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### Credits

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# Chapter I: Using This Manual & Other Important Information



## About This Manual:

Throughout this manual icons appear to the left of the text. Each icon indicates that the paragraph beside it is of special importance for this specific computer or that the screen picture is from a specific computer. For example, the minimum requirements to run The Universal Military Simulator II: Nations at War are:



### IBM/Tandy & Compatibles

512 K of RAM, EGA monitor with 256 K of Video RAM. A mouse is not required, however, it is supported throughout the program and its use is encouraged. Standard EPSON or EPSON-emulating printers are supported as well.



### Macintosh

512 KB of RAM minimum; 1MB of RAM for sound. Color or monochrome monitors are supported as well as Finder and MultiFinder. UMS II has been tested with a wide range of CDEVs and INITs and behaves superbly with all. Also supported are the Imagewriter I, Imagewriter II and LaserWriter printers.



### Atari ST

UMS II will run on an Atari 520ST, 1040ST, Mega2 ST and Mega4 ST. Atari and EPSON emulating printers are supported as well. The issue of color and monochrome monitors is still undecided. Desk accessories are also supported.

### Commodore Amiga

UMS II will run on a Commodore Amiga 1000, 2000, 2500 and 3000. A minimum of 1 Meg of RAM is needed. To install UMS II on a hard disk:

1. Boot your hard disk.
2. Open a CLI or SHELL (a window into which commands can be typed). The following use the name hd: to refer to your hard disk. Substitute the appropriate name when hd: appears. Type the following:  
mkdir hd:UDisk  
copy udisk:umsii hd:udisk  
copy udisk:libs/iff.library libs:  
copy udisk:fonts fonts: all
3. Add this to your startup sequence:  
assign udisk: hd:udisk  
path udisk:
4. If you want the opening animation and music type:  
copy udisk:libs/arp.library libs:  
mkdir hd:pictures  
copy udisk:pictures hd:udisk/pictures all  
copy udisk:intro hd:udisk  
copy udisk:play hd:udisk  
To hear a data disk's theme music insert the disk and type:  
INTRO



### Apple IIGS

UMS II will run on an Apple IIGS with a minimum of 1 Meg of RAM.



### Printing

These messages are important if you wish to create hard copy printouts of combat reports, maps or messages.

Very important messages have the pointing finger icon beside them. This is the first - and probably most important of these messages - that appears in this manual:



UMS II is not copy-protected. Before doing anything else, including reading further in this manual, please make back up copies of all the disks that were included in the package. Then put the original disks away in a safe place.

UMS II may also be installed on a hard disk. This is highly encouraged. Simply copy all of the files on all of the disks to a directory or folder on your hard disk (Amiga owners see instructions above).

UMS II does not require a key disk, either. You should never need to use your original disks again.

## Overview of UMS II: Nations at War

UMS II scenarios are divided into sequenced phases. In the first phase each nation under human control may, in turn, move any or all of the military units under its control, schedule new units to be created and make offers of peace or neutrality. When all nations under human control have completed their moves the Done option is selected from the **Phases** menu (see chapter 2 for details). The mouse cursor will now change shape to indicate that the computer has control of all operations.

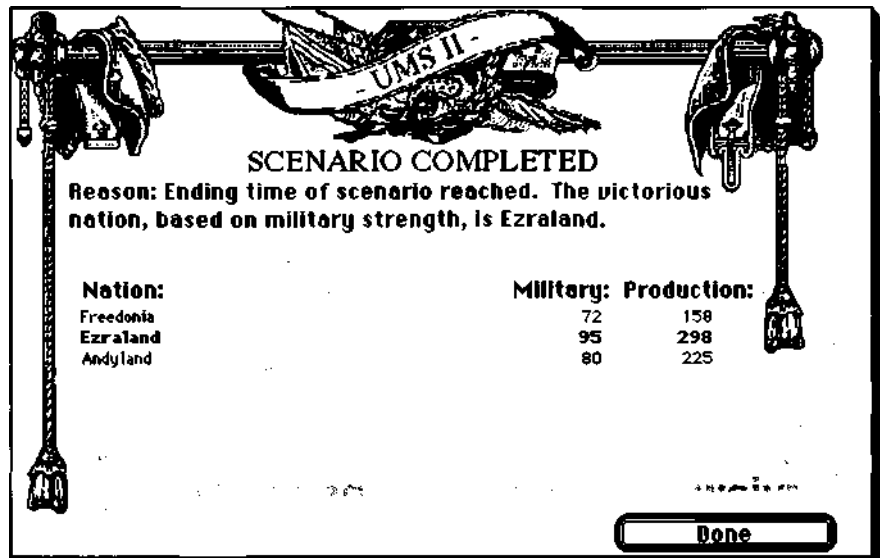
During the second phase nations under computer control move military units, schedule new unit construction and conduct diplomatic proceedings (sometimes just between two computer nations). When the computer is finished making decisions for all the nations under its control the mouse cursor changes back to the standard design.

Select **Execute** under the **Phases** menu to start the third phase. During this phase the computer again regains control of all functions and the mouse cursor changes appropriately. The computer will now move units, advance weather systems and act as a 'referee' deciding the outcome of hostile conflicts. These three phases are repeated until the completion of a scenario.

A scenario is completed when one of the following conditions are met:

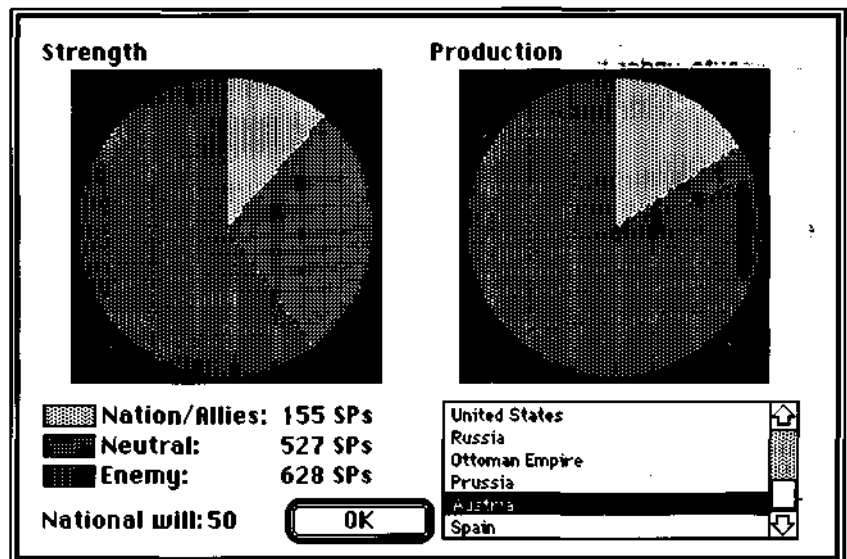
- 1) The end time of a scenario is reached. All scenarios have a specific date that the simulation is terminated at. This end time is set when the scenario is created and can not be changed during the simulation.
- 2) One of the nations has achieved a decisive victory based on the cumulative total of the Strength Points of its military units. When a scenario is created this ratio is set by the designer. The scenarios included with UMS II have Armed Forces Victory Ratios of either 2:1 or 3:1.
- 3) One of the nations has achieved a decisive victory based on the cumulative total of the Production Points of the provinces under its control. When a scenario is created this ratio is set by the designer. The scenarios included with UMS II have Production Victory Ratios of either 2:1 or 3:1.

## Scenario Completion



The Scenario Completion screen as it appears on the Macintosh.

4) Only one nation remains. A nation is eliminated when its National Will is reduced to 0. The National Will can be reduced by the loss of military units, provincial capitals or national capitals. The National Will can be increased by destroying enemy units or capturing enemy capitals. How much the National Will is increased or decreased is decided by the user in the Master Control Panel (see chapter 5 for details).



National Will, Production and Armed Forces Graphs are available by selecting the Graphs option from the Extras menu.

It is important that you clip and mail the registration form (located on the last page of the index) so that we can inform you of upgrades to the program. Intergalactic Development, Inc. has always had a free upgrade policy (all that we ask is a self addressed stamped envelope large and sturdy enough to hold your original disk). We also need to receive comments from you so that we can incorporate your suggestions into our upgrades. Please write to us at: Intergalactic Development, Inc., 1427 Washington Street, Davenport, Iowa 52804 USA.

## **Upgrades**



## **Chapter II: Menus & Using the Interface**



## Menus

UMS II: Nations at War is a completely menu-driven program that operates in a windowing environment. UMS II completely supports the Macintosh operating system (Finder and MultiFinder), GEM on the Atari ST, Intuition on the Amiga and the Apple IIGS GS/OS. UMS II will also function perfectly on IBM and IBM compatible machines with, or without, a mouse. There are keyboard equivalents for all mouse activities.

At the top of the UMS II window are a series of pull-down menus. From left to right the menus are:

### About...



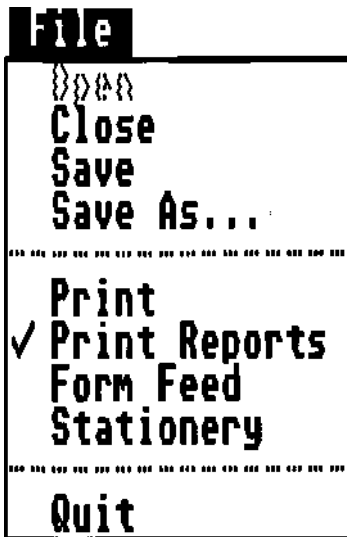
IIGS



UMS II completely supports Desk Accessories for the Macintosh, Classic Desk Accessories for the Apple IIGS and .ACC DAs for the Atari ST (see the appropriate User Manual for your computer to install these accessories on your computer). Any installed Desk Accessories will appear beneath About UMS II... on this menu. Information about your version of UMS II may be obtained by selecting this menu option.

The IBM key equivalent - for machines without a mouse - is A. Pressing this key will highlight this menu. Pressing A again will display the About UMS II message box. Pressing D for Done will exit this dialog box.

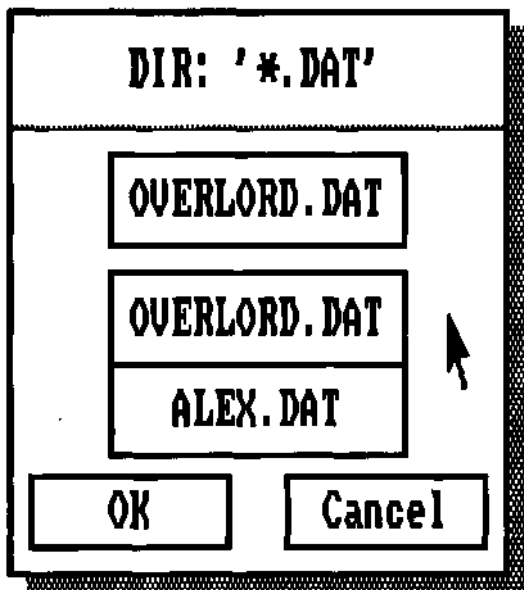
### Files



Selecting **Open** will cause a file selector box to appear. Click the mouse on the desired file to select it. For IBM users without a mouse: Press **F** to highlight the file menu and then press **O** to view the file selector box. Use the **Up** and **Down Arrows** to scroll through the available files. Press **Return** to select a file. The selected file will appear in the separate box at the top of the file selector. Press **O** (for OK) to load the selected file or **C** to cancel.







Only one file may be open at a time. If a file is currently open (a map is displayed on the screen) the Open File option will be grayed out and can not be selected. In such circumstances it is necessary to first Close the currently open file.



Selecting this menu item will close the existing file and allow the user to load a **Close** new scenario. The IBM key equivalent is C.

Selecting this menu item will save the currently open file to disk under the same name. This will overwrite the existing file on the disk. The IBM key equivalent is S.

**Save**

Selecting this menu item will save the currently open file to disk under a new name. The user will be prompted to either enter a new name for the file or to cancel the process. The file may be saved onto a new disk. The IBM key equivalent is A.

**Save As**

Selecting this menu item will cause a hard copy printout to be made of the current screen view. Atari ST users may also add up to three lines of text to the hard copy. The Atari ST version supports either ATARI or EPSON compatible printers. The Macintosh and Apple IIGS versions support Imagewriter I, Imagewriter II or LaserWriter printers. The Amiga version supports a multitude of printer types; see your computer manual for installing the correct printer drivers.

**Print**



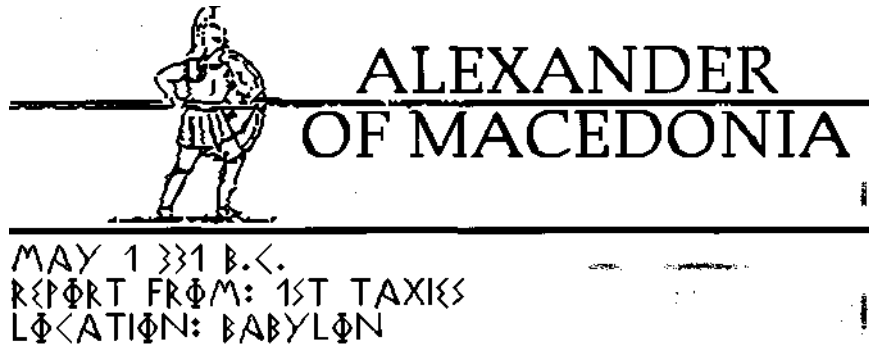
When this menu item is selected a check mark will appear to the left of the box. All reports, throughout the course of the scenario, that are displayed to the screen will also be sent to the printer. This option may be toggled off by selecting it again. When this option is on, the following menu items also become available:

**Print Reports**



**Form Feed:** Each report is printed on a single sheet of paper. When this option is selected a check mark will appear to the left of the box. Selecting this item again will remove the check mark and disable the option.

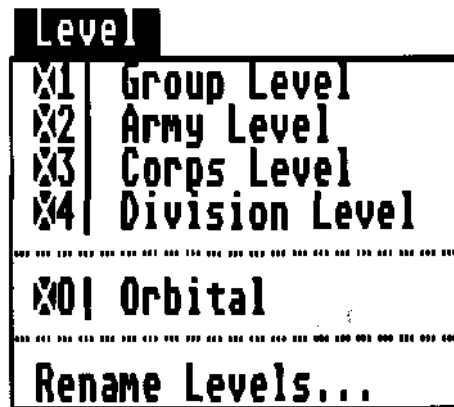
**Stationery:** Reports will be printed on the appropriate national stationery; and, when applicable, with the appropriate typeface(Macintosh only).



## Quit

Selecting quit will terminate the program immediately after saving any changes to the scenario file. See also Chapter 15 for information about files.

## Level



The first four items on this menu allow the user to select the organizational level and map detail level that are displayed on the screen. Each level of a nation's Order of Battle table corresponds to a viewing level of the map. For example, selecting **Division Level** during the Overlord scenario will display the smallest level of units on a map with a resolution of approximately 12 kilometers<sup>1</sup> (8 miles) per square. Selecting **Corps Level** will redraw the map at the lower resolution of 58 kilometers (36 miles) and display the commanders of the previously displayed units.

These menu items may also be selected by pressing the **Command Key** (Open Apple on the Macintosh, ALT on the Atari ST, the Hollow Amiga Key on the Amiga and the ALT key on the IBM) and the numbers 1, 2, 3 or 4 (use the

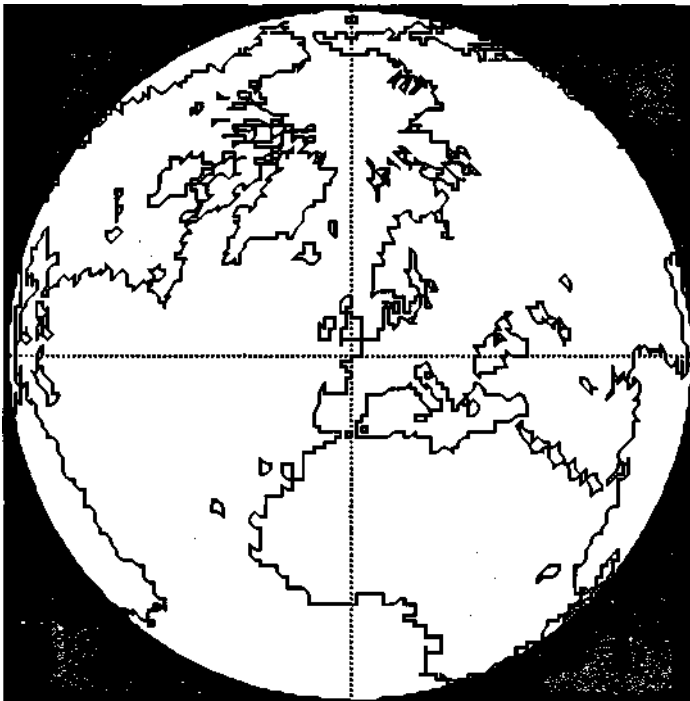
<sup>1</sup>Note: The map scale is calculated using the distance of the display area from the equator. The further the viewing area is from the equator the greater the scale. Remember: UMS II maps, like real life, are actually two-dimensional representations of three-dimensional spheres.

numbers above the keyboard; not the the numeric keypad to the right of the keyboard).

Make certain that NUM LOCK is on if you wish to use the numeric keypad to the right of the keyboard.



## Orbital



Selecting this menu item will cause a hemispheric map to be drawn centered on the current coordinates of the previous detail map. This view requires a great deal of RAM and may not be available on small memory machines that are running very large scenarios.

The globe can be rotated by selecting the appropriate arrow buttons. Selecting OK will exit this view and redraw the detailed map at the coordinates selected from the Orbital view. Selecting Cancel will exit the Orbital view and return the user to the previous detailed view.

On the Macintosh, the globe may also be rotated by selecting a predefined coordinate from the scrolling list, or pop-up menu, to the right of the hemisphere.

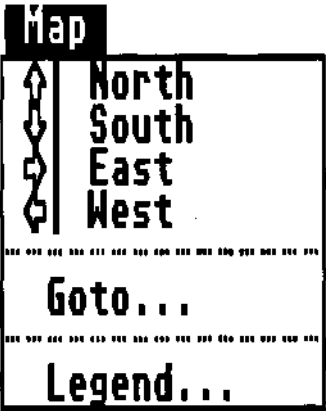


## Rename Levels

This option allows the user to rename the levels to any word or phrase up to twenty-five (fifteen on the Atari ST) characters in length (spaces included). For example, Army Level, may be renamed to Theater Level. The level names are stored in the .MCP file and it is necessary to save the new .MCP file if the user wishes to retain these names. See Save **.MCP** File for details.

Selecting the menu items North, South, East or West will cause the map to be scrolled in the desired direction. Macintosh and Atari users may also use the Arrow keys to scroll the map.

## Map



Simultaneously depressing the Option key and a keyboard arrow on the Macintosh will scroll the map in larger segments.



IBM compatible users may also use the **ALT** key combined with the keys **N**, **S**, **E** and **W** to scroll the map without accessing the pull-down menus or the keys **N**, **S**, **E** and **W** when the menu is currently active.

**Goto.**

Selecting this menu item will display a dialog box that allows the user to select the coordinates of a special square or path start. In addition the user may also directly enter a coordinate pair. Selecting OK will exit the dialog box and force the map to be changed with the selected coordinate at the center of the screen. Selecting Cancel will return the user to the previous map coordinate. If a special square's coordinates are selected the map will also be redrawn at the highest resolution.

The IBM Go to box is below. See p. 3.2 for the Macintosh and IIGS Go To Boxes.

Go to...

Latitude 50 ° 00 ' ☉ N ○ S

Longitude 000 ° 00 ' ○ W ☉ E

Path Starts

↑ | Eure R. | ↓

Special Squares

↑ | Abbeville | ↓

OK Cancel

IBM Keys  
Use **TAB** to move between text fields.  
**RETURN** when done.  
Use **N,S,E,W**.

Use **UP** and **DOWN** arrows to scroll through list; **A** for Path Starts, **Q** for Special Squares.

Use **SHIFT**, **UP** or **DOWN** arrows to scroll list





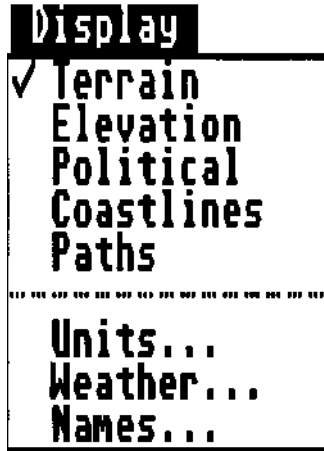
## Legend

Selecting **Legend** will display all sixteen terrain types with their corresponding map patterns. Selecting **Kilometers** will cause the map scale in the lower left hand corner of the screen to be calibrated in kilometers. Selecting **Miles** will cause the map scale to be displayed in miles. The IBM key equivalents are **K** and **M**. The user preference for kilometer or mile calibration is saved in the .MCP file.

**Atari ST Only:** Alternate terrain patterns may be loaded by selecting **LOAD**. UMS II uses .FL2 medium resolution fill patterns. These patterns may be edited and created using the ArtST program. ArtST is a shareware program by Robert Birmingham and is available on numerous bulletin boards.



## Display



The first four menu items on this list are mutually exclusive. That is to say that only one of these four items may be active at a time. The active item has a check mark, or tick, to the left.

### Terrain

This is the default setting for viewing the map. When this feature is selected the map will displayed using the sixteen terrain patterns.

### Elevation

When this menu item has been selected the map will be drawn with elevation contour outlines.

### Political

This option causes an outline to be drawn around each province.

### Coastline

This option causes an outline to be drawn around the coastline and all large bodies of water on the map.

### Paths

When this menu item is checked paths will be drawn on the map.

There are six different path types used in UMS II: Nations at War: Track, Road, Highway, Railroad, River and Canal. The first four are ground paths and are drawn in black; the last two are water paths and are drawn in blue on color monitors. Paths on the Macintosh appear as follows:



Track



Road



Highway



Railroad



River



Canal

**UNIT DISPLAY OPTIONS**

☒ Show unit icons

☐ Show unit names

**Done**

Units.

Unit icons will be displayed if the appropriate box contains a check mark. The name of the unit will be displayed below the icon if this option is selected.

Only the first six letters of the unit name will appear on Atari ST screens.

Only visible units are displayed. See Chapter 5, The Master Control Panel, Unit Visibility; to adjust this variable.



Weather...

**Weather Display Options**

☐ Show Temperature

☐ C ☒ F

☐ Show Winds

☐ Show Weather Systems

☐ Show Pressure Zones

**Done**



At all times temperature, wind direction, storm fronts (rain and snow) and high and low pressure zones may be displayed at any level of resolution on the map. When the box to the left of the option is checked the item is active. Temperatures may be displayed in either Centigrade or Fahrenheit.

Clicking the mouse in the box will toggle the options on and off. On IBM compatible

computers these options may be toggled by pressing the keys **T**, **W**, **S**, **P**, **C** and **F** respectively. See Chapter 4, Weather for more information about weather, its effect and meteorological symbols.



Names

**PLACE NAME OPTIONS**

☒ **Show capital names**

☐ **Show minor place names**

**Done**

**Modify**

**Master Control**  
**Battle Equation**  


---

**Save .GEN file**  


---

**Load .MCP File**  
**Save .MCP File**

Provincial and national capital names will be displayed if this option is checked. All city and special square names will be displayed if this option is selected. IBM compatible users may also use the keys **C** and **M**.

**Modify**  
**Master Control**  
**Battle Equation**

Selecting this menu item will display the Master Control Panel. See Chapter 5: The Master Control Panel for detailed information about these operations.

Selecting this menu item will display a series of dialog boxes that allow the user to 'design' or modify the actual equations used to determine combat results. The user may also set the variables that determine the effect on combat of all unit formations and commands as well as the cost in supplies for a unit to assume these formations. See Chapter 11, Combat for details.

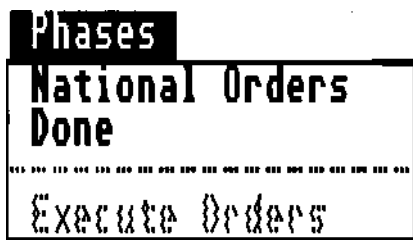
**Save .GEN File**

The user defined variables used by the Artificial Intelligence routines that command computer controlled nations and armies are stored in small files that end with the extension .GEN. When a scenario file is loaded, the corresponding .GEN file is also loaded into memory. For example, the scenario file OVERLORD.DAT has a matching set of AI variables stored in the file OVERLORD.GEN. See Chapter 13: Artificial Intelligence for more details. Selecting this menu item will cause the current AI routines to be stored in a file with the current scenario filename with the .GEN extension appended to it.



These two menu items cause a file selector dialog box to appear to respectively load a new .MCP file or save the current. MCP file. An .MCP file stores all the

**Load .MCP File...**  
**Save .MCP File...**



variables set with the Master Control Panel as well as a number of user preferences (kilometers or miles, centigrade or Fahrenheit, for example). For more information see Chapter 5, The Master Control Panel.

Select this menu item to set national policy, give orders to military units, set budget and production goals, program computer artificial intelligence routines and change passwords. See Chapter 12, National Policies for details.

Select this menu item when all national orders of all human controlled nations are given. Selecting this menu item will deactivate National Orders and Done and activate the menu option Execute Orders.

Selecting this menu item will cause the computer to move all units, update and move weather systems and analyze and resolve hostile contacts between enemy units. The computer will continue to advance time and update unit positions until the preset time is reached. See Chapter 5, The Master Control Panel for details.

**Phases**  
**National Orders**

**Done**

**Execute Orders**



## Moving the Cursor and Special Cursor Commands



Macintosh, IBM, Amiga cursor, left.



Atari ST cursor, right

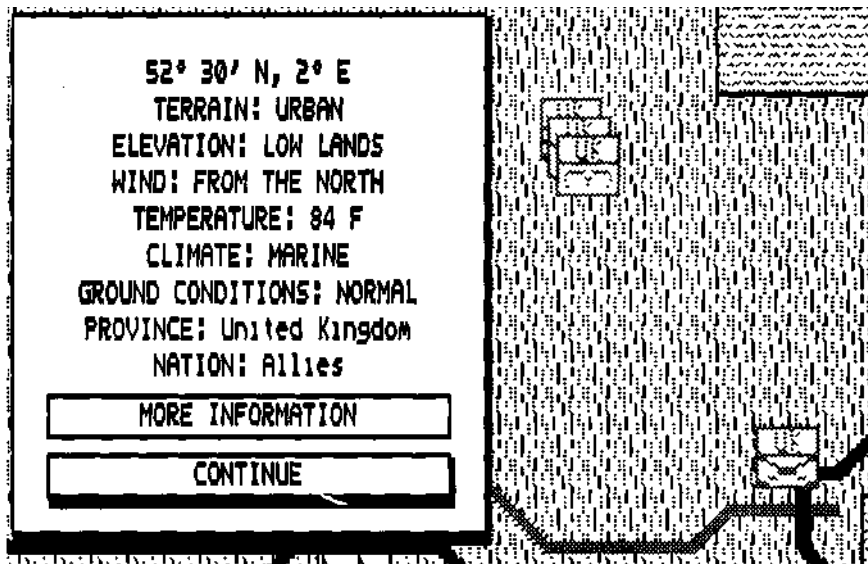
On IBM compatible machines that are not equipped with a mouse, the cursor may be moved about the map by using the numeric keypad to the right of the keyboard. When NUM LOCK is selected the cursor moves in five square increments. When NUM LOCK is not selected the cursor moves in one square increments. The cursor is not visible until a key is depressed.



To see detailed unit information position the cursor over the upper left hand corner of the desired unit and double click the left mouse button. IBM compatible users without a mouse should press RETURN twice. For a detailed explanation of the Unit Information box see Chapters 6,7,8 and 9 .

**Double Click**





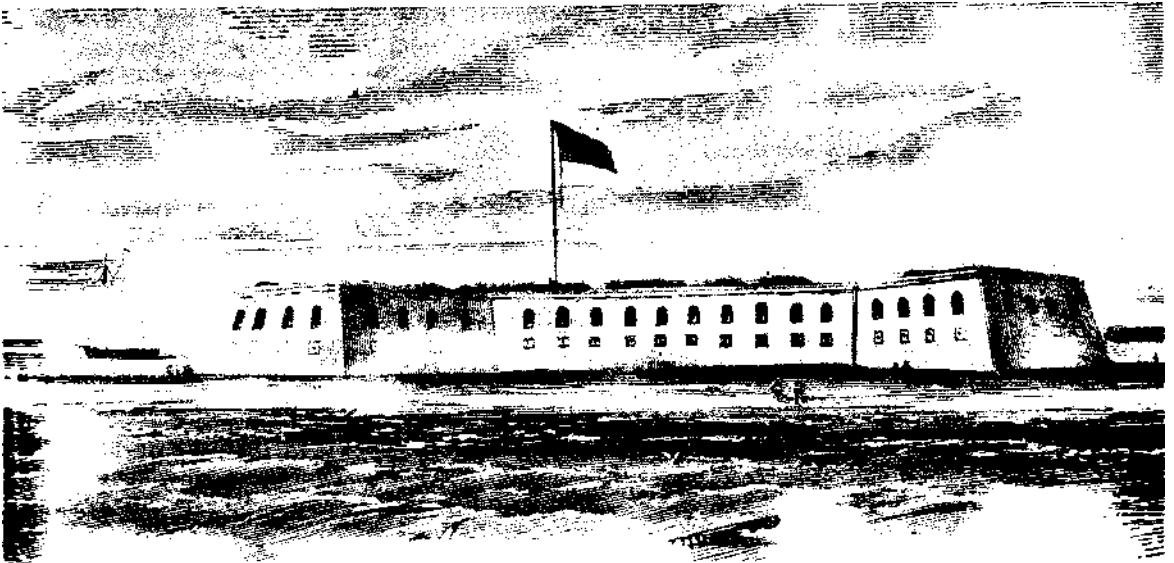
**Shift Click**

To see detailed information about terrain, weather, paths and special squares, position the cursor over the desired map square and simultaneously depress the SHIFT key and the left mouse button. IBM compatible users without a mouse should simultaneously press the SHIFT key and the RETURN key.

If the selected square is also a Special Square the More Information button will be highlighted. Click on this button (or press M on IBM compatibles without a mouse) to list detailed information about the Special Square.

For a detailed explanation of this feature see Chapter 3, Special Squares.

## Chapter III: Special Squares, Ports & Forts.



## Special Squares: Ports and Fortifications

A special square is a map square that contains either a national capital, a provincial capital, a port, a town or fortifications. Special squares have names - though it is not necessary for a square to have a unique name - and are controlled by either one of the provinces that make up nations (and therefore considered as part of the resources of that nation) or are declared "uncontrolled" and will be occupied by the first military unit that enters the special square.

From the **Main Menu**<sup>1</sup> it is possible to **Go To** any special square from any point on the map. Selecting this option from the menu will produce the Go To dialog box:



**Go to...**

**Latitude**     °     '    
 ☒ N (%N)    ☐ S (%S)

**Longitude**     °     '    
 ☐ W (%W)    ☒ E (%E)

**Path Starts**

- Achaean Road
- Achaean Road
- Adriatic Road
- Aetolian Road
- Bactrian Road
- Bactrian Road
- Boeotian Road
- Bosporian Road
- Bucephala Road
- Byzantine Road
- Central Highway
- Chalcidictian Road

**Special Squares**

- Phasis
- Pteria
- Ptolemais
- Pura
- Pydna
- Ragae
- Rhodes
- Sagala
- Sais
- Salamis
- Samaria
- Sardes
- Seistan

• Click in a scrolling list to get the coordinates of a path or special square

• Command-click or double-click to get the coordinates and exit quickly

**Cancel**    **OK**

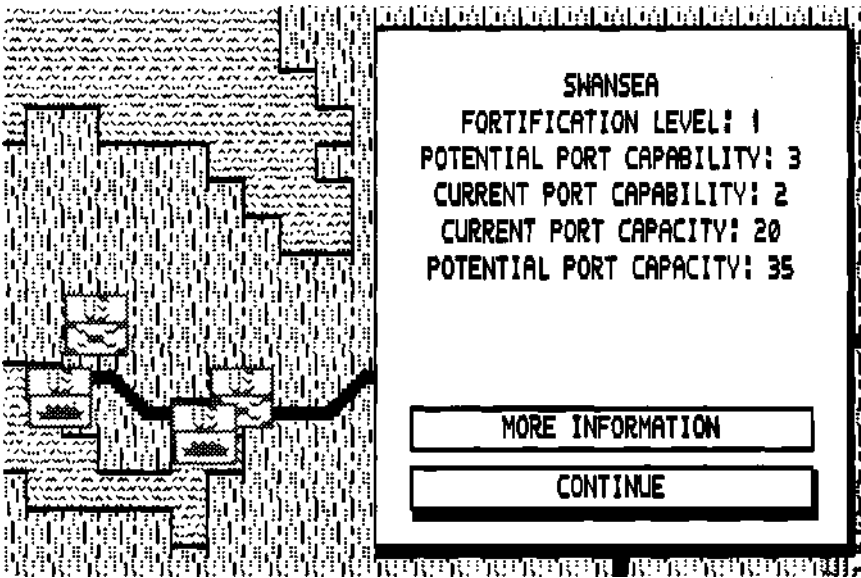
Click on the desired special square to see its coordinates. Double click on the special square to go to those coordinates immediately. To the left of the special square list is a list of all paths in the world. This functions identically to the special square list. See Chapter 2, Menus & Using The Interface, for the IBM, Atari ST and Amiga Go To box.

## Special Square Information



To receive detailed information about a special square, position the cursor over the desired spot on the map and simultaneously press the left mouse button and the left shift key. On the Amiga press the left mouse button and the left Amiga key. A detailed dialog box will now appear displaying information about local temperature, climate, wind direction and coordinates. Click on the **More Information** box to receive detailed information about the special square (as follows):

<sup>1</sup>See Chapter 2 for detailed information about the Main Menu.



Click on Continue to exit the box. IBM compatible users without a mouse may select M and C respectively for the same effect.

The fortification level of a special square is used to increase the defensive strength of units located on the special square. The fortification bonus is a variable that may be changed using the Master Control Panel (see Chapter 5 for details). The higher the fortification level, the greater the bonus.

