders. They will tend to move towards supply sources (if supply rules are in effect) or away from enemy units.

Units become demoralized as a result of combat. This occurs when a unit's combat strength approaches the demoralized break point defined in the Technology for that unit type. This is somewhat random based on both the break point and the combat variance.

Units may have their demoralized status removed at the start of a turn. Again, the chance of losing demoralization is dependent on the unit's strength when compared to the break point. Receiving replacements will help the unit's chance of losing its demoralized status.

Click on **Print** to send a copy of the report to your printer or to a text file. Click on **Done** to close the report.

Supply Report

All currently out-of-supply units are listed, along with their locations. You can click on a listed unit to jump to that location in the active map window.

Units that are unsupplied will move more slowly, and will have reduced effects when attacking an enemy unit. They are also more vulnerable to enemy attacks.

Units are supplied if a path exists between the unit and a supply source (either a controlled supply location or an allied unit with defined supply capabilities). This path can traverse only sea-based locations and locations controlled by an allied force.

Also listed in this report are the defined supply locations and the existing allied units which are capable of providing supply. Both of these items contain hot-spots for jumping to the related locations in the Map Window.

Note that you can change the Map Display options, using the Map Window Object Menu, to display on the map all locations that are and are not currently supplied.

Click on **Print** to send a copy of the report to your printer or to a text file. Click on **Done** to close the report.

Victory Report

This report gives you a detailed reporting on the current progress you have towards a victory (or defeat). While the total score for the two sides is always displayed in the Toolbox area, this report tells you the current status of the three (possible) categories of awarded points — Map Locations controlled, Strategic Locations controlled, and Units Killed.

In addition, it shows how these three categories are weighted for the two sides — note that the weighting can differ for each side, as defined in the scenario. The numbers in the first table, shown in green and in parenthesis, are the weighting factor (or multiplier).

In addition to the score, broken into categories, this report shows the statistics for the individual forces. These statistics show the net changes to the status since the start of the game. The numbers shown here do not reflect locations that were originally controlled at the start of the scenario.

Following these status sections, the report contains a list of all defined Strategic Locations and a table showing the base values assigned for the killing of each defined unit type.

Click on **Print** to send a copy of the report to your printer or to a text file. Click on **Done** to close the report.

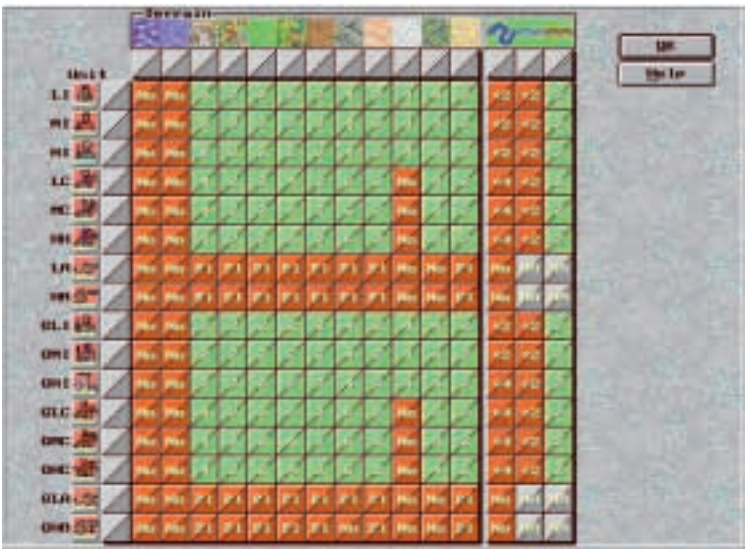
Weather Report

This report, available during the game, provides a quick synopsis of the current weather conditions (and their effects). It also provides a forecast report of weather changes that will occur in the immediate future.

Click on **Print** to send a copy of the report to your printer or to a text file. Click on **Done** to close the report.

Charts

Movement Costs Chart



The movement cost chart shows the movement costs for each unit type based on the terrain type being entered. Note that these costs only apply to units that are in Standard mode — Transit mode movement costs are treated separately.

Along the left side of the chart are the defined unit types.

Along the top are the 12 base terrain types, plus the three different types of "network" overlays: Roads, Rivers and Streams.

Note that the base terrain types are treated differently than the network overlay types.

Base Terrain

The values for movement costs relative to base terrain types **must** be even numbers, and represent the unmodified costs of moving into a location of that type in a horizontal or vertical direction. This avoids issues of rounding when calculating the costs for moving in a diagonal direction, which is calculated as 1.5 times the value specified here.

Two special values are supported for unit movement into base terrain types:

A value of **Pl** (standing for Place-Only), means that a unit of that type can be placed in that location in the **Scenario Editor**, or can switch to Standard Mode from Transit mode in that location. The unit cannot, however, move into that location from an adjacent location.

A value of **No** implies that the unit can not enter a location of that type, nor can it be placed there.

Network Overlays

Rivers, Streams, and Roads can be defined with three different types of effect: They can be defined as having No Effect (NA), they can be defined as having a Barrier effect (values displayed in red), or can function as Transportation Networks (values displayed in green).

If the No Effect value is set, then the movement costs (or prohibitions) for that location are calculated based on the costs of the underlying terrain.

Barriers can either prohibit movement (special value of **No**), or increase the cost of moving into that location. In the latter case, the cost associated with the barrier is added to the cost for entering the underlying base terrain type.

Transportation Networks can reduce the costs of entering a location — the cost is calculated as the smaller of the value associated with the overlay and the value associated with the underlying base terrain type. However, the benefits of the network **only** apply if the movement is along connecting segments of the network.

Unit Transit Cost Chart

The Transit Movement Cost chart shows the movement costs for each unit type based on the terrain type being entered. Note that these costs only apply to units that are in Transit mode — Standard mode movement costs are treated separately.

Along the left side of the chart are the defined unit types. Note that only unit types for which Transit Mode is permitted are displayed. Along the top are the 12 base terrain types, plus the three different types of "network" overlays — Roads, Rivers and Streams.

Note that the base terrain types are treated differently than the network overlay types.

The same information on Base Terrain and Network Overlays included in the preceding section on the Movement Cost Chart applies to the Unit Transit Cost Chart.

Combat Defender Chart

The combat defender chart reflects the modifiers to unit close combat, based on the type(s) of units being attacked. The unit types on the left are the attacking units and the types across the top are the defender possibilities.

Values range from -10 to +10. A value of -10 is displayed as **No**, indicating that Combat against that unit type cannot be initiated. A value of 0 is displayed as a blank gray box, indicating that no extra advantage or disadvantage is awarded for attacking the corresponding unit type. Positive values (green) give an advantage to the attacking unit, and negative values (red) give an advantage to the defender.

Terrain Combat Chart

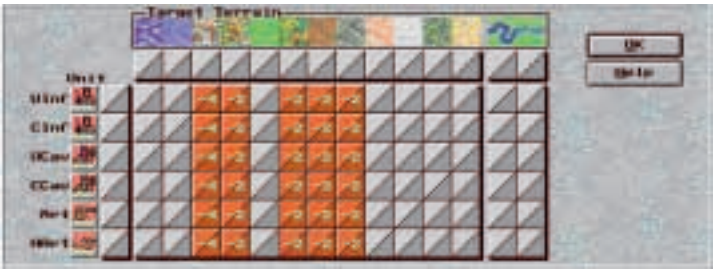
The combat terrain chart reflects modifiers to unit close combat based on terrain characteristics.

Along the left side of the chart are the defined unit types, representing the attacking unit. Along the top are the 12 base terrain types, plus two columns for River and Stream overlays.

The modifiers for the base terrain reference the terrain type in the defending units location. The River/Stream modifiers, however, consider the terrain in the attacking unit's location, rather than the defender's.

Values range from -10 to +10. A value of -10 is displayed as **No**, indicating that an attack into that location type is not allowed. A value of 0 is displayed as a blank gray box, indicating that no extra advantage or disadvantage is awarded for attacking into the corresponding terrain type. Positive values (green) cause the combat to be more effective, and negative values (red) reduce the damage inflicted.

Ranged Fire Terrain Chart



The ranged fire terrain chart reflects modifiers to ranged combat based on the terrain type of the target location.

The attacking unit is on the left, the terrain across the top. Note that only units with Ranged Fire capabilities are shown.

Values range from -10 to +10. A value of -10 is displayed as **No**, indicating that Ranged Fire into that location type is not allowed. A value of 0 is displayed as a blank gray box, indicating that no extra advantage or disadvantage is awarded for firing into the corresponding terrain type. Positive values (green) cause the Ranged Fire to be more effective, and negative values (red) reduce the damage inflicted.

Ranged Fire Target Chart

The ranged fire target chart reflects modifiers to Ranged Fire based on the unit type that is hit.

Along the left of the grid are the firing unit types (the types that have Ranged Fire capability). Along the top of the grid are the potential target unit types.

Values range from -10 to +10. A value of -10 is displayed as **No**, indicating that Ranged Fire at that unit type will never do any damage. A value of 0 is displayed as a blank gray box, indicating that no extra advantage or disadvantage is awarded for firing at the corresponding unit type. Positive values (green) cause the Ranged Fire to be more effective, and negative values (red) reduce the damage inflicted.