This number indicates the maximum combined Strength Points of ships that may be docked at this specific special square at one time. For example, if the Current Port Capacity of a special square is 10, one naval unit with 6 Strength Points and another naval unit with 4 Strength Points may simultaneously be in the same square. However, a third ship, given orders to move into this special square, would not be allowed to enter. If the naval unit in question is under Human Control<sup>1</sup> a report would be issued asking the user to make new orders for the third unit.

Port capacity can be expanded by using a province's Production Points. The cost, in Production Points, for increasing a Special Square's Port Capacity is set in the Master Control Panel (see Chapter 5). The Potential Port Capacity indicates the maximum Port Capacity that this Special Square can be raised to.

This number represents the depth of draft of ships that can harbor at this Special Square. There are four drafts represented by the numbers one through four: 1-Very Shallow Draft, 2-Shallow Draft, 3-Deep Water and 4-Very Deep Water. In turn, every naval unit type, when created, is assigned a class corresponding to the draft of the ship. For example, a ship with a unit type class of 3 (Deep Water) would not be allowed to enter a Special Square that has a Current Port Capability of 2 (Shallow Draft).

## Fortification Level

## Current Port Capacity

## Potential Port Capacity

## Current Port Capability

<sup>1</sup>All nations are controlled either by a human or a computer. For more information see Chapter 12.

**Potential Port Capability** Port capability can be expanded by using a province's Production Points. The cost, in Production Points, for increasing a Special Square's Port Capability is set in the Master Control Panel (see Chapter 5 for details). The Potential Port Capability indicates the maximum Port Capability that this Special Square can be raised to. No Special Square can have a Port Capability greater than four.

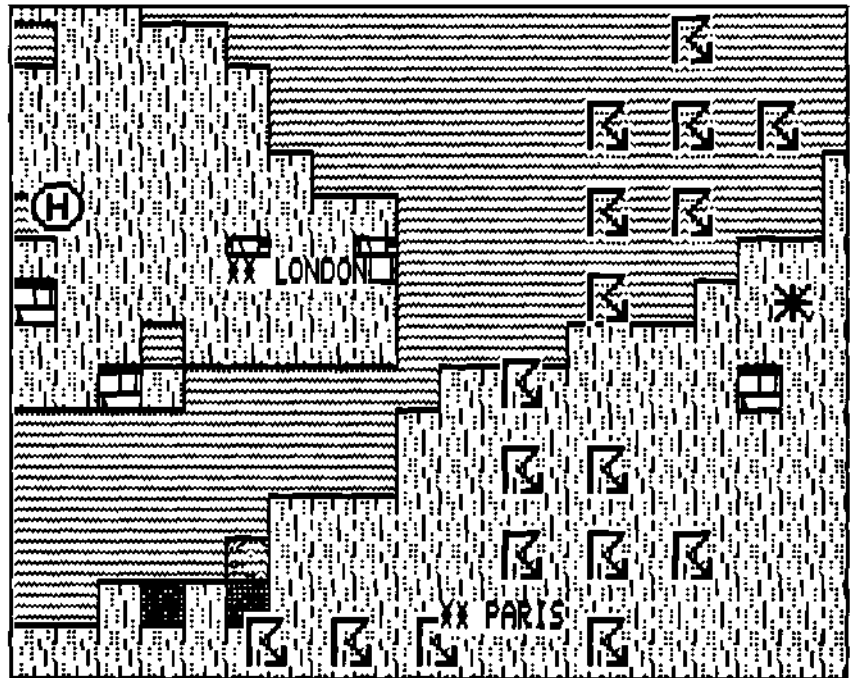
**Capture and Loss Of Special Squares** The loss of a Special Square adversely effects a country's National Will. When a country's National Will is reduced to zero that nation surrenders. Inversely, the capture of an enemy's Special Square increases the victor's National Will. The amount of increment, and decrement can be set in the Master Control Panel (see Chapter 5 for details).

## Chapter IV: Weather



## Weather

In UMS II: Nations at War we are concerned about weather primarily for two reasons: one, how weather effects movement of units, and two, how weather contributes to attrition or the loss of a unit's strength.



*A storm crosses the English Channel and lashes into northern France.*

Rain, snow, winds, storm fronts and temperatures do not "just happen" in UMS II: Nations at War, rather they are generated dynamically following a detailed set of rules. And, like all important factors in a simulation, the user may adjust the variables and change the outcome.

## Pressure Zones

*A Low Pressure Zone and a High Pressure Zone symbol.*

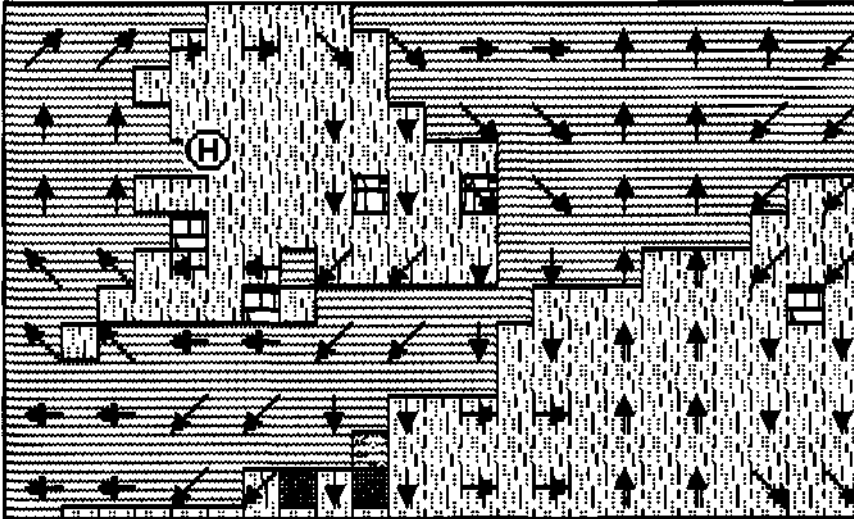
The first factor in all weather calculations is the location of High Pressure and Low Pressure Zones. When a scenario is first created High Pressure and Low Pressure Zones are placed on the map in a manner similar to placing units. As simulated time elapses these Pressure Zones move about the globe. As these Pressure Zones move they create and modify storm fronts and wind patterns.

Pressure Zones move in the general direction of the prevailing winds of the longitude of which they are currently located. The prevailing winds may be set in twenty degree longitudinal bands using the Master Control Panel (see Chapter 5 for details). For example, if the prevailing winds for 30 degrees North to 50 degrees North have been set to East to West, then a Pressure Zone located 37 degrees North will move in westerly direction. Using the Master Control Panel the user may reverse the prevailing winds at these longitudes and the same Pressure Zone would now move in the opposite, or easterly, direction. In addi-



tion, wind patterns may be set to automatically reverse with the change of seasons (see below).

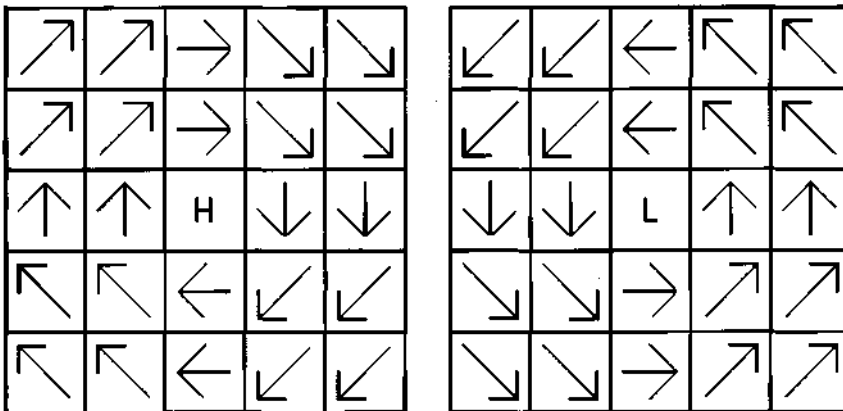
Furthermore, the direction of the movement of Pressure Zones is effected by the location of other nearby Pressure Zones. High Pressure Zones move towards Low Pressure Zones.



## Winds



Wind direction obviously effects the movement of sail powered naval units (how the wind effects these units is adjustable by the user via the Master Control Panel; see Chapters 5 and 7 for details). The two forces that, in turn, effect wind direction are: one, the location and proximity of Pressure Zones, and two, the prevailing wind patterns at a specific longitude.



*Left: A High Pressure Zone Matrix north of the equator.*

*Flight: A Low Pressure Zone Matrix north of the equator.*

*Note that these would be reversed south of the equator.*

If there were no Pressure Zones, wind would move in straight east to west, or west to east, lines. It is the location, and type, of these Pressure Zones that change wind patterns.

Pressure zones cause wind patterns to be shaped into a spiral, or Coriolis effect shapes. Above the equator, High Pressure Zones cause a clockwise effect and Low Pressure Zones cause a counterclockwise effect. These patterns are reversed below the equator.

The range, or distance, which Pressure Zones effect prevailing wind patterns (as well as storm fronts) may be adjusted by the user via the Master Control Panel (see Chapter 5). This is done by changing the value for the variable 'Size Of Pressure Zone Matrix Squares'. This number adjusts the size, in kilometers, of the squares that comprise the Pressure Zone Matrix. A Pressure Zone Matrix is a five square by five square two dimensional array. For example, if the variable is set to 100 kilometers then a Pressure Zone's radius of effect would be 250 kilometers (a diameter of 500 kilometers centered on the location of the Pressure Zone).

## Temperature



*A map segment with local temperatures displayed.  
Note the cooler temperatures over land and the warmer temperatures over water.*

Four factors effect the temperature of a specific location: one, the longitude of the location, two, the general climate group of the location, three, the current season and four, if the location is over land or over sea.

The globe is divided into latitudinal temperature zones of twenty degrees each. The average, or base, temperature for each of these zones may be set via the Master Control Panel (see Chapter 5 for details). This base temperature is then modified by adding the appropriate Climate Group factor. These factors may be changed by the user in the Master Control Panel as well. These modifying climate factors may be either positive or negative numbers. For example, if the average temperature at a certain location is 60 degrees Fahrenheit, the local climate is Mediterranean, and the climate modifier for Mediterranean is +7 then the result would be 67 degrees Fahrenheit.

This number is further modified by the seasonal difference. Like the Climate modifiers, this may be either a positive or negative number that is added to the results of the previous calculations. It is assumed that Spring encompasses the months of March, April and May; Summer the months of June, July and August; Fall the months of September, October and November and Winter the months of December, January and February. The Seasonal modifiers may be changed via the Master Control Panel (see Chapter 5 for details). For example, if the current scenario date is July 15, and the Summer Seasonal modifier is +12 the temperature at our previous hypothetical location would now become 79 degrees Fahrenheit.

The last variable used to determine temperature is a modifier for land or sea. This number reflects the tendency of water to retain heat in winter as earth does in the summer. These two numbers, one for land and one for sea, may be either a positive or negative number. They may be changed by the user via the Master Control Panel (see Chapter 5 for details). This number is then added to the previous calculations and the resultant number is the temperature at this location.

Temperatures for all locations on the map may be viewed by checking the Temperature option in the weather display box (see Chapter 2 for details). Temperature at one location may be viewed by positioning the cursor over the desired location and clicking the mouse button while simultaneously depressing the SHIFT key (see Chapter 2 for details). Temperatures may be displayed in either centigrade or Fahrenheit by checking the desired option in the weather display box.

Storm fronts are caused when the radius of effect of a High Pressure Zone (see Pressure Zones above) overlaps the radius of effect of a Low Pressure Zone. If the temperature at the location is above freezing (32 degrees Fahrenheit, 0 degrees Centigrade) the thunderstorm symbol will be displayed at the location. If the temperature at the location is below freezing, the meteorological symbol for snow will be displayed. It is quite possible for one storm front to produce both rain and snow.

## Storms and Storm Fronts



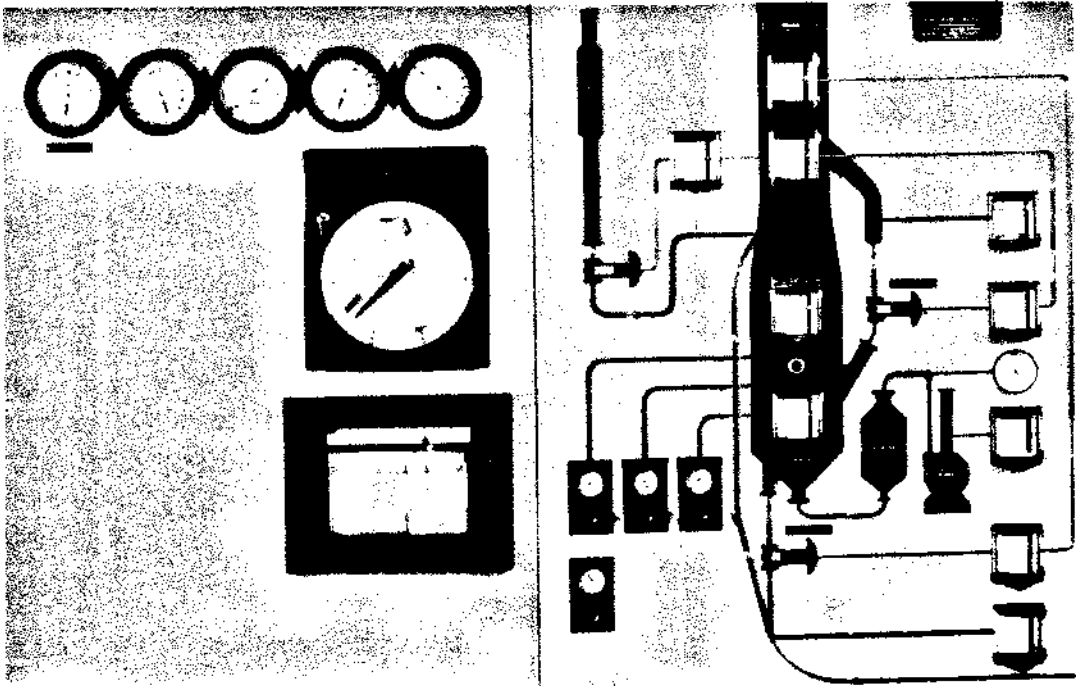
*The standard meteorological symbols for snow (left) and thunderstorm (right).*

After the fronts have been determined, the chance of precipitation for each map square affected by the fronts is calculated. This is done by comparing the Climate Precipitation Percentage for the pertinent locations to a randomly generated number. The Climate Precipitation Percentages (or the chance that it will rain or snow for a given climate type) may be modified by the user in the Master Control Panel (see Chapter 5 for details).

There are twelve different types of climates: Tropical, Monsoon, Semi-Arid, Arid, Mediterranean, Sub-Tropical, Marine, Continental, Cool, Sub-Arctic, High-Altitude and Polar. Every location on the globe belongs to one of these groups. These climates effect precipitation and temperature (see above). Using the Master Control Panel it is possible to redefine the attributes of the climate groups. For example, it is possible to set the Climate Precipitation Percentage to 99% for Arid. This would, of course, result in considerable rainfall in what would normally be a desert area.

## Climates

## Chapter V: The Master Control Panel



# The Master Control Panel

The Master Control Panel is not the brains, nor is it the heart of UMS II: Nations at War. Rather, as the name implies, it is the place where a myriad of variables may be adjusted, modified and tweaked so that a simulation may be tailored to be as accurate as possible. For example, if the user would like to simulate an especially rainy monsoon season, or accelerate the rate of scurvy (attrition) among sailors, this would be the place to do it.

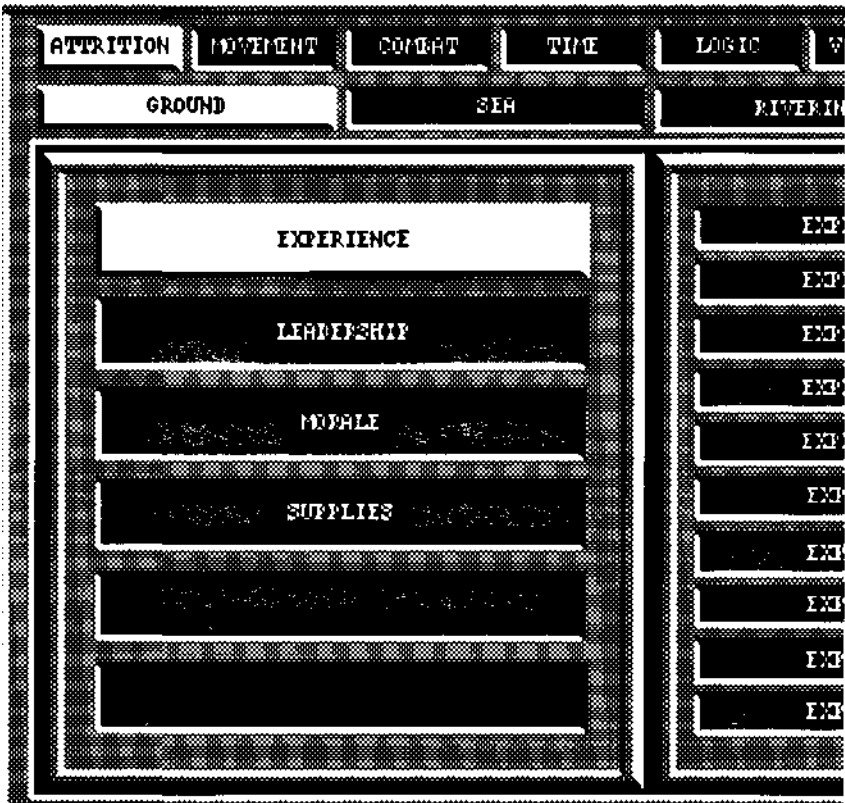


Macintosh default MCP file icon.

DEFAULT.MCP

## .MCP Files

All of the settings of the Master Control Panel can be saved to disk and reloaded at a later time. These files, which end with the .MCP file extension, can be saved or loaded from the **Modify** menu (see Chapter 2 for details). When a scenario is first loaded, the program will automatically look for a .MCP file of the same name. For example, if the scenario ABCDEF.DAT is loaded, the program will attempt to load the corresponding .MCP file, ABCDEF.MCP. If the program cannot locate such a file it will load DEFAULT.MCP. Also saved in the .MCP file are various user preferences, such as displaying the temperature in Centigrade or Fahrenheit, distances in miles or kilometers and the user's name for the four viewing levels.



## The Master Control Panel Interface

To access the Master Control Panel select **Master Control Panel** from the **Modify** menu (see Chapter 2). The Master Control Panel consists of four groups of buttons. Clicking the mouse on any of the top row of buttons (except EXIT) will change the labels of the three other groups of buttons. Clicking the mouse on the second row of buttons will change the labels of the two remaining groups of buttons. Clicking the mouse on the left set of buttons will change the labels on the right group of buttons. The right group of buttons, and only the right group, contains values that the user may change. This method of menu selection replaces hundreds of dialog boxes.

### Changing Button Values {Atari ST, Amiga}

To change a value displayed on a button from the right hand group on the Atari ST or Amiga: Click on the button so it is highlighted then press the left mouse button to decrease the value or the right mouse button to increase the value. Every value in the Master Control Panel has a maximum value and a minimum value. The value will stop when this limit is reached.



### Changing Button Values {IBM}

IBM and compatible users with a mouse should follow the above instructions for Atari ST and Amiga. However, IBM and compatible users without a mouse should follow these instructions: To select buttons in the top row: use the LEFT and RIGHT ARROW keys. To select buttons in the second row of buttons: use the LEFT and RIGHT ARROW keys while simultaneously depressing the SHIFT key. To select buttons in the left row use the UP and DOWN ARROW keys while simultaneously depressing the SHIFT key. To select a button in the right row use the UP and DOWN ARROW keys. To change the values in the selected button use the PLUS and MINUS keys.



### Changing Button Values {Macintosh}

The Master Control Panel on the Macintosh functions the same as for the Atari ST and Amiga (above), however, to change values depress the mouse button (two triangles will appear, one above and one below the right set of buttons) and, while still depressing the mouse button, move the mouse up (to increase the value), or move the mouse downward (to decrease the value). The further up or down the mouse is moved the faster the numbers will change.



## The Master Control Buttons

The Master Control Panel is set up in a tree structure. That is to say that changing the selected top button will cause different options to appear in the subordinate groups of buttons.

The chart beginning on the following page describes the location of all the buttons on the Master Control Panel and includes a brief description of the variables stored.

TOP BUTTON	SECOND BUTTON	LEFT BUTTON	RIGHT BUTTON
ATTRITION	GROUND	EXPERIENCE	Experience levels (0-9) These variables specify the percentage of attrition for <i>ground units based on</i> experience. The greater the number the higher the losses.
		LEADERSHIP	Leadership levels (0-9) These variables specify the percentage of attrition for ground units based on leadership. The greater the number the higher the losses.
		MORALE	Morale levels (0-9) These variables specify the percentage of attrition for ground units based on morale. The greater the number the higher the losses.
		SUPPLY	Supply levels (0-9) These variables specify the percentage of attrition for ground units based on supply. The greater the number the higher the losses.
	SEA	SUPPLY	Supply levels (0-9) These variables specify the percentage of attrition for naval units based on supply. The greater the number the higher the losses.
		LEADERSHIP	Leadership levels (0-9) These variables specify the percentage of attrition for naval units based on leadership. The greater the number the higher the losses.
		EXPERIENCE	Experience levels (0-9) These variables specify the percentage of attrition

TOP BUTTON	SECOND BUTTON	LEFT BUTTON	RIGHT BUTTON
			for naval units based on experience. The greater the number the higher the losses.
		MORALE	Morale levels (0-9) These variables specify the percentage of attrition for naval units based on morale. The greater the number the higher the losses.
		WEATHER	RAIN This variable specifies the percentage of attrition for naval units in rain.  SNOW This variable specifies the percentage of attrition for naval units in snow.
MOVEMENT	GROUND	WEATHER	RAIN This variable specifies the percentage of additional cost in Movement Points for ground units traveling in rain.  SNOW This variable specifies the percentage of additional cost in Movement Points for ground units traveling in snow.
		EXPERIENCE	Experience Level (0-9) This variable specifies the percentage of additional cost in Movement Points for ground units based on experience.
		MORALE	Morale Level (0-9) This variable specifies the percentage of additional cost in Movement Points for ground units based on morale levels.



TOP  
BUTTON

SECOND  
BUTTON

LEFT  
BUTTON

RIGHT  
BUTTON

FORCED  
MARCH MOVE-  
MENT BONUS

This variable specifies the percentage of bonus in Movement Points for ground units who have been ordered to perform a forced march.

SEA

LEADERSHIP

Leadership Level (0-9)  
This variable specifies the percentage of additional cost in Movement Points for naval units based on leadership.

EXPERIENCE

Experience Level (0-9)  
This variable specifies the percentage of additional cost in Movement Points for naval units based on experience.

MORALE

Morale Level (0-9)  
This variable specifies the percentage of additional cost in Movement Points for naval units based on morale.

WINDS

DIRECTLY INTO THE WIND:

This variable specifies the percentage of additional cost in Movement Points for naval units traveling directly against the wind.

RUNNING WITH THE WIND:

This variable specifies the percentage of additional cost in Movement Points for naval units traveling before the wind.

CLOSE HAULING:

This variable specifies the percentage of additional cost in Movement Points for naval units traveling at a forty-five degree angle into the wind.

TOP BUTTON	SECOND BUTTON	LEFT BUTTON	RIGHT BUTTON
			<p>REACHING: This variable specifies the percentage of additional cost in Movement Points for naval units traveling at a ninety degree angle with the wind.</p> <p>BROACH REACH: This variable specifies the percentage of additional cost in Movement Points for naval units traveling at a forty-five degree angle with the wind.</p> <p>BECALMED: This variable specifies the percentage of additional cost in Movement Points for naval units traveling in a map square with calm winds.</p>
MOVEMENT BONUS		PATHS	<p>TRACK This variable specifies the percentage of bonus in Movement Points for units traveling along a track (path type 1).</p> <p>ROAD This variable specifies the percentage of bonus in Movement Points for units traveling along a road (path type 2).</p> <p>HIGHWAY This variable specifies the percentage of bonus in Movement Points for units traveling along a highway (path type 3).</p> <p>RAILROAD This variable specifies the percentage of bonus in Movement Points for units traveling along a railroad (path type 4).</p>

TOP  
BUTTON

SECOND  
BUTTON

LEFT  
BUTTON

RIGHT  
BUTTON

RIVER

This variable specifies the percentage of bonus in Movement Points for units traveling along a river (path type 5).

CANAL

This variable specifies the percentage of bonus in Movement Points for units traveling along a canal (path type 6).

COMBAT

BATTLE  
EQUATIONS

MULTIPLIERS

MORALE LEVEL MULTI-  
PLIER

A unit's morale factor is multiplied by this number in the battle equation (see Chapter 11).

LEADERSHIP LEVEL  
MULTIPLIER

A unit's leadership level is multiplied by this number in the battle equation (see Chapter 11).

EXPERIENCE LEVEL  
MULTIPLIER

A unit's experience level is multiplied by this number in the battle equation (see Chapter 11).

MAXIMUM RANDOM  
MULTIPLIER

This is the largest random number permitted in the battle

TECH LEVEL DIFFER-  
ENCE

In combat the Tech Level between combatants is compared and the unit that has the highest Tech Level will receive a bonus equivalent to this number times the difference (see Chapter 11 for details).

TOP BUTTON.	SECOND BUTTON.	LEFT BUTTON.	RIGHT .BUTTON.
		FORTIFICA- TION LEVEL	<p>TIMES SPs: A defending unit in a Special Square will have its Strength Points multiplied by the Fortification Level of the Special Square times this number (see Chapter 3 Special Squares &amp; Ports for details).</p>
		NUCLEAR WEAPONS	<p>PRIMARY BLAST RANGE IN KMS All units, regardless of nationality, within this distance (measured in kilo-meters) of a detonation of a nuclear device will be immediately destroyed and removed from the map.</p> <p>RANGE OF SECONDARY EFFECTS IN KMS All units, regardless of nationality, less than this distance (measured in kilo-meters) of a detonation of a nuclear device, yet greater than the Primary Blast Range (see above) will lose a percentage of Strength Points as determined in the variable immediately below.</p> <p>SECONDARY BLAST EFFECT The cost, in percentage of total Strength Points, of all units within the Secondary Range of Effect of a detonation of a nuclear device (see above).</p>

TOP  
BUTTON

SECOND  
BUTTON

LEFT  
BUTTON

RIGHT  
BUTTON

GROUND  
CASUALTIES

A/D 80% +

The losses suffered by a ground unit (as a percentage of total Strength Points) of a unit that has an 80% or greater advantage over its opponent as determined by the battle equation (see Chapter 11 for details). The precise number of casualties are determined by the formation of the unit. The seven possible military formations for ground units are:

SCREEN  
DEFEND  
HOLD  
MARCH  
FORCED MARCH  
ATTACK  
ASSAULT

A/D 60% - 79%

The losses suffered by a ground unit (as a percentage of total Strength Points) of a unit that has between a 60% to 79% advantage over its opponent as determined by the battle equation (see Chapter 11 for details). The precise number of casualties are determined by the formation of the unit. The seven possible military formations for ground units are:

SCREEN  
DEFEND  
HOLD  
MARCH  
FORCED MARCH  
ATTACK  
ASSAULT

A/D 40%-59%

The losses suffered by a ground unit (as a percentage of total Strength Points) of a unit that has between 40% - 59% the strength of its opponent as determined by the battle equation (see Chapter 11 for details). The precise number of casualties are determined by the formation of the unit. The seven possible military formations for ground units are:

SCREEN  
DEFEND  
HOLD  
MARCH  
FORCED MARCH  
ATTACK  
ASSAULT

A/D 20% - 39%

The losses suffered by a ground unit (as a percentage of total Strength Points) of a unit that has between a 20% - 39% disadvantage with its opponent as determined by the battle equation (see Chapter 11 for details). The precise number of casualties are determined by the formation of the unit. The

TOP  
BUTTON

SECOND  
BUTTON

LEFT  
BUTTON

RIGHT  
BUTTON

seven possible military formations for ground units **are:**

SCREEN  
DEFEND  
HOLD  
MARCH  
FORCED MARCH  
ATTACK  
ASSAULT

A/D < 20%

The losses suffered by a ground unit (as a percentage of total Strength Points) of a unit that has less than 20% of its opponent strength as determined by the battle equation (**see** Chapter 11 for details). The precise number of casualties are determined by the formation of the unit. The seven possible military formations for ground units are:

SCREEN  
DEFEND  
HOLD  
MARCH  
FORCED MARCH  
ATTACK  
ASSAULT

SEA  
CASUALTIES

A/D 80% +

The losses suffered by a naval unit (as a percentage of total Strength Points) of a unit that has an 80% or greater advantage over its opponent as determined by the battle equation (see Chapter 11 for details). The precise number of casualties are determined by the formation of the unit. The four possible military formations for sea units are:

AVOID  
EVADE  
ATTACK  
OFFSHORE BOMBARD-  
MENT

A/D 60% - 79%

The losses suffered by a naval unit (as a percentage of total Strength Points) of a unit that has between a 60% to 79% advantage over its opponent as determined by the battle equation (see Chapter 11 for details). The four possible military formations for sea units are:

AVOID  
EVADE  
ATTACK  
OFFSHORE BOMBARD-  
MENT

TOP  
BUTTON

SECOND  
BUTTON

LEFT

RIGHT  
BUTTON BUTTON

A/D 40% - 59%

The losses suffered by a naval unit (as a percentage of total Strength Points) of a unit that has between 40% - 59% the strength of its opponent as determined by the battle equation (see Chapter 11 for details). The four possible military formations for sea units are:

AVOID  
EVADE  
ATTACK  
OFFSHORE BOMBARD-  
MENT

A/D 20% - 39%

The losses suffered by a naval unit (as a percentage of total Strength Points) of a unit that has between a 20% - 39% disadvantage with its opponent as determined by the battle equation (see Chapter 11 for details). The four possible military formations for sea units are:

AVOID  
EVADE  
ATTACK  
OFFSHORE BOMBARD-  
MENT

A/D < 20%

The losses suffered by a naval unit (as a percentage of total Strength Points) of a unit that has less than 20% of its opponent strength as determined by the battle equation (see Chapter 11 for details). The four possible military formations for sea units are:

AVOID  
EVADE  
ATTACK  
OFFSHORE BOMBARD-  
MENT

AIR/MISSILE  
CASUALTIES

A/D 80% +

The losses suffered by an air or missile unit (as a percentage of total Strength Points) of a unit that has an 80% or greater advantage over its opponent as determined by the battle equation (see Chapter 11 for details). The seven possible military formations for air and missile units are:

MOVE  
PATROL  
ESCORT  
BOMB  
TRANSPORT  
ATTACK  
INTERCEPT

TOP  
BUTTON

SECOND  
BUTTON

LEFT  
BUTTON

RIGHT  
BUTTON

A/D 60% - 79%

The losses suffered by an air or missile unit (as a percentage of total Strength Points) of a unit that has between a 60% to 79% advantage over its opponent as determined by the battle equation (see Chapter 11 for details). The seven possible military formations for air and missile units are:

MOVE  
PATROL  
ESCORT  
BOMB  
TRANSPORT  
ATTACK  
INTERCEPT

A/D 40% - 59%

The losses suffered by an air or missile unit (as a percentage of total Strength Points) of a unit that has between 40% - 59% the strength of its opponent as determined by the battle equation (see Chapter 11 for details). The seven possible military formations for air and missile units are:

MOVE  
PATROL  
ESCORT  
BOMB  
TRANSPORT  
ATTACK  
INTERCEPT

A/D 20% - 39%

The losses suffered by an air or missile unit (as a percentage of total Strength Points) of a unit that has between a 20% - 39% disadvantage with its opponent as determined by the battle equation (see Chapter 11 for details). The seven possible military formations for air and missile units are:

MOVE  
PATROL  
ESCORT  
BOMB  
TRANSPORT  
ATTACK  
INTERCEPT

A/D < 20%

The losses suffered by an air or missile unit (as a percentage of total Strength Points) of a unit that has less than 20% of its opponent strength as determined by the battle equation (see Chapter 11 for details). The seven possible military formations for air and missile units are:

MOVE  
PATROL



TOP  
BUTTON

SECOND  
BUTTON

LEFT  
BUTTON

RIGHT  
BUTTON

ESCORT  
BOMB  
TRANSPORT  
ATTACK  
INTERCEPT

SET ITU

INTERNAL  
TIME UNITS

IN DAYS  
The minimum time unit in UMS II: Nations at War is one day. ITUs are used to calculate a number of things including the time it takes to create units and reinforcements. This variable sets ITUs to X number of days. For example, if this number is set to 7 then 1 ITU will equal one week.

TIME BETWEEN  
COMMANDS

CALENDAR INCRE-  
MENTED IN DAYS  
After these many days have elapsed the simulation will automatically stop and allow all human controlled nations to issue new orders to units as well as an opportunity to set national policies, make hard copy print outs of maps, form diplomatic alliances, set budgets and goals, etc.

RESOURCES

PROVINCIAL

PRODUCTION  
POINTS

COST IN PRODUCTION  
POINTS  
This number represents the number of production points that must be spent to increase the level of production points produced by an existing province.

RECRUITMENT  
POINTS

COST IN PRODUCTION  
POINTS  
This number represents the number of production points that must be spent to increase the level of

TOP BUTTON	SECOND BUTTON	LEFT BUTTON	RIGHT BUTTON
			recruitment points produced by an existing province.
	TAX RATE	LOSS OF WILL	PER 10% OF TAX RATE This number represents the number of National Will points that are subtracted per 10% of the Tax Rate (as set in the Budgets and Production dialog box - see Chapter 12 for details). For example, if this number is set to '2' and the nation's Tax Rate is 80% then 16 National Will points will be subtracted every turn.
	PORTS	PORT CAPABILITY	COST IN PRODUCTION POINTS This number represents the number of production points that must be spent to increase the port capability of a given Special Square (see Chapter 3 for details).
		PORT CAPACITY	COST IN PRODUCTION POINTS This number represents the number of production points that must be spent to increase the port capacity of a given Special Square (see Chapter 3 for details).
	NATIONAL WILL	CAPITALS	LOSS OF NATIONAL CAPITAL This number will be deducted from the National Will of a country that loses its national capital.  CAPTURE OF NATION- ALCAPITAL This number will be added to the National Will of a country that captures an

TOP BUTTON	SECOND BUTTON	LEFT BUTTON	RIGHT BUTTON
---------------	------------------	----------------	-----------------

	enemy's national capital.
	LOSS OF PROVINCIAL CAPITAL This number will be deducted from the National Will of a country that loses a provincial capital.
	CAPTURE OF PROVINCIAL CAPITAL This number will be added to the National Will of a country that captures an enemy's provincial capital.
MILITARY UNITS	LOSS OF UNIT This number will be deducted from the National Will of a country for every military unit lost for any reason.
	CAPTURE OF UNIT This number will be added to the National Will of a country for every enemy unit that is destroyed through direct military action.
SPECIAL SQUARES	LOSS OF SPECIAL SQUARE This number will be deducted from the National Will of a country for the loss of a Special Square for whatever reason.
	CAPTURE OF SPECIAL SQUARE This number will be added to the National Will of a country for every enemy Special Square that is captured through direct military action.

TOP BUTTON	SECOND BUTTON	LEFT BUTTON	RIGHT BUTTON
PROXIMITY	UNIT VISIBILITY		ENEMY UNITS VISIBLE WITHIN KILOMETERS Only enemy units within this distance will be dis- played on the map.
	HOSTILE CONTACT DISTANCE BETWEEN UNITS		KILOMETERS Hostile contact (battle) will ensue when two enemy units come within this distance of each other.
WEATHER	PREVAILING WINDS BY LATITUDE		LATITUDE (-90 to +90) This button switches between "East to West" and "West to East". This sets the prevailing wind direction for this longitude.
	PRESSURE ZONE MATRIX SIZE		SIZE OF SQUARES IN KMS This variable sets the size of the squares of Pres- sure Zone Matrices (see Chapter 4 for details).
	TEMPERA- TURE	AVERAGES BY LATITUDE	LATITUDE (-90 to +90) These variables set the average temperature for the selected longitude band (see Chapter 4 for details).
		SEASON	SPRING SUMMER FALL WINTER These variables set the Seasonal Temperature Modifier for each of the four seasons (see Chap- ter 4 for details).
		CLIMATE GROUP 1	TROPICAL MONSOON SEMI-ARID ARID MEDITERRANEAN SUB-TROPICAL MARINE

TOP BUTTON	SECOND BUTTON	LEFT BUTTON	RIGHT BUTTON
			CONTINENTAL COOL SUB-ARCTIC These variables set the Climate Temperature Modifier for each of these Climate types (see Chap- ter 4 for details).
		CLIMATE GROUP 2	HIGH ALTITUDE POLAR These variables set the Climate Temperature Modifier for each of these Climate types (see Chap- ter 4 for details).
		LANDS SEA	LAND This variable sets the Temperature Modifier for land squares (see Chap- ter 4 for details).
			SEA This variable sets the Temperature Modifier for sea squares (see Chap- ter 4 for details).
	PRECIPITA- TION	CLIMATE GROUP 1	TROPICAL MONSOON SEMI-ARID ARID MEDITERRANEAN SUB-TROPICAL MARINE CONTINENTAL COOL SUB-ARCTIC These variables set the percentage (likelihood) of precipitation at a given square of a this climate type once a weather from has been located at these coordinates. See chapter 4 for details.

TOP  
BUTTON

SECOND  
BUTTON

LEFT  
BUTTON

RIGHT  
BUTTON

CLIMATE  
GROUP 2

HIGH ALTITUDE  
POLAR

These variables set the per-centage (likelihood) of precipitation at a given square of a this climate type once a weather front has been located at these coordinates. See chapter 4 for details.


## **EXIT**

Selecting EXIT will immediately exit the Master Control Panel and return the user to the map.

## Chapter VI: Ground Movement & Orders



## Activating a Unit

	<b>Unit Info</b>
<b>Name: 2nd Armored</b> <b>Nationality: Allies</b> <b>Leadership: 7 Talented</b> <b>Morale: 7 Enthusiastic</b> <b>Experience: 6 Regular</b> <b>Strength: 50</b> <b>Supplies: 90</b>	
<b>MARCH TO POOLE AND PROVIDE A SCREEN.</b>	
<b>Issue Direct Orders</b>	
<b>Done</b>	<b>Next Unit</b>

*The Unit Information Box.*

*This box appears by double-clicking on the upper left hand corner of a unit.*

*IBM key-board commands:  
I-Issue Direct Orders  
D-Done  
N-Next Unit*

A ground unit may be activated by positioning the cursor over the left hand corner of a unit and double-clicking (see Chapter 2 for details). If more than one unit shares this map square select Next Unit to activate the desired unit. Selecting Issue Unit Direct Orders will cause the Ground Unit Orders Box to appear.

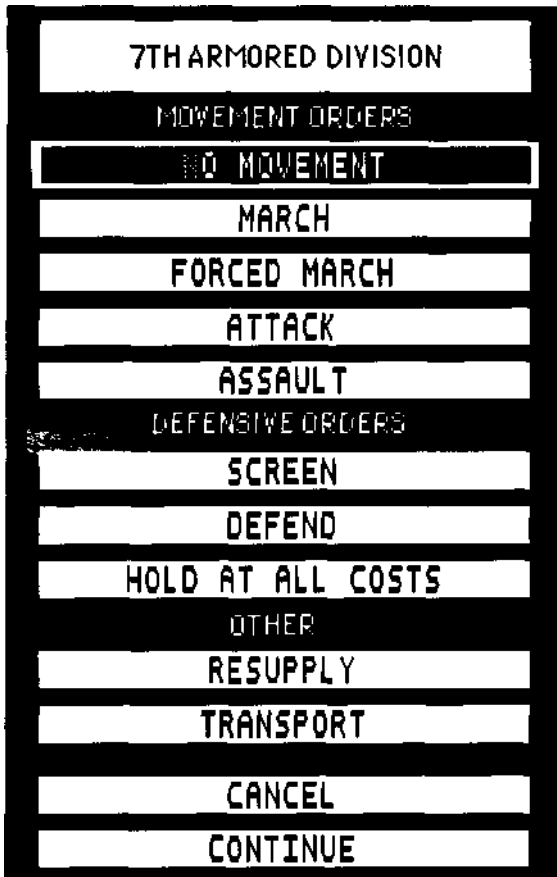
## Ground Movement

Ground units may be assigned a Movement Order and a Defensive Order as well as up to seven waypoints. The Movement Order, either March, Forced March, Attack or Assault indicates the formation that the ground unit will assume when moving from one point on the map to another. When the unit has reached its objective (the last assigned waypoint), or the unit has been assigned the **No Movement order**, the unit will assume the formation assigned to it by the Defensive Order.

Only the orders that a unit has sufficient supplies to carry out will be active. Each order costs a set number of Supply Points per Strength Point. The cost, in Supply Points, for each order can be set by the user in the Orders Cost and Effect Box (see chapter 12 for details). For example, if the cost of a ground unit assuming **Assault** formation is 3 Supply Points, and the unit has 4 Strength Points, it is necessary for the unit to have at least 12 Supply Points to be issued this command. These calculations are carried out by the computer before this dialog box is presented and illegal orders will not be selectable.







*The Ground Movement Command Box.*

*One of the five Movement Orders may be assigned to each unit as well as one of three Defensive Orders.*

*The Resupply button will be enabled only if another unit shares the same map square.*

*The Transport button will be selectable only if the active unit has transport capabilities and another unit shares the same map square.*

*Cancel exits the Ground Movement Command box without saving orders. Continue exits the box and saves orders for later execution.*

After a unit has been assigned a Movement Order (it is not necessary for a unit to be assigned a Defensive Order; a unit not assigned a Defensive Order will default to Screen) and Continue has been selected the cursor will turn from an arrow to a solid black cross hair. A line will extend from the upper left hand corner of the unit to the cursor. Position the cursor on the desired waypoint and press the left mouse button to set a waypoint. Press the right mouse button to end setting waypoints. The user is not allowed to select an illegal waypoint<sup>1</sup>. To determine the actual route that a unit will travel from one waypoint to the next, depress the ALT key. The route of the unit will appear as a series of darkened and flashing boxes. This is a handy method for determining legal moves across rivers.

IBM owners without a mouse should use the SPACE BAR in place of the Left Mouse Button and the RETURN key in place of the Right Mouse Button when setting waypoints.

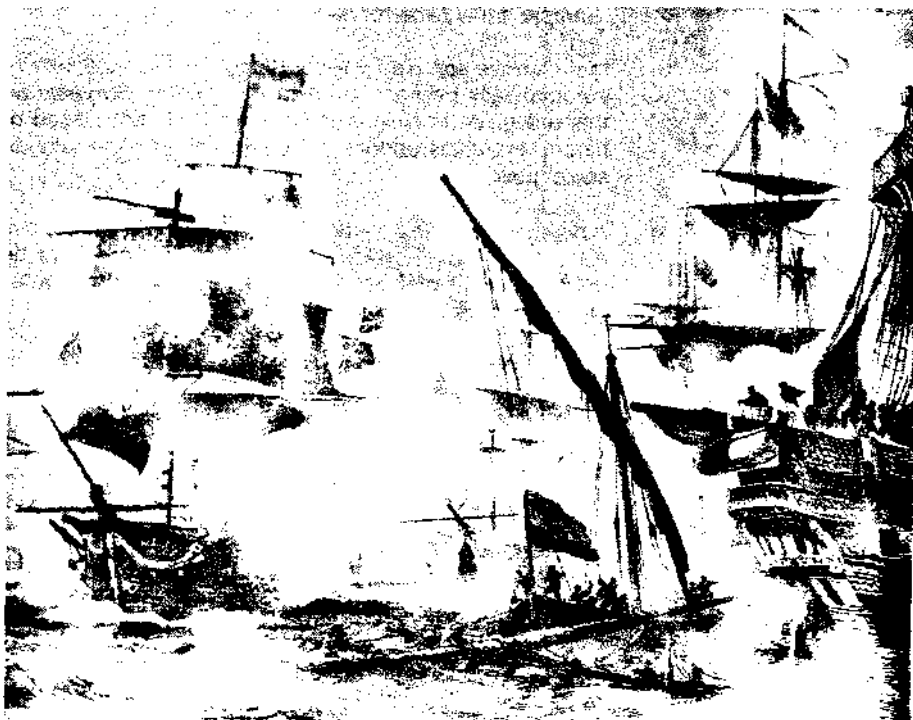
See chapter 10 for details about supply, resupply and transporting units.

<sup>1</sup>illegal waypoints: ground units may not travel across Coastal Sea, Shallow Sea or Deep Sea map squares (except when being transported by naval units). Ground units may not cross rivers or canals except in map squares that also contain either a track, path, railroad or highway.

## Setting Waypoints


## Resupply & Transport

## Chapter VII: Sea Power & Amphibious Operations



## Sea Power: Naval and Amphibious Operations

A scenario may contain up to forty different types of naval units<sup>1</sup>. The total number of individual units, however, is limited primarily by the available RAM. Naval units, like all units in UMS II, are controlled by a command hierarchy, or Order of Battle.

	<b>Nelson</b> id#3020...Leadership Brilliant...96 SP
	<b>Hardy</b> id#2784...Leadership Talented...55 SP
	<b>Victory</b> id#2785...Leadership Talented...5 SP
	<b>Euryalus</b> id#2786...Leadership Talented...4 SP
	<b>Neptune</b> id#2839...Leadership Inspired...5 SP

*Sample naval Order of Battle segment.*

In the above sample Order of Battle, for example, any orders given to Hardy will automatically be passed on to the *Victory*, *Euryalus* and *Neptune*. Any orders that are given to Nelson will automatically be passed on to Hardy, and through him, to the ships under his control. This is especially useful when making large scale movements.

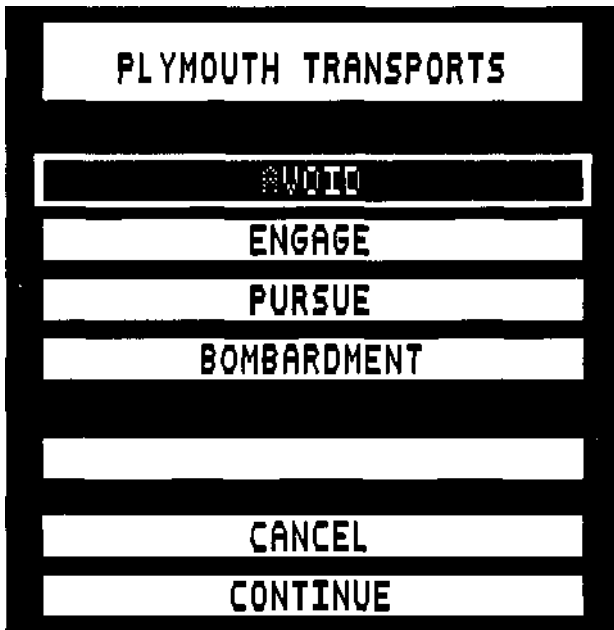
### Activating a Unit

A sea unit may be activated by positioning the cursor over the left hand corner of a unit and double-clicking (see chapters 2 and 6 for details). If more than one unit shares this map square select Next Unit to activate the desired unit. Selecting Issue Unit Orders will cause the Naval Unit Orders Box to appear.

### Naval Orders

At all times a naval unit is currently under one of four orders. In addition to these standing orders, the unit may be assigned up to seven waypoints. The naval unit will proceed from one waypoint to the next in consecutive order until the last waypoint is reached or new orders are issued to the unit. It is not necessary to assign a naval unit any waypoints. A unit without any currently assigned waypoints will remain in its current location.

<sup>1</sup>Note: a scenario may contain up to forty different unit types in total. These forty unit types may be any combination of naval, air, orbital, missile or ground troops. While it is quite possible for a scenario to contain only naval units, on the average, most scenarios contain about ten different naval units.

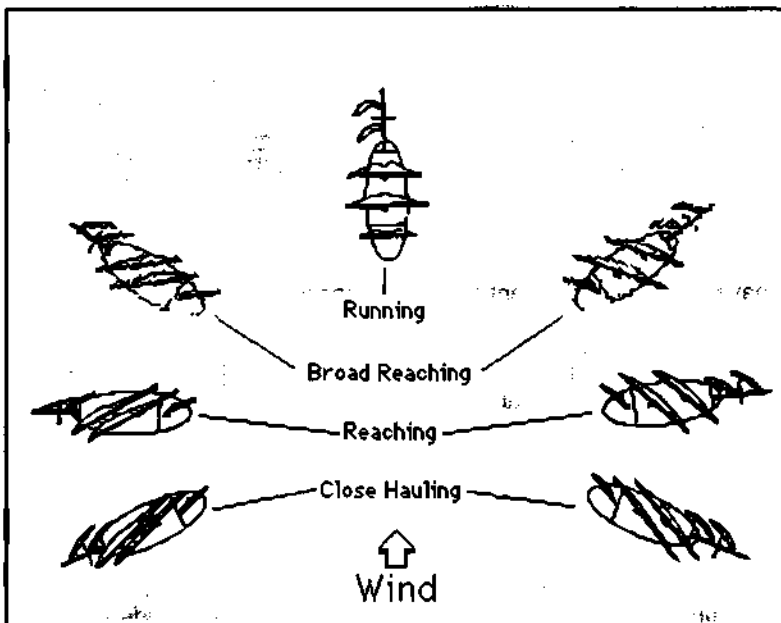


IBM Key  
commands:  
A - Avoid  
E - Engage  
P - Pursue  
B - Bombardment  
R - Resupply  
C - Cancel  
O - Continue



## Wind & Naval Movement

The direction of the wind in relation to the direction of travel of sail powered naval units effects the speed of the naval unit. The amount of the effect is determined by the settings in the Master Control Panel (under the Movement, Sea, Winds menu; see chapter 5 for details).



The default settings are: Running: 100%, Broad Reaching: 120%, Reaching: 60%, Close Hauling: 40%, and Directly Into The Wind: 20%. For example, a

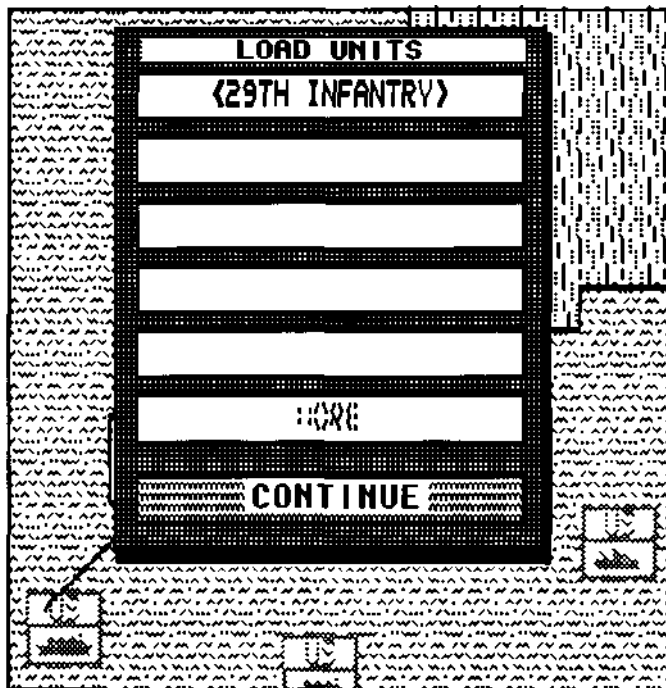
naval unit traveling from south to north, with the wind from the southwest would be 'Broad Reaching' and would receive a 20% movement bonus.



Only sail-powered naval units are effected by wind direction.

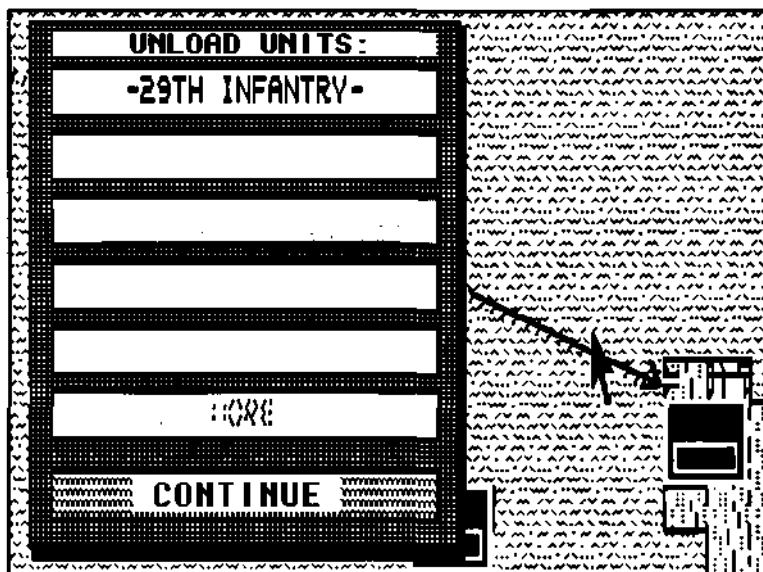
## Amphibious Operations

Amphibious operations - campaigns involving the transport of ground units across bodies of water by naval units - are fully supported by UMS II: Nations at War. Transporting a ground unit via a naval unit is accomplished in two steps:



*Loading a ground unit on to a naval transport.*

First, a naval unit (with sufficient transport capacity) is moved into a special square containing a ground unit. Special squares are the only places on a map that ground and naval units may share a location (see Chapter 3 for more details). All ground units have a Load Value or the cost to transport this unit. This number is set for a particular unit type at the time that the scenario is created. When a naval unit with Transport Capacity (also set for each unit type at the time that the scenario is created) enters a special square a Load Unit Box (above) appears and displays a list of all ground units that the naval unit has sufficient Transport Capacity to carry. If there are more than five ground units located in the special square the More button is enabled. Selecting this button will display the next set of five ground units. Selecting this button again will continue to display ground units in groups of five. To load a ground unit click the button that contains the unit name. The symbols: < > will appear on either side of the unit name to indicate that it has received orders to board the transport.



*The  
Unload  
Units  
Box.*

Second, to unload a ground unit that is being transported by a naval unit, while giving movement orders to the transporting naval unit, position the cursor over a land square that is adjacent to a water square and simultaneously depress the right shift key and the left mouse button. The Unload Units Box will appear. Click the mouse on the button that contains the name of the unit, or units, that you wish to unload at this place. Units so selected will appear with a dash: - - on either side of the unit name.

## Chapter VIII: Air Power & Airborne Operations



## Air Power & Airborne Operations



101ST TRANSPORTS
MOVE
PATROL
BOMB
ESCORT
RESUPPLY
CANCEL
CONTINUE

*The Air Movement Command box.*

*IBM key equivalents are:*

- M** - Move
- P** - Patrol
- B** - Bomb
- E** - Escort
- R** - Resupply
- C** - Cancel
- O** - Continue

Air units, like all units in UMS II: Nations at War, can be made active<sup>1</sup> in two ways: one, through the National Policies box (click on the Move Units button and select the desired unit from the armed forces organizational chart) or two, by clicking on the desired unit from the map and selecting Issue Direct Orders from the Unit Information Box after double clicking on the unit (see page 6.2 for an example of the Unit Information Box).

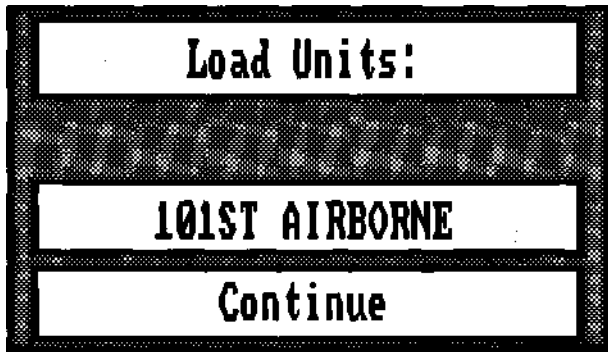
It is important to remember that a unit can be issued direct orders only if that unit belongs to a nation that is: 1) under Human Control and 2) the password for that nation is either the default 'PASSWORD' or the user correctly inputs the password.

The supply cost for each movement command is determined by the values in the Orders Cost and Effect Box (see chapter 12 for details).

Air units (as well as ground units that are being transported by air units) are not affected by any ground terrain. However, all air units have a ceiling (either 1-Low Altitude, 2-High Altitude or 3-Very High Altitude). Air units will not be allowed to cross over elevation that is above their ceiling.

<sup>1</sup>The active unit is the unit currently being issued orders.





*The Load Unit box.  
This box can simultaneously display five airborne units. If more units are available the MORE button becomes enabled. IBM key equivalents: UP Arrow, DOWN arrow, RETURN, M - More, C - Continue*



## Loading Airborne Units

If an air unit with transport capacity shares a map square with a unit that it can transport the user will automatically be presented with the Load Unit Box (above). To transport a unit click on the button with the unit's name (this box contains buttons for five unit names and, if needed, a More button that will display additional lists of units in groups of five). A unit that has been selected for transport will have brackets added to its name. For example, if the above airborne unit is selected its name would appear as: <101ST AIRBORNE>. Click the button again to de-select the unit.

After a unit has been assigned a Movement Order and **Continue** has been selected the cursor will turn from an arrow to a solid black cross hair. A line will extend from the upper left hand corner of the unit to the cursor. Position the cursor on the desired waypoint and press the left mouse button to set a waypoint. Press the right mouse button to end setting waypoints. A unit may have up to five waypoints.

IBM owners without a mouse should use the SPACE BAR in place of the Left Mouse Button and the RETURN key in place of the Right Mouse Button when setting waypoints.

All air units must start and end their movement on either an air base or a unit capable of basing aircraft (such as an aircraft carrier).

## Setting Waypoints



## Bases



*An airbase symbol (left)  
and an aircraft carrier symbol (right).*



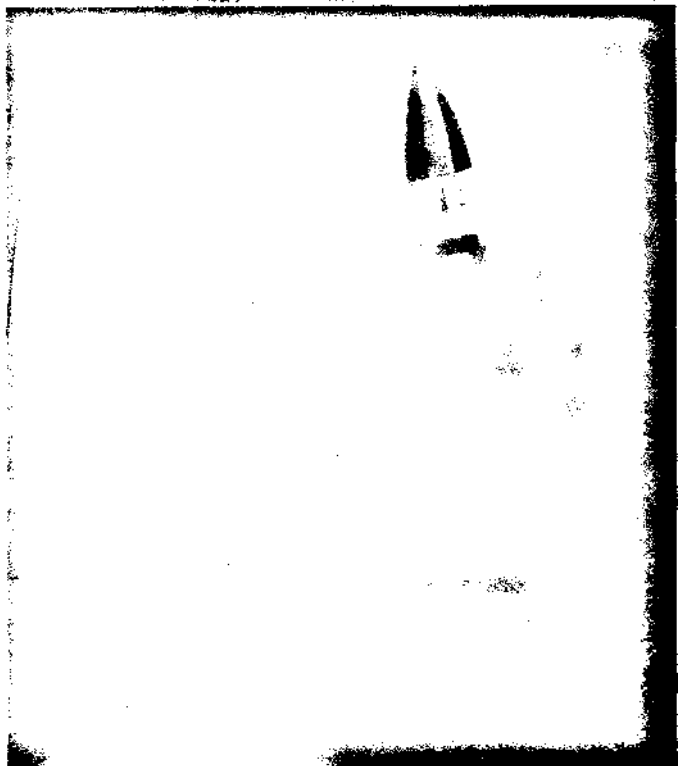
To drop a transported unit, simultaneously press SHIFT and the Left Mouse button while the cursor is positioned over the desired map square. The Unload Unit Box (very similar to above) will appear. To air drop a unit click on the button with the unit's name (this box contains buttons for five unit names and, if needed, a More button that will display additional lists of units in groups of five). A unit that has been selected for an air drop will have brackets added to its name. For example, if the above airborne unit is selected its name would appear as: <101ST AIRBORNE>. Click the button again to deselect the unit.

## Dropping Airborne Units

When an air unit is assigned to Patrol formation a circle with a radius equal to one fourth of the unit's range is drawn with the unit as the center point. Any enemy air units that enter this circle will be immediately attacked by the patrolling air unit.

## Patrols

# Chapter IX: Missiles & Orbital Movement



## Missile Movement



V2 #3  
STRAIGHT LINE FLIGHT  
RANGE: 250 KMS

TRANSPORT

ATTACK

INTERCEPT

CANCEL

UNIT INFORMATION BOX

The Missile Movement Command box. Information displayed from the top down: the unit name, type of guidance, missile range.

IBM key equivalents are:

T - Transport

A - Attack

I - Intercept

C - Cancel

O - Continue

Missile and orbital units, like all units in UMS II: Nations at War can be made active<sup>1</sup> in two ways: one, through the National Policies box (click on the Move Units button and select the desired unit from the armed forces organizational chart) or two, by clicking on the desired unit from the map and selecting Issue Direct Orders from the Unit Information Box<sup>2</sup> (see pages 2.11 and 6.2 for details).

Missiles that have "straight line guidance" proceed directly to the target. These missiles may only have one waypoint. Missiles that are not "reusable" are removed from the Order of Battle Tables after they have been used (moved) once.

The supply cost for each movement command is determined by the values in the Orders Cost and Effect Box (see Chapter 12 for details).

Missiles and orbital units are not affected by any ground terrain or elevation. Missiles and orbital units may move across all map squares.

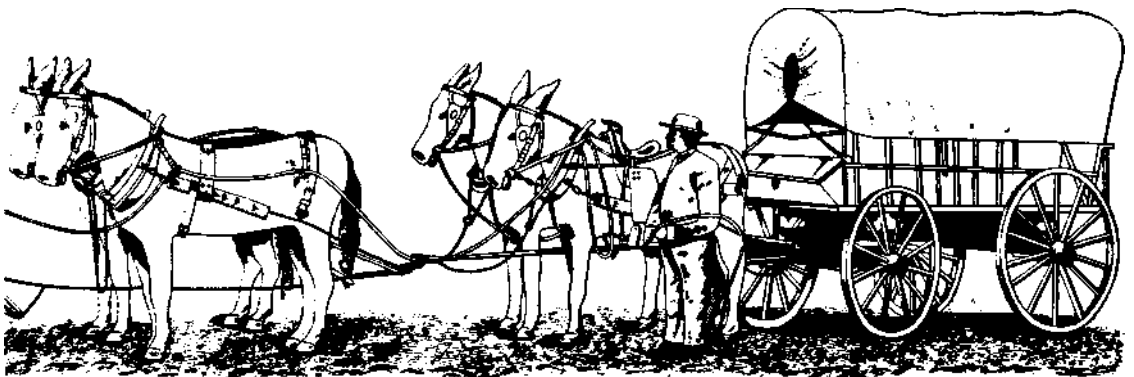
### Intercept

When a missile unit is assigned to Intercept formation a circle with a radius equal to one fourth of the unit's range is drawn with the unit as the center point. Any enemy air or missile units that enter this circle will be immediately attacked by the patrolling missile unit.

<sup>1</sup> The active unit is the unit currently being issued orders.

<sup>2</sup> It is important to remember that a unit can be issued direct orders only if that unit belongs to a nation that is: 1) under Human Control and 2) the password for that nation is either the default PASSWORD or the user correctly inputs the password.

## Chapter X: Supplies & Transportation



## Supplies

Supplies are the currency that military units expend as they assume different formations and move about the map. The cost to assume each military formation is set by the user in the Formation Cost and Effect box. Note in the dialog box reproduced below. The left and right half of the box has been divided for display purposes.

~ GROUND COMMANDS ~

---

**DEFENSE COMMANDS**

	COST	EFFECT
1 Screen position:	1_	10_ %
2 Defend position:	2_	60_ %
3 Hold at all costs:	5_	110 %

---

4 March:	2_	10_ %
5 Forced March:	5_	5_ %
6 Attack:	6_	50_ %
7 Assault:	7_	120 %

**DONE**



IBM key equivalents: TAB to go from one text field to the next. D - Done. The Cost is the cost in Supply Points per Strength Point to assume this formation. The Effect is the effect in combat of this formation. Press Return when done entering values. See Chapter 11 for details.



If the Cost in Supply Points for every military formation is set to zero then supply will have no importance or effect on a simulation. It is through this dialog box that the importance of supply in a simulation is set.

		COST	EFFECT
- NAVAL COMMANDS -			
8	Move and avoid:	1_	10_%
9	Move and engage:	2_	50_%
10	Move and pursue:	4_	120%
11	Bombardment:	3_	100%
- AIR COMMANDS -			
12	Move:	1_	10_%
13	Patrol / Interdict:	2_	60_%
14	Bomb and return:	2_	50_%
15	Escort:	3_	75_%
- MISSILE COMMANDS -			
16	Transport:	1_	10_%
17	Attack:	2_	100%
18	Intercept:	2_	100%

Redistribute Supplies			
UNCLAIMED SUPPLIES	006		
TRANSPORT A	↑	25	↓
SUPPLY DEPOT A	↑	49	↓
SUPPLY DEPOT B	↑	55	↓
SUPPLY DEPOT C	↑	55	↓
	↑		↓
MORE			
Continue			

IBM keys:

Function keys  
1-5 select unit.

UP arrow to  
add supplies,  
DOWN arrow  
to deduct.

The select unit  
will be outlined  
in red.

## **Redistribute Supplies**

When two or more units occupy the same map square, supplies can be exchanged between them. This is necessary to resupply units and to load supplies on to transport units for movement.

The Resupply option is selectable from the unit Movement Command box (see Chapter 6, Ground Movement, Chapter 7, Sea Movement, Chapter 8, Air Movement, Chapter 9, Missile Movement for details). If this button is selected the above Redistribute Supplies box will appear with a list of all units that share the same map square. If there are more than five units on the same square, selecting More will cause the next group of five units to be displayed in the box.

To transfer supplies between units, decrement the store of supplies of the first unit by clicking on the down arrow. These supplies will be added to the total of Unclaimed Supplies at the top of the dialog box. To add these supplies to the second unit, click on the up arrow for that unit. The supplies will be deducted from the Unclaimed total and added to the second unit. Select Done when finished.



All unclaimed supplies are destroyed.

The maximum quantity of supplies that any unit can carry is 99 Supply Points.

## **Spoils**

To the victor belongs the spoils. Whenever a unit has been eliminated in battle, the victorious unit will receive all of the eliminated unit's supplies that it can carry.

## Chapter XI: Combat





## Combat

Combat occurs whenever the distance between two hostile<sup>1</sup> units is less than the current value of CONTACT BETWEEN HOSTILE UNITS as set in the Master Control Panel<sup>2</sup>. This distance is usually about 20 kilometers, however the user may change it for each UMS II: Nations at War scenario.

The methods for determining the victorious and defeated units, as well as the number of casualties sustained, are defined by the user.

Following combat, the morale level<sup>3</sup> for the victorious unit is raised by one point. For example: a unit determined to be the victor who previous to combat had a morale level of 5: STALWART would be raised to a morale level of 6: DETERMINED. A defeated unit's morale level is reduced by one point. For example: a unit determined to be the defeated unit who previously had a morale level of 4: WAVERING would be reduced to a morale level of 3: SHAKEN.

Following combat, the experience levels<sup>4</sup> for both units are raised by one point. For example: a unit who previous to combat had an experience level of 5: IRREGULAR would be raised to an experience level of 6: REGULAR.

The unit suffering the greatest number of casualties - as measured in Strength Points - will be forced to retreat. The computer will move the unit in the opposite direction from which it was attacked. If the attacker is victorious it will continue with its previous orders. If either unit is unable to continue with its previous orders and is under Human Control the user will be asked to issue new orders to the unit.

### Reporting Hostile Contact



If either of the controlling nations of the attacking or defending unit has had the Show Report option set on (see Chapter 12 for details) a report on the appropriate national stationery will be displayed on the screen.

On Macintosh and Amiga computers the report will also appear in the specified typeface for that nation's reports, as below.




If the option Print Reports has been selected (see Chapter 2 for details) the report will also be sent to the printer. If the option Use Stationery had previously been selected the report will be printed in graphics mode on the stationery sheet. If the option Form Feed (or Separate Pages on some computers) had previously been selected, the printer will automatically advance the paper to the next sheet between reports.