Sighting Chart

The Unit Sighting Chart shows the modifiers to the basic sighting distances, based on the unit types doing the sighting and the unit types they are attempting to see.

Along the left side are all of the defined unit types, representing the units doing the sighting, and along the type are the unit types representing the target of the sighting.

Values range from -10 to +10. A value of -10 is displayed as **No**, indicating that the target unit type cannot be detected or identified by the corresponding unit type. A value of 0 is displayed as a blank gray box, indicating that no modification is made to the basic sighting ranges as defined in the Technology. Positive values (green) give an advantage to the sighting unit–the target unit type can be Detected and Identified at a greater distance than the base values. Negative values (red) reduce the effective sighting ranges.

Empire II History Records

Empire II maintains three levels of history records.

First, it will remember individual battles (games) that you have previously played. These are optionally maintained in separate log files, but only if you have logging enabled for the game. You can save the log file from within the game after the game has ended.

The second level of history maintained is the statistical history of the results of playing each scenario — the Scenario History. This record contains average, low, and high scores obtained for the scenario, and records the last 50 games completed with the scenario.

The third level of history is the Commander History, which tracks all of the human players who have played the game on your system. These records track wins/losses and average scores and handicaps.

Empire II Battle History Replay

Replaying a Battle History record will show you all the unit actions that occurred during a previous game – Movement, Combat, and Ranged Fire. During the actual replay, the display is not responsive to your actions, with a few exceptions.

First, you can pause the replay by selecting the **Wait** button in the Toolbox. When paused, you can scroll around the map windows and have access to the menus. Selecting the **Resume** button when paused will allow the replay to continue at the point where you had stopped.

While the replay is playing, pressing the **ESC** key or clicking while the cursor is within a Map Window will end the replay.

Once the replay has ended, you will remain within the game presentation for further review of reports and/or location information. You can also restart the full game replay by clicking the Replay Game menu item from the Intelligence/Historian menu tree. Clicking on the **Exit Game** item from the File menu will return you to the Main Screen.

Scenario History Report

This report gives you the history of a single scenario. The top portion of the report provides the summary for the scenario. This includes the total number of games completed with this scenario, the total number of Wins recorded by each side, and the Average, Low, and High scores obtained by each side.

Below this is the list of results of the individual games. Note that **Empire II** maintains records of the most recent 50 games completed for each scenario.

Commander History Report

This report gives you a list of the human commanders that have played **Empire II** on your system. Note that the statistics shown only include completed games. For each commander, the statistics displayed include:

Games Played – The number of games completed by the commander.

Games Won – The number of completed games where this commander controlled one or more forces on the winning side.

Average Handicap – The average handicap level that this commander had for all completed games. 0 is "no handicap", while negative numbers provide the commander a disadvantage, and positive numbers provide an advantage.

Average Score – The average number of victory points earned by the side on which this commander participated.

Average Opp. Score – The average number of victory points earned by the side against which this commander battled.

Multiple System Play

Empire II supports two distinct forms of playing against one or more human players in remote locations: playing by (electronic or surface) mail (referred to as Play-by-Mail or PBM), and playing with two or more connected computer systems. Connections can be made by modem (using the phone lines), or directly via either a null-modem cable connection or a supported Local Area Network.

Just like playing a single-system game (as described previously), a multiple-system game of **Empire II** can have from 2 to 4 commanders, depending on the scenario. Any of these commanders can be either human or computer-controlled, although each "system" must have at least one human commander.

Play-by-Mail

Starting a Play-by-Mail game is identical to starting a single-system game, with the single exception of specifying Play-by-Mail as the System Type in the Game Setup window rather than Local. Once started, the commanders will be prompted for a password at the start of their turn. The first time that you are asked for a password, type it in carefully, as the game will accept what you type. You must remember

this password and use the identical password every time this particular game asks you for it.

After entering your password, you will play your turn in the same manner as in a single-system game. If the game is a Sequential game, then you will be giving orders to your units and watching the orders execute. In a Parallel game, you will only be giving the orders — they will be executed after all commanders have given the orders for the turn.

Note that you can view the results of your opponent's turns (or the results of the last Execution phase in a Parallel game) by selecting the **Replay Turn** menu option from the **Intelligence/Historian** menu.

When you complete your turn, the game will ask you for a file name to which to save the game. Note the name that you save it under, as this is the file that you will then send on to the next commander. The game will inform you of which commander is next. By default, saved-games are kept in the ***Games*** subdirectory, and can be copied from there for sending. The saved-game is the only file that you will need to pass on to your opponents — there is no need to send the starting scenario.

Connecting Multiple Systems

Before attempting to play a multiple-system game via modem/serial-port or network connection, please make sure that your hardware configuration is set up properly in the game. Refer to the Configuration section of this document for more detailed instructions.

One player must be the Master for the game to be setup. If the game will include any computer controlled commanders, it is preferable that the Master be the person with the fastest system, as the computer players will operate on the Master's system.

Setting Up the Master System

The commander on the Master system will start up the game normally, selecting the New Game or Reload Saved Game options as appropriate. All of the options in the Game Setup Options window are set as they would be for a single-system game, with the exception of the System element. This should be set for all human commanders who will be connecting via a remote system, depending on which access port (Network, or defined COM-port) you will be using to connect to their system.

After completing the Setup options, you will be prompted for passwords for all human players on your system. These passwords will be needed for

restarting a saved game. The remote players will be prompted for their passwords after they connect to your system.

The Master system will then attempt to connect with the Remote Slave systems that you configured. Once the connection(s) is/are made, the scenario data and setup information will be transmitted to the remote systems. It is not a requirement that the remote systems have the same **.SCN** file that you used.

Setting Up Slave System(s)

All players other than the Master system should select the Setup from Master button on the Game Startup Options window. After selecting this, the game will ask you which connection port to use, depending on which COM-ports are defines and whether a supported Network is detected. If only one option is available on your system, the program will not bother asking.

After selecting the method of connection, the game will attempt to connect with the Master system. After the connection is made, you will be shown a player-selection window, described below:

Remote Player Selection

The window displays the Commanders set up by the Master system, and expects you to choose the entries that will be playing on your system. Note that at least one commander must be selected.

In addition to the list of commanders, there will be either one or two other checkboxes that you may select:

The **Change Cmdr Name(s)** option, when checked, will allow you to rename the selected Commanders, so that the record of the game will accurately reflect your preference for the player. This option is always available.

The Connect Another System option is only available if the game being set up has an available Commander slot that is still waiting to be filled accounting for the players on the Master system and on your system. When this option is selected, you will be able to attempt to connect your system to a third system, using a different connection port than the one to which you've connected to the Master.

Normally, the Master system will control all of the connections to multiple systems, which will not require you to use this option. However, certain configurations will require you to set up this daisy-chained approach (Master->Slave1->Slave2).

Once you have identified the players on your system (and supplied passwords), the Master system will send the scenario and game setup data to your system. You will be shown a window, showing all of the players set up, the rules in effect, and the selected scenario's description. If you desire, you can request to see the three main reports — the **Map Report**, the **Technology Report**, and the **Scenario Report**. After looking at the proposed game setup, you can either **Accept** or **Reject** the game. Selecting Reject will communicate your displeasure to the Master system, disconnect you from the Master, and return you to the game's Main Screen. Selecting Accept will proceed to the actual game (once all the other Slave commanders have also accepted).

From this point, the game play will be almost identical to playing on a single system. You will notice one extra button in the Toolbox — the Radio Room button. Selecting this will open up a chat window, in which you can receive messages from other commanders and send messages to one or more of them.

A scenario consists of three parts: a map defining the terrain (using the Map Editor), a "technology" defining the available units and their characteristics (using the Technology Editor), and scenario-specific items like unit allocations, reinforcements, controlled territory, and victory conditions (using the Scenario Editor).

Technologies and maps may be edited separately, and saved in separate files for reuse. Generally, both the technology and the map should be established before defining the scenario-specific data.

Editor Menus

The same menu is available in all three components of the Game Editor. The only exception is in the **Technology Editor**, where the menu is **only** available at the top-level window. From other windows in the **Technology Editor**, select the **OK** buttons to walk back up to the top level to access the menu items.

The **Menu Bar** can be activated either with the keyboard or the mouse. With the keyboard, pressing and releasing the **ALT** key will activate the menu bar. You can then either press the appropriate highlighted letter key to select the desired item, or use the arrow keys to move the highlight, and press the **Enter** key to select. Pressing/releasing the **ALT** key again will deactivate the menu bar.

To active the menus with the mouse, point the cursor into the menu bar area, and click. You can either drag the mouse with the button down, releasing the button when the cursor is over the desired item, or release the button immediately, point to the desired item and click. Pointing the cursor outside of the menu area and releasing the button will deactivate the menu bar without selecting anything.

The following Menu items are available:

File

New

Map – Creates a new map, initialized to clear land. You will be presented with a window, into which you can specify the dimensions. Any existing map will be discarded. If scenario elements (units, etc.) exist, some cleanup will most likely be needed — refer to the **Validate** command.