<sup>1</sup> Hostile units are defined as units belonging to the armed forces organization of two different nations that are currently at war.

<sup>2</sup> This variable is accessed under the PROXIMITY menu of the Master Control Panel. The distance to initiate combat is defined in kilometers. For more information see Chapter 5, The Master Control Panel.

<sup>3</sup> The morale level for a unit is expressed as a number between 0-9 with 0 being the lowest possible value. The initial morale level for a unit is set at the time that the unit is created.

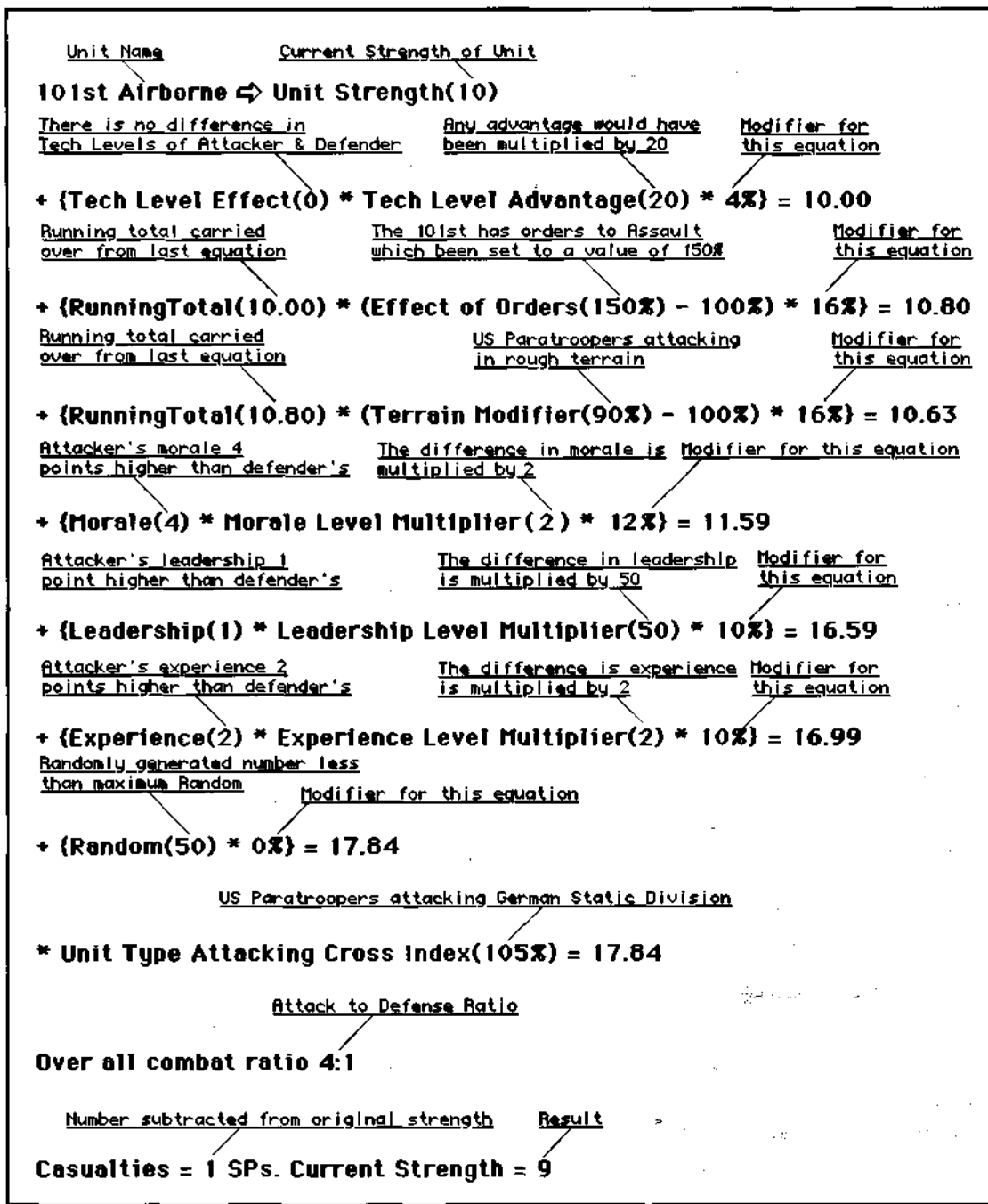
<sup>4</sup> The experience level for a unit is expressed as a number between 0-9 with 0 being the lowest possible value. The initial experience level for a unit is set at the time that the unit is created.

	<b>SUPREME HEADQUARTERS ALLIED EXPEDITIONARY FORCE</b>
	<b>June 5, 1944 A.D. Report From: 101st Airborne Location: 50° 0' N by 1° 6' E</b>
<b>Have engaged enemy forces (709th Division) and have sustained 10.0% casualties while inflicting 25.0% casualties. Advancing.</b>	
<input type="checkbox"/> Stop reporting for Allies	
<input type="checkbox"/> Print this report	
<div>Zoom in on unit</div>	
<div>Continue</div>	

*A sample report as it appears on a Macintosh.*

On the following page is a sample Battle Equation from an actual encounter between the 101st Airborne and the 709th Static Infantry Division during the Assault on Fortress Europe Scenario (see previous battle report).

**The Battle  
Equation**



N.B. Identical calculations are made for the defending unit; only those for the attacking unit, the 101st Airborne, are displayed.



The Battle Equation reports in order<sup>1</sup>:

This is the unit name as it appears in the national Order of Battle, or Armed Forces Organizational Chart. Note that this name does not have to be unique.

## Unit Name

This number is the current strength, before the hostile contact, or battle, as measured in Strength Points (SPs). This is an arbitrary number, **decided** by the scenario designer, based on the field strength of the unit and ranges from one to ninety-nine. When this number is reduced to zero, for whatever reasons, the unit is eliminated from the national Order of Battle and is no longer displayed **on** the map. Furthermore, the unit's controlling nation is subject to a corresponding loss of National Will (see Chapter 5, The Master Control Panel, for setting the effect on National Will caused by the loss of a unit). In this example the 101st Airborne's strength is 10 SPs.

## Current Strength of Unit

Every unit is created with a Technological Level that ranges from (0) Stone Age to World War III Future (18). The attacker's Tech Level is compared to the defender's Tech Level and the superior unit is awarded a bonus based on this number.

## Tech Level Effect

This number is the bonus awarded to a unit that has a superior Technological Level. This bonus is multiplied for every Tech Level that the superior unit has above the inferior unit. This bonus is user defined and may be set in the Master Control Panel (see Chapter 5).

## Tech Level Advantage

This number, set in the Battle Equation (see below) represents the weighting of the importance of the difference in Technological Levels between units. For example, if this number is set to 100 (100 percent of the result of the equation) then 100% (all) of the resulting number will be added to the running total of the Battle Strength of the unit. In the above example, the Tech Level Equation Modifier is set to 20%, therefore the result of the Tech Level Equation will be multiplied by 20% and the result added to the original attacking unit's Strength Points.

## Tech Level Equation Modifier

This number, set in the Battle Equation (see below), represents the bonus awarded for a unit assuming one of a number of formations. For example, an attacking ground unit (see Chapter 7) will be either Marching, Forced March, Attacking or Assaulting. A defending ground unit will be in either Screen, Defend or Hold at All Costs formations. Every unit type (Ground, Sea, Air, Missile or Orbital) has a predefined number of formations, and each formation has a predefined Combat Bonus. The values of these bonuses are set by the user (see below). In this example the 101st Airborne is in Assault formation and the bonus for this formation is 150%. The Effect of Orders bonus, minus 100% in order to get the net change, is multiplied by the running total. Note: this number may be less than 100% and therefore is not a bonus at all, but rather a liability.

## Effect of Orders

This number, set in the Battle Equation (see below), represents the weighting of the importance of the Effect of Orders bonus. For example, if this number is set to 100 (100 percent of the result of the equation) then 100% (all) of the resulting number will be added to the running total of the Battle Strength of the unit. In the above example, the Effect of Orders Modifier is set to 16%, therefore the result of the Effect of Orders Equation will be multiplied by 16% and the result added to the original attacking unit's running total which is displayed to the right side of the equal sides of the equation.

## Effect of Orders Equation Modifier

<sup>1</sup> N.B. The Battle Equation is not displayed in the national typeface. This in the interest of clarity.

### **Terrain Modifier**

Every unit type (there may be up to forty individual unit types for every scenario) has been cross-indexed with its ability to attack (or defend) in the sixteen terrain types. This is set up at the time that a scenario is created. In this example, the unit type, American Paratroopers, is cross-indexed with attacking across rough terrain and the result (90), minus 100% in order to get the net change, is multiplied by the running total. Note: the terrain type of the defending square determines the terrain type. The same calculation is made for the defending unit, though a different table is used for calculating the effect of terrain on defense.

### **Terrain Effect Equation Modifier**

This number, set in the Battle Equation (see below) represents the weighting of the importance of the Terrain Effect bonus. For example, if this number is set to 100 (100 percent of the result of the equation) then 100% (all) of the resulting number will be added to the running total of the Battle Strength of the unit. In the above example, the Terrain Effect Modifier is set to 16%, therefore the result of the Terrain Effect Equation will be multiplied by 16% and the result added to the attacking unit's running total which is displayed to the right side of the equal sign of the equation.

### **Morale Level**

All units have a Morale Level that ranges from 0 (Broken) to 9 (Fanatical). Note: the morale level of a victorious unit is raised by one point after battle, while the morale level of a defeated unit is lowered by one point. The number displayed is the difference between the attacker's and defender's morale. In this example the 101st Airborne's Morale Level is 4 points higher than the defender's.

### **Morale Level Advantage**

This number is the bonus awarded to a unit that has a superior Morale Level. This bonus is multiplied for every Morale Level that the superior unit has above the inferior unit. This bonus is user defined and may be set in the Master Control Panel (see Chapter 5 for details). In this example, the bonus is 2.

### **Morale Level Equation Modifier**

This number, set in the Battle Equation (see below) represents the weighting of the importance of the difference in Morale Levels between units. For example, if this number is set to 100 (100 percent of the result of the equation) then 100% (all) of the resulting number will be added to the running total of the Battle Strength of the unit. In the above example, the Morale Level Equation Modifier is set to 12%, therefore the result of the Morale Level Equation will be multiplied by 12% and the result added to the attacking unit's running total which is displayed to the right side of the equal sign of the equation.

### **Leadership Level**

All units have a Leadership Level that ranges from 0 (Incompetent) to 9 (Genius). The number displayed is the difference between the attacker's and defender's morale. In this example the 101st Airborne's Leadership Level is 1 point higher than the defender's.

### **Leadership Level Multiplier**

This number is the bonus awarded to a unit that *has* a superior Leadership Level. This bonus is multiplied for every Leadership Level that the superior unit has above the inferior unit. This bonus is user defined and may be set in the Master Control Panel (see Chapter 5 for details). In this example, the bonus is 50.

### **Leadership Level Equation Modifier**

This number, set in the Battle Equation (see below) represents the weighting of the importance of the difference in Leadership Levels between units. For example, if this number is set to 100 (100 percent of the result of the equation) then 100% (all) of the resulting number will be added to the running total of the Battle Strength of the unit. In the above example, the Leadership Level Equation Modifier is set to 10%, therefore the result of the Leadership Level Equation will be multiplied by 10% and the result added to the attacking unit's running total which is displayed to the right side of the equal sign of the equation.

All units have an Experience Level that ranges from 0 (Untrained) to 9 (Elite). Note: the experience level of both units is liaised by one point after battle, regardless of the outcome. The number displayed is the difference between the attacker's and defender's experience. In this example the 101st Airborne's Experience Level is 2 points higher than the defender's.

This number is the bonus awarded to a unit that has a superior Experience Level. This bonus is multiplied for every Experience Level that the superior unit has above the inferior unit. This bonus is user defined and may be set in the Master Control Panel (see Chapter 5 for details). In this example, the bonus is 2.

This number, set in the Battle Equation (see below) represents the weighting of the importance of the difference in Experience Levels between units. For example, if this number is set to 100 (100 percent of the result of the equation) then 100% (all) of the resulting number will added to the running total of the Battle Strength of the unit. In the above example, the Experience Level Equation Modifier is set to 10%, therefore the result of the Experience Level Equation will be multiplied by 10% and the result added to the attacking unit's running total.

This number, set by the user in the Master Control Panel, is between 0 and 99. It represents the random occurrences that take place in a battle. In this example the number returned will be less than 50.

This number, set in the Battle Equation (see below) represents the weighting of the importance of random factors in battle. For example, if this number is set to 100 (100 percent of the result of the equation) then 100% (all) of the resulting number will added to the running total of the Battle Strength of the unit. In the above example, the Random Equation Modifier is set to 0%, therefore the result of the Random Equation will be multiplied by 0% and the result added to the original attacking unit's running total. In the above example, the Random Factor has no effect on the equation.

Every unit type (there may be up to forty individual unit types for every scenario) has been cross-indexed. This is set up at the time that a scenario is created. These values are based on firepower of the unit types. In this example, the unit type, American Paratroopers, is cross-indexed against German Static Infantry as having a 150% efficiency or firepower rating.

This number is multiplied by the running total and the result is displayed to the right of the equal sign of the equation.

This number compares the end result of the Attacking Unit's Running Total with the Defending Unit's Running Total. This number is used to cross-index the casualty charts that are user defined in the Master Control Panel (see Chapter 5 for details).

This is the number of Strength Points (SPs) subtracted from the attacking unit. This number is user defined in the Master Control Panel (see Chapter 10 details). In this example the 101st Airborne lost 1 SP.

This is the current strength, after battle, of the unit that issued the report to the national commanding general. In this example the Current Strength of the 101st Airborne after the battle is 9 SPs.

## Experience Level

## Experience Level Advantage

## Experience Level Equation Modifier

## Random

## Random Equation Modifier

## Unit Type Attacking Cross Matrix (Unit Type Defending Cross Matrix)

## Overall Combat Ratio

## Casualties

## Current Strength

## The Battle Equation Dialog Box



<b>Strength</b>		<b>Strength</b>	
<b>Tech level</b>		<b>3</b>	
<b>Orders</b>	<b>14</b>	<b>Orders</b>	<b>14</b>
<b>Matrix</b>		<b>Matrix</b>	
<b>Terrain Modifier</b>	<b>20</b>	<b>Terrain Modifier</b>	<b>20</b>
<b>Morale</b>		<b>10</b>	
<b>Leadership</b>		<b>5</b>	
<b>Experience</b>		<b>14</b>	
<b>Random</b>		<b>0</b>	
<b>Sum-&gt;100 (%S)</b>		<b>Done</b>	
<b>Orders... (%0)</b>			

This dialog box is accessed from the Modify menu (see Chapter 2 for details). It is through the variables set in this dialog box that the user determines the weight, or importance, of each of these factors in deciding the outcome of combat. Any number, between 0 and 100, may be placed in the text field for each of the variables, with the greater the number, the greater the proportional effect that that variable will have on the combat equation. For example, if Random is set to 0, then randomness will have no effect whatsoever on the outcome of a battle.



The sum total of the all the numbers in the Battle Equation dialog box need not total up to 100 (100 percent). However, the Sum button has been added as a convenience to automatically total and average all the numbers for all variables. This allows the user to set up the battle equation in such a way that, for example, leadership would determine 10% of the outcome of combat, experience might be weighted to represent 25% of the outcome, while the difference between unit types might be the deciding 65% of the equation.

The Battle Equation Dialog Box is laid out as a flow chart representing the battle equation in the order in which the variables are evaluated (see above for a detailed explanation of the variables that make up the battle equation). The two topmost areas, labeled Strength, represent the attacking unit's strength measured in Strength Points on the left, and the defending unit's strength measured in Strength Points on the right. A defending unit's strength may be increased by a fortification bonus (see Chapter 3, Fortifications and Ports and Chapter 5, the Master Control Panel for more details). These two variables may not be 'weighted', or assigned a percentage of importance in the equation.

The next area down from the top is the percentage of importance of the difference in the Tech Levels between the two units.

The next area down from the top is the percentage of importance of the effect of the orders (military formation) of the attacking unit (again, on the left) and the percentage of importance of the effect of the orders of the defending unit (on the right). Clicking on the Orders... button will bring up the Formation Cost and Effect Box (see Chapter 10 for details). It is through this dialog box that the bonus, or penalty, for the eighteen military formations is set. For example, if a ground unit with 20 Strength Points was attacked while in the 'Hold At All Costs' formation (which had been set to an effect of 110%) then the defending unit would receive a bonus of 2 Strength Points multiplied by the percentage of importance of the effect of the defending unit's orders.

The next area down from the top is the Unit Type Attacking Matrix (left) and Unit Type Defending Matrix (right). These values are set in the matrices when the scenario is created and can not be modified by a percentage of importance.

The next area down from the top is the Terrain Attacking Cross Index (left) and Terrain Defending Cross Index (right).

The remaining areas, in order, are Leadership, Experience, Morale and Random. See above for detailed explanations.

All of these values may be saved in the .MCP file. (See Chapter 2 for details).

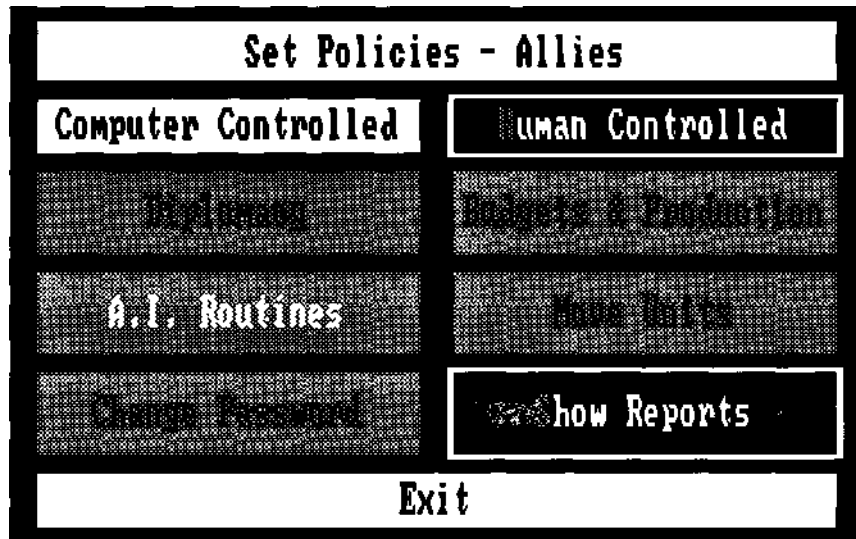
Selecting Done will exit the dialog box.



## **Chapter XII: National Policies, Budgets & Diplomacy**



## National Policies



*The National Control Panel.*

- **The Budgets & Production , Move Units and Diplomacy buttons are active only when the Human Controlled button is selected.**
- **The A.I. Routines button is active only when Computer Controlled is selected.**
- **The Change Password and Show Reports buttons are always active.**

*The IBM keyboard equivalents are:*

C - Computer Controlled	H - Human Controlled
D - Diplomacy	B - Budgets & Production
A - A.I. Routines	M - Move Units
P - Change Password	
S - Show Reports	
E - Exit	



Entrance to the National Control Panel is from the menu item National Orders.. of the Phases menu. This item is active only at specific times during a simulation. The time (as measured in simulation days) is set by the user in the Master Control Panel (see Chapter 5). Furthermore, the National Control Panel is not accessible after the Done menu item has been selected.



### Computer Controlled Button

When this button is selected the active nation (the name of the nation that appears at the top of the National Control Panel) will be controlled by the computer. The computer will make all diplomatic, production, budget and troop movement decisions. These options will be grayed out and the user may not select them.

When this button is selected the active nation is controlled by the human user and the A.I. Routines button will not be active.

**Human  
Controlled Button**

This button is active only when the nation is under Human Control. Selecting this button causes this dialog box to appear:

**Diplomacy**

MACEDONIA'S DIPLOMATIC RELATIONS WITH:

↑ Corinthian League ↓

CURRENT RELATION:

ENEMY NEUTRAL **ALLIED**

PROPOSED RELATION:

ENEMY NEUTRAL **ALLIED**

DONE

*The Diplomatic Relations Box.*

*IBM key equivalents: Scrolling Nation list: UP arrow and DOWN arrow.*

*E - Enemy*

*N - Neutral*

*A - Allied*

*D - Done*












At the top of this dialog box appears a scrolling list of all nations in the simulation. Clicking on the Up arrow or the Down arrow will scroll the list to the next name. Macintosh users have the standard pop-up menu.

The middle row contains three buttons, one of which is highlighted, and displays the current relationship between the two nations. The bottom row of three buttons represent proposals made by the active nation to the selected nation.

Selecting Done will return the user to the National Control Panel.

Selecting this button will cause a scrolling display of the active nation's entire armed forces organizational chart or Order of Battle. The list may be scrolled up or down by clicking the mouse in the Up or Down arrows or by clicking the mouse in the slider area and positioning the bar to the desired place on the track. To select a unit, click the mouse on the desired tile. The selected unit, and any units under the command of this unit, will be displayed in inverse.

**Move Units**

	<b>Montgomery ID#: 5347</b> <b>Strength: 530 Leadership: Competent</b>	 
	<b>Bradley ID#: 5349</b> <b>Strength: 290 Leadership: Talented</b>	
	<b>VII Corps ID#: 5350</b> <b>Strength: 120 Leadership: Talented</b>	
	<b>9th Infantry ID#: 5351</b> <b>Strength: 40 Leadership: Competent</b>	
	<b>90th Infantry ID#: 5353</b> <b>Strength: 40 Leadership: Competent</b>	
	<b>4th Infantry ID#: 5354</b> <b>Strength: 40 Leadership: Competent</b>	
	<b>V Corps ID#: 5355</b> <b>Strength: 170 Leadership: Competent</b>	
<b>Cancel</b>		



IBM key equivalents are UP arrow and DOWN arrow to scroll the list one line at a time. PGUP and PGDPWN scroll one page at a time. HOME goes to the beginning of the list and END to the bottom of the list. Use function keys F1-F7 to select a unit tile. Press C for cancel.



Clicking on a highlighted unit tile (or highlighted group of tiles) will cause the map view to be changed to the appropriate level centered on the selected unit based on the level of indentation in the Order of Battle Table. For example, selecting the 4th Infantry in the above Order of Battle table will cause the map view to be redrawn at the Division Level (maximum zoom) centered on the 4th Infantry. Using the same Order of Battle table, selecting the VII Corps will cause the map to be drawn one level up from the previous example, or Corps level.

The appropriate Movement Command Box will be displayed for the selected unit. For example, the Ground Movement Command Box would be displayed for the 4th Infantry. See Chapters 6, 7, 8 and 9 for details.

### Artificial Intelligence Routines

The next chapter, Chapter 13, is devoted entirely to this subject. This button is active only when the **Computer Controlled** button is selected.

Select this button to change the password of the active nation. The password may be any eight letters and characters. The default password is: PASSWORD.

Change Password

**CHANGE NATIONAL PASSWORD FOR MACEDONIA**

PASSWORD

**CANCEL**

Do not change the default password unless there are multiple human users, as the user will be asked for the national password before accessing the national control panel and moving units if the password is not PASSWORD.



**France**

Tax Rate: 75

**Production Points: 120**

**Recruitment Points: 155**

**Done**

IMPROVE PROVINCE:			MAX	CURRENT	COST
Belgium		INCREASE PRODUCTION	60	30	4
<input type="checkbox"/>	<input type="checkbox"/>	INCREASE RECRUITING	40	30	3

IMPROVE SPECIAL SQUARE:			MAX	CURRENT	COST
AMSTERDAM		PORT CAPACITY	100	40	5
<input type="checkbox"/>	<input type="checkbox"/>	PORT CAPABILITY	4	4	6
		FORTIFICATION	16	4	13

**BUILD UNIT:**

Guard Infantry

SPs: 10

☐

**DATE UNIT AVAILABLE:**

JANUARY 29, 1905 A.D.

☐

**BUILD UNIT**

**COST**

**RECRUITMENT POINTS: 10**

**PRODUCTION POINTS: 15**

IBM Key Commands-

Tax Rate: TAB, then return to leave text field.

Done: D

Province Scrolling: Left Arrow and Right Arrow

Special Square Scrolling: Left Shift Left Arrow and Left Shift Right Arrow

Unit Scrolling: Right Shift Left Arrow and Right Shift Right Arrow

Increase Production: P

Increase Port Capability: B

Increase Recruiting: R

Increase Fortification: F

Increase Port Capacity: C

Build Unit: U

**Budgets &  
Production**



The Budgets & Production Dialog Box is divided into four sections. The top section contains the name of the active nation, an editable text field for changing the tax rate for the nation, the nation's total Production Points and the nation's total Recruitment Points.

## National Taxes

The higher that the Tax Rate is set for the nation, the greater the number of Production and Recruitment Points that that nation will receive for building units and improving provinces and special squares. The total number of Production and Recruitment Points available to a nation is determined by adding up the totals for the provinces under that nation's control and then multiplied by the Tax Rate. However, as the Tax Rate is increased the National Will is decreased. The amount of decrease in the National Will per 10% of Tax Rate is set in the Master Control Panel (see Chapter 5 for details).

## Improve Province

The second section of the Budgets & Production Dialog Box accesses the list of provinces currently under the active nation's control. In the example dialog box above, Belgium is the active province under the control of the nation of France. The province of Belgium contributes 30 Production Points and 30 Recruitment Points to France's national budget (note: in the above example, the national Tax Rate is set to 75% so Belgium would only contribute 22 Production Points and 22 Recruitment Points). However, Belgium has a Maximum Production Capability of 60 Production Points and a Maximum Recruitment Capability of 40 Recruitment Points. To reach these maximum numbers the nation of France would need to spend Production Points from its treasury (in essence, spend money to build factories and shipyards, or increase the enlistment bounty for new recruits). The cost, in Production Points, to increase the values is displayed to the right of the dialog box. In the above example, increasing Belgium's Production would cost France 4 Production Points while increasing Belgium's Recruiting would cost France 3 Production Points. The cost for these improvements is set by the user in the Master Control Panel (see Chapter 5 for details).

Click on **Increase Production** to budget the necessary Production Points to increase the active province's future production. Clicking on this button again will unhilite this option and cancel the expenditure. Likewise, click on **Increase Recruitment** to budget the necessary Production Points to increase future Recruitment Points. This, too, may be cancelled by clicking again on the button.

## Improve Special Squares

Like provinces, Special Squares may be improved (see Chapter 3 for more information about Special Squares). Special Squares that contain ports may improve their capacity (the number of ships), their capability (the size, or depth of draft, of ships) and all Special Squares may increase their defensive fortifications. Clicking on the left and right arrows will scroll through a list of all Special Squares that are within the borders of the active province.

To the right of these option buttons is a list of the Special Square's Maximum and Current levels, as well as the cost to improve these features. In the above example, the selected Special Square is Amsterdam. This Special Square has a Current Port Capacity of 40. This means that up to 40 Strength Points of naval vessels may dock at Amsterdam. The Maximum Port Capacity of Amsterdam is 100. This means that this number may be increased up to a maximum of 100 Strength Points. The Cost to increase Amsterdam's Port Capacity is 5 Production Points per Port Capacity Point. Likewise, Amsterdam has a Current Port Capability of 4. This means that ships of Very Deep Draft may dock at Amsterdam. Four is also the Maximum Port Capability. This means that Amsterdam's Port Capability may not be increased. However, if it were possible to increase

this value it would cost 6 Production Points per Port Capability Point. Amsterdam's Current Fortification Level is 4; however, the maximum Fortification Level (for all Special Squares, is 16. The Cost to increase the Fortification Level is 13 Production Points per Fortification Level. The Cost to increase Port Capability, Port Capacity and Fortification Level is set by the user in the Master Control Panel. See Chapter 5 for details.

Click on Port Capacity to budget the necessary Production Points to increase the active Special Square's Port Capacity. Clicking on this button again will unhilite this option and cancel the expenditure. Likewise, click on Port Capability to budget the necessary Production Points to increase the active Special Square's Port Capability. This, too, may be cancelled by clicking again on the button. Lastly, click on the Fortification button to budget the appropriate Production Points to increase the active Special Square's Fortification Level. This may also be cancelled by clicking again on the button.

Clicking on the left and right arrow buttons will scroll through a list of available unit types for this province. Not all unit types are available for all provinces. To create new military units click on the Build Unit button. Also displayed is the date when this unit will be ready and what its Strength Points will be. In the above example, a French Guard Infantry unit, of 10 Strength Points has been selected. This unit will be created on January 29, 1805. The cost to produce such a unit is 10 Recruitment Points and 15 Production Points. The Cost to produce each unit type is set by the scenario designer when the scenario is created. However, the time it takes to create a unit is measured in ITUs, or Internal Time Units. The value, in scenario days, for an Internal Time Unit is set by the user in the Master Control Panel. For example, if the cost to produce a unit is set at 4 ITUs and the value of an ITU, as set in the Master Control Panel is 7 days, then it will take 28 days to create this unit.

Select Done from this dialog box to return to the National Control Panel.

When this button is hilited all messages involving the active nation will be displayed to the screen. If the Print Reports options are set (see Chapter 2) these reports will also be sent to an online printer. See also Chapter 11 for more details on reports. Click this button again to deselect it.

## **Build Unit**

## **Done**

## **Show Reports**

# Chapter XIII: Designing Computer Generals & Artificial Intelligence



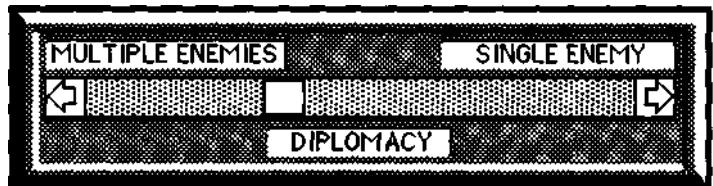


## Artificial Intelligence

Each nation in a UMS II: Nations at War scenario may be controlled by either a human or computer general. There is a maximum of 127 nations. The user can determine the computer general's behavior for each computer controlled nation. Each computer controlled nation may have a unique computer personality.

### Designing a computer general's personality

A computer general's strategy and tactics are influenced by parameters specified by the user. There are seven personality traits. To set the variables click on the slider and move the mouse to the left or to the right. Clicking on the left and right arrows will also increment or decrement the position of the slider. On IBM computers without a mouse use the function keys 1-7 to select slider (the active box will be outlined in red) and the left and right arrows to move the slider. The HOME key moves the slider to the far left, the END key moves the slider to the far right, PGDOWN decrements the slider in units of 10, and PGUP increments the slider in units of 10.



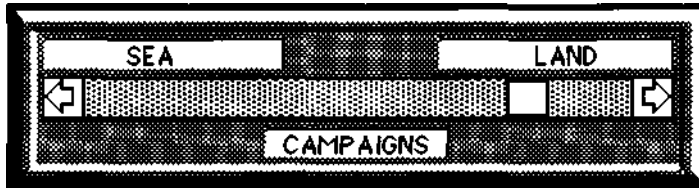
#### Diplomacy

This variable determines a computer general's inclination to wage war on multiple fronts. The further to the left the slider is positioned, the more likely the computer controlled nation is to simultaneously invade other countries. If the slider is positioned all the way to the right the computer general will concentrate on one nation at a time.



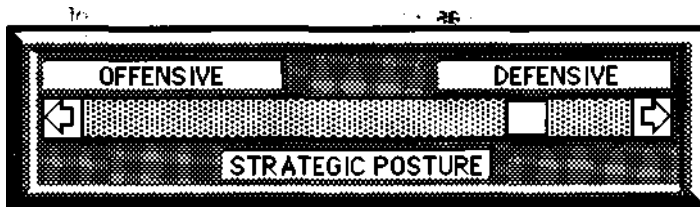
#### Behavior

This variable determines the amount of risk that a computer general will take to achieve its goals. As the slider is moved to the left, the computer controlled nation will be more likely to attack at less advantageous odds. As the slider is moved to the right, the computer general becomes more cautious and will assemble large reserves of supplies and troops before attacking.



This variable determines the inclination of the computer general to wage amphibious campaigns. If the slider is set all the way to the right the computer will initiate land campaigns only. If the slider is set to the left the computer general will look for naval solutions to strategic problems. This variable is used in conjunction with other A.I. variables to determine specific military objectives as well.

## Land versus sea campaigns



This variable determines the basic strategic posture of the computer general. If this slider is set fully to the left, the computer will attack its enemies regardless of the strategic position. If this slider is set to the right the computer general will be concentrate on the defense of its borders and territories.

## Strategic posture



If this slider is set towards the left the computer general will concentrate on the destruction of its enemies' military forces. If this slider is set towards the right the computer will concentrate on seizing enemy ports, provincial and national capitals.

The issue of strategic objectives has long been debated among military theorists. Von Clausewitz and Grant believed that the destruction of the enemy's army was of paramount importance. Other generals, including Napoleon, were content to conquer territory.

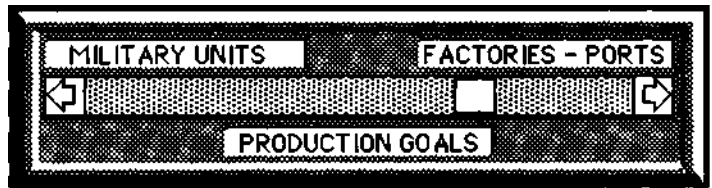
## Objectives



## Division of forces

Moving this slider to the left will make the computer general concentrate forces and use them towards one common goal. Positioning the slider to the right will make the computer general divide forces and attack multiple objectives. The further to the right that the slider is positioned, the more the computer general will divide forces.

The term 'Horde' is used here as a euphemism for concentration of forces into a single attack group. However, it is important to remember that historically the Mongol military machine was comprised of numerous wings. Indeed, to accurately duplicate Genghis Khan's behavior patterns, it is recommended that this slider be set towards the center of the track.



## Production goals

This variable determines how the computer general will allocate national production points. Production points are used to create military units, increase factory production, improve port capacities and fortifications.<sup>1</sup> Moving the slider to the left will make the computer general concentrate on producing military units exclusively. Moving the slider to the right will make the computer general use the nation's production points to improve a province's production capacity, forts and ports. Ports will receive special attention if the computer general has simultaneously been programmed to concentrate on sea campaigns and Factories - Ports Production Goals.

<sup>1</sup>See Chapter 3, Special Squares & Ports, for more information on production, building forts and creating units.

## Chapter XIV: Files & Memory Management



## Data storage

UMS II goes to great lengths to store large amounts of data in relatively little disk space, and to work well on computers without large amounts of RAM memory. This section describes the advantages of the methods UMS II uses, and describes a little bit of how it's done.

## Data storage goals

UMS II runs on five different microcomputers, which use several different processors, and come with varying amounts of memory. Early on, it became clear that we'd have to work at it to make sure that a planet or army database created on one computer would work on another type of computer. If you have a way of communicating from one computer to another — a phone line, bulletin board, or other link — you can easily send your favorite UMS II: Nations at War data files to your friends, even if they have a Macintosh while you have an IBM PC, for instance.

Microcomputers have come a long way, but a single model still varies a lot. Some have small floppy disks, while others come with hard disks holding many megabytes. For those of you without those expensive options — don't worry, UMS II works hard to squeeze all the data it can onto a disk.

The amount of main memory, or "RAM" also varies from 512K (the minimum UMS II will run on) to multi-megabyte machines. UMS II automatically uses as much RAM as is available, and will operate fine on a 512K-sized computer, but even faster on one with more RAM.

Does all this generality slow it down? Not noticeably!

## Portability

### How it works:

Being able to exchange UMS II files sounds pretty simple — just make all five computer programs write files the exact same way, right? Well, there's a little bit more to it than that. Real numbers (like 1.3 or -670,000) are stored differently on different computers, so they're usually written to disk differently. Integers (like 3, 22, or -6) are written more or less the same, though.

Almost all data written out are compacted to save space, and a bonus of this compression is that real numbers are changed a little bit and written as integers. This is one of the key reasons the files are portable.

## Encoding

### How it works:

Encoding is pretty simple. Let's say you've got a "flag" variable, used to keep track of whether or not a military unit has biological-warfare capability. Many programs store that in a byte, or eight bits of data. But a single bit can store it — many other programs will use this more compact representation.

Or, let's say you want to store the terrain type of a square. There are sixteen terrain types. Most programs would store this in a byte (8 bits) or a word (16 bits). Some of the time, UMS II keeps this information stored as a word, so it can be used quickly. But when it comes time to store it on disk, it stores it in just 4 bits.

Most sets of attributes (a nation's information or a military unit's information) have each attribute encoded like this, and all these tiny savings add up.

Encoding also helps with portability for text, in addition to real numbers as was mentioned above. For instance, the name of a unit can consist of only numbers, upper- and lower-case letters, and spaces. Usually, each character is stored in 8 bits. UMS II stores characters in various sizes; in this case, in six bits. That

means not every character can be represented. This is actually helpful for portability — it means that a Macintosh user can't type in a unit name like "•unit°", which uses nonstandard characters which wouldn't come out on another computer. In other words, text is reduced to its lowest common denominator as a side-effect of encoding.

### How it works:

UMS II maintains a map of 360° by 180°. That's 64,800 squares, each with a 10 by 10 array inside it because it works at the six minute level — a total of 6,480,000 squares! Each square requires a couple of bytes for terrain, climate, etc. Does this mean you need a 250-megabyte disk to store an entire planet?

### Geographic compression

Unfortunately for the manufacturers of compact digital disks (which can hold over 600 megabytes), UMS II can do just fine storing a planet database on a floppy disk. The secret is that not all of the planet has that level of detail. UMS II notices when broad areas of the planet have the same terrain (or climate, etc.), and stores those areas efficiently. Computer scientists call the data structure used internally a "quadtree".

Of course, if you add detail to over 6,000,000 squares by hand, you will eventually produce a giant database. Perhaps you should invest in a good optical-storage drive before attempting this.

### How it works:

UMS II determines how much RAM your computer has available when it starts up. It doesn't fill this up immediately, but brings data into RAM from disk only when they're needed. Eventually, the available RAM may fill up.

### Using all of RAM

A section of the program called the "paging manager" handles this. It remembers which data were used recently and which weren't. When RAM is full, it writes the least-used data out to the disk to make room in RAM for other needed data. The paging manager doesn't know what these pieces of data mean; it just gets them from the disk when other parts of the program request them.

On a machine without much RAM, the paging manager will wind up throwing data out to disk more often. The data's not lost; it's just moved to make room for other data. This is why you may hear a lot of disk access on small-memory machines.

If your computer has a lot of RAM, you may hear hardly any disk operations at all after much of the data have been read into RAM. UMS II will keep as much as possible in RAM.

The paging manager is the reason UMS II uses two files. The larger one, the data file, stores the actual pieces of data. The smaller one is called an "index" file — it's how the paging manager keeps track of where in the data file each piece of data is.

Paging sounds like lots of effort — internally, it is. But it's quite fast, and it lets computers with all kinds of RAM sizes use the same program quite simply.

**In summary..**

UMS II uses a variety of techniques to make sure you get the most out of your machine. It compresses individual data items and uses specialized methods to represent terrain and other maps very efficiently. It uses your RAM efficiently if you have a lot, but can 'get by' using the disk if you don't. UMS II is another example of the commitment Intergalactic Development has made to bringing the finest in quality graphics computing to the largest number of microcomputers possible.



# ALEXANDER OF MACEDONIA



Alexander at the Granicus



# ALEXANDER OF MACEDONIA

by Edward Bever, Ph.D.

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## I. INTRODUCTION

In the early spring of 334 BC, young Alexander the Great led an army of Macedonians and Greeks across the Hellespont, the strait that separates Europe and Asia, beginning one of the greatest campaigns of conquest in all history. Behind him lay the rugged hills and fertile valleys of Greece, home to a vital young civilization. In front stretched the colossal empire of Persia, encompassing the fertile plateau of Anatolia, the ancient river-valley civilizations of Mesopotamia and Egypt, the untold treasures of the imperial capital at Persepolis, the vast grasslands and deserts of Media and Parthia, and who knew what stretching beyond. Until Alexander, Greece was a peripheral corner at the edge of civilization; after Alexander the Greeks ruled the known world.

## II. BACKGROUND

Alexander's invasion was the final, decisive round in a struggle dating back to 499 B.C., when Greek cities along the Aegean coast of Aetolia (modern Turkey) rose in revolt against their Persian overlord. The Emperor Darius soon crushed the uprising, but retained a desire to punish the mainland Greeks who had supported their rebellious brethren, in particular the rising city of Athens.

Four years later, in 490 BC, Darius personally led an amphibious expeditionary force across the Aegean Sea to the coast at Marathon, 26 miles from Athens. Heavily outnumbered, the Athenians managed to rout the invaders, sending them scurrying back to their ships. Humiliated, the King of Kings resolved to avenge his defeat by conquering Greece entirely, and he began extensive preparations for a far greater expedition.

Darius died in 486, but the preparations were continued by his successor Xerxes. Meanwhile, the Greeks of the southern Isthmus, led by Sparta, resolved to stand by Athens, while the remainder of the Greek cities, awed by the mighty forces being assembled against them, chose neutrality or even support of Persia.

In 480 B.C. the Persian army of 200,000, possibly the greatest force yet assembled, crossed the Hellespont on two parallel bridges, and marched round the north coast of the Aegean, accompanied just offshore by 1500 warships and 3000 transports carrying supplies. Their advance was delayed by the heroic stand of a small Spartan force in the narrow pass at Thermopylae, and stopped cold by the loss of their fleet in the naval battle of Salamis. Bereft of supplies, Xerxes pulled most of his force out of Greece, and the Greeks destroyed the remainder at the battle of Plataea in 479.

With Greece safe, most of the Greeks made peace with Persia the following year, but the Athenians refused. They transformed the war for survival into a war of conquest in which they "liberated" many of the Aegean islands, much of the Anatolian coast, and Cyprus, and forced them into the Athenian dominated Delian League. Hostilities continued in an increasingly desultory fashion until 468 B.C.

Despite Xerxes' stinging defeat, the Greeks represented little threat to the

integrity of the Persian empire. The more successful they were against the Persians, the more they fought amongst themselves, a tendency the Persians exploited through skillful diplomacy and generous bribes. From 460 to 404 BC Greece was preoccupied by the duel between Athens and Sparta known as the Peloponnesian Wars, and when victorious Sparta went on to fight the Persians in the decade after 400, the Athenians used the opportunity to organize a coalition against it. Persia played the honest broker between the quarreling Greeks, and even got them to recognize nominal Persian suzerainty in 387, but could not turn that into effective control. Instead, in 371 Thebes broke Spartan power forever and enjoyed a brief period of hegemony, which was followed by decades of diplomatic instability that ended only with the creation of the Hellenic League under Macedonian leadership in 336 BC.

The rise of Macedonia from 359 to 336 B.C. transformed Greek politics, and tolled the deathknell of Persia. Inhabiting a frontier region to the northeast of Greece proper, the Macedonians had long hung at the margins of the Greek world, related by blood and language but distinguished by their semi-barbaric society. Nevertheless, they gradually adopted the essential elements of Greek superiority - intellectual, administrative, and, above all, military - and were galvanized to action by their young king, Philip II, who took the throne in 359. He solidified his control at home, reformed the Macedonian army, and began a campaign of conquest in all directions. He subdued the more barbaric tribes to the north and west and intervened in an internecine struggle to seize Greek Thessaly to the south and Thrace to the east. By 346 Philip was master of northern Greece, and in 338 he won a decisive battle at Chaeronea against Athens and Thebes. The next two years he spent organizing the Hellenic League, with the express purpose of embarking on a common campaign against Persia. By 336 all the preparations were complete. Philip was chairman of the League, which included virtually all Greek states but Sparta, he was commanding general of the combined Graeco-Macedonian army, and he had already dispatched his trusted general Parmenio across the Hellespont with a strong force to conduct a reconnaissance in force.

In June, 336 B.C., Philip's plans were cut short by an assassin's blade. Who killed him has never been in doubt, but who had him killed has always been uncertain. That his estranged wife Olympias was involved is commonly acknowledged; that her son, his son, Alexander was involved is hotly disputed even today.





Aristides

Since there is really no way to know for sure, suffice it to say that Alexander was the chief beneficiary of his father's death. Product of a passionate union that soured during his childhood, Alexander was raised to be Philip's heir, even as his father created rivals for the throne through a subsequent marriage. Always the sole focus of his mother's ambitions, Alexander had a complex relationship to his father, in part protege and in part competitor. Philip arranged for the best education, including tutoring by the great philosopher Aristotle, and Alexander flowered into a commanding and enterprising young man. As a sign of his fatherly confidence, Philip gave his 18 year old son command of the crucial cavalry charge at Chaeronea, the decisive blow of the decisive battle in Macedonia's rise to hegemony.

Just 20 at the time of his father's death, Alexander moved swiftly to assert his control of Macedonia, and followed up just as swiftly to assert Macedonia's control of Greece. Whether Philip could have built upon his successes within Greece to achieve his ambitions in Asia will forever be uncertain; that his son used them to accomplish all the father dared dream, and then infinitely more, is undeniable fact.

### III. THE COMBATANTS

#### A. The Greeks

The basic unit of Greek politics was the *polis*, the city-state. Unlike neighboring peoples, who were subjected by sprawling empires that were dominated by warrior aristocracies supported by masses of peasant-farmers, the Greeks remained divided into numerous independent states, each generally embracing a fertile valley, separated and protected from its neighbors by rugged hills and mountains, and dominated by the largest town and its citizens. Originally democratic, the government of each *polis* evolved over time according to the interplay of factions and traditions, with some becoming despotisms, others solidifying into oligarchy, and still others remaining true to their original form. In the wealthiest and culturally most important, Athens, democracy ruled to the end; in the most unusual, Sparta, the minority of ethnically defined citizens lead an austere, militarized life in order to maintain their domination over the majority, whom their forebears had conquered and enslaved.

Forced by geography to turn to the sea, the Greeks became a great exploring, colonizing, and trading peoples, with outposts and trading relations throughout the eastern Mediterranean. In this urbane and cosmopolitan atmosphere, they developed the most sophisticated civilization of the time, one that contributed many of the basic elements of the modern world: logic, philosophy, geometry, drama, and history, to name a but a few. At the time, these advances gave the Greeks an advantage over their neighbors in terms of their ability to analyze and solve problems, organize themselves and their natural surroundings, and express their feelings about life and the world. And in terms of raw power, they enabled the Greeks to design more powerful warships, to equip their soldiers with more powerful weapons, to maneuver forces on the battlefield more precisely, and to supply their forces on land and sea more efficiently. While these difference between the Greeks and their neighbors to the east were perhaps differences of degree and not of kind, they made them, by everyone's acknowledgement, the most formidable combatants, man for man and ship for ship, in the known world.

The Greek soldier was known as a *hoplite*, a heavy infantryman armed with an 8-10 foot pike and a short sword, protected by a helmet, breastplate, greaves,

and a round shield. The *hoplites* were organized into a *phalanx*, a disciplined body from 8 to 12 men deep, as wide as the terrain (or numbers) allowed. The *phalanx* was capable of limited maneuvers, particularly since the *hoplites* were well motivated free citizens, more used to exercising independent judgement than peasant masses and professional soldiers. The Greeks trapped the Persians at the Battle of Marathon by deliberately yielding in the center while crushing the enemy flanks; the Thebans won their brief period of primacy 120 years later through a sophisticated battlefield maneuver involving pinning attacks by a thin right and center and a decisive hook by a massive column on the left.

The *hoplite's* equipment was expensive, so these soldiers were drawn from the upper and middle classes. Poorer citizens served as light troops, *psiloi*, for their own city, or as mercenaries for hire. Some of the slingers and archers were quite good; most were not. Nor was Greek cavalry distinguished, since the topography did not favor use of the horse. On the other hand, geography pushed the Greeks toward the sea, and they developed unsurpassed naval forces, particularly the Athenians. The capital warship, the battlewagon or carrier of the ancient Aegean, was the *trireme*, a long, low galley designed specifically for fighting. Propelled by 150 oars arranged in three banks, they were fast, maneuverable, and deadly. Each had a 10 foot metal beak projecting in front for ramming, and each carried a strong contingent of crack infantry for boarding. These sleek ships, commanded by expert seamen and manned by experienced sailors, made the Greeks the most formidable naval power in the eastern Mediterranean.

## B. The Macedonians

Inhabiting a more open region than their relatives to the south, the Macedonians were a more rural people, and this was reflected in their politics, their social structure, their culture, and their army. Politically, they were organized as a kingdom. Admittedly, the king was elected by the warriors, but once elected he reigned supreme. The elective principal, the practice of polygamy, and the violent ethos of the upper class combined to give Macedonian politics a tumultuous character whenever succession was in doubt, but in between a strong ruler like Philip or Alexander ruled absolutely.

Beneath and alongside the ruler, the warrior aristocracy dominated Macedonian society. Its members comprised the social elite, exercised administrative leadership, and imposed on it their cultural values, which emphasized the military virtues: prowess in combat, fortitude, and honor. However, the Macedonians gradually absorbed the advances of their neighbors, and adopted some of the forms and much of the practical content of classical Greek culture, particularly over the course of the early 300s B.C.

Nowhere was this absorption more apparent than in the military realm. The Macedonians under Philip adopted and vastly improved the Greek system, thereby transforming it into an instrument as far superior to the *phalanx* as the *phalanx* was to other forms. The core of the Macedonian army was a type of *hoplite* called a *pezetaeri*, a heavy infantryman armed like his Greek counterpart except that the pike was considerably longer - 13 or 21 feet - and the shield was much larger as well. Similarly, the basic formation resembled the *phalanx*, but it was deeper - 16 men - and more maneuverable because space was left between the men, rather than massing them shoulder to shoulder. As a result, the Macedonian *phalanx* was able to perform a variety of evolutions and maneuvers that made it probably the most formidable formation to enter battle before the invention of gunpowder



**Alexander the Great**  
**Portrait head from Pergamon, second century B.C.**

In addition to the *peze-taeri*, the Macedonians added a number of formations that enhanced the power of their army still more. The elite heavy infantry units were known as *hypaspists*, armed and organized like the *peze-taeri* except for a shorter pike, and distinguished primarily by better training, higher motivation, and exceptional physical strength. They were used in battle to link the slow-moving *pezetaeri* center with the cavalry on the flanks, and they were detached on campaign to form flying columns that could travel along with horsemen.

Horsemen played a far greater role in the Macedonian army than the Greek; in fact, it was drawn from the cream of society and formed the decisive arm in battle. The *creme de la creme* of this branch were the "Companions," so named because they accompanied the king in battle. Armed with a 10 foot lance that could be either thrust or thrown and a short sword, protected by a shield, helmet, a mail breastplate, and greaves, as well as mail headpieces and breastplates for their horses, they constituted a mounted shock element unmatched until the armored knights of the Middle Ages (who were held on their horses by stirrups,

which were invented long after the age of Alexander). Equally formidable were the Thessalian cavalry contingents, which were armed and trained in a similar style. In battle, the Companions usually deployed on the right of the infantry, the Thessalians on the left.

Both heavy infantry and heavy cavalry were complemented by a variety of

lighter troops. On foot, the *psiloi* preceded the *phalanx* into battle, covering its deployment with a shower of arrows, darts, and javelins, while *peltasts* armed with short pikes and drawn up eight deep covered the rear. On horseback, unarmored lancers, javelin throwers, and bowmen provided missile power, screened the army, conducted reconnaissance, and protected the flanks.

In addition to these traditional arms, the Macedonians developed the first known field artillery. Philip had light-weight catapults and ballistae developed so that the siege train could easily accompany his army, and Alexander regularly employed it on the battlefield in support of the other arms. So, too, the Macedonians advanced the techniques of formal siegecraft far beyond their contemporaries, forming a specialized corps of engineers to handle this task and applying the ingenuity and mathematical skills developed by the Greeks (many of the engineers were in fact Greek). Whereas for the last millennium fortresses had been virtually impossible to reduce save by starvation, Alexander's army took many easily, and with great pains captured a number that had been considered absolutely impregnable.

Beyond its energetic and intelligent leaders, warlike and proud nobility, successful assimilation of Greek culture, and formidable military machine, Macedonia had a final source of strength that contributed significantly to its primacy among the Greek states. Located within its borders was the largest silver mine in the Greek world, a mine at Pangaeus that yielded 1,000 talents (\$7,000,000) a year. At the time, this represented a vast sum that allowed Philip to grease the wheels of diplomacy and create the large, exceptionally well trained army that formed the backbone of his imperialism.

Nevertheless, the army he amassed for the invasion cost more than twice Pangaeus' yield each year. After his assassination, his successor would have to act fast, and succeed fast, or else all Philip's accomplishments would have melted away. Nothing loses its supporters faster than an enterprise that has run out of money.

## C. Persia

If the Macedonian government suffered from a shortage of money, Persia suffered from a surfeit. The vastest empire created to date, it drew tribute from all civilized regions west of India save Greece, which amounted to an annual intake of 9-11,000 gold talents plus another 1,000 worth in goods. Only 30-40% of this income was spent on the local level, and the remainder was more than was needed to support the lavish Imperial Court and the army. The excess was stored in three royal treasuries in Susa, Persepolis, and Ecbatana, and totalled 180,000 talents (\$1,260,000,000 !!) when the Macedonians captured it. A strong lure to adventurers indeed, it was as much a liability to the Empire as an asset, not only because it was an "attractive nuisance," but also because it depressed the economy by draining it of currency.

Centered on the Persian's home territories on the southeastern shore of the Persian Gulf, in what is today southwestern Iran, the Persian Empire resulted from a remarkable series of conquests by one of the great empire-builders of history, Cyrus I, who lived from 559 to 530 B.C. He threw off the rule of the Medes and conquered Iran, Armenia, Assyria, Asia Minor, Mesopotamia, Syria, Palestine, Bactria, and Sogdia: most of the civilized world at the time. His successors added Cyprus, Egypt, Thrace, Macedonia, and Cyranicia to the Empire, and even the western half of the Indus valley. It is often overlooked in marvelling

about Alexander's exploits that he was not the first to conquer the vastness of southwestern Asia; to a considerable extent he merely usurped the accomplishments of Cyrus the Great.

In view of the huge assortment of peoples encompassed by the Persian Empire, ranging from the highly civilized Mesopotamians and Egyptians to the nomadic barbarians of Sogdiana and Bactria, Cyrus erected an administrative structure designed to minimize friction between the Imperial government and local populations. Specifically, he organized a system of 20-30 satrapies, administrative units the size of large kingdoms, which supervised local administration, collection of taxes, and mobilization of military forces while minimizing disruption of local traditions, customs, and laws. The satraps were the highest level of local government, but they were the lowest level of the imperial hierarchy.

Above the satrapies, the Imperial government consisted of the court, the treasury, and agents, auditors, and an independent judiciary that oversaw the actions of the satraps. The system functioned smoothly so long as the Emperor was alive, but every instance of succession brought a crises involving court conspiracies, assassinations, provincial revolts, and civil war. The Empire did lessen if it could not end warfare and raiding, and it built a network of roads linking all corners of the realm. Like the Roman roads and the Interstate Highway system, the ostensible purpose was undoubtedly military, but the chief beneficiary was peaceful commerce. Western historians have often slighted the accomplishments of the Persians, but in reality they do not compare badly to the empires that came afterwards, and they seem truly remarkable compared with what came before.

Militarily, Cyrus began his conquests with an infantry army particularly strong in archers. Very soon, however, he created a cavalry corps that included both horse archers and heavy lancers, which evolved into the most effective cavalry force of the times. As the Empire expanded, each conquered area was expected to contribute a contingent, so a Persian army might contain virtually any imaginable kind of military force, from militia infantry and barbarian cavalry to mercenary Greek *hoplites* and Indian war elephants.

The best Persian infantry were the 10,000 "Immortals", armed with a twelve foot spear and sword, and protected by a large shield and body armor. They were complemented by 10,000 "Royal Guard" cavalry, armed with a javelin and a bow, and protected by wicker armor and a small shield, and supplemented by a further 20-40,000 infantry armed with spear and sword and protected only by a wicker shield and cloth padding. Beyond these Persian troops were the satrapal levies, which included every conceivable type and quality of infantry and cavalry. Among the best were the Jewish, Anatolian, Armenian, and Indian infantry contingents, and the Parthian, Median, Bactrian, and Scythian cavalry forces. In addition, the Persians still used numerous chariots, even though they were of questionable effectiveness against disciplined troops. Finally, the Persians usually had Greek mercenaries in their employ: at the time of Alexander's invasion about 35,000, including both *hoplites* and *peltasts*.

Persian tactics emphasized missile weapons, in particular the bow. Light troops on foot and horseback would shower the enemy army with arrows while the main body advanced, and the heavier troops would only close when the enemy was thoroughly disorganized. These tactics brought success against all enemies save the Greeks, and even the Macedonians were hard pressed whenever the two armies engaged. The lopsidedness of the casualty figures belies

the nearness of the fighting, for in both of the biggest battles the Persians were giving as well as they got until a narrow attack towards the Emperor Darius caused him to flee. Only in the ensuing retreat did the Macedonians enjoy the easy kills that have been taken to characterize the battles overall.

The Persians could theoretically field close to 1,000,000 men at a time, but most of these would have been of marginal usefulness, and such a large force would have been impossible to supply. Instead, Persian forces were spread around the Empire in garrisons, accompanied by modest standing forces drawn from other regions, and supplemented by local levies in case of need to repel or launch an invasion. Thus, for example, Alexander first faced the forces of only the five westernmost satraps at the river Gracrus, then the levies from the remaining western and central portions of the Empire at Issus, and the eastern contingents only at the climactic battle of Arabela. This system sufficed to protect the Empire's far-flung frontiers for two centuries, but allowed Alexander to defeat its forces in detail as he smashed through the frontier and then moved deeper into the interior.

On the sea, the Persians could gather a considerable fleet from their coastal dependencies, most notably the Phoenician city of Tyre. The Phoenicians inhabited a region with significant similarities to Greece - a hilly topography and good harbors - and had also developed into a society of independent-minded city-states. Their orientation was similarly maritime: they colonized the North African coast extensively (founding the city of Carthage), and they developed a commercial network in the Mediterranean that rivaled the Greek. It was they who first developed the specialized war galley, although their design was inferior to their rivals', and they used the rich rewards of trade to maintain a large fleet. Their ships formed the backbone of the Persian navy; it was supplemented by significant squadrons from other Phoenician cities and the ports of Asia Minor, Palestine, and Egypt.





## **D. Others**

### 1. Barbarians

All along the frontiers of the civilized world lived peoples at a lower level of social and cultural development known as barbarians. In contrast to the civilized peoples, whose economies were based on intensive cultivation, whose societies were based on a stable pattern of dense settlement, and whose cultures reflected the accumulated knowledge prosperity and stability made possible, the barbarians' economies were based on either slash-and-burn agriculture or herding. Their societies were therefore migratory or fully nomadic, and their cultures reflected the unsettled nature of their lives.

However, unlike the truly primitive peoples who lived beyond them, the barbarians existed in a symbiotic relationship with their civilized neighbors that had a marked influence on both. At one extreme, it was a relationship of peaceful commerce and intellectual interchange, as barbarians traded raw materials for civilization's finished goods and information about the wider world for the organizational and technological advances pioneered by the settled peoples. At the other extreme, the relationship involved raids and incursions by barbarians over the frontiers of civilization in campaigns of conquest that left farms abandoned, cities in ashes, and empires in ruin. Whether trading or fighting, however, the relationship led to a cross-fertilization at every level that enriched both peoples in the long run.

Militarily, the barbarians' weapons and tactics depended on whether they were migratory agriculturalists or nomadic herders. If the former, they tended to fight on foot, depending heavily on the combined impact of a missile barrage from skirmishers and the shock effect of heavily armed, although lightly armored, infantry. If the latter, they fought entirely on horseback, and generally favored the bow. Overall, they were inferior to the civilized armies, more than anything because they were less disciplined, but they could be formidable on their own turf. In the case of the agriculturalists, this meant the tangled forests and rugged hills north of Greece; in the case of the nomads this meant the featureless steppes stretching from the lower Danube across southern Russia to the deserts of Soviet Central Asia. In their element, each could rout a civilized opponent, as the Romans found to their dismay against the Germans in the Teutoburgerwald and the Parthians at Carrhae. Alexander was one of the few civilized generals able to beat both types consistently in their own element.

### 2. Indians

Beyond the eastern frontier of the Persian Empire lay the Indus Valley, home of one of the most ancient and venerable civilizations. At the time of Alexander, it was divided into a series of small states, which ranged in social level from semi-barbaric to highly civilized, and in political system from self-governing republics to autocratic kingdoms. At one point subjected by the Persian Empire, they had gained independence in the decades before the Macedonia conquests. Their autonomy was destroyed, however, when Alexander's campaigns carried him over the Hindu-Kush mountains into the Indus valley, headed for what he thought was the eastern edge of the world.

The inhabitants along the Indus proved to be formidable opponents indeed: numerous, aggressive, well armed, and experienced. The fertile region supported large numbers of people, so the armies were sizable: many states' forces

alone almost equalled Alexander's invading host. The up-country barbarians and self-governing republics defended themselves with particular vigor, and in the southern region Alexander was opposed by a fanatical army lead by Brahman clerics engaged in a holy crusade.

The Indian armies were composed primarily of bowmen armed with a bamboo longbow, protected by a smaller number of shield-bearing javelin men. Although both types tried to avoid close combat, each carried a broadsword as well. The cavalry arm was underdeveloped due to the unfavorable climate for breeding horses, so the Indians continued to make extensive use of the chariot. And, of course, they employed numerous war elephants, which terrorized horses and undisciplined infantry, although they were unreliable and could stampede through their own ranks as easily as through the enemy's. These forces were honed to a high standard by incessant internecine warfare. In some cases Alexander was able to exploit their differences to ally with one against the other; in others the Indians hurriedly made up in order to join forces against the invader.



Miltiades

The Macedonian objective is simple: take over everything. Failing that, a marginal victory can be achieved by seizing Asia Minor; a tactical victory can be had with the western half of the Empire. But you won't go down in history unless you take it all, from the coast of Turkey to the banks of the Indus; from the steppes of Southern Russia to the sands of Arabia. Go for it!

## IV. OBJECTIVES

The Persian objective is equally simple: round out your empire by subduing the pesky Greeks at best, and hold on to what you've got at worst. The former will be almost impossible (and would guarantee you a place in history except that your very success will stunt its growth). Failing that, you'll win a tactical victory by establishing a bridgehead across the Hellespont, and a marginal victory by pushing the Macedonians into the sea. Good luck!

All the other states are basically trying to hold on to what they've got, and expand it if possible. Go ahead and command the Spartans or the Mallians if you want, but why play in the minors when you can play in the big leagues?

Upon his father's death in 336 BC, Alexander's first move was to solidify his hold on his base. Aware that his father's death had raised the Greeks' hopes that they could throw off Macedonian tutelage, he marched rapidly south at the head of an army. Moving to Corinth, he had himself elected as his father's successor as *hegemon* of the Hellenic League, with the same mandate to lead an expedition against Persia.

## V. THE HISTORICAL CAMPAIGN

With affairs in Greece apparently in order, he moved in the next year against the restive barbarians to the north and west. He quickly subdued them through a lightning campaign in which his rapid movements and the disciplined maneuvers of his army totally overmatched his opponents. Succeeding as much through psychological shock as military action, he so awed them that they remained passive for the remainder of his reign.

While Alexander secured his northern flank, trouble was again brewing to the south. Darius III of Persia's agents had taken advantage of Greek resistance to incite Athens and Thebes to renounce Macedonian leadership. Alexander moved again with decisive rapidity. He swept southward with his powerful army to take Thebes totally by surprise, and laid the city to waste. Stunned by this

harshness, the Athenians surrendered; seeing that the lesson had been learned, Alexander treated it generously, gaining the durable, if reluctant, backing of the Hellenic League for the remainder of his reign.

Early the next year, 334 BC, Alexander began the great adventure. Leaving a strong force under Antipater, one of his father's two best generals, to hold the fort in Greece, he moved the bulk of his army with the troops of the League along the northern coast of the Aegean Sea to the shores of the Hellespont. There, protected by the League's triremes, the soldiers boarded transports for the short trip to Asia. As his ship reached the beach, Alexander hurled a javelin into the sand, declaring Asia "granted by the gods" and "won by the sword."

As the Macedonians consolidated their beachhead and prepared to move inland, the satraps of the westernmost Persian satrapies gathered their forces to oppose him. Ignoring the advice of the Greek mercenary captain Memnon to lay the land to waste and withdraw into the interior, the majority chose to stand at the river Granicus. Advancing boldly across the riverbed against superior numbers, Alexander won the short, sharp fight, although the Persians came within a swordstroke of forestalling the invasion by killing the Macedonian king, which apparently was their primary strategy.

With the enemy's field force defeated, Alexander spent the next year capturing the port cities along the southern coast of Asia Minor. His reasons for proceeding this way rather than by the shorter route across the interior were twofold. First of all, many of the cities were Greek, and the ostensible purpose of the expedition was to free them from Persian control. Secondly, and far more importantly, he was following a conscious strategy aimed at protecting his lines of communication across the Hellespont and his base in Greece from disruption by the superior Persian fleet by seizing *its* bases. He aimed to secure the entire Mediterranean coast of the Persian Empire; only then could he move into the interior without risk of being cut off from home.

In late 333 BC, as Alexander lead his army of 30,000 men from Asia Minor into northern Phoenicia, Darius moved in behind him with an army three times as large. Turning to meet this threat, the Macedonians were forced to attack along a narrow coastal plain. The resulting Battle of Issus was hard-fought and the issue was at times in doubt, as Persian attacks on the Macedonian left and center threatened to overwhelm them. At the same time, however, Alexander's main thrust on the right knifed into the Persian left-center, and as it headed for Darius's ostentatious chariot the Emperor took to his heels, setting an example the rest of his army soon followed. Once the Persian ranks broke, the Macedonians slaughtered them, killing almost 50,000 at a cost of less than 500. Darius managed to get away, but Alexander captured his wife, children, and mother.

With the Persian field forces once again out of the way, Alexander continued with his strategy of winning control of the sea on land. He moved on the great city of Tyre, home of the biggest Persian fleet, protected by massive fortifications, and situated on an island half a mile out to sea. The siege lasted the better part of 332, and was marked by feats of remarkable engineering and bitter, bitter fighting. When the Macedonians finally forced their way in, they slaughtered the defenders without mercy, and then sold the survivors as slaves. A similar fate befell the strongly fortified town of Gaza down the coast after a similar, although shorter, siege in the last months of the year. This victory cleared the way for Alexander to lead his men on a difficult march across the desert into Egypt, which fell without resistance in March of 331.

While the Macedonians besieged Tyre, Darius offered Alexander peace based on a substantial payment of 10,000 talents, control of the entire western empire, and the hand of his daughter in marriage. Alexander replied that he wanted the whole empire, and noted that since he held the daughter captive, he could marry her whenever he wished.

Thus rebuked, Darius summoned the remaining forces from all over his empire, 200,000 men in all. Alexander marched his army, now reinforced to 50,000, against it, and the two met in northern Mesopotamia on the plain of Gaugamela, near the town of Arbela. As the Macedonians reconnoitered the Persian positions, Darius made a final attempt to buy the Macedonians off (this time offering 30,000 talents), and when Alexander again refused, the armies got down to the serious business of killing.

The battle took place on October 1, 331 BC, and proceeded pretty much as at Issus. Alexander again led with his right; the Persians again threatened his left; Alexander's hammerblow again crumpled the Persian left-center; Darius again fled before the Macedonian onslaught; the Persian army again collapsed upon the flight of the king; the Macedonians again killed upwards of 50,000 while losing only around 500. The main difference was that Darius would not get another chance; the campaign became a manhunt as the Macedonians mopped



**Alexander riding Bucephalus in battle: detail from the Alexander Sarcophagus**

up resistance on the road to Persepolis, captured and destroyed the Persian capital, and then plunged across the Iranian plateau in pursuit of the fleeing Emperor. As Alexander approached at the head of a flying column, the Persian satrap Bessus murdered the monarch, bringing the 200 year old empire to a sordid end.