Technology – initializes the technology, discarding any current definitions.

Scenario – Initializes the scenario data, including allocated units, victory conditions, events, supply locations, and strategic locations. This will leave the existing technology and map intact.

All – This will discard all existing map, technology, and scenario data items, initializing everything to defaults.

Open

Map – Loads in an existing map from a file, replacing any existing map information.

Technology – Loads in an existing technology from file, replacing existing technology data. Note that if any units have been allocated in the scenario data, strange results can occur. (Refer to the **Validate** command).

Scenario – Loads in an existing scenario, replacing the current scenario data, map, and technology.

Save

Map – Writes the current map to a file. This will allow you to utilize the same map in multiple scenarios. If the game has a name for the map file (i.e., if you had previously loaded in a map file by name), it will use this name as the file to which to save. Otherwise, you will be asked for a file name.

Technology – Writes the current technology to a file. Again, this permits you to incorporate the same technology definitions into multiple scenarios. Like the **Save/Map** command, the program will not ask you for a file name if a named technology file was originally loaded, but will overwrite that file.

Scenario – Writes the current scenario to a file. Note that the scenario includes all of the data needed to play a game, including the map, the technology, and the scenario data. Prior to saving, the program will automatically validate the scenario, insuring that there are no logical inconsistencies. If problems are detected, you will be informed. Note that scenarios that have detected errors will not be playable until corrected. Warnings will not stop playability, although they may point out unintended oversights. This command will only prompt for a file name if needed. If you have previously loaded a scenario, the program will overwrite it.

Save As

Map – Writes the current map to a file. This will allow you to utilize the same map in multiple scenarios. The program will always ask you for a name for the file.

Technology – Writes the current technology to a file. Again, this permits you to incorporate the same technology definitions into multiple scenarios. Like the **Save As/Map** command, the program will always ask you for a file name.

Scenario – Writes the current scenario to a file. Note that the scenario includes all of the data needed to play a game, including the map, the technology, and the scenario data. Prior to saving, the program will automatically validate the scenario, insuring that there are no logical inconsistencies. If problems are detected, you will be informed. Note that scenarios that have detected errors will not be playable until corrected. Warnings will not stop playability, although they may point out unintended oversights. This command will always prompt for a file name.

Revert

Map – Reloads the last loaded map file from disk. Any changes that you have made will be discarded.

Technology – Reloads the last loaded technology file from disk. Note than any changes that you have made will be discarded.

Scenario – Reloads the last loaded scenario file from disk. Any changes that you have made will be discarded.

AutoSave – Turns on or off the timed autosave feature. For more information see Game Preferences in the accompanying **Empire II** Installation Instructions and Reference Card.

Exit Editor – This will leave the **Game Editor** and return to the Main screen, from which you can play a game or exit back to DOS.

Edit

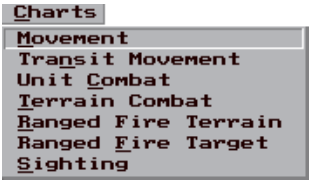
Map – This will open up the Map Editor, in which you can modify the terrain and labels of the map.

Technology – This will open up the **Technology Editor**, in which you can define the unit types and general technology related rules governing the period for which you are creating a scenario.

Scenario – This will open up the **Scenario Editor**, with which you can place/allocate units, define victory conditions, events, etc. that comprise the actual scenario you are building.

Validate – This initiates a process where all of the information you have defined for the map, technology, and scenario data are checked for logical inconsistencies. Results are reported as errors and warnings, and you will be given an option of having the program attempt automatic fixes, or just reporting the problems allowing a manual correction. Note that scenarios are automatically validated upon saving, and that invalid scenarios (ones with errors) will not be playable. Warnings will not affect playability, although they may point out problems that you did not intend.

Charts



Movement – Displays the terrain cost for defined unit types.

Transit Movement – Displays the transit-mode terrain cost for defined unit types.

Unit Combat – Displays a chart of unit type vs. unit type combat modifiers.

Terrain Combat – Displays a chart showing the terrain modifiers for Combat calculations.

Ranged Fire Terrain – A chart showing the target terrain modifiers used for Ranged Fire results calculations.

Ranged Fire Target – Shows the unit type vs. unit type ranged fire modifiers.

Sighting – The unit type vs. unit type sighting modifiers are displayed in chart form.

Reports

Map – Statistical characteristics of the current map are displayed.

Technology – Rules and capabilities for the current scenario's technology are reported. This includes all of the defined unit types, and their attributes.

Scenario – Other definitions for the current scenario, including unit allocations, victory conditions, and events, including weather, reinforcements, and replacements, are reported.

Units – Currently placed and reinforced units are reported.

Window

New Window – Opens an additional Map Window. Note that the game supports a maximum of 5 map windows.

Tile Windows – Causes the currently opened map windows to be automatically arranged to fill the display area, so they do not overlap.

Cascade Windows – Causes the currently opened map windows to be automatically arranged in a cascading, overlapping arrangement.

Help

About – Displays program credits and miscellaneous trivia.

Help Index – Displays a top-level table-of-contents for the available Help topics.

Editor Help – Displays a top-level Help file for the editor in which you are currently working.

Map Editor

The display area in both the map and scenario data editors consists of a number of elements. Along the top are the pull-down menus, which contain commands to control the whole game system. The right side of the display is dominated by the Toolbox, containing a number of tools. Along the bottom of the display area is the information bar, which displays some quick information in response to the location of the cursor.

The main portion of the display contains one or more Map Windows.

With multiple map windows opened, commands affect the active window, which is the window with the red title bar. To change the active window, point the cursor to another map window and click.

The purpose of the Map Editor is to define the basic parameters of terrain in the field of play. In addition, you can add Text Labels to specific locations on the map. Note that a single map may be used in multiple

scenarios, and that maps may be saved separately in a .MAP file.

Your primary work in the Map Editor will be accomplished with use of the various tools available in the Toolbox in conjunction with the displayed Map Window(s). The Toolbox will be discussed below.

Map Editor Toolbox

The specific actions you will take are, for the most part, controlled by the various Tool Buttons in the Toolbox. The topmost section provides a small-scale view of the entire map, with an indication of the section of the world currently visible in the current Map Window.

This world map can be used to reposition the view of the current map window. Note that the white rectangle within the world map represents the portion of the world currently displayed in the current map window. Clicking-and-dragging inside of this rectangle will drag/scroll the current map window accordingly. Pointing to any position in this world map, clicking-and-releasing the left button will center that location in the map window.

The buttons in the Toolbox should be viewed in three groupings:

Tools, Actions, and Paint Objects. The Tools buttons determine the current actions you are performing with operations taken in the Map Window. The Actions buttons request specific, immediate actions to be effected to the existing map. The Paint Objects determine, if one of the two Paint tools are selected, what Terrain Type you are painting.

The following Tools buttons are available:

Paint 1x1 – With this tool selected, single locations on the map will be replaced with the selected Terrain Paint object. Clicking on a single location will paint that location. Holding the mouse button down will allow you to paint in a continuous motion, following the movement of the cursor.

Paint 3x3 – This tool acts similar to the above tool, except that the area affected on the map is a block of locations 3 across and 3 down. This tool allows you to paint larger areas of the map with the selected Terrain Type more quickly.

Drag Paint – This tool permits you to use the Map itself as both canvas and palette. In this mode, position the cursor to a specific map

location and click, temporarily selecting that terrain type as a Paint Object. You may then drag the cursor (keeping the button depressed) and paint (with the 1x1 brush) using that temporary object. This object is only selected until you release the mouse button.

 **Paste Clipboard** – After having used the Select Region tool to select a rectangular area and the Cut Region or Copy Region action to copy an area to the clipboard, this tool allows you to place that rectangular area onto the map. When selected, the cursor will be represented by a moving rectangle when over the map, defining the area to be replaced. Clicking will paste the contents of the clipboard over that area.

 **Select Region** – This tool allows you to mark a rectangular area of the map. This marked region can then be used as a reference for a number of the Action operations, like Fill Region, Cut Region, and Copy Region.

 **Location Info** – When selected, this tool places you in a mode where selecting a location on the map will cause an Information window to be opened, showing details about the specific location.

The following Actions buttons are available:

 **Fill Region** – If a region is currently marked (refer to the Select Region tool, above), this action will fill the selected rectangular area with the currently selected Terrain Paint Object. If no region is defined, this action will fill (upon confirmation) the entire map with that terrain type.

 **Cut Region** – Only available when a region is marked, this button will perform two separate actions. First, the area contained in the marked rectangular region will be copied to the Clipboard. After this, the region will be filled with the currently selected Terrain Paint Object. Note that this clipboard can then be accessed via the Paste tool.

 **Copy Region** – As above, this option will copy the marked rectangular region to the clipboard. This action will not make any changes to the marked region, however.

 **Resize Map** – This action will allow you to either increase or decrease the size of the map. If a Region is selected, you will be given the option of resizing the map to the size of the selected region, retaining that region's contents. Otherwise, the contents of the map starting

from the top/left corner will be retained, clipping to the right and bottom if a smaller size is requested. If the map is increased in size, the width and/or height are padded with the currently selected Terrain Paint Object.

 **Generate World** – This action will create a randomly generated world, replacing the current contents of the map. You will be presented with a dialog into which you can specify some basic guidelines for the type of world that will be generated.

 **Map Description** – This will open up a dialog, in which you can specify a Name and a Description for the map you are creating.

The first twelve buttons available in the grouping described as Terrain Paint Objects correspond to the twelve types of terrain supported by **Empire II**:


- Deep Sea


- Shallow Sea


- City


- Village


- Clear


- Forest


- Broken Ground


- Mountains


- Desert


- Arctic


- Swamp


- Beach

The bottom four buttons are used for painting the Network Overlays.



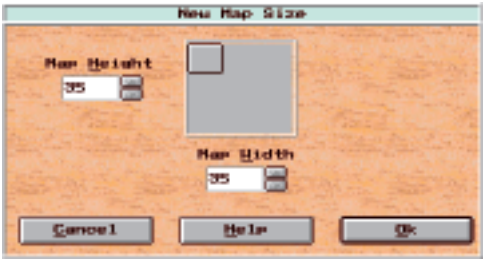

The first of these (from the left) is used to clear any Roads and/or Rivers in a location. The other three buttons are Road, River, and Stream. These overlays do not replace the location upon which they are painted, but modify that location by adding the road or river on top of the defined Terrain Type.

Map Windows

The use and manipulation of (multiple) Map Windows has been discussed

previously, in the section titled Map Window Manipulation under the Playing the Game topic. That discussion also applies to the Map Editor (as well as the Scenario Data Editor).

Map Size Window



Creating a New Map or Resizing the current map requires that you specify the new dimensions for the map. This is accomplished with the Map Size Window.

This window allows you to set the size of the map. Maps are always rectangular, and can vary from a minimum of 10 to a maximum of 100 locations in both horizontal and vertical dimensions.

You can click-and-drag the rectangular button in the middle of this dialog to change the map dimensions, or you can change either the height or width dimensions individually.

Map Generation Options

When you request the Map Editor to generate a world for you, you will be prompted to specify some basic parameters that are used as guidelines for this process. This dialog allows you to control the basic type of map characteristics that will guide the random generation of a map.

There are a total of 6 parameters that can be specified:

The Land masses selection controls the ratio of land-based terrain to sea-based terrain, and also affects how the land terrain tends to group.

The Climate option determines the predominant type of land mass to be contained in the generated world.

The Roads choice determines the relative number of roads that will exist in the generated map.

Similarly, the Rivers and Streams options determine the frequency with which these network types are generated.

The Population setting controls the number of Cities and Villages that will be contained in the generated map.

The game remembers the last settings that you used to generate a World, and initializes this window to reflect those settings.

Map Labels

The map labels can be added or edited in the Map Editor, via the Object Menu for a location. To bring up this Object Menu, point the cursor to the location in question and Rclick.

Map labels are cosmetic in nature, but they can really improve the appearance of a map. Options for defining a label are:

Label Text – The text you want to appear on the map. The length of this is limited to a maximum of 32 characters.

Position – Controls whether the text of the label is rendered to the Left or the Right of the location which "owns" the label.

Text Size – Determines which of the two available relative sizes is used to render the label. The actual fonts used are Map-Zoom dependent.

Map Description

The Map Description consists of a short (16 character) name and a brief text description.

These elements are cosmetic in nature, intended to allow the scenario designer to add brief notes to the Map component. When a player is loading a scenario and clicks on the preview button this description will be displayed.

Technology Editor

The technology editor allows the scenario designer to define the military capabilities to be used in scenarios based on this technology. The complete specifications comprising the technology are set up in a series of windows, beginning with the Technology Definitions window.

Technology Definitions Window

The top section of this window allows the designer to specify a name and a short description for the technology.

Rules Selection

Limited Sighting, when checked, causes units to be unsighted (not visible), detected (the unit is known to exist in a location but no other information is known), or identified (the unit is known to exist and all details about the unit are also known) by commanders on the opposing side, based on the distance from the unit to enemy units and on the various sighting modifiers for unit types.

When this option is not checked, all units will be identified at all times.

Supply, when checked, force units to remain in supply or to be considered crippled during the game. Refer to the Supply Rules for more information.

When this option is not checked, units are considered Supplied at all times.

Sighting Range

Defines the base Sighting Ranges that are used to calculate a unit's sighted status if the Sighting Rule is enabled in the Rule Sighting box. Two distances are specified, one for detecting that a unit exists in a location, and the second for detecting all of the details concerning that unit. These base values provide the basis to which other sighting modifiers are applied in determining a unit's sighted status.

Turn Length

The Turn Length items determine how long a turn is. This provides a basis for determining the "realism" factor involved in the movement capabilities (speed) defined for the unit types. While the turn length period is used in various reporting, it is more cosmetic in value than deterministic.

Forces

A Technology supports up to four Forces.

For each force, a Name is specified, the force is assigned to one of two sides, a Color is specified, and a relative Efficiency is specified.

To specify the definitions for a given force, select the appropriate entry from the Name drop-down control. The corresponding values will be displayed and can be changed for that force. The Name can be changed by typing the new name into the appropriate Edit control portion of the drop-down.

If a force is not assigned to either Side 1 or to Side 2, it is considered inactive and not available in the technology. A technology must have at least one force assigned to each of the two sides, and that up to three forces can be assigned to one side.

The force's Efficiency is a value ranging from -10 (least effective) to +10 (most effective).

The last box in this window specifies the global values used in the calculation of Combat results with this technology.

Combat

Variance – Determines the amount of randomness in combat results. Values range from 0 (no randomness — i.e., totally predictable results) to 10 (extremely random). Each step represents a range of 10 percent, so a value of 2 implies that results will vary between -20% and +20% of the calculated (deterministic) results.

Effectiveness – Determines the degree of damage that can result from a combat attack. This value ranges from 1 to 100, and represents the base amount of damage that will be inflicted by 100 strength points on an enemy unit.

Entrenched Modifier – Controls the modification of combat results to be factored into the calculations when the attacked unit is in Entrenched Mode. Refer to the game manual for a complete discussion of the calcu-

lations used in determining combat results. Values can range from +1 to +10.

Transit Modifier – Controls the modification of combat results that will occur when combat targets a unit in Transit Mode. Values can range from -10 to 0.

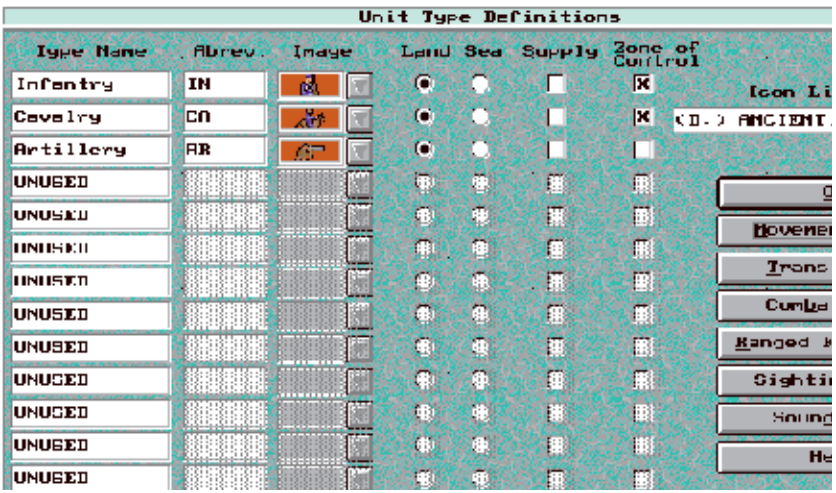
Units

Clicking on the Units button will lead you to the Unit Type Definitions window.

Help

Clicking on the Help button will call up the Technology Editor Help file.

Unit Type Definitions Window



This window allows the scenario designer to set the unit types that will be included in the technology. All subsequent windows in the Technology Editor depend on the types specified here, so it is important that you set up all of the desired unit types first.

There is a maximum of 16 unit type slots that can be used in a Technology. The Type Name column is the key to determining which slots are available and which are used. Entries with a name of UNUSED are available for additional types — simply replace the name text with a name for the new type.

To delete an existing unit type, click on the Type Name column of the appropriate entry and delete the text. Type in a new name, if desired, and press the **Enter** key.

The following elements are contained in this window:

Type Name – Used to identify the unit types, and is used in most reporting in the game. This element is limited to a maximum of 12 characters.

Abrev. – provides a shorter abbreviation for the Type Name, and is limited to 5 characters. It is used as an alternative to the above when a shorter description is needed.

Image – allows you to choose the illustration used for unit icons of this type in the game display. To change the image used, click on the drop-down button to the right of the image box. You will be shown a list of the images contained in the currently selected Icon Library from which to choose. You can change the selected library with the Icon Library control to the far right of this window.

A technology can contain unit icons from multiple Icon Libraries. Click on the appropriate library before setting the icon for the desired unit type. You can create and/or modify Icon Libraries using the supplied Icon Utility program (IU.EXE).