Alexander, now the undisputed ruler of southwest Asia, determined to bring the regicides to justice. He pursued them northeast into Bactria, now roughly the Soviet Socialist Republic of Turkmen, where he captured and executed Bessus in 329. He moved further northeast through Sogdiana, to fight a number of brilliant but bitter battles against the Scythians beyond, and then turned back to suppress a revolt in Sogdiana itself lead by the former satrap, Spitamenes.

Having suppressed this last rebellion, Alexander was drawn toward India by the entreaties of the ruler of Taxila, who wanted his support against King Porus, the dominant power of the Punjab, the upper Indus. Alexander responded eagerly, and in 327 B.C. fought his way through the passes in the rugged Hindu Kush mountains of Afghanistan into the northern end of the Indus Valley, what is today central Pakistan. Turning to secure his northern flank, he subdued the semi-barbaric peoples in the foothills of the Himalayas, and in 326 moved into the valley of the Indus itself.

Halted by the unfordable Hydaspes River and blocked by Porus' army drawn up on the other side, Alexander feigned this way and that until the Indians, bewildered, ceased to take his movements seriously. Alexander seized the opportunity to throw a modest force across the river upstream, and then moved down the far bank, reinforced by Macedonians crossing as their forces came into view. Porus realized that Alexander was across, and drew up his army of 30,000 to face him, with about 100 elephants in front. Deploying about 15,000 of his own troops, Alexander detached a flying column to circle around the Indian right flank, which hit the Indians in the rear just as they attempted to turn the Macedonian left. Meanwhile, Alexander led a combined cavalry and infantry charge against the Indian left. Bitter fighting continued with heavy casualties on both sides, but eventually the Indians broke and fled, and Porus, badly wounded, was captured.

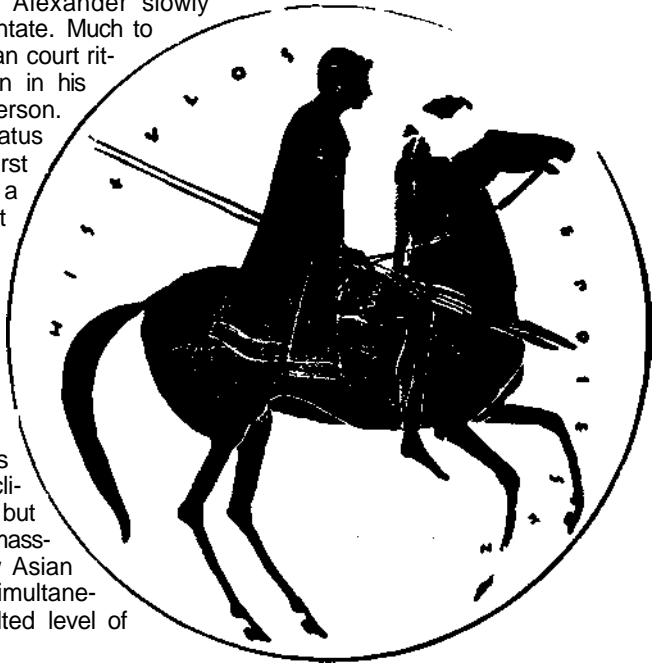
Having reached what contemporary Greek geography told him should be the edge of the world, Alexander was surprised to learn that there were still more Indian states to the east, across the watershed between the Indus and Ganges valleys. Despite the fact that they were reputed to be even more numerous and more warlike than the Indians already encountered, Alexander resolved to push on.

In July, 326, his army finally faltered. Tired, homesick, and convinced that the journey was endless, the soldiers staged a sitdown strike, refusing to move eastward. Alexander went into a huff and shut himself up in his tent, hoping to shame them into acquiescing. It had worked before, but this time they were not buying. A stony silence enveloped the camp for three days; on the fourth Alexander emerged from his tent, made the sacrifice that was customary before crossing a river, concluded that the omens were unfavorable, and announced that he had decided to turn back. His decision was greeted with cheers and tears of relief, and he solidified it by erecting twelve altars to mark the easternmost boundary of his empire.

Having halted his eastward momentum, Alexander turned to the south. If he

could not move to the Ganges, he would take the whole of the Indus, and so he prepared a riverine expedition that would move down the center of the valley, supported by land forces on either bank. As this juggernaut advanced, it fought and subdued the formidable Indian forces of the middle and lower regions, and established Macedonian rule from the foothills of the Himmalyas to the shores of the Arabian Sea. At the mouth of the mighty river, he divided his force into three parts, sending the largest back to Persia via the easy route looping north, putting the second aboard ship to explore the water route across the southern sea, and leading the last on an arduous trek across the desert wastelands of the Gedrosian coast. Reunited with the main body in Carmania, he led the victorious survivors back to Babylon, the capital of his Asiatic Empire.

Over the course of his vast campaign, Alexander slowly evolved from Macedonian king into Asian potentate. Much to the disgust of his compatriots, he adopted Persian court rituals for his Asian subjects, including prostration in his presence and the gradual deification of his person. Worse, he appeared to chafe at the lesser status accorded him by Macedonian tradition, and worst of all, he seemed to seriously intend to rule a multi-national empire based on the equal (if not identical) treatment of all his subjects, Greek and Asiatic alike. Instead of treating all non-Greeks as "barbarians" to be oppressed and exploited he treated them as equals, and because they were more docile even began to favor them. He began to organize a mixed army of Greeks and Asians, trained and equipped on Macedonian lines, and he also created a separate corps of light troops that was predominantly Asian. His cosmopolitan policy climaxed in further disobedience by his army, but after punishing the leaders he reconciled the masses, and capped it with a ceremony that drew Asian princes into the ranks of the Imperial elite and simultaneously elevated his leading generals to the exalted level of Asian princes.



Even as he began the consolidation of a sprawling empire, he was working on plans to extend it still further. First of all, he wanted to lead an expedition down the Arabian coast, to see if a trade route could be established from the Persian Gulf to the Red Sea. Further ahead he foresaw an expedition to the northern end of the Caspian Sea, and even more grandiose, a massive amphibious thrust westward, to conquer the shores of the Mediterranean Sea. However, these plans came to naught, for in 323 B.C., at the age of only 32, he contracted a fever and died.

Whether his fever was natural will never be known; certainly he had plenty of enemies among the Greeks and Macedonians who wished him dead, and several plots had already been hatched against him. Be that as it may, his empire did not long survive him; his wife and heir were murdered, and his generals fought each other to a standstill, each controlling a portion of his legacy. His influence extended far beyond the grave, however, because despite the political disunity, he had enabled Greeks to take control of the whole civilized Western world, establishing a vast commercial network that spread Greek civilization

while enriching it with Asian elements. This network engendered an unprecedented level of trade and manufacture, which made possible the appearance of huge metropolises totally dependent on massive long distance trade for their imports of food and exports of manufactures, and capable of supporting the huge armies and bureaucracies necessary for the appearance of stable imperial rule. If it was left to the Romans to create a stable, unified empire for the Mediterranean world, their achievement rested on the foundations laid by the Macedonians following the unrivaled genius of Alexander the Great.

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# Assault on Fortress Europe



# **D-Day**

## **Assault on Fortress Europe**

### **The Allied Invasion of Europe, 1944**

**by Edward Bever, Ph.D.**  
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#### **I. INTRODUCTION**

On June 5, 1944, the greatest armada ever assembled set sail from the ports of Southern England. Aboard the 4,000 transport ships were 176,475 men, 20,111 vehicles, and 1,500 tanks. Escorting them were over 600 warships; overhead flew almost 10,000 airplanes. Ahead lay the coast of occupied France, the main German army in the West, and the road to final victory in World War II.

#### **II. ALLIED PREPARATIONS**

##### **STRATEGY**

That the Allies would follow this road to victory had not always been certain, and not all were convinced that it was the proper path. The British Prime Minister Winston Churchill advocated an indirect approach, striking at the "soft underbelly" of Hitler's empire in southern Europe, and his strategy lay behind the 1942 and '43 campaigns in Tunisia, Sicily, and Italy. But the Americans, whose contribution to the Allied coalition was becoming more dominant with each passing month, never lost their preference for a direct "Cross-Channel attack" from southern England into France and thence to the heart of Germany. Furthermore, their preference was heartily endorsed by the third of the "Big Three," Russia, whose armies along the Eastern Front were struggling against 80% of the German army in the greatest land war in history. With America's President Roosevelt and the Russian leader Joseph Stalin united against him, Churchill gave his final consent at the Tehran Conference in November, 1943.

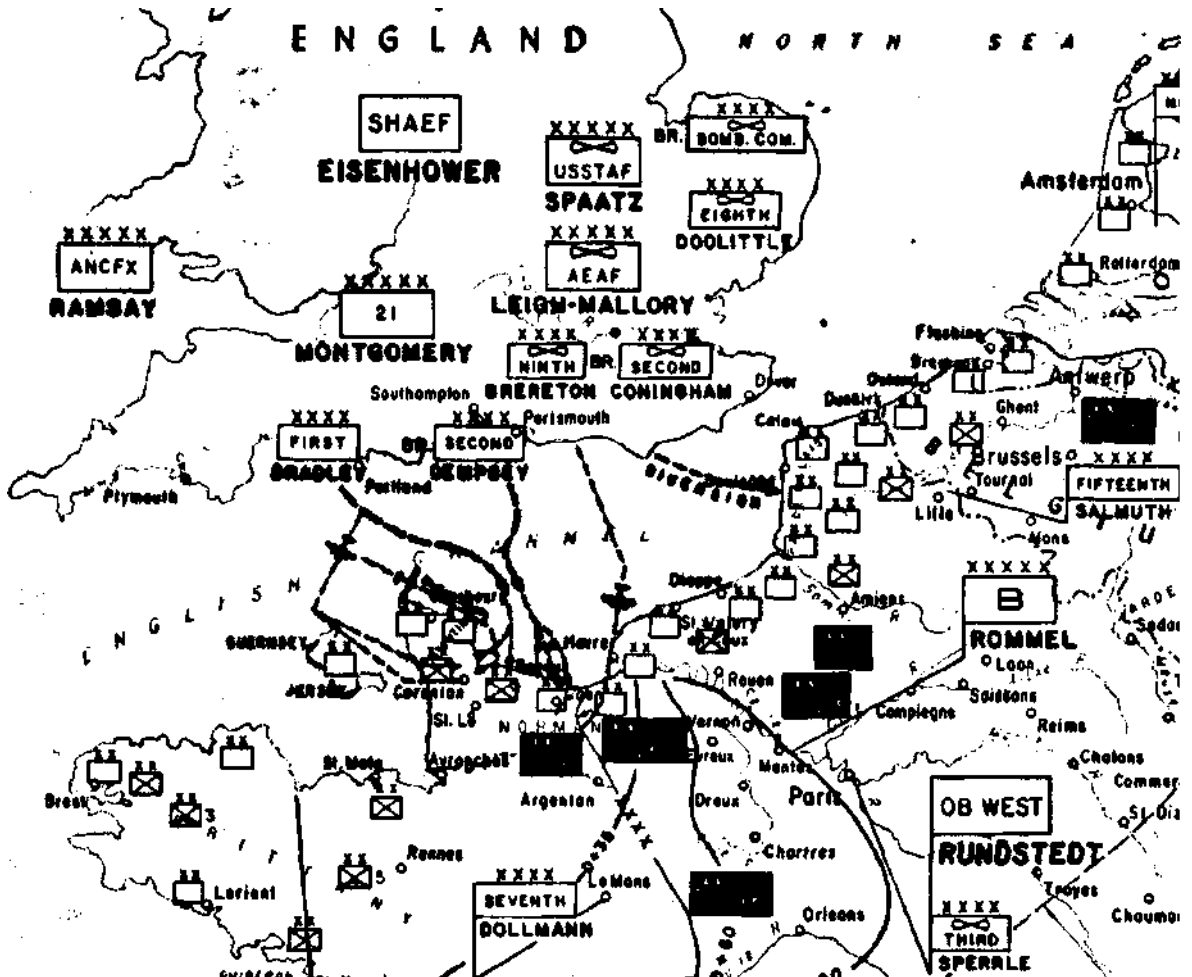
Once the decision to invade France had been made, the Allies still faced the formidable obstacle of conducting the ambitious amphibious attack. The problem was not so much getting ashore, which the Americans in the Pacific had been doing on Japanese held islands for two years, but sustaining a large enough army to defend the foothold against counterattacks by Germany's large and battle-hardened army. The most obvious approach was to seize a port large enough to handle the necessary shipping, but the dangers of the obvious approach had been shown by a disastrous raid on Dieppe in 1942. Canadian troops had landed in force at this coastal city, and had been bloodily handled by the heavily fortified defenders. The alternative, to land across open beaches, promised a greater likelihood of initial success, but posed the problem of how to sustain the invading army once ashore. To avoid being thrown back into the sea, the Allies would have to create their own port facilities on the beaches, capture an existing port by land, or both.

The problem of finding beaches favorable for a landing that were suitable as temporary harbors and close enough to a sizable port played a big part in settling the last strategic problem facing the Allied planners: where, precisely, to land. The most obvious place was the Pas de Calais, the closest point of the

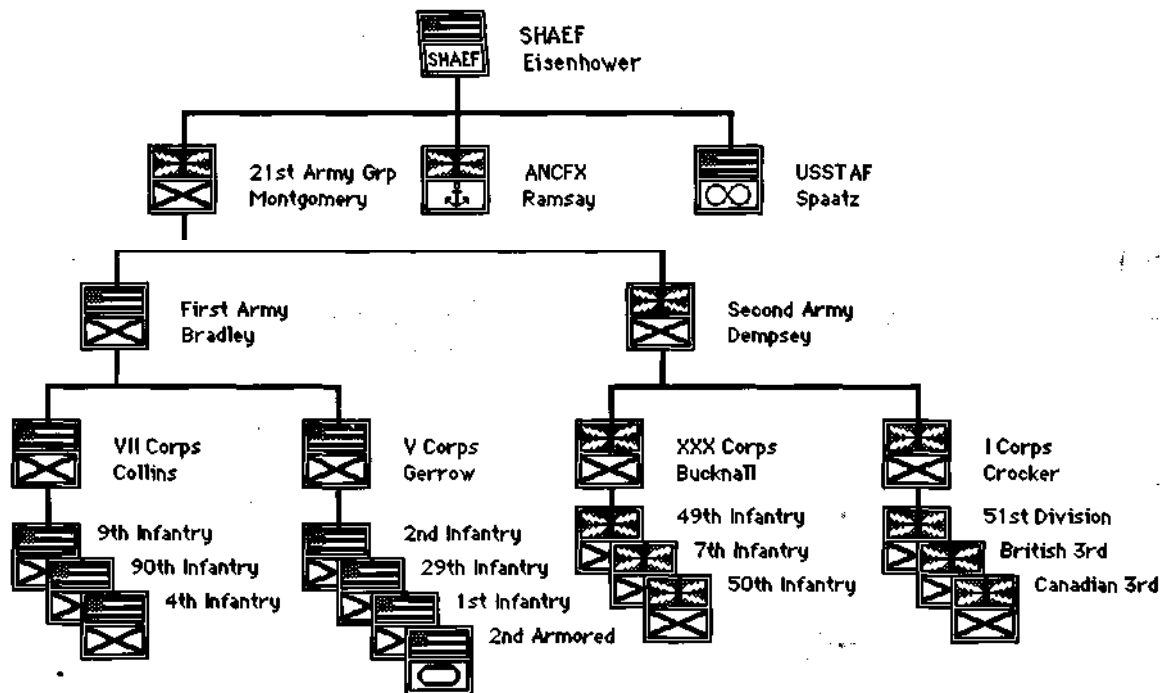
Continental coastline to England. Once again, the obvious choice had severe drawbacks, for the Germans expected an invasion there, and defended it most strongly. At the other extreme, the lightly defended coasts of Brittany and the Bay of Biscay were too exposed to Atlantic storms for temporary harbors to survive, and the ports there were heavily defended. In between, the coast of Normandy was only moderately defended, was sheltered from the worst of the Atlantic weather by the Cotentin peninsula, and was near the major harbor of Cherbourg. It was here that the Allies chose to land.

## LOGISTICS

Having laid their plans, the Allies were confronted by the formidable problem of making them work. American operations in the Pacific had proved the viability of amphibious operations, but only against relatively small garrisons isolated on island bastions. In Europe, the Allied invasion forces would have to fight a huge, seasoned army, drawing reinforcements and supplies directly from the wealthiest continent in the world. To survive, the beachhead would have to serve as a conduit for a massive influx of men and vehicles and an even more massive influx of supplies.



## D-Day Landing Forces



## Airborne Units



## Naval Support



In preparation for the invasion, the Allies transformed southern England into one colossal base. A half million men, 50,000 vehicles, and 100,000 tons of supplies were allocated to the initial assault and the immediate follow up, with more constantly arriving from the "Arsenal of Democracy" across the Atlantic. Twelve thousand planes were based on the island, and as the invasion grew closer they concentrated increasingly on preparing the way, turning from strategic bombing against German economic targets to missions against troop concentrations, gun emplacements, and transportation centers in France. Meanwhile, thousands of merchantmen and troop ships concentrated at the Channel ports, supported by hundreds of warships ranging from minesweepers and patrol craft to cruisers and battlewagons.

In order to sustain the invasion once ashore, Allied engineers and scientists turned their ingenuity to the problems of supplying so vast a force across open beaches. Special transport trucks called DUKWs that could swim to shore like boats and then drive across the sand on rubber tires were developed to bring supplies to the first waves. Artificial harbors using old sunken ships as breakwaters and floating docks entitled "Mullberries" were designed to transform the beaches into functional ports. An undersea pipeline was created to pump all-important petroleum directly from reserves in England to storage facilities in the beachhead. Never before had such a massive invasion been contemplated; never before had such innovative preparations been made.

## **ORGANIZATION AND TACTICS**

An American, Dwight D. Eisenhower, commanded the Allied armies, but each of his chief lieutenants was British. General Bernard L. Montgomery commanded the ground forces, assembled in the 21st Army Group, and including the British 2nd Army and the American 1st Army. Over the course of the campaign, the Canadian 1st Army would come on line as part of the 21st Army Group, while the American 1st Army would join the 3rd Army under General Patton in a second army group, the 12th. Because of the proximity of the western ports of England to the Atlantic sea lanes, the American units assembled in southwestern Britain and would attack the western beaches while the British assaulted the eastern. This geographical relationship was maintained until the whole Allied line pivoted to face east, moving the Americans to the south and the British and Canadians to the north. At the end of the war, the same north/south relationship was incorporated in the countries occupation zones, and the dispositions of their current NATO contributions still reflect the deployments made half a century ago.

Allied ground forces were organized into three basic types of divisions: armored, infantry, and airborne. The first two differed mainly in the ratio of tanks to infantrymen, for the Allies had created the first truly mechanized army in history. Armored divisions of course had a strong complement of tanks, and their attached infantry had trucks or armored half-tracks so they could keep up, but the infantry divisions generally had an entire tank battalion attached, and enough trucks to keep pace with their armored cousins. Only the airborne divisions lacked armor and motor transport, and that was because they were, as their name indicates, intended to ride to the battlefield in aircraft, which could not carry armored vehicles or heavy artillery to support them. Really light infantry formations, they were designed for one purpose: to drop behind enemy lines and then hold out until help arrived overland.

This special purpose gave the airborne divisions an important place in the invasion, which the Allies planned and rehearsed with relentless exactitude. The first stage was to be a massive air attack designed to destroy installations, demoralize the defenders, and disrupt reinforcement to the beaches. Next, during the night before the assault, three airborne divisions were to drop behind the flanks of the invasion area to seize key objectives, block reinforcements, disrupt communications, and create confusion about exactly what was going on. Finally, five infantry divisions were to transfer from transports to assault craft, complete the journey across the Channel in them, and then storm the beaches. The soldiers were briefed in detail about the sections of beach they were to seize, and even practiced the landings across English beaches that resembled the real invasion points. They were to be supported by fire from ships ranging from rocket-firing assault craft to battleships, and by a variety of special tanks: amphibious tanks, mine-destroying "flail" tanks, tanks equipped with flamethrowers, and

even tanks carrying metallic "carpets" to avoid getting bogged down in the soft sand.

Once ashore, the Allied armies would fight with more conventional tactics, but tactics designed to exploit their limitless supply of munitions and machines. They developed close cooperation between the ground and air forces, typically involving fighter-bombers, but including the use of heavy bombers to literally blast the Germans from entire zones of the front at the start of major offensives. Similarly, the Allies placed great reliance on artillery, devastating the countryside they had come to save but saving Allied lives and inflicting massive punishment on the German defenders. They utilized their motorized transports to shift troops rapidly from sector to sector, and their tanks to spearhead their assaults. It was a form of warfare that depended on a massive superiority in material, but since the Allies in fact enjoyed such a superiority, like Grant against Lee they were able to grind away at their adversary until inevitably his resources ran out and his armies melted away.

### III. GERMAN PREPARATIONS

#### STRATEGY

The Germans, of course, were aware of the storm gathering against them, and worked feverishly to prepare for it. By 1942 they had fortified the Channel ports, in 1943 extended the defenses to the nearby beaches and more distant ports, and in the first six months of 1944 attempted to transform them into the "Atlantic Wall." This defensive zone comprised an increasingly sophisticated network of major forts with strongpoints and field positions between, all protected by barbed wire, minefields, anti-boat obstacles on the beaches, and anti-airborne obstacles in the fields behind. Manning these positions were "static divisions" filled with over- and underaged reservists and even Russian prisoners of war, but interspersed among them were first rate infantry units, and backing them up were crack panzers and panzergrenadiers.



Intelligence photo of the Normandy beach defenses taken one month before D-Day.

Unfortunately for the Germans, they had to defend 3,000 miles of coastline, and they could not fortify or man it all. They had to make choices about where to place their effort, choices that would effect profoundly the outcome of the war. Fortunately for the Allies, the Germans put their emphasis in the wrong place, the Pas de Calais. The Atlantic Wall was developed first and most strongly there, partly because it was the most obvious choice for an invasion, partly because an Allied landing there posed the greatest danger since it would put them between the bulk of the German forces in France and the Rhine, and partly because the Allies created a successful diversion in the fictitious First Army Group based near Dover, staffed by a skeleton crew who massed dummy tanks and trucks, stockpiled empty supply boxes, and generated meaningless radio traffic. The ruse worked, and only in the final months before D-Day did the Germans turn their attention to the Normandy area. At that point the Pas de Calais had been strongly fortified. The Germans could see that a logical reaction of the Allies would be to seek a less well defended route, and Allied preparations inevitably betrayed some indication of their real intentions. When the blow struck, the German defenses in Normandy had advanced considerably over a few short months, although they were still far less than they would have been had they been pursued vigorously over the course of the previous year.

Wherever the blow might strike, the Germans were faced with the problem of how to counter it once it fell. Conventional wisdom, which the Commander-in-Chief of the German forces in the West, Field Marshal Gerd von Rundstedt accepted, suggested that they guard the beaches with their second-rate troops, holding the veteran infantry and panzer divisions in deep reserve for a decisive counter-attack. Field Marshal Erwin Rommel, commander of Army Group B defending along the Channel coast, however, dissented. Convinced by his experiences in North Africa, where his mobile forces had been paralyzed by Allied aircraft, that a counter-attack would never be possible, he advocated deploying the armor and line infantry as far forward as possible, in a position to keep the invaders, from establishing a foothold or drive them immediately back into the sea. "The first 24 hours," he maintained, "will be decisive." In the event, Rommel was able to move some reserves forward, and these proved to be the most important obstacles to the initial Allied attack. Nevertheless, the bulk of the mobile reserves remained far to the rear, and the situation was further complicated by Hitler, who ordered that the best of them await his personal command before moving. When the Allies did land, their forces would gain valuable time to consolidate their hold not only because of the efforts of their air forces, but also because of the disunity and mistrust in the German high command.

## **LOGISTICS**

While Germany did not possess the prodigious material resources of the Allies, it had had the strongest economy in Europe before the war, and had been bloated by the spoils of conquest since. Its forces were equipped with significant quantities of excellent weapons systems, and were veterans of more than four years of combat against a variety of foes. Supporting the combat forces was the legendary German administrative efficiency, degraded perhaps by the perversities of National Socialist rule, but still capable of working miracles to deliver necessary materials to critical locations.

The Atlantic Wall required the labors of half a million workers and soldiers and consumed huge quantities of concrete and steel. Manning it were 33 static divisions, supported by 15 regular infantry divisions and 10 panzer divisions organized into three army groups. The crucial one, Rommel's Army Group B,

contained two armies, with a panzer group in reserve. The 7th Army, responsible for the Normandy coast, deployed four static, two line infantry, and three panzer divisions in the area, although two of the armored units were not under its control.

Covering the ground forces were a mere 119 fighter aircraft, and only a handful of U-boats and patrol craft were available to defend at sea. Hitler put great stock in the latest of his "wonder weapons," the V-1 rockets deployed near the Pas de Calais, and they might have had a serious impact if turned on the Channel ports or the invasion beaches. Typically, though, he saw them as a strategic weapon, and wasted them in fruitless attacks on population centers in a futile attempt to shatter British morale. Despite considerable damage and fatalities, the British took them in stride, as they had taken in stride the earlier bomber raids, and the V-1s had no impact on the course of the war.

Supporting these combat forces, Rundstedt's OB West had to make the best of a bad situation. Germany's industrial capacity was strained by the magnitude of the demands placed upon it, and its ability to expand production to meet the challenge was hampered by the ceaseless hammering of Allied air attacks. The German transportation network was even more seriously damaged by the pounding from above; much effort was needed just to keep rail lines open and bridges usable, and the local area around the invasion area was effectively isolated by sustained and intensive air attacks. Considerable amounts of supply were destroyed, delayed, or unable to reach the front, and reinforcements arrived days late, under strength, and exhausted by the exertions necessary just to reach the battle lines. That the Germans succeeded in marshalling and supporting a formidable fighting force despite the difficulties is undoubted; that it would have been a far more formidable fighting force had it not faced the attacks from above is equally clear.

## **ORGANIZATION AND TACTICS**

The German army in France showed vividly both the strengths and weaknesses of the German army overall. Its combination of old and new elements had revolutionized warfare in 1939 and '40, but had not kept pace with the progress of the Western armies. Coupled with its numerical inferiority to the Russian forces on the Eastern Front, the amazing thing is not that the Germans lost, but that they did as well as they did.

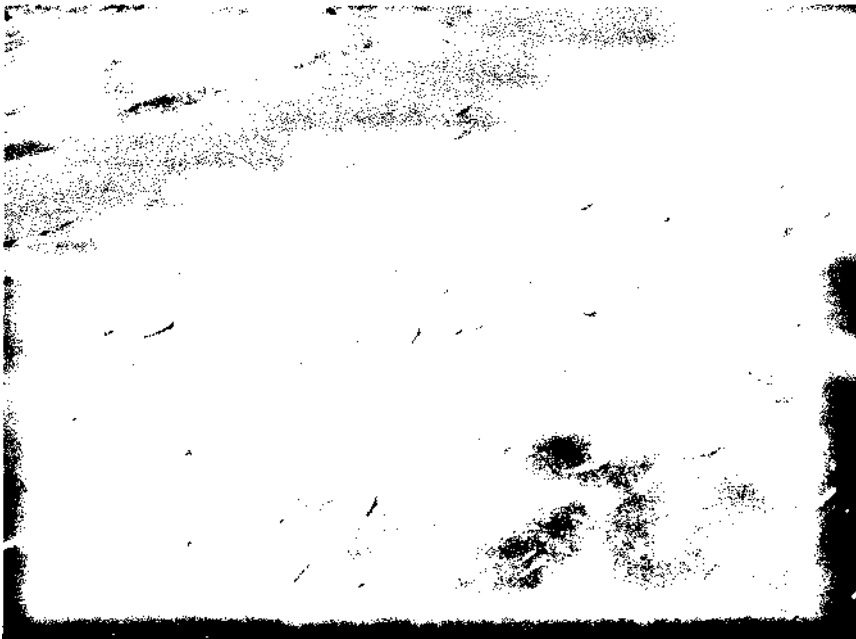
The panzer divisions symbolized the innovativeness that had brought Germany its swift victories in the first years of the war. However, by 1944 they had been watered down to the point that many contained barely more usable tanks than an Allied infantry division. The first dilutions from the masses of tanks contained in the early formations had been a healthy response to the realization that tanks needed more infantry support, and so it made sense to break them up and combine them with panzergrenadiers (armored infantry) to create a larger number of more balanced units. More recently, the decline in the numbers of tanks reflected the fact that the units were used more as mobile reserves than as armored spearheads. Their dilution also reflected Hitler's refusal to confront the shrinkage of his forces, by retaining or increasing the number of units, even as their effective strengths declined.

The panzer divisions were complemented by a small number of motorized infantry divisions: "panzergrenadier" units with only a minimum of armor, "parachute" units no longer trained to parachute, and favored infantry divisions



allocated a complement of trucks. However, the vast majority of German infantry divisions moved as their fathers in World War I and their grandfathers in the France-Prussian war had. Strategic movements - the mobilization of reserves and shifts from one theatre to another - were done by rail, and all other movement was on foot. Supplies wagons and artillery were drawn by horses; the only concessions to the twentieth century were the weapons (mostly similar to World War I types), and a few motor vehicles for the staff and, perhaps, the reconnaissance battalion. It was ironic indeed that the army that had pioneered the armored "Blitzkrieg" in 1939-40 by 1944 looked in large part like a relic of the previous century itself.

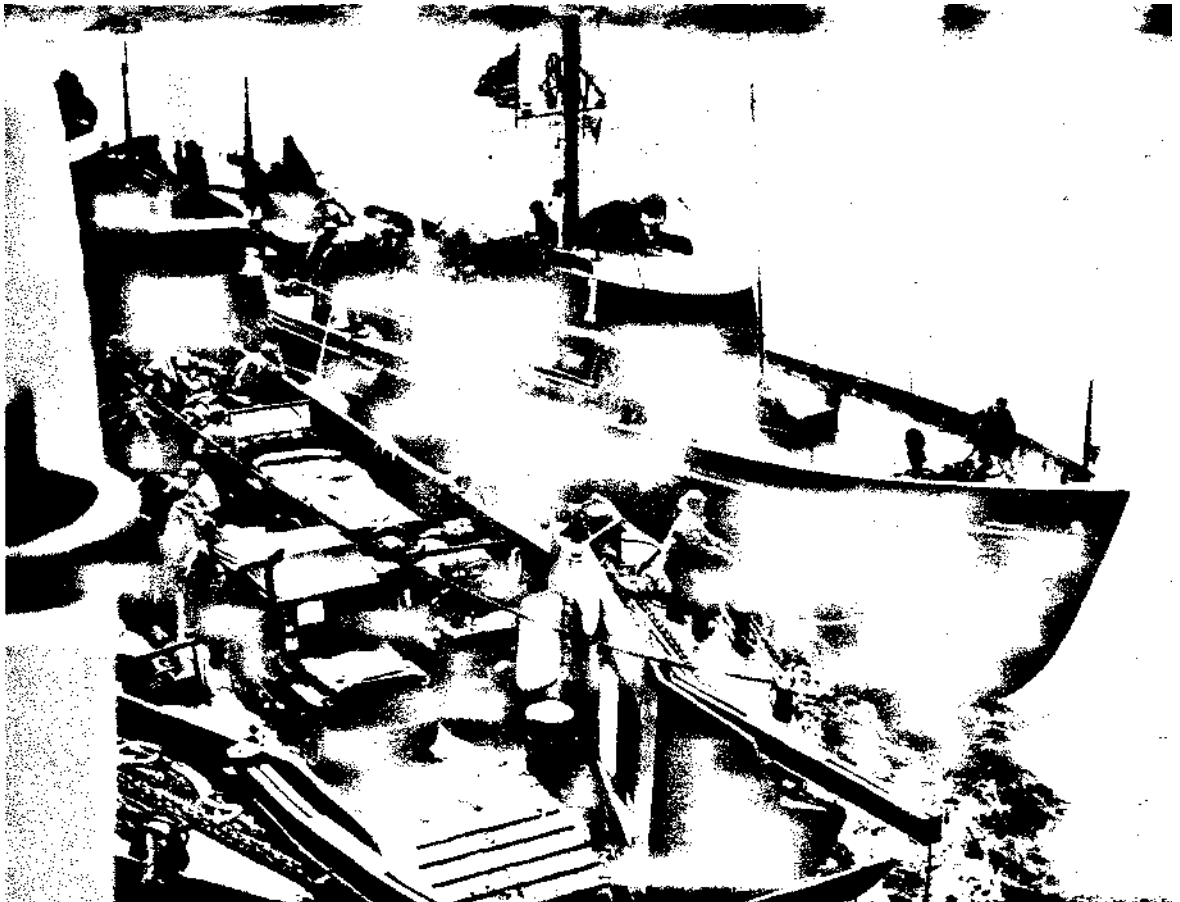
Once on the battlefield, however, the German army was second to none. With the exception of the static divisions, its units were more than a match for comparable formations of Americans, British, or Russians. In part this undoubtedly reflected the experience of five years of war; in part it perhaps reflected a deeply ingrained militarism in German culture and society; in part it certainly reflected a superior understanding of how to get men to fight effectively. Unlike the Allied armies, which treated the men like so much meat to be fed into a vast, impersonal military machine, the Germans structured their replacement system to integrate new soldiers into a unit that psychologically resembled a family group. In camp, German officers mixed easily with the enlisted men, minimizing the differences bestowed by their ranks. In battle, German soldiers called loudly to each other rather than keeping quiet; what was lost in stealth was more than made up in a sense of companionship and support. If nationalism or National Socialist ideology motivated some soldiers, the vast majority were sustained by the much more primitive, and much more powerful, force of devotion to the immediate leader and comrades, father and brothers.



Thousands of Allied naval craft ferry to and from the beachhead.