Land, **Sea**, **Supply**, **Zone of Control** selections – Each unit type is defined as either a Land or Sea class — this distinction is used for some basic determinations including Replacements and Supply path calculations.

If the Supply item is checked, this type of unit can provide supply to other units on the same side — it will be considered a Supply Source. This only applies if the Supply Rule is enabled in the Technology Definitions window.

If the Zone of Control item is checked, then this unit type asserts a zone of control of a one square radius around its current location. This affects both the control of map locations and the movement costs for enemy units moving in these adjacent locations (i.e., within the unit's zone of control).

The following buttons are also available in this window:

Movement – This opens up the Unit Movement Characteristics window, allowing the definition of movement-related parameters for the defined unit types.

Transit – This open up the Unit Transit Characteristics dialog, allowing the definition of Transit-mode specific parameters for the defined unit types.

Combat – This opens up the Unit Combat Characteristics window, allowing the definition of Close Combat-related parameters.

Ranged Fire – This opens up the Unit Ranged Fire Characteristics window, allowing the definition of Ranged Fire related parameters.

Sighting – This opens up the Unit Sighting Chart window, allowing the specification of the sighting characteristics (both as the Sighter and the Sightee).

Sound – This opens up the Unit Sound Effects window, allowing the specification of the Sound Effects to be used for the defined unit types.

Unit Movement Characteristics Window

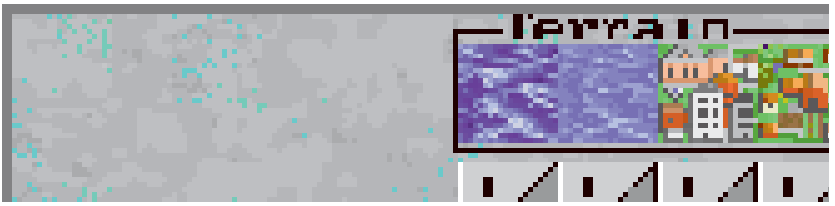
This window allows the scenario designer to define the basic movement characteristics for all defined unit types.

Speed – The Speed value determines the number of movement points allocated to a unit at the beginning of a turn. This value only applies to units in Standard or Entrenched modes. The speed for units in Transit mode is specified in the Unit Transit Characteristics window. These are the points upon which the costs of moving (and performing ranged fire or combat) are based. Values can range from 0 to 100.

RFire Cost – The RFire (Ranged Fire) Cost value determines the cost (in movement points) for firing Ranged Fire. This control is only enabled for units that have a Ranged Fire Type defined in the Unit Ranged Fire Characteristics window. The value can be between a minimum of 1 and a maximum of the unit type's speed.

Terrain – Clicking on the Terrain button will open the Movement Terrain Modifiers window, allowing you to specify the movement costs for moving into each terrain type.

Movement Terrain Modifiers Window



The movement cost chart shows the movement costs for each unit type for the terrain type being entered. These costs only apply to units that are in Standard mode — transit mode movement costs are treated separately.

Along the left side of the chart are the defined unit types. Along the top are the 12 base terrain types, plus the three different types of "network" overlays — Roads, Rivers and Streams. Note that the base terrain types are treated differently than the "network" overlay types.

Base Terrain

The values for movement costs relative to Base Terrain types **must** be even numbers, and represent the unmodified costs of moving into a location of that type in a horizontal or vertical direction. This avoids issues of rounding when calculating the costs for moving in a diagonal direction, which is calculated as 1.5 times the value specified here.

Two special values are supported for Unit Movement into base terrain types:

A value of **Pl** (standing for Place-Only), means that a unit of that type can be placed in that location in the **Scenario Editor**, or can switch to Standard Mode from Transit mode in that location. The unit cannot, however, move into that location from an adjacent location.

A value of **No** implies that the unit can not enter a location of that type, nor can it be placed there.

Network Overlays

Roads, Rivers, and Streams can be defined with three different types of effect: They can have **No Effect** (NA), a **Barrier** effect (values displayed in red), or can function as **Transportation Networks** (values displayed in green).

If the **No Effect** value is set, then the movement costs (or prohibitions) for that location are calculated based on the costs of the underlying terrain.

Barriers can either prohibit movement (special value of **No**), or increase the cost of moving into that location. In the latter case, the cost associated with the barrier is added to the cost for entering the underlying base terrain type.

Transportation Networks can reduce the costs of entering a location. The cost is calculated as the smaller of the value associated with the overlay and the value associated with the underlying base terrain type. However, the benefits of the network ***only*** apply if the movement is along connecting segments of the network.

Technology Editor Grid Charts

Many of the tables defined in the Technology Editor utilize a similar chart, referred to as a Grid chart. Changing the values in these charts are accomplished in the same manner.

Along the left side are the elements (unit types) for which you are defining values. Just to the right of these icons is a strip of gray two-colored boxes with +/- indicators. Each of these boxes is a control that can be used to adjust all of the values in the corresponding row (across) of the grid.

Along the top edge of the window are the Target or Destination items, which will either be unit types or terrain types. Below these icons is a strip of gray boxes (similar to the ones described above). These boxes are controls that can be used to adjust all of the values in the corresponding column (vertical) of the grid.

The main portion of the window contains the actual grid, with one control box for each combination of row and column (Source and Target). These boxes (all containing two shades of the same color) are color coded, using one of three color sets. The gray boxes are neutral, indicating no advantage/disadvantage. The red boxes indicate a negative effect (disadvantage or barrier), and the green boxes indicate a positive effect (advantage).

Manipulating all of these controls is accomplished by clicking on either the top left (+) or the bottom right (-) halves of the control to either increase or decrease the corresponding value. Values are changed in steps of +/-1, and will continue to change as long as you hold the mouse button down. Holding the **Shift** key down while you click causes these

changes to jump by larger values (generally 5 or 10, depending on the specific chart).

Unit Transit Characteristics Window

This window allows the scenario designer to specify which of the defined unit types have a Transit Mode.

Transit Avail. – When this is checked, the unit type can use Transit Mode, and other values specified here are relevant. When this item is not checked, no other values here apply.

Icon – Units in transit can have a different icon than in Standard Mode, but don't have to. Click on the drop-down button to display the available icons in the current Icon Library. You can first select a different Icon Library if desired.

Speed – Units in Transit Mode can be given a different number of movement points at the start of a turn than when in Standard Mode. They can also be defined to have different movement costs for the various terrain types. If a unit changes modes to or from Transit Mode in the middle of a turn, its remaining Movement Points are scaled according to the speed defined for the target mode.

Class – Units in Transit Mode can be defined as belonging to a different Class — Land or Sea — as opposed to when they are in Standard Mode. This classification is used when calculating the effects of weather on the unit's movement when the unit is in Transit Mode.

Trans Terrain – Click on the **Trans. Terrain** button to define the Terrain Movement costs for units in Transit Mode. Note that it is unavailable unless at least one unit type is defined with Transit capability.

OK – Select the **Ok** button to return to the Unit Type Definitions window.

Help – Click on the **Help** button to display the Unit Transit Characteristics help file.

Transit Movement Terrain Modifiers Window

The Unit Transit Cost chart shows the movement costs for each unit type based on the terrain type being entered. These costs only apply to units that are in Transit mode. Standard mode movement costs are treated separately.

Along the left side of the chart are the defined unit types. Only unit types that have a Transit Mode are displayed. Along the top are the 12 base terrain types, plus the three different types of "network" overlays — Roads, Rivers and Streams.

Remember that the base terrain types are treated differently than the network overlay types.

The same rules for Base Terrain and Network Overlays that were listed under the Movement Terrain Modifiers Window heading apply here as well.

Unit Combat Characteristics Window

The Unit Combat window allows the scenario designer to determine the combat characteristics for each unit type.

There are four items that can be set for each unit type in this window:

Max. Strength – Sets the maximum value, in strength points, for a unit of the given type. A unit's strength is reduced as a result of Combat and Ranged Fire, and can be increased as a result of Replacement Events.

Kill Level – Determines when a unit is considered to be "killed" — when it will cease to exist in a game. When a unit's strength decreases to the level defined in that unit type's Kill Level, it is destroyed and goes to Wargame Heaven.

Morale Brk. Pt. – Provides the base value used for the determination of demoralized units. Remember that Combat Variance also factors into this determination, with the calculation being Break Point +/- Variance percent.

Entrench Avail. – When checked, units of this type are allowed to enter Entrenched Mode.

There are also two buttons available on this window that will lead to subsequent windows for defining more combat characteristics:

Def Unit Mod – Defender Unit Modifiers allows the designer to set the unit-type versus unit-type combat advantages and/or disadvantages.

Terrain Mod – Terrain Modifiers allows the designer to set advantages or disadvantages for combat occurring in various terrain types.

Combat Defender Chart

This chart controls the modifiers to unit close combat, based on the type(s) of units being attacked. The unit types on the left are the attacking units and the types across the top are the defender possibilities.

Values range from -10 to +10. A value of -10 is displayed as "No", indicating that Combat against that unit type cannot be initiated. A value of 0 is displayed as a blank gray box, indicating that no extra advantage or disadvantage is awarded for attacking the corresponding unit type. Positive values (green) give an advantage to the attacking unit, and negative values (red) give an advantage to the defending unit.

For help on setting the values in the Technology Editor, refer to the Technology Editor Grid Windows section in this document.

Combat Terrain Modifiers Chart

This chart chart reflects the modifiers to unit close combat based on terrain type.

Along the left side of the chart are the defined unit types, representing the attacking unit. Along the top are the 12 base terrain types, plus two columns for River and Stream overlays.

The modifiers for the base terrain reference the terrain type in the defending unit(s)' location. The River/Stream modifiers, however, consider the terrain in the Attacking unit's location, rather than the defender's.

Values range from -10 to +10. A value of -10 is displayed as "No", indicating that an attack into that location type is not allowed. A value of 0 is displayed as a blank gray box, indicating that no extra advantage or disadvantage is awarded for attacking into the corresponding terrain type. Positive values (green) cause the combat to be more effective, and negative values (red) reduce the damage inflicted.

For help on setting the values in the Technology Editor, refer to the Technology Editor Grid Chart section earlier in this document.

Unit Ranged Fire Characteristics Window

This window defines the Ranged Fire abilities of unit types.

R.F. Type – This specifies the type of Ranged Fire the unit uses. A value of "None" indicates that unit cannot use Ranged Fire. Other types imply characteristics as outlined in the manual.

Max R.F. Strength –This defines the maximum value allowable for a unit's Ranged Fire strength. This strength is used when calculating the amount of damage inflicted when a Ranged Fire attempt successfully hits a target. Values can range from 1 to 100. Note that the actual damage is calculated, considering a number of factors, including the unit's Combat Strength, RF Strength, RF Depletion, and Target Terrain and Unit Type modifiers.

R.F. Range – Determines the maximum distance from the firing unit for Ranged Fire.

R.F. Accuracy – Used in the determination of whether the firing of Ranged Fire hits a unit in the target location or not. It represents a percentage, from 1 to 100 — the higher the value, the more likely that a unit will be hit.

R.F. Depletion – Represents the depletion of Ranged Fire strength or capability. Depending on the Ranged Fire Type involved, the Ranged Fire Strength will be reduced each time the unit fires by value. The unit will no longer be able to use ranged fire after the depletion has been reduced to zero.

Terrain Mod – Clicking on the Terrain Mod button allows you to define the modifiers for Ranged Fire calculations based on the Terrain Type of the destination target.

Target Mod – Clicking on the Target Mod button allows you to define the modifiers for Ranged Fire calculations based on the unit type of the unit(s) in the destination target location.

Ranged Fire Terrain Chart

The ranged fire terrain chart reflects modifiers to ranged combat based on the terrain type of the target location.

The attacking unit is on the left, the terrain across the top. Only units with Ranged Fire capabilities are shown.

Values range from -10 to +10. A value of -10 is displayed as "No", indicating that Ranged Fire into that location type is not allowed. A value of 0 is displayed as a blank gray box, indicating that no extra advantage or disadvantage is awarded for firing into the corresponding terrain type.

Positive values (green) cause the Ranged Fire to be more effective, and negative values (red) reduce the damage inflicted.

For help on setting the values in the **Technology Editor**, refer to the **Technology Editor Grid Chart** section earlier in this document.

Ranged Fire Target Modifiers Chart

The ranged fire target chart reflects modifiers to Ranged Fire based on the unit type that is hit.

Along the left of the grid are the firing unit types (the types that have Ranged Fire capability). Along the top of the grid are the potential target unit types.

Values range from -10 to +10. A value of -10 is displayed as "No", indicating that Ranged Fire at that unit type will never do any damage. A value of 0 is displayed as a blank gray box, indicating that no extra advantage or disadvantage is awarded for firing at the corresponding unit type. Positive values (green) cause the Ranged Fire to be more effective, and negative values (red) reduce the damage inflicted.

For help on setting the values in the Technology Editor, refer to the Technology Editor Grid Charts section earlier in this manual.

Unit Sighting Chart Window

The Unit Sighting Chart shows the modifiers to the basic sighting distances, based on the unit types doing the sighting and the unit types they are attempting to see.

Along the left side are all of the defined unit types, representing the units doing the sighting, and along the top are the unit types that are the target of the sighting.

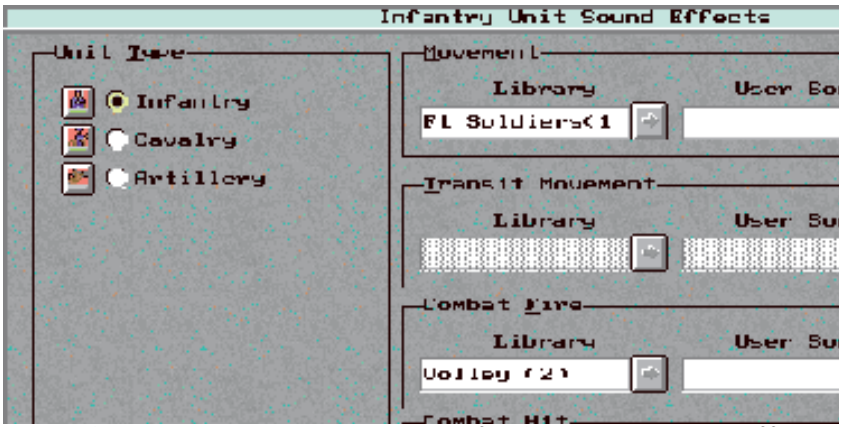
Values range from -10 to +100. A value of -10 is displayed as "No", indicating that the target unit type cannot be detected or identified by the corresponding unit type. A value of 0 is displayed as a blank gray box, indicating that no modification is made to the basic sighting ranges as defined in the Technology. A value of +100 is also a special value, indicating that the sighting unit type will be able to Identify all units of the target type, regardless of distance.

Positive values (green) give an advantage to the sighting unit — the target unit type can be Detected and Identified at a greater distance than

the base values. Negative values (red) reduce the effective sighting ranges.

For help on setting the values in the Technology Editor, refer to the Technology Editor Grid Charts section earlier in this manual.

Unit Sound Effects Window



This allows the scenario designer to specify the actual sound effects used for the defined unit types.

On the left side of this window, a list of the defined unit types is displayed. Selecting any one of these types allows you to see or change the sounds associated with the selected type.

Four types of sound effects can be defined:

The Movement sound is used when a unit of that type is moving when in Standard mode.

The Transit Movement sound is used when a unit of that type is moving when in Transit mode.

The Combat Fire sound specifies the sound of units of that type firing during combat.

The Combat Hit sound is used to represent the results of that unit's firing (e.g., a bullet hitting) during combat.

Note that the designer may select from the included library of more than 100 sound effects. Clicking on the arrow button to the right of the Library column brings up a window from which you can preview or select sound effects.

The User Sound selections allow the designer to provide their own sound effects, in the form of external .VOC or .WAV sound files.

Two notes are important here:

First, these sounds must exist in the **usersnd** directory in order to be played during the game. The game will copy the files to this directory when they are specified here. These external sound files are **not** included directly in the scenario files, and are not transmitted to remote systems automatically during game setup in multi-machine games (modem or network), and are not included in Play-by-Email games.

Second, if the scenario specifies that an external User Sound file be used and that file cannot be accessed during the game, we will default to using the defined Library sound effect, so this should still be set to something appropriate.

Clicking on the **Test** button allows you to preview the currently selected effect. This button is disabled if you do not have a SFX driver specified in your configuration.

Scenario Data Editor

The display area in both the Map and Scenario Data editors consists of a number of elements. Along the top are the drop-down menus, which contain commands which control the whole game system. The right side of the display is dominated by the Toolbox, which contains a number of tools. Along the bottom of the display area is the information bar, divided into a number of sections. This is used to display some quick information to you, responding to the movement of the cursor.

The main portion of the display contains one or more Map Windows.

With multiple map windows opened, commands affect the active window, which is the window with the blue title bar. To change the active window, point the cursor to another map window and click.

The purpose of the Scenario Data editor is to take the basic parameters of terrain (defined in the Map Editor) and unit type capability (defined in the Technology Editor), and add the specific details needed to comprise a specific Battle situation. This includes the placing of the individual units for all forces, the Victory Conditions (how the Scenario ends, how points are awarded, etc.), the designation of supply sources, the locations that are controlled by a force at the start of the game, and so on.

The interface also makes use of Object Menus to direct commands to the specific objects. These menus are accessed by pointing the cursor to the object in question and Rclicking (-click for Mac). Object Menus exist for controlled units and for the Map Windows. The Map Window's object menu is requested by Rclicking the window's Title Bar. Activating the object menu causes a drop-down menu list to appear, from which you can select the desired item.

Map Windows

The use and manipulation of (multiple) Map Windows has been discussed previously, in the section titled Map Window Manipulation under the Playing the Game topic. That discussion also applies to the Scenario Data Editor (as well as the Map Editor).

Scenario Data Toolbox

The specific actions you will take are, for the most part, controlled by the various Tool Buttons in the Toolbox. The topmost section provides a small-scale view of the entire map, with an indication of the section of the world currently visible in the current Map Window.