On the Norman battlefields, German units displayed a mastery of modern defensive tactics. Snipers hidden in trees and attics harassed enemy forces, and strongpoints were cleverly concealed in villages and woods. Dug-in anti-tank guns, machine gun nests, and infantry supported each other, and local reserves of tanks and assault guns waited for opportunities to hit the enemy as the impetus of their attack was spent. Medium and heavy mortars provided immediate indirect fire support, while further behind the lines, field artillery were available to lay in well-coordinated fires. When possible, a force would hold as long as practical, making the enemy pay for every foot of advance, and then withdraw to the next line of defense. Occasionally a larger force of armor and infantry would launch a well coordinated attack, winning back some of the enemy's dearly gained ground.

If the German forces suffered from any handicap, it was from Hitler's rigid "no retreats" policy, and his predilection to launch major counterattacks even when the forces at hand were clearly inadequate. Perhaps the greatest irony of World War II in Europe was not that the remarkable talents of the German people were used in Hitler's service, but that Hitler himself did so much to defeat those purposes through the use he made of them.



U.S Coast Guard 83-footers escort the Invasion fleet and guard against U-boats.

## ON THE BEACHES

## IV. THE CAMPAIGN

Having decided where and how to invade France, the remaining question facing the Allied commanders was when. Their options were limited due to the need for a fullish moon for the paratroopers, low tides at dawn to uncover the beach obstacles, and of course good weather so the air forces could fly and the ships could put to sea. The first two conditions pointed to early June, but an Atlantic gale blew up at the beginning of the month, threatening to delay the invasion by at least four weeks. The weather was so bad that the German high command decided an invasion was impossible; Rommel went to visit Hitler in Berchtesgarden and his wife in Dim, and other top commanders took leaves as well. However, Allied meteorologists predicted a lessening of the storm on June 6, and so with grave misgivings Eisenhower decided to go ahead. As the clouds thinned and the winds abated, Allied ships turned south toward the French coast, and paratroopers clambered into their transports.

The paratroopers landed first, scattered by gusting winds and inexperienced pilots. Even so, they sewed confusion and panic in the early morning darkness, and small groups managed to secure their main objectives. At dawn, the Allied armada emerged from the ocean mists to begin a merciless bombardment of the Germans' coastal defenses. Cold, seasick soldiers clambered down fishing nets from the decks of their transports to the landing craft bobbing below. These carried them to the edge of the beach, where the front ramps dropped down and the soldiers splashed through the surf to dry land.

On four of the five beaches, the landings went smoothly, encountering only light opposition from the startled and demoralized reservists of the static divisions. On Omaha beach, however, one of the two American landing sites, the invaders ran into a regular infantry division conducting anti-invasion maneuvers, and the issue was for a time in doubt. Frightened soldiers huddled behind beach obstacles or a low seawall, until heroic individuals took the initiative and led the way inland. By the end of D-Day, all five beaches were secure. Despite 9,000 casualties, 150,000 men had come ashore. Within a week, 326,547 soldiers, 54,186 vehicles, and 104,428 tons of supplies were in France, and the five landings had been linked up into a single beachhead.

## IN THE BOCAGE

While Omaha Beach provided the tensest drama of D-Day, the most significant portent of what was to come occurred on the eastern flank of the invasion, in the British zone. The major town and transportation center of Caen lay just behind the beaches, and was slated to fall on the first day. The presence of the 21st Panzer Division prevented this, and began a ferocious struggle that was to delay the fall of the city until July 13, more than a month behind schedule. Even after the fall of Caen, British advances were to be measured in yards. A climactic attack by three full armored divisions following a carpet-bombing attack by 2,000 heavy bombers on July 20 similarly bogged down against heavy opposition, and at the end of the campaign the British proved unable to make even the limited gains needed to seal the fate of the German armies encircled by Patton's ram-paging armor to the south.

Before the Americans tasted the elation of their own "Blitzkrieg" they, too, endured weeks of agonizing combat a few short miles behind the invasion beaches. The problem was in part the Germans, of course, but the defenders found a powerful ally in the unusual terrain known as "bocage." Generations of

Norman farmers had divided their fields with thick hedges that grew atop ridges of earth anywhere from waist to head high. Each ridge offered a perfect defensive strongpoint, a natural earthwork with dense foliage for camouflage. Allied tanks and aircraft could offer little assistance, and the campaign devolved into a series of grueling small infantry actions. St. Lo, an objective for the first week after D-Day, fell only on July 18, after costing the Americans 11,000 casualties. Overall, on this date the Americans had lost 122,000 men against the Germans 114,000, and were more than a month behind schedule.

The only notable American success came on June 27. The VII Corps had advanced steadily up the Cotentin peninsula from Utah Beach, the westernmost of the Allied landing spots, against steady but forlorn German resistance. The defenders of the Corps' objective, the port of Cherbourg, resisted long enough to wreck the harbor, and then surrendered. The American success was vital, for a storm had destroyed their artificial harbor on June 19, but its fruits were long delayed, since it took until August 8 for Cherbourg's harbor to be cleared.

## **TO PARIS**

As July drew to a close, Allied fortunes improved. The buildup reached far over a million men, 150,000 vehicles, and 500,000 tons of supplies, and the fighting had gradually worn down the German defenders. The British armored offensive south of Caen on July 20 drew in the last German reserves, tying down two infantry and all seven of their panzer divisions, which meant that only seven exhausted infantry units opposed the Americans on the western flank. On July 25, the Americans launched a new offensive, codenamed "Cobra." Beginning with a carpet-bombing attack by heavy bombers which dropped 4,200 tons of bombs on the stunned German defenders, the attack soon achieved the long awaited breakthrough. It reached Coutances on July 28 and the crucial town of Avranches, the last position at the base of the Cotentin peninsula, on July 31.

The next day, August 1, Patton's 3rd Army was activated, and the divisions under his command poured through Avranches to sweep around the now-open western flank into Brittany to the southwest and toward the Loire river to the southeast. The thrust into Brittany, aimed at the major ports of Brest, Lorient, and St. Nazaire, was frustrated by the isolated garrisons ability to hold out virtually indefinitely, but the American sweep to the south and their subsequent turn to the east held out the promise of bagging the entire German army that had defended the bocage country so stoutly.

Realizing the threat, but also perceiving an opportunity, Hitler ordered the remaining panzers to attack. His plan, reasonable on paper but impossible in practice, was to stab through the narrow bottleneck to Avranches, cutting off Patton's Third Army even as it swung around behind the 7th Army. If the Allies had not controlled the air, it might have worked. If the Germans had had stronger forces, it might have worked. If the Allies had had less confident leadership, it might have worked. As it was, none of these "ifs" obtained, and the German attack petered out without ever seriously threatening the American advance. Hitler's fortunes had waned to the point that hope could no longer triumph over reality.

The only practical effect of Hitler's Avranches offensive was to stick the Germans' head even further in the noose. Patton's tankers swept southeast and then turned north, closing in behind the remnants of the 7th Army in the bocage country. Montgomery's British and Canadians launched an attack southwards

hoping to link up with Patton's hard-driving troops and bag the entire lot, but the defenders used their last ounce of strength to hold the Tommies at bay, maintaining an escape hatch through the town of Falaise, the "Falaise gap." As it was, the Germans lost over 100,000 men and virtually all the equipment from two panzer and eight infantry divisions, but scores of thousands more men made good their retreat, to appear again a month later in Holland and the Rhineland as the core of Germany's final defenses. These would hold the Allies through the fall, launch a desperate counterattack in the winter, and delay final victory until early May of 1945.

In August, 1944, though, the end seemed nearer, and the Allied armies were not the only ones to feel its exhilaration. As the German defense in Normandy collapsed, the problem arose of what to do about Paris. General Eisenhower wanted to bypass it in order to press the broken German forces and to avoid adding the burden of its 4,000,000 mouths to the already overtaxed Allied supply lines. His military calculations, however, ignored the human desire of the Parisians to be rid of their German conquerors, the Free French leader de Gaulle's political desire to pose as liberator of the traditional capital and spiritual heart of his country, and all Frenchmen's national desire to avoid the very real possibility that given time the Germans would either destroy the city in vengeance or dig in to defend it block by block. Consequently, the Parisian population rose on August 19, and Eisenhower had little choice but to detach forces in support. On August 25, with the French 2nd Armored Division in the van, the Allied armies entered Paris. The war would go on, but the battle for France was over.



Infantryman, 79th Infantry Division, fires a "Bazooka" at an enemy installation in Lessay, France.

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Edwin P. Hoyt. U-Boats: A Pictorial History (1987)

David C. Knight, Shock Troops: The History of Elite Corps and Special Forces (1983)

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# The Unit Icons



## Supplies

These icons represent basic supply units (measured in **Supply Points**). Supply icons are used by all national forces and belong to no particular nation. Any unit sharing a map square with a supply point may add to its current store of Supply Points (up to the unit type maximum of Supply Points per Strength Point) by reducing the same amount from the Supply unit's Supply Points. See Chapter 10 of the manual for more details. Supply units can be created by all provinces in this scenario.



## The 21st Army Group

This icon represents the 21st Army Group in the Allied command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of its subordinate units.



## U.S. Infantry

This icon represents a United States infantry division (over 13,000 men) with its auxiliary support troops, transport, artillery and headquarters. While the 1st Infantry were veterans of the North African campaign most U.S. infantry at this time were green draftees.



## U.S. Armor

This icon represents a United States armored division (over 14,500 men) with its auxiliary support troops, transport, artillery and headquarters.



## U.S. Airborne Division

There were two U.S. airborne divisions available in Europe in June 1944: the 82nd ("The All American") and the 101st ("The Screaming Eagles"). Both divisions may be considered as elite units and they distinguished themselves throughout the European Theater in numerous campaigns and battles.

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### **U.S. Air Transport**

This icon represents the Dakota transports that carried U.S. Airborne troops to their drop zones.



### **U.S. Air Force Command**

This icon represents an Air Force headquarters unit in the Allied command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of its subordinate units.



### **Allied Bombers**

Allied air support for the invasion consisted of the IX Tactical Air Wing, XIX Tactical Air Wing, 83rd Group Air Wing and the 84th Group Air Wing. These units were used for close tactical support as well as for strategic interdiction. When attacking in massed formations these units could unleash devastating damage against ground units as attested to by German General Bayerlein, commander of the Panzer Lehr Division at Saint-Lo,

"...there followed one of the heaviest blows delivered by the Allied air forces in a tactical role during the whole of the war. I learnt later from American sources that on 25 July a force consisting of 1600 Flying Fortresses and other bombers had bombed the Panzer Lehr's sector from nine in the morning until around mid-day. Units holding the front were almost completely wiped out, despite, in many cases, the best possible equipment of tanks, anti-tank guns and self-propelled guns. Back and forth the bomb carpets were laid, artillery positions were wiped out, tanks overturned and buried, infantry positions flattened and all roads and tracks destroyed. By midday the entire area resembled a moon landscape, with the bomb craters touching rim to rim and there was no longer any hope of getting out any of our weapons. All signal communications had been cut and no command was possible. The shock effect on the troops was indescribable." ([Eye-Witness to History](#). Edited by John Carey, p.604).



### **Commonwealth Infantry (British and Canadian)**

Recently formed Commonwealth divisions were often 40% larger than their U.S. counterparts, however the quality of the troops and training often suffered.



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Nonetheless, some veteran divisions (including the 51st) were available in June 1944 though these units were depleted from earlier engagements.



### Commonwealth Armor

The British 7th Armored Division (14,900 men and 290 tanks) were veterans of the North African campaigns.



### Commonwealth Airborne

The British 6th Airborne were considered an elite force and had exceptionally high morale.



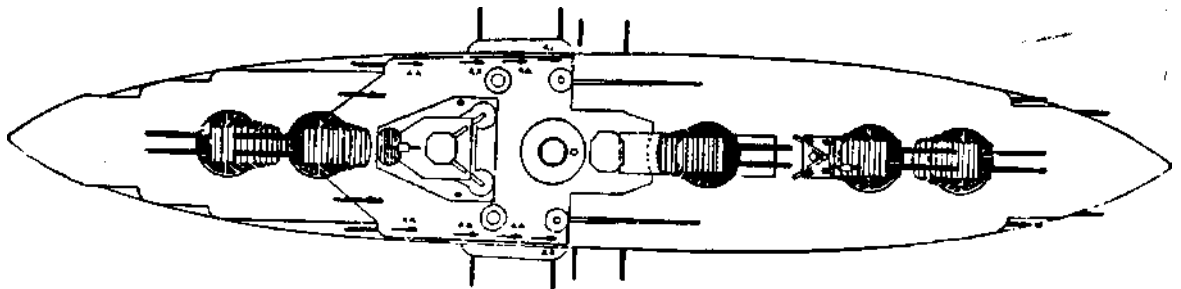
### Commonwealth Air Transport

This icon represents the aircraft that transported the British 6th Airborne to the drop zones.



### British Naval Command

This icon represents a Naval headquarters unit in the Allied command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of its subordinate units.



U.S.S. Texas (see following page)

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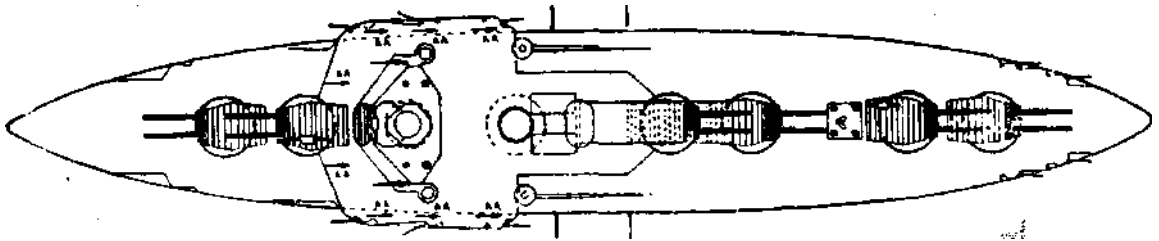
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### **U.S. Battleship**

Two U.S. battleships, the U.S.S. Texas and the U.S.S. Arkansas, were available for offshore bombardment in support of amphibious assaults. The Texas, launched on May 18, 1912 sported 10 fourteen inch guns as well as three aircraft that could be launched from a catapult amidships. A note in Jane's Fighting Ships of World War II makes the acerbic comment that the Texas was, "hard to handle and a bad sea boat in rough weather." The U.S.S. Arkansas was



**The U.S.S. Arkansas**

launched January 14, 1911 and had 12 twelve inch guns in its main batteries. Also fitted with a catapult, the Arkansas carried three aircraft.



### **U.S. Convoy Escorts**

The invasion convoys were escorted by numerous craft including destroyers such as the U.S.S. Bancroft pictured below. With a displacement of 1,630 tons



**U.S.S. Bancroft**

and a crew of 250 she had a top speed of 36.5 knots. For armament this class of destroyer was fitted with 4 five inch guns, 4 40mm Bofors, 7 20 mm Oerlikon and five torpedo tubes.

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**U.S. Naval Transports**

This icon represents the plethora of landing and transport craft that were necessary for the amphibious invasion of the continent. Some of the best known were the 1ST (Landing Ship, Tank) with a displacement of 4,080 - 6,000 tons and a crew of 64-119, the LCI (Landing Craft, Infantry), 387 tons displacement and the LSM (Landing Ship, Medium) 1,095 tons displacement.



**U.S. Ground Transport**

Ground transport was essential for moving the massive quantities of supplies that a modern army needed.



**German Army Group B**

This icon represents Army Group B in the German command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of its subordinate units.



**German Parachute Infantry**

By 1944 Germany had lost control of the sky and their airborne troops **were** relegated to ground infantry positions. Nonetheless, German parachute infantry remained an elite fighting force, often enjoying the best equipment, transport and supplies.



**German Line Infantry**

German infantry divisions were reorganized in 1944 and reduced in manpower from around 18,000 men to about 12,000. German infantry was hindered by a severe lack of ground transport and often relied on horse drawn wagons.

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#### German Static Infantry

These infantry divisions were originally formed to occupy France, and when the Allies began to build up for the invasion, they were stationed along the coast as a first line of defense. They contained fewer men than regular infantry divisions (around 10,000), and the troops were generally old, unfit and uninspired. Some divisions even included contingents of Russian POWs who eagerly looked forward to the Allied invasion as a chance to escape.



#### German Panzer Division

Originally organized as formations of massed tanks for their roles in the blitzkreigs of Poland and France, German panzer divisions had evolved into balanced combined arms teams by 1944.



#### German Panzergrenadier Division

Though the literal translation of 'Panzergrenadier' is 'armored infantry', German productivity was unable to supply sufficient half-tracked vehicles to so equip these units. Consequently, Panzergrenadiers though transported to battle in trucks, fought on foot as conventional infantry. However, an additional battalion of assault guns were attached to each formation.



#### SS Panzer Division

The SS were the elite of the elite and their units received first priority for equipment and supplies. Furthermore, these units consisted of more tanks, infantry and artillery than standard Panzer divisions.



#### German Ground Transport

Though the icon represents a truck, much of the German ground transport for-

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mations consisted of horse and wagon. Ancient, decrepit and overtaxed, the German ground transport system did a poor job of moving supplies for the troops in the field.



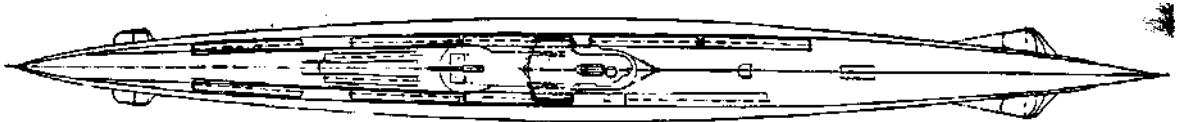
### **German Submarine Base**

This icon represents a Submarine base. At the time of the invasion there were seventeen U-boats stationed at Brest, fourteen at Saint-Nazaire, Four in La Pallice and one in Lorient.



### **German U-boat (Unterseeboot)**

Between June 6 and August 31, 1944 German U-boats, equipped with snorkels,



**German U-Boat**

had taken part in forty-five operations against the Allied invasion fleet. They sank five escorts, 12 merchant ships and four landing craft at a cost of twenty U-boats.



### **German V1 Rocket**

The first V1, or "Buzz Bomb" attack was on the night of June 12, 1944. Allied planners were keenly aware of Hitler's new secret weapon and their decisions as to where and when to invade were influenced by this knowledge. Technically, the V1 was a pilotless flying bomb. Pointed in a direction the V1 would proceed until its engines had exhausted its fuel and the bomb would drop to earth. About 8,000 were fired upon civilian populations until September 1944 when the Germans lost their launch sites on the coast of France. Still, the question remains, would the invasion have succeeded if the V1s were fired at the landing beaches?

# *The Age of Napoleon The Campaign of 1805*



# The Age of Napoleon The Campaign of 1805

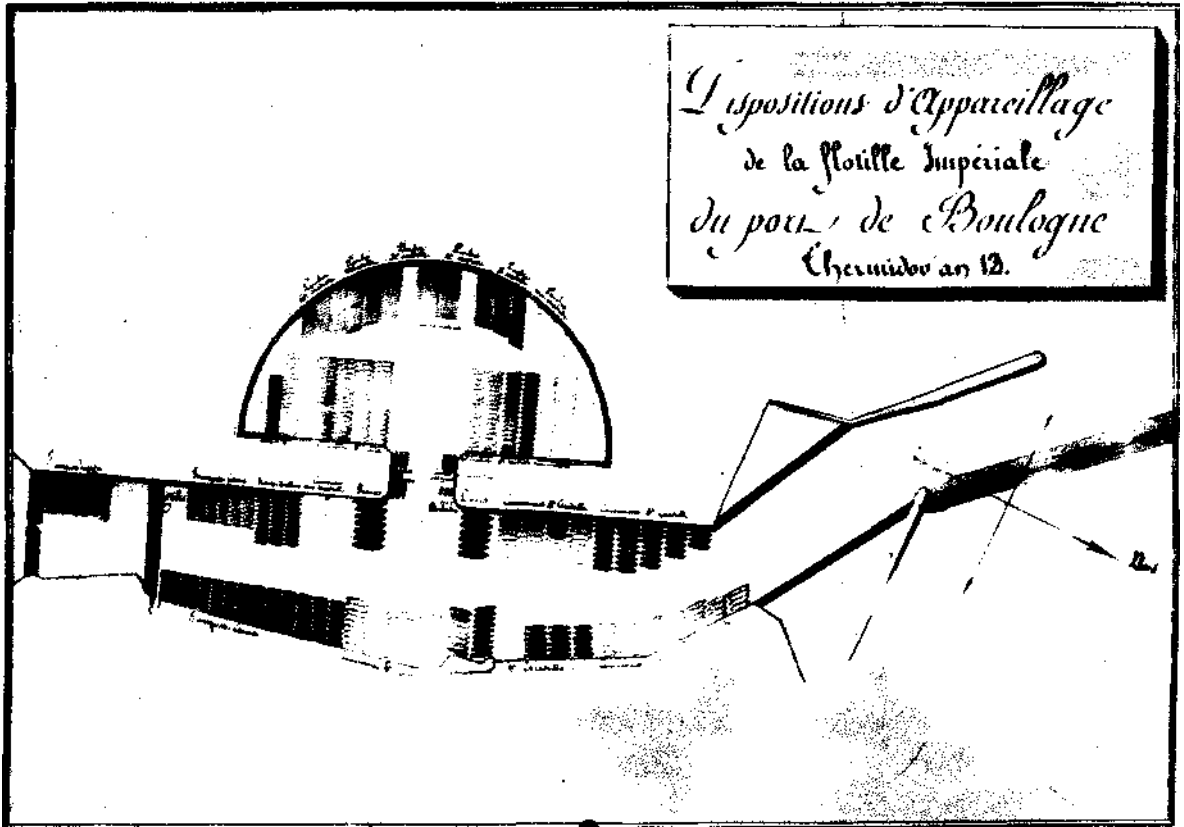
by D. Ezra Sidran

*"This is the masterpiece of the flotilla:  
it costs a great deal of money,  
but it is necessary for us  
to be masters of the sea for six hours only,  
and England will have ceased to exist."  
-Napoleon  
Boulogne, France, June 9, 1805*

## On Sea

It had cost a great deal of money. The invasion fleet stretched from Ostend to Boulogne. There were 18 flat barge praemes (cost: 70,000 francs each), three *beatex canonniere*s (at 23,000 francs each), 10 packet boats, 6 sloops, 19 *caiques*, 81 transport ships, 405 horse transports and assorted Newfoundland boats, whalers and gun-brigs (priced from 8,000 to 15,000 francs each). In all 2,343 vessels capable of transporting 167,590 men and 9,149 horses were assembled. Indeed, Decres, the Minister of Marine, had reported to the emperor that there was now a *surplus* of transport. All that remained was for Napoleon to secure control of the Straights of Dover; if only for six hours.

What denied Napoleon control of the seas was, of course, the English navy and their fabled 'walls of wood'. Napoleon's solution to this strategic problem was clever, it was inspired, but, most importantly, it was *global*. Between Boulogne and Dover lay British admiral Keith's 12 ships of the line, off the coast of Brest were Cornwallis' 18 ships of the line, Stirling's five ships in the Bay of Biscay, Calder's ten off Ferrol, Orde's five off of Cadiz and Lord Nelson's 12 standing off Toulon. Napoleon correctly reasoned that it was unlikely that the demoralized French Imperial navy could defeat the British in a pitched battle. Indeed, Napoleon had developed a quite healthy respect for the English, and it was constantly reinforced by such debacles as Nelson's crushing defeat of the French fleet under Admiral Francois Brueys d'Aigalliers at Aboukir Bay (The Battle of the Nile) on August 1, 1789 that stranded the Army of the Orient in Egypt. What Napoleon wanted was for the English ships to be *removed* from the Eastern Atlantic and the mouth of the Channel. It was not necessary that this be done by force of arms. If the English navy could be induced to leave its blockading stations, through threats real or imagined, in the Western Hemisphere or in Ireland, the effect would be the same.



Drawn for use by the French military staff, this 1805 plan shows Napoleon's invasion fleet of troops, cavalry and artillery transports, plus gunboats and supply craft docked on the River Liane at Boulogne.

Napoleon first sketched out the basics of the plan on September 29, 1804:

*We must send off three expeditions: from Rochefort to secure Martinique and Guadeloupe against enemy action and seize Dominica and St. Lucia [in the West Indies]; from Toulon to capture Surinam and the other Dutch colonies [in the Americas]; from Brest to capture St. Helena... The landing in Ireland [a subsidiary plan] is only the first act. The squadron must then enter the English Channel and sail to Cherbourg to get news of the [Grande Armée at] Boulogne. If on arriving off Boulogne it meets several days of contrary winds, it must go on to the Texel, where it will find seven Dutch ships with 25,000 men embarked. It will convoy them to Ireland. One of the two operations must succeed [and] we shall win the war.*

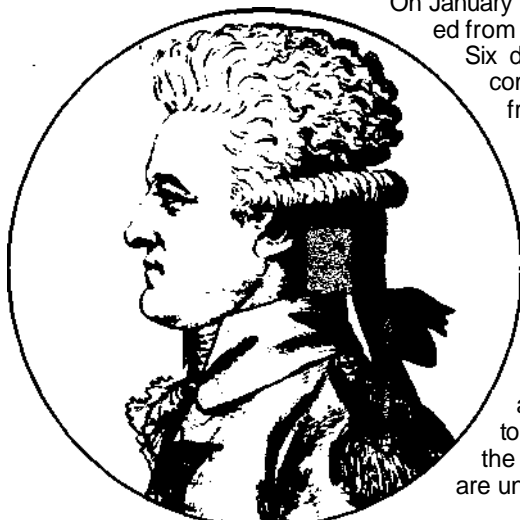
*-Letter to Decres, Minister of Marine*

*The Price of Admiralty, John Keegan; p. 19*

Spain became an active ally of France on December 12, 1804 and the Spanish king agreed to commission "25-29 sail-of-the-line...by March 30, 1805."



Still, the first hurdle of the emperor's plan remained to be cleared: the scattered French fleets would have to break out of the English blockade.



Adm. Pierre Charles Villeneuve

On January 11, 1805, Admiral Missiessy, with five ships of the line, bolted from the port of Rochefort and dashed westward into the Atlantic. Six days later at Toulon, while the British squadron under the command of Lord Nelson was forced to abandon its station for fresh water at the Maddalena islands, Admiral Villeneuve slipped out leading eleven ships of the line. However, Villeneuve's heart was not in the expedition. Sighting bad weather and two British frigates that dogged the French fleet's moves, Villeneuve returned to Toulon without firing a shot where Nelson promptly bottled him up again.

Napoleon howled, "What is to be done with admirals who allow their spirits to sink and determine to hasten home at the first [storm] damage they may receive? A few topmasts carried away, some casualties in a gale of wind are everyday occurrences. Two days of fine weather ought to have cheered up the crews and put everything to rights. But the greatest evil of our navy is that the men who command it are unused to all the risks of command."

The emperor revised his plans, this time incorporating the Spanish fleet and Missiessy's squadron that had been left to wander around on its own hook in the Caribbean. The Irish invasion was abandoned and in its place was substituted a massive rendezvous of the combined fleets in the West Indies. After leading the British fleet on a transatlantic goose chase the Franco-Spanish armada would return to Boulogne and sweep aside Keith's small coveringforce.

On March 30, Villeneuve's squadron again left Toulon and successfully eluded Nelson's picket line of frigates. Nine days later the French passed through the Straights of Gibraltar, slipped into Cadiz, where they joined up with five Spanish ships, and then set course for the New World. A befuddled Sir John Orde, in charge of the British fleet stationed off of Cadiz, failed to report the news to Nelson who was criss-crossing the eastern Mediterranean in a futile search for Villeneuve. Ten more precious days would elapse before Nelson, guided by rumors during a call at Lagos Bay in Portugal, convinced him that his quarry had fled westward. On May 10, Nelson wrote the Governor of Malta, "Although I am late, yet chance may have given them a bad passage and me a good one. I must hope the best."

The race across the Atlantic was now on. Villeneuve made landfall first, arriving at Martinique on May 14 after a passage of thirty-four days. Nelson, with superior crews and ships, spent ten days less traveling the same distance though his later start pushed back his appearance in the Caribbean to June 4 when he made Barbados.

Unfortunately for Villeneuve he arrived to find that Missiessy, not bothering to wait for the scheduled rendezvous, had long since returned to Europe. Indeed, the two French fleets passed in the Atlantic, traveling in opposite directions. Napoleon promptly sacked Missiessy upon his return to the continent.

Napoleon's instructions to Villeneuve had been quite explicit: he was to wait

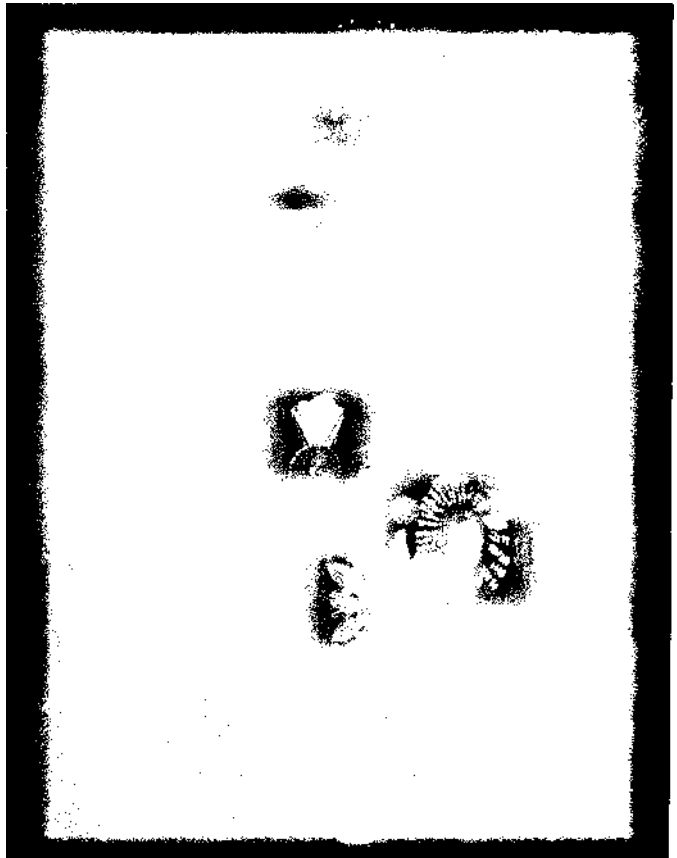
in the Caribbean for forty days or until the reinforcements from Brest, Rochefort and Lorient, under Admiral Ganteaume arrived. With the addition of Ganteaume's fleet, Villeneuve would have had a two to one superiority of ships of the line over Nelson (twenty-three to eleven). However, only two ships had been able to run the English blockade of the eastern Atlantic ports when Villeneuve learned of his adversary's arrival. Five days later, Villeneuve received new orders from Napoleon to return back across the Atlantic and to smash the British blockading forces outside Brest.

As Villeneuve sailed further away, Nelson remained in the Caribbean furiously searching for the French, first at St. Luica, then south to Trinidad, then back north to Grenada. "I believe my opinions to be very fallible," Nelson wrote the Admiralty on June 16, "and I therefore may be mistaken that the enemy's fleet is going to Europe; but I cannot bring myself to think otherwise." Far from being fallible this time, Nelson was absolutely correct. Indeed, the brig *Curieux*, which Nelson had dispatched back to London bearing the message overtook the French fleet three days later in the mid-Atlantic. The First Lord of the Admiralty, Lord Barham, was hastily awakened on the morning of July 9 with the startling news when the *Curieux* arrived in England.

Napoleon's gambit had worked, so far. The combined total of French and Spanish ships in the eastern Atlantic now greatly outnumbered their British opponents. Lord Barham had only two squadrons on station: the Channel squadron under Keith that stood between the Grande Armée and south-east England, and Lord Cornwallis' squadron that kept Ganteaume bottled up in Brest. Barham, promptly ordered Cornwallis to send Admiral Calder with half the squadron south in search of Villeneuve. It was now imperative that the British foil any attempt of Villeneuve and Ganteaume to form a juncture.

Ten days later Calder found Villeneuve and the French squadron foundering in a gale off the northwest coast of Spain. As Barham had predicted, Villeneuve was trying to force a passage into the Bay of Biscay to relieve Cornwallis' blockade of the fleet at Brest. The storm was followed by a thick fog, only breaking intermittently to tantalize the combatants with a glimpse of each other. On July 22, when the haze cleared to show the two fleets had actually passed each other, Calder immediately signalled his fleet to close for battle.

By future measures, it was a small engagement of uncertain results. The French suffered 641 casualties and the loss of two ships; the British escaped with the loss of 203 killed and the fleet intact. Calder drifted off to the north while Villeneuve was grateful to make the Spanish port of Ferrol. However,



Lord Nelson

the greatest casualty of the engagement off Cape Finisterre was Villeneuve's morale which sank to a new low. In response to Napoleon and the Minister of Marine's urgent dispatches to sail to Brest he mournfully replied,

*" I am about to sail but I do not know what I should do. Eight of the [British] line keep in sight of the coast at eight leagues. They will follow us; I shall not be able to get contact with them and they will close on the squadron before Brest... I do not hesitate to say - to you - that I should be sorry to meet twenty of them. Our naval tactics are antiquated. We know nothing but how to place ourselves in line, and that is just what the enemy wants."*

In Boulogne Napoleon awoke on the morning of August 23 from a beautiful vision. The emperor reported that the previous night he dreamed that he could see the French tricolor "fluttering over the Tower of London." A few hours later a dispatch from Villeneuve arrived admitting defeat. Napoleon howled,

*"What a navy! What sacrifices for nothing! All Hope is gone! Villeneuve, instead of entering the Channel, has taken refuge in Cadiz. It is all over. He will be blockaded there!"*

Four days later Napoleon ordered the Grande Armee to break camp and turn east towards Austria. The invasion of England had been cancelled.

*"Sir Robert Colder's naval action  
convinced Napoleon that all hope  
of an invasion of England was,  
for the present,  
at an end.  
He had no longer any motive  
for delaying his meditated attack on Austria.  
-F. Loraine Petre  
"Napoleon at War"*

## On Land

It was the great misfortune of the Austrians that they were the first signatories of the Third Coalition against France. To declare war against the emperor Napoleon on August 9, 1805 was the height of folly. Along with England, Russia and Sweden they had, indeed, cast their fate upon a troubled sea. It might as well have been a suicide pact.

England was to be the paymaster of the alliance; but the war was to be fought by proxy. Safe behind her wooden walls, England goaded her continental allies to pull the emperor's tail, and in so doing remove the Grande Armee from its invasion staging area at the Pas de Calais.

After Villeneuve shamelessly retired upon Cadiz, Napoleon turned his fury

upon the Austrian army that had foolishly occupied Bavaria and now had taken up defensive positions behind the Danube River. What was to follow is often regarded as "Napoleon's masterpiece." If the emperor could not control the affairs upon the sea, he would certainly demonstrate his dominance of campaigns on land. Before the end of the year Napoleon would utterly crush the Austrian army and humiliate the Russians.

The emperor was about to teach the world a lesson in what would later be termed "The Battle of Maneuver." Petre coyly points out, "The primary advantage of this type of battle was that it inflicted a major defeat on the enemy at minimal cost." Napoleon was out to bag himself an army.

The positions of the military organizations on August 23, 1805, the day Napoleon decided to abandon his cross-channel invasion, are precisely as depicted at the beginning of the "Age of Napoleon" UMS II: Nations at War scenario. The Grande Armee was stationed in the Boulogne-Calais area with an auxiliary corps (the VII), under the command of Augereau near Brest (Napoleon had originally planned to use this corps as a diversionary attack against Ireland; or perhaps, the west of England). As has been noted, Austria had taken up advance positions on the Danube, while the promised reinforcing Russian army, under the command of General Kutusov, was in transit near Brest-Litovsk and Grodno (near the modern day Polish-Russian border). In a pattern that was to become increasingly familiar to the emperor, Napoleon was outnumbered by his enemies.

Still, a situation such as this, offered a number of opportunities. One element that was foremost in Napoleon's mind was that his opponents must be defeated in detail before they could unite into an overwhelming force. On August 24, French cavalry formed a screen along the Rhine and began to probe the enemy defenses.

In swift order Napoleon sealed his borders, censored the reporting of troop movements in newspapers and swung his Grande Armee eastward. Like a rodent transfixed by the stare of a predator, the Austrian army, under the nominal command of the Archduke Ferdinand (though in fact under the leadership of Quartermaster General Mack) awaited the inevitable blow. It first fell upon Munster where troops of Soult's advance guard poured across the Danube, inexplicably, the Austrians retired west, towards Ulm, while Napoleon quickly moved to cut their only road of retreat, or reinforcement, towards Vienna.

Ferdinand urgently requested a retreat to the south (the Third Coalition had previously planned an attack against Massena, commanding France's Army of Italy) but Mack would have none of that. Ulm, Mack insisted, was well provisioned, and offered the opportunity for the Austrian army to advance northward and seize Napoleon's line of communication back into France. Indeed, under the Quartermaster General's personally drafted orders, the Austrian army began to move northward. The Archduke Ferdinand, thoroughly discouraged as



Imperial Guard battle flag

defeatist reports filtered back from units assigned to contest Napoleon's crossing of the Danube, insisted that Mack either retreat into the Tyrol or immediately strike boldly into the heart of France. Mack, completely disheartened by the lack of fighting spirits among the officers and men alike of the Austrian army, fell back upon Dim.

Napoleon, still believing that the Austrian army was commanded by rational men, was certain that his opponents would retreat to the south and ordered Marshal Ney to "take possession of Dim " and follow the presumed retiring enemy towards the south. Ney, quickly bumping up against stronger than expected resistance outside the town, assigned Dupont's division, reinforced by Baraguay cavalry and one brigade, to the north bank of the river while the remainder of his corps invested Ulm from the south.

A brief moment of opportunity opened for the soon to be besieged Mack as Ney maneuvered into position and he took it; savagely striking out at Dupont who was alone and unsupported on the north bank of the Danube. The Austrians forced the lone French division back upon its supporting cavalry, but uncoordinated support from Ferdinand precluded a major victory.

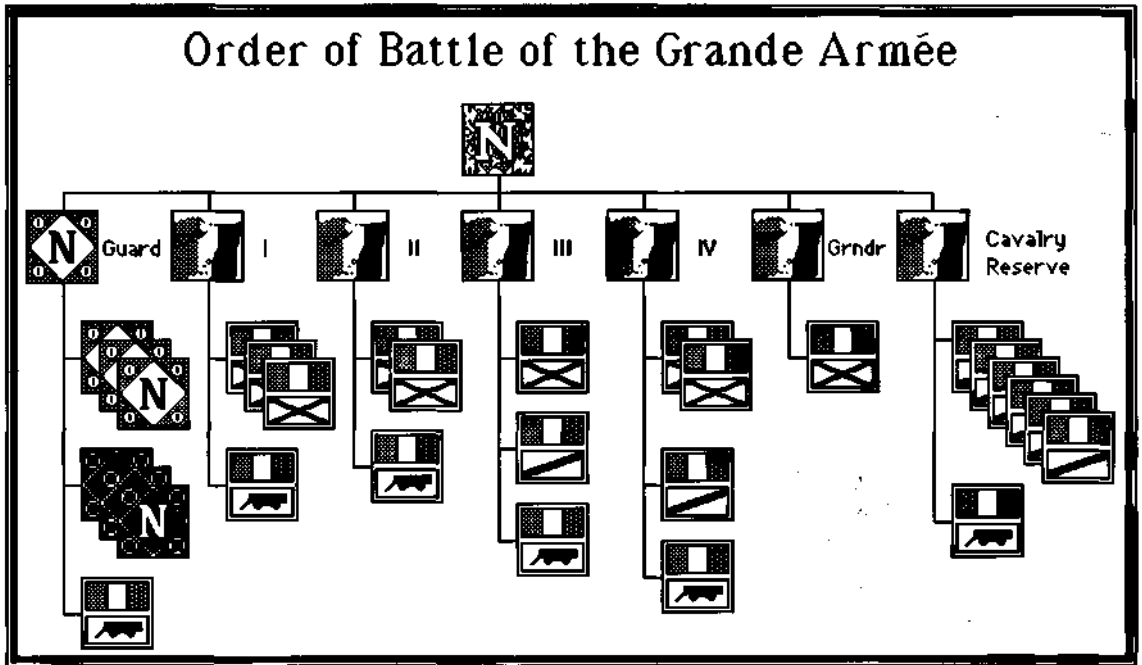
Realizing that he was about to be encircled, and that a fleeting opportunity presented itself for an escape on the north road out of Ulm, with the possibility of a juncture with the presumed Russian reinforcements (they were still many hundreds of miles away) Mack urged a desperate thrust towards Ratisbon. The Archduke Ferdinand, echoing the sentiments of his corps commanders, reported that the troops were much to weary for such a maneuver, and instead urged a withdrawal towards the Tyrol. Napoleon, sensing a great victory, ordered Soult's corps to advance upon Ulm "like lightning."

As French troops poured back across the Danube to close the last exit from Ulm, Mack mistakenly interpreted the movements as a retreat back into France. He immediately announced that, "the French were retreating toward the Rhine" and began issuing orders to intercept them. The Quartermaster General of the Austrian army was only rudely dissuaded from his illusions when the flotsam of Riesch's decimated corps (stationed on the north bank) fell back upon Ulm and recited their tales of destruction.

It was now obvious to all that the lion's share of the Austrian army was isolated in the fortress of Ulm and that its capture was but a matter of a few day's time. The Archduke Ferdinand, swearing that he must, "deprive the French of the glory of the capture of a Hapsburg" decided to cut himself out of the trap with 6,000 cavalry troopers (students of history might want to compare this incident with the rather sudden abandonment of the position of Fort Donnellson during the American Civil War by the former U.S. Secretary of War Pillow and the cavalry of Nathaniel Bedford Forrest after the investment by U. S. Grant).

The garrison at Ulm fought gamely on and even attempted a sally on October 15, but the Austrian corps commanders, overriding Mack's wishes, began negotiations with Napoleon for capitulation of the fortress city. Undone from without, and within, Mack surrendered 60,000 prisoners on October 25th.

As the emperor received the capitulation of the garrison a courier arrived bringing news of Villeneuve and the fleet. The French admiral, finally galled into action and the news that his replacement was en route to Cadiz, sailed out of the harbor on the morning of October 21. Lord Nelson and the combined British



fleet were waiting. What occurred can only be described as a massacre. The Combined Fleet of Villeneuve lost 18 ships of the line and 14,000 men while the British lost no ships and 1,500 sailors. Certainly, the greatest loss to the British fleet was the death of Nelson, early in the battle, to a French sniper. Nonetheless, the French and Spanish fleets were utterly smashed; never again would they sail in any numbers. Only two months before the French had been poised to invade England. While Napoleon would control the continent, to greater or lesser degrees, for the next ten years, never again would the British Isles fear an invasion from him.

*"If the campaign of 1805  
were Napoleon's greatest triumph,  
then Austerlitz  
- 'the battle of three emperors' -  
was probably his masterpiece."  
- Philip J. Haythornthwaite  
"Napoleon's Military Machine"*

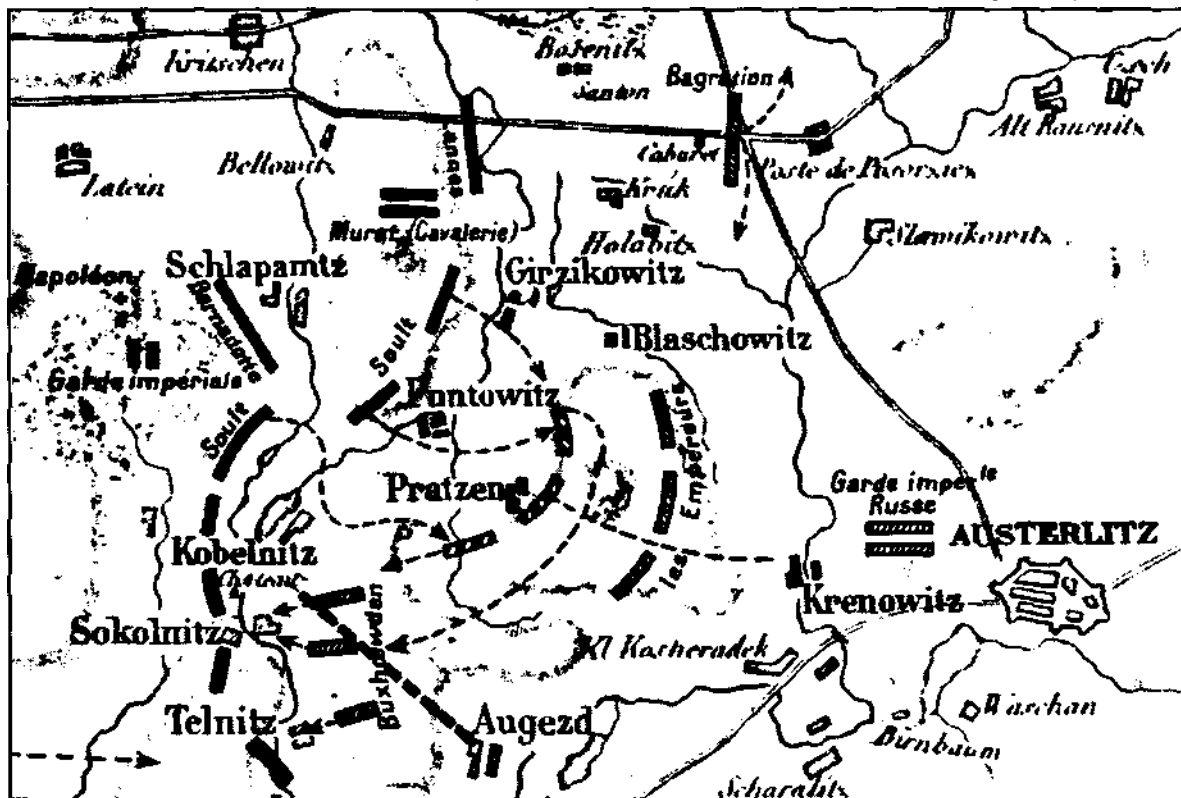
Napoleon lost no time consolidating the gains from his great victory at Dim. During November he chased the Allied armies across the Danube and established a series of depots stretching from the French border to Vienna and on to his forward base to the north at Brunn. He sent orders to Massena, commanding

the Army of Italy on his southern flank to pursue Archduke Charles, "without relaxation." By the end of the month, Napoleon's enemies seemed in flight everywhere, however reports that Soult's outposts were being driven in and the Allied army was on the march arrived on November 28.

The Allied army was technically under the command of Russian Czar Alexander, a hereditary ruler with no military experience and an entourage of sycophants. The daily operations, however, were left in the hands of the one-eyed and greatly respected Mikhail Kutuzov who, nonetheless, was obligated to respect the orders of his czar and Austrian Emperor Francis I. The two allied emperors decided that a well timed thrust between Napoleon's forward base at Brunn and his depot at Vienna would cause the French army to fall back.

Napoleon keenly observed the Allied army's movements from the Grande Armée's forward outposts and determined to divert Alexander from his planned line of march. The Pratzen Plateau was the dominating topographical feature slightly west of the Allied army's line. Napoleon ordered it abandoned on November 30 and the Grand Armée formed a solid defensive line behind the River Goldbach to the west. Brigadier General Vincent J. Esposito, in his authoritative *A Military History and Atlas of the Napoleonic Wars*, prepared for study at West Point Military Academy, writes, "The plateau was the bait to draw the Allies into his trap. As he calculated, the Allies -unable to resist the temptation to occupy this dominating terrain - halted their move to the south and turned westward... This change in direction further scrambled their formation..."

The valleys to the west of Austerlitz were thick with fog at daybreak on



December 2nd, and Napoleon's reserves lay concealed. At 8:00 A.M. Napoleon, from the vantage point of his headquarters on a small hill to the west, observed the combined Austrian and Russian columns descending the plateau and marching to the south. Waiting until 8:30, when he judged that the enemy would come in contact with French outposts, he gave the order to Soult's two concealed divisions to charge straight up the heights and split the Allied army in two. The French advance was hotly contested, and by 11:00 A.M. Kutuzov ordered the Russian Imperial Guard infantry and cavalry towards the center of the plateau. This counterattack was thrown back by Bernadotte's corps which had moved up from its concealed position as well as by a valiant charge of the French Imperial Guard cavalry led by Bessieres.

After securing the heights the French turned south and launched an irresistible attack against the milling Austrians and Russians now trapped between the Goldbach River and a chain of large frozen ponds. The Allied army disintegrated into a terrified mob whose artillery caissons and horses broke through the ice of Menitz Pond as they attempted escape; hundreds drowned.

Falling temperatures accompanied by snow ended the battle. The Allied army lost over 15,000 killed and wounded, 11,000 prisoners, 45 battle flags and 180 guns. French losses were barely 2,000 killed. The following day Emperor Francis I begged for an armistice and signed the Peace of Pressburg (December 26) which removed Austria from the war for four years and ceded to France large tracts of territory. The Russians retreated eastward back into their own lands. So ended the Third Coalition and with it the campaign of 1805. Only Britain remained to fight Napoleon.





The meeting of Napoleon and the Holy Roman Emperor Francis I, December 4, 1805

# Political & Military Situation In the Western Hemisphere 1805

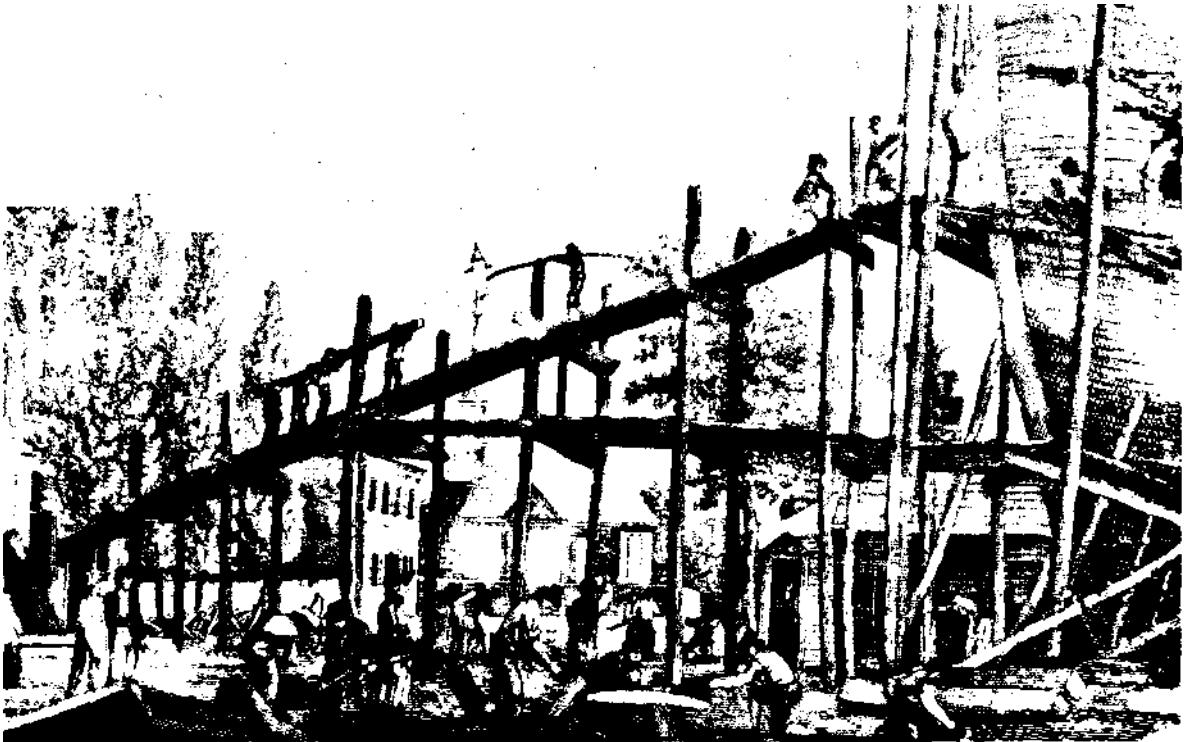
## The United States of America

## North America

It is extremely difficult to fix the exact strength of the American army and navy in 1805. Indeed, when the U.S. Senate requested these figures of the Secretary of War just two weeks before the outbreak of hostilities with Britain in 1812, the government minister was unable to provide them. At this time the U.S. War Department consisted of the Secretary himself and an even dozen clerks. The Navy Department was not quite so large.

Nonetheless, T. Harry Williams, the preeminent American military historian, places the peacetime army at 6,700 regulars and the naval forces at "between 16 and 20 ships - the estimates of it differ, too - and a personnel of but 4,000." (T. Harry Williams. The History of American Wars From 1745-1918. Louisiana State University Press. 1981. Baton Rouge and London.)

Of the naval forces, the three largest, rated as 'heavy frigates' were the *Constitution*, the *President* and the *United States*. These ships, while not of the same caliber as ships of the line, were considerably larger than the standard frigates of the day and carried 54 guns, ten guns more than their smaller sisters.



The U.S.S. *Philadelphia* under construction.

In addition, they were built of fir, rather than oak, and had a deserved reputation for being invulnerable to enemy round shot. The *Constitution* reputedly received its famous sobriquet "Old Ironsides" after British shot bounced off the hull during an encounter.

The position and strength of U.S. warships at the beginning of the Age of Napoleon scenario are:

<u>Ship</u>	<u>Guns</u>	
Adams	32	Off Virginia
Argus	18	Chesapeake Bay
Boston	36	Washington
Constitution	44	Boston
Constellation	36	Norfolk
Congress	36	Chesapeake Bay
Enterprise	14	Chesapeake Bay
Essex	32	Chesapeake Bay
Hornet	18	New London
New York	36	Washington
President	44	<b>East Coast</b>
United States	44	New London

The U.S. land forces, at this time, are represented by four standing regiments of line infantry and two regiments of cavalry.

#### **Great Britain**

At this time the bulk of Great Britain's military might was positioned in Europe with only small contingents in the New World and India. Less than 3,500 British regulars were stationed, primarily in Lower Canada, in this area. In addition, a small naval squadron patrolled the coast off Canada.

### **West Indies & Caribbean**

#### **France**

France had a series of small garrisons or outposts that secured its hold on its territories throughout the Caribbean and the West Indies. France had sold the bulk of its North American possessions to the United States in the Louisiana Purchase (treaty signed April 30, 1803, the actual date of transfer was December 20, 1803) and was now content to simply hold on to Martinique and Haiti.

Ground forces were less than 3,500 in number. Various naval squadrons were stationed here, too.

#### **Great Britain**

Great Britain maintained a strong hold on Jamaica and Bermuda as well as a string of lesser islands such as Grenada and St. Vincent. Britain kept about 4,000 troops garrisoned in the West Indies with an appropriate naval force.

#### **Spain**

Spanish power was all ready in decline during this period. Spanish ground forces were located in Cuba and Puerto Rico with some naval support. Though, like Britain and France, the majority of its forces were assigned to the European theater.

# Chronology of the Age of Napoleon

January 21	The Execution of Louis XVI	1793
February 1	Revolutionary France declares war on Britain	
March 9	Revolutionary France declares war on Spain	
September 16	Napoleon Bonaparte takes command of artillery besieging Toulon.	
December 19	French victorious at Toulon.	



Napoleon surveys the accuracy of his shore fire on the British at Toulon.

July 27	The execution of Robespierre.	1794
October 5	Napoleon puts down the attempted Coup d'etat of 13 <i>Vendemiaire</i> with the famed "whiff of grapeshot."	1795
March 1	Napoleon receives his first independent command: the Army of Italy.	1796
April	In a lightning campaign, Napoleon defeats the Austrians (April 12 at Montenotte and April 14/15 at Dego) and the Piedmontese (April 13 at Millesimo and April 21 at Mondovi). By April 28, the Piedmontese sue for peace and sign the armistice of Cherasco.	

	May 10	Napoleon defeats the Austrians at Lodi
	May 15	Napoleon enters Milan
	August 3	Napoleon defeats Austrians at Lonato
	August 5	Napoleon defeats Austrians at Castiglione
	August 19	Alliance between Spain and France sealed with the Treaty of San Ildefonso
	September 5	Napoleon defeats Austrians at Caliano
	September 8	Napoleon defeats Austrians at Bossano
	November 15/17	Napoleon defeats Austrians at Arcola
<b>1797</b>	January 14	Napoleon defeats Austrians at Rivoli
	February 2	Mantua captured by French
	February 22	French attempt to land at Wales
	May 16	Napoleon captures Venice
<b>1798</b>	April 12	Napoleon appointed to command of the Army of the Orient
	May 19	Napoleon departs for Egypt
	June 10	The French capture Malta
	July 1	Napoleon lands at Alexandria
	July 21	Napoleon victorious over the Mamelukes at the Battle of the Pyramids
	July 25	The French capture Cairo
	August 1	Nelson defeats the French at Aboukir Bay
	September 5	The French begin conscription to fill the ranks of the army and navy
<b>1799</b>	February 20	Napoleon invades Palestine
	May 4	British storm Seringapatam in India
	August 23	Napoleon sails for France
	November 9/10	The Coupe d'etat of <i>18 Brumaire</i>
	December 14	Napoleon appointed First Consul
<b>1800</b>	May 15	Napoleon crosses the Alps
	June 14	Napoleon defeats the Austrians at Marengo
	September 5	Malta surrenders to the British
<b>1801</b>	March 8	British Army lands in Egypt
	March 21	British defeat French at Aboukir
	April 2	Nelson defeats the Danish at Copenhagen
	September 2	The French Army of the Orient surrenders
	September 14	The French evacuate Egypt
<b>1802</b>	March 25	Peace of Amiens concluded between England and France
	April 29	Wellesley (Wellington) made Major General for successes in India
	August 2	Napoleon appointed First Consul for life
	September 11	France annexes Piedmont
	October 15	France annexes Switzerland

May 16	Britain declares war on France
August 6	Outbreak of the Second Mahratta War in India
September 23	Wellesley (Wellington) victorious at the battle of Assaye
October 9	Alliance between Spain and France

1803

May 18	Napoleon proclaimed Emperor
December 2	Napoleon's imperial coronation
December 14	Spain declares war on Britain

1804

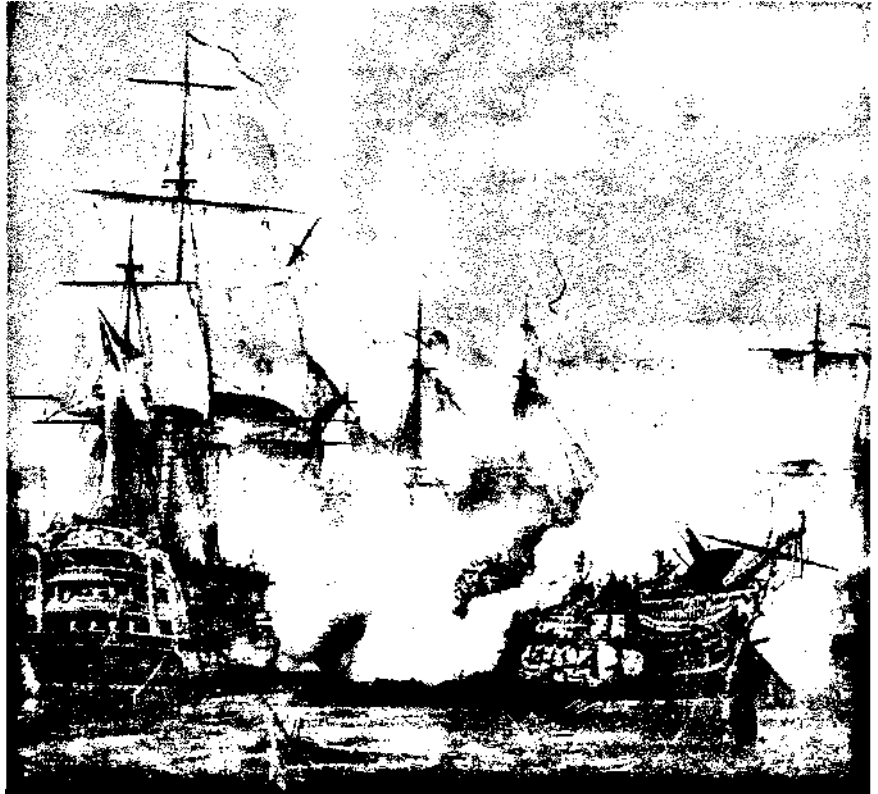


The Coronation - from a sketch by Jacques Louis David

May 26	Napoleon crowned King of Italy
August 9	Formation of the Third Coalition (Austria, Britain and Russia)
August 27	France Grande Armee abandons hope of a cross channel invasion of England and turns east to invade Germany

1805

September 5	Austria invades Bavaria
October 17	Austrians surrender to Napoleon at Ulm
October 21	Nelson defeats combined French and Spanish fleets at Trafalgar and pays for the victory with his life
November 14	Napoleon captures Vienna
December 2	Napoleon defeats the Russians at Austerlitz
December 26	The Austrians sue for peace and conclude the Treaty of Pressburg with France



The battle at Trafalgar

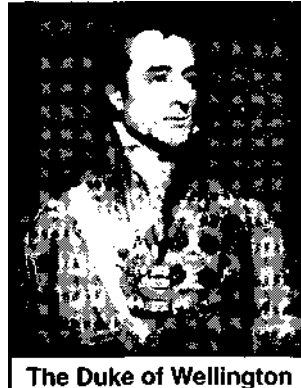
<b>1806</b>	October 6	Formation of the Fourth Coalition
	October 7	France invades Saxony
	October 14	Napoleon defeats the Prussians at Jena and Auerstadt
	October 25	Napoleon captures Berlin
	November 7	Prussians surrender to the French at Lubeck
	December 18	Napoleon captures Warsaw
<b>1807</b>	February 8	Napoleon defeats the Russians at Eylau
	June 10	Napoleon defeats the Russians at Heilsberg
	June 14	Napoleon defeats the Russians at Friedland
	July 7	The Treaty of Tilsit creates a Franco-Russian alliance
	August 16	Britain invades Denmark

September 7      Danish fleet surrenders  
 October 20      France declares war on Portugal  
 November 30      France captures Lisbon

August 17      Wellesley (Wellington) defeats the French at Roleia  
 April 25      Wellesley (Wellington) made a Lieutenant-General

**1808**

April 9      Creation of the Fifth Coalition  
 Austria invades Bavaria  
 April      Napoleon hands the Austrians three defeats at Abensberg (April 20), Landshut (April 21) and Eckmuhl (April 22)  
 May 12      Wellesley (Wellington) defeats French at Oporto  
 May 13      Napoleon captures Vienna.  
 July 5/6      Napoleon defeats the Austrians at Wagram  
 July 12      Armistice between France and Austria  
 July 28      Wellesley (Wellington) defeats French at Talavera  
 September 4      Wellesley made Viscount Wellington of Talavera  
 October 19      Austria submits to France with the Treaty of Vienna and the Peace of Schonbrunn



**The Duke of Wellington**

**1809**

July 9      France annexes Holland  
 September 18      France unsuccessfully attempts to invade Sicily  
 September 27      Wellington defeats French at Busaco

**1810**

March 5      French retreat from Portugal  
 April 3      Wellington defeats French at Sabugal  
 May 4      Wellington defeats French at Fuentes de Onoro

**1811**

June 18      The United States declare war on Britain  
 June 20      The Six Coalition formed  
 June 24      Napoleon invades Russia  
 July 22      Wellington defeats French at Salamanca  
 August 13      Wellington captures Madrid  
 August 17      Napoleon defeats Russia at Smolensk  
 August 19      Napoleon defeats Russia at Valutino  
 September 7      Napoleon defeats Russia at Borodino  
 September 14      Napoleon captures Moscow  
 October 19      Napoleon abandons Moscow and begins the westward retreat  
 November 2      French recapture Madrid  
 December 30      The Convention of Tauroggen creates an alliance between Russia and Prussia

**1812**



<b>1813</b>	March 4	Russians enter Berlin
	March 16	Prussia declares war on France
	May 2	Napoleon defeats the Allies at Lutzen
	May 20/21	Napoleon defeats the Allies at Bautzen
	June 21	Wellington defeats the French at Vittoria
	August 12	Austria declares war on France
	August 26/27	Napoleon defeats the Allies at Dresden
	September 10	The United States defeats the British on Lake Erie
	October 7	Wellington invades France from Spain
	October 16/19	The Allies defeat Napoleon at Leipzig
	October 18	Bavaria and Saxony join the Allies
	November 10	Wellington defeats the French at Nivelle
<b>1814</b>	February 1	Allies defeat Napoleon at La Rothiere
	February 10/14	Napoleon's 'Five Days' of success against Blucher and the Army of Silesia. French victories at Champaubert (February 10), Montmirail (February 11), Chateau-Thierry (February 12), Vauchamps (February 14)
	February 18	Napoleon defeats Allies at Montereau
	February 27	Wellington defeats French at Orthez
		Allies defeat French at Bar-sur-Aube
	March 7	Napoleon defeats Allies at Craonne
	March 13	Napoleon defeats Allies at Rheims
	March 20/21	The Allies defeat Napoleon at Arcis-sur-Aube
	March 31	The Allies capture Paris



The Campaign of France, by Meissonier depicts Napoleon leading a weary general staff through the snows of early 1814 in the final days of the Empire.

April 6	Napoleon abdicates at Fontainebleau
April 10	Wellington defeats the French at Toulouse
May 3	Louis XVIII enters Paris
May 4	Napoleon arrives at Elba
August 24	The British defeat the Americans at Bladensburg, capture Washington and torch the White House
September 14	British repulsed at Baltimore
December 24	The Treaty of Ghent ends the War of 1812 between Britain and the United States

January 8	Jackson defeats the British at the Battle of New Orleans
February 26	Napoleon escapes from Elba
March 1	Napoleon lands in France
March 20	Napoleon arrives in Paris
March 25	The Seventh Coalition is formed
June 16-18	The battles of Quatre Bras, Ligny and Waterloo
June 22	Napoleon abdicates again
July 7	Allies enter Paris
July 15	Napoleon surrenders
October 17	Napoleon lands on St. Helena

**1815**

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## **Bibliography**

[THIRD EDITION]

# BOB ROUSEM'S

EPISTLE TO  
BONYPART.

**T**HIS comes hoping you are well, as I am at this present; but I say, Bony, what a damn'd Lubber you must be to think of getting *soundings* among us English. I tell ye as how your Anchor will never hold; it isn't made of good Stuff; so luff up, Bony, or you'll be *fast aground* before you know where you are. We don't mind your Palaver and Nonsense; for though 'tis all Wind, it would hardly fill the *Stun'sails* of an English Man of War. You'll never catch a Breeze to bring ye here as long as you live, depend upon it. I'll give ye a bit of Advice now: do try to Lie as near the *Truth* as possible, and don't give us any more of your *Cliackers*. I say, do you remember how Lord Nelson came round ye at the Nile? I tell ye what, if you don't take Care what you are about, you'll soon be afloat in a way you won't like; in a high Sea, upon a Grating, my Boy, without a bit of soft Tommy to put into your *Lantern Jaws*. I'll tell you now how we shall fill up the Log-Book, if you come: I'll give ye the Journal, my Boy, with an Allowance for *Lee-way* and *Variation* that you don't expect. Now then, at Five, A. M. Bonypart's Cock-Boats sent out to amuse our ENGLISH MEN OF WAR with *fighting*, (that we like). Six, A. M. Bonypart lands (that is, if he can), then we begin to blow the *Grampus*; Seven, A. M. Bonypart in a Pucker; Eight, A. M. Bonypart *running away*; Nine, A. M. Bonypart on board; Ten, A. M. Bonypart *sinking*; Eleven, A. M. Bonypart in *Davy's Locker*; MERIDIAN, Bonypart in the North Corner of —, where it burns and freezes at the same time; but, you know, any Port in a Storm, Bony: so there I'll leave ye. Now you know what you have to expect: so you see as how you can't say I didn't tell ye. Come, I'll give ye a Toast: Here's Hard Breezes and Foul Weather to ye, my Boy, in your Passage: Here's may you be Sea Sick; We'll soon make ye Sick of the Sea; Here