This world map can be used to reposition the contents of the current map window. Note that the white rectangle within the world map represents the portion of the world currently displayed in the current map window. Clicking-and-dragging inside of this rectangle will drag/scroll the current map window accordingly. Pointing to any position in this world map and clicking will center that location in the map window.

Toolbox

The buttons in the Toolbox should be viewed in three groupings: Tools, Objects, and Forces. The Tools buttons determine the current actions you are performing. The Objects determine, if the Place tool is selected, what you are placing (units, control, etc.). Finally, the Force selection determines the owner of the object that you are placing.

The following **Tools** buttons are available:

 **Place** – Allows you to place objects onto the map. The placed objects are determined by which Object button is currently selected and which Force button is currently selected.

 **Erase** – Allows you to remove objects from the map. After clicking on the Erase tool, click on a visible object in the map. If more than one object exists in the selected location, you will be asked which of the eligible object(s) to remove.

 **Move** – Permits you to change the placement of an existing object. Click on the object in the map that you wish to move, and then click on the new location into which it will be placed.

 **Location Info** – Click and hold to select a map location. A window will open showing relevant information concerning that location and any

objects placed there.

Scen Description – Opens up a window that allows you to add a title and a short description for the Scenario. You also specify the starting Date and Time for the scenario here.

Events – Opens a window that allows you to add scheduled Weather and Replacement events, as well as to edit or delete previously defined events. Reinforcement events are added by selecting the Place tool, the Reinforcement Object and then selecting the map location. See the **Scenario Events Window** later in this manual.

Victory Conditions – Opens a window from which you can set the ending conditions for the scenario. Scenarios can be defined to end after a set number of turns or to end when one side obtains a set number of victory points. You also define the weighting factors for the three types of victory points and the values associated with killing units of the defined types.

Below these Tools buttons are the available Objects buttons. These include:

Supply – This object, when placed, defines Supply Locations on the map.

Reinforcements – After clicking on this Object button and the Place tool button, click on a Map Location will place a Reinforcement Event at that location for the selected Force. You will be able to edit that event to specify the time (turn) of the event and to add the specific units that will be placed at that time as a part of the event. See the **Reinforcements Events Window** later in this section of the manual.

Control – This allows you to mark unoccupied locations on the map as being controlled by the currently selected Force. Clicking on this button a second time will perform a special Fill Control operation (upon confirmation), that will allow you to more quickly set an enclosed region as controlled. This fill will basically find areas on the map that are fully surrounded by controlled (by the current force) locations, and assign control to the force. Note that no locations within this enclosed region can be controlled by another force.

Strategic Locations – This allows you to identify special locations on the map that will award victory points to the side controlling them.

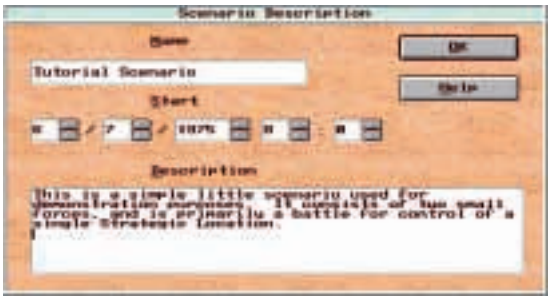
Editing these objects (Rclick on the location, then click on Edit Strat. Loc.), you can specify the number of victory points to be awarded and whether the points are awarded at the end of each turn, or only at the end of the game.

Below the Objects buttons are a group of Units buttons and two Force buttons.

Units – There is an Object button for each unit type defined in the Technology. Click on the desired unit along with the Place tool and the appropriate Force button. Then click on the desired location to place the unit. No more than two units may be placed on any given location.

Force – Below the group of Object Buttons, you will find two to four Force buttons, one button for each Force that is defined as active in the Technology. One and only one of these Force buttons may be selected at any time. The selected Force is used in conjunction with the Tool and Object buttons, as explained previously.

Scenario Description Window



The scenario description consists of the scenario name, the starting date and time of the scenario, and a brief text description.

These elements are cosmetic in nature, intended to allow the scenario designer to establish the "feel" of the scenario. The scenario description is displayed when a player is loading a scenario and selects the Preview Scenario button.

Scenario Events

This window presents you with a list of the defined Events in the scenario, in turn-sequence order.

Three types of events are supported:

Weather events change the weather conditions at the start of a turn.

Replacement events allow for the replenishment of Units' Combat Strength or Ranged Fire Strength for a force at the beginning of that force's turn.

Reinforcement events allow for the allocation and deployment of new Units for a force at the beginning of that force's turn. Unlike the previous event types, Reinforcement events are tied to a specific map location, into which these new units will be placed. Control of this location may be required.

This window has two modes of use, determined by the method that you used to open the window.

When you select the Events button in the Scenario Editor Toolbox, the Scenario Events list will show all defined events for all three event types. In this mode, the Add button will allow you to add a new Weather or Replacement event. You will not be able to add a new Reinforcement event, however, since these are location-dependent.

You can also open this window by selecting the Reinforcements tool in the Scenario Editor Toolbox and selecting a location on the map. This opens the Events list in location-specific mode. In this mode, Reinforcement events can be added/copied/deleted for that specific location and the current force.

The following buttons are available, and where applicable, apply to the currently selected Event in the displayed list:

Add – Creates a new event. If you are in Reinforcement mode the new event will be that type of event, tied to the current location and force. In full-scenario mode, you will be given a choice of Weather or Replacement

event, and then be taken to the appropriate window to change the default values for that event type.

Edit – Allows you to change the parameters of the selected event.

Delete – Will remove the selected event. Warning: the event will be irretrievably gone if this button is clicked on!

Copy – Creates an exact copy of the selected event, and then invoke the type-specific editor to allow you to modify some or all of the parameters of the newly-created copy.

OK – Clicking on the OK button will close this window.

Reinforcement Events Window

Reinforcements provide the means of bringing new units into battle after the beginning of a scenario. These events are always associated with a single force, although multiple events may be defined to provide for multiple forces.

Reinforcements are location specific events, and the reinforcement window allows the scenario designer to place the units which will appear in or around the targeted location.

The specific elements of this window are:

Turn – Specifies the turn in which the event will happen. Reinforcements always happen at the beginning of a force's turn.

Reinforce – button is selected, the reinforcements will always be dispatched at the appropriate time.

If the Reinforce if Controlled button is selected, the reinforcements will **only** be dispatched if the location to which the event is linked is controlled by any force on the same side as the force that is to receive the reinforcements. If the control criteria is not met, then the reinforcements will never be dispatched.

The buttons along the right side of the window allow you to specify the units that will be dispatched when the event is processed.

Add Unit – Will bring up a list, allowing you to select the unit type to add to event.

Copy Unit – Allows you to add a duplicate of the highlighted unit, copying all of the defined attributes (except for the unit's name).

Edit Unit – Allows you to inspect and modify the current attributes of the highlighted unit in the list.

Delete Unit – Removes the highlighted unit from the list of units to be dispatched.

Replacement Events

Replacement Events provide a means to rebuild the strength of units damaged in combat. Depending on the type of replacements, eligible units will have either their Combat Strength or their Ranged Fire Strength increased (up to the maximum level defined for the corresponding unit type).

Replacement Events happen at the beginning of the specified turn for the affected Force.

The quantity specified for the event indicates the total number of Strength Points that will be allocated. These points are allocated in a "weighted random" manner, such that the lower a unit's strength level is relative to its maximum strength, the greater that unit's chance of being allocated one or more replacement points.

The specified quantity can range from 1 to 10000.

The game supports four types of Replacements:

General replacements apply to all units, and bolster their Combat Strength.

Sea replacements only apply to units whose type is defined as Sea Class units (refer to the unit type Definitions window). This type of replacement also increases the Combat Strength of the affected units.

Land replacements only apply to units whose type is defined as Land Class units. This type of replacement also increments the Combat Strength of the effected units.

Ranged Fire replacements apply to units that possess Ranged Fire capability, and bolsters their Ranged Fire Strength.

Weather Events

Unlike other Event Types, Weather Events apply to all forces involved in the battle, and can affect Combat and Ranged Fire results, Movement

speeds, and Sighting. These events happen at the beginning of the specified turn, and their effects will remain until superseded by subsequent Weather events.

The type of event determines the visual affects (the map display changes according to the current weather conditions). Also, the various types of weather will set specific default values for the effects that can be specified in this window. The scenario designer has the option of modifying these effects as needed.

The Label provided for the event is used for reporting purposes. By default, this label corresponds to the type specified. However, the scenario designer can replace this with their own descriptive name if desired.

The Weather Event contains Modifier Values for six categories of game actions. These values all range from -10 to +10, with a value of 0 being "No Effect" (standard calculations apply). Negative values are disadvantageous, while positive values provide improved performance.

Scenario Victory Conditions Window

This window controls two important components of the scenario: how to determine when that scenario is over, and how to allocate the victory points used to determine the winner of the game.

Games can end based on one of two criteria:

If the Game ends by Turn, then the value specified for Pts/Trns means that after that number of turns have been completed, the game will end.

If the Game ends by Points, the game will end when one side has accumulated the specified Points value at the end of a turn.

The second portion of this window allows the designer to allocate differing weighting factors to the various sources of Victory Points, by side:

Strat. Locs. – Specifies the multipliers used when allocating victory points for control of Strategic Locations. The score will be the points defined for the Strategic Location multiplied by the number specified here for the controlling side. Setting this value to 0 causes controlled Strategic Locations not to be factored into the victory point calculations for the side.

Map Control – Specifies the multipliers used for calculating Victory Points based on the number of locations controlled by a side. Setting this value to 0 causes controlled locations (other than Strategic Locations) not to be factored into the victory point calculations for the side.

Units Dest. – Defines the multipliers used for allocating victory points for units destroyed. The values awarded for the killed unit type are multiplied by this value when awarding victory points. Setting this value to 0 causes killed units not to be factored into the victory point calculations for the side.

Unit Victory Values Window

This window allows the designer to specify the number of victory points to be allocated when killing an enemy unit. This value is multiplied by the Units Destroyed Multiplier for the killing side, as defined in the Scenario Victory Conditions window.

The values can range from 0 to 25 (points) for each unit type.

Library Processing

The first display upon entering the Icon Library Utility provides the basic tools for manipulating Icon Libraries. An Icon Library is a collection of unit icons to be used when defining unit types in **Empire II**'s Technology Editor.

An Icon Library can contain just over 2000 icons. **Empire II** allows you to use icons from many libraries, so this limitation should not be a problem.

For each icon contained in the library, three images are maintained — one for each of the three largest Map Zoom Levels supported by **Empire II**. The actual unit icon as used in the game is comprised of three elements.

1) The icon frame is used for all units. It contains the border edging and the strength bars. Icon frames are not editable.

2) The actual icon image is taken from the Icon Library. This is the image which you can create or modify with this utility program.

3) The icon background is used to indicate the force and relative strength of the unit. The game uses four color sets for the four forces: Blue, Red, Green, and Brown. This background color shares the same space as the icon image, which means that you must take this into consideration when designing icons.

Each icon must have an area painted in the Transparent color, which is Color Number 254 (in the color range from 0 to 255) in the palette (second from the bottom on the right). Each pixel of this color in the icon image will be replaced by the appropriate background color when the unit icon is actually rendered.

This will be discussed in more detail in the Paint and Clip help topics.

While this utility provides all of the tools that you actually need to draw an icon, we recognize that our paint tools are pretty basic. Most artists would prefer to work in a real paint program and use this utility to actually build the libraries. We provide the means of importing files created in a variety of formats, which are mentioned later.

When using a different paint program, it is important that you know the exact sizes of the icon images used here. Each icon is rectangular, with the following dimensions (in pixels):

Zoom 1 - 28 across, 20 down

Zoom 2 - 20 across, 15 down

Zoom 3 - 14 across, 10 down

This main screen has two areas with which you work. The drop-down menus are used for File-Control and Help functions, and to exit the program. Working with individual icons and groups of icons is performed by the various controls present in the window.

Icon Utility Menus

The following menu items are available:

File

New - This command initializes a new library. In its initial state, the library has no icons.

Open - This command loads in an Icon Library from disk.

Save - This command rewrites the Library being worked on to disk, overwriting the existing library.

Save As - This will prompt for a file name to use for saving the Library being worked on.

Revert - This will reload the last file loaded from disk, ignoring any changes you may have made.

Exit - Closes the program, returning you to the command-line prompt.

Help

Help - Brings up the Library Processing file.

About - Displays brief program information.

Icon Manipulation

Most of the work you will do on the main screen involves the manipulation of icons. The window contains four sections.

The first section is the Icon List on the left side of the window.

This shows the icon images contained in the current library. All images displayed in this window are presented with a blue background color. Click on the icon you wish to work on, or use the arrows or slider bar.

Icon Zooms

Displays the currently selected icon in the three Zoom Levels. One of these three icon sizes is selected, as indicated by the yellow outline. This is the size you will be manipulating (paint, generate, import, etc.) To select a different size, click on the desired icon size.

Edit Functions

Contains Paint and Generate buttons. Both of these functions operate on a single icon image in the selected Zoom.

Paint – Opens up the Paint Window, allowing you to draw or modify the icon, and to test the icon image with the various background colors that will be used in the game.

Generate – Allows you to automatically generate the image for the selected zoom as a scaled version of one of the adjacent zooms for the same icon. For example, you can create an image for the largest zoom, and then select the middle zoom and automatically generate the image by scaling the image down from the large size. You can then select the smallest size, and generate that one from the middle zoom.

Icon Functions

Provides tools to add or delete icons from the library. In addition, you can import data from other files into the Icon Library.

Copy – Creates a new icon entry in the library, and copies all three zooms of the currently selected icon to the newly created one.

New – Add an icon to the library. All three zooms of this icon are initialized to the Transparent color. This new icon becomes the selected icon.

Import – Performs two different functions. First, it allows you to copy one or more icons from another Icon Library to the library with which you are working. Secondly, if there is a currently selected icon, the Import function allows you to clip an image for the currently selected zoom of the selected icon from an external .IFF, .LBM, .BBM or .PCX file.

If there is no currently selected icon, the program will assume that you wish to Import from an Icon Library. With a selected icon, the program will ask you which of these two functions you wish to perform.

Delete – Deletes the currently selected icon (all three zooms) from the library.

Painting an Icon

The Paint Window contains three separate sections. On the right side of the window is the Palette Box, containing the 256 colors which you have available to use. The current color is outlined with a White box. To select a different color for painting, click on the appropriate color.

The main (center) portion of the window contains an enlarged version of the icon with which you are working. Each pixel in the image is displayed by a larger square. The Transparent color is displayed as a medium red, and corresponds to the next-to-last color at the bottom-right corner of the palette.

To paint with the current color, simply click-and-drag the cursor. To automatically paint with the transparent color, Rclick (-click for Mac). You can also select a new color as the current color from the Icon Image by holding the **Shift** key down while you click on the desired color in the paint region.

Along the left side of the Window are some tools for your use. At the top of this area is the icon with which you are working, shown at actual size with the standard frame, with a blue background.

Also, on the left side are the following buttons:

OK – Accepts the changes you have made and returns to the Icon Manipulation window.

Test – Opens up a window that displays the current icon image with a variety of background colors, as will be used in the actual game. This allows you to make sure that the image stands out under normal game conditions.

Help – Shows you the Painting an Icon text.

Cancel – Discards any changes you have made in this mode, and return

you to the Icon Manipulation window.

Importing from another Icon Library

After selecting the library from which you will be importing, you are shown the Import Icons Window. Along the left side of this window is the list of icons in the selected source library. Along the right side of the window is the list of icons that you have selected for copying.

>> – To add a single icon to the Destination list, click on that icon in the Source list and then click the **>>** button.

All – Will copy all of the icons in the Source list to the Destination list.

<< – To remove a single icon from the Destination list, click on that icon and then select the **<<** button.

None – Removes all icons from the Destination list.

Ok – Will copy all of the icons in the Destination list to the Icon Library on which you are working, and return you to the main window.

Cancel – Returns you to the main window, but will not perform any updates to the Icon Library.

Clipping from a Graphic File

As previously mentioned The Icon Utility supports the importing of other graphic files. Note that upon loading these files, the palettes are automatically converted to the palette used by **Empire II**, which may result in some minor changes to the graphics files due to palette differences.

Once you have loaded in an external graphics image, you will use the Clip Window to select the appropriately-sized area from the image that will be used for the icon. The Rectangular White Box that displays when the cursor is positioned over the image indicates the section that will be cut out to form the icon image.

The first thing you should do after loading the image is to tell the program which color in your image should be treated as Transparent. Click on the **Select** button and then point the cursor to an appropriate location in the image to choose the transparent color.

Load – Allows you to load in a new graphic file from within the Clip Window.

Grid On/Off – Allows you to toggle forced alignment to a grid on or off. When the button is depressed, the grid alignment is on, which means that the clip rectangle is forced to line up with a grid the size of the Icon being clipped. When the alignment is off (button is raised), the clip rectangle will move freely and can be moved to any position.

Grid Adjust – Allows you to re-orient the alignment discussed above.

Increase Magnification and **Decrease Magnification** allow you to zoom in or out on the image for finer detail work.

This window will automatically close when you select an area of the graphic image to clip.

Close – Returns you to the Icon Manipulation window without selecting a clip area.

Empire II

Credits

Producer: Alvin Eohian Mullins
Quality Assurance: George Moneo, James H. Smith IV, Sean Pereira
Online Manual Edition: April 1997

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- The type of hardware you are using:
- The brand of computer you own,
- CPU type (80386, 80486, Pentium®),
- Video type (EGA, VGA, Super VGA),
- Model and type of video card, and
- Model and type of printer.
- The exact wording of any messages that appeared on the screen.
- What happened and what you were doing when the problem occurred.
- We encourage Windows® 3.x (or MS-DOS 6.x) users who need product support to print an MSD report. Have it available for the Product Support Specialist who answers your call. You will find the MSD (Microsoft Diagnostics) program in either the Windows or the DOS directory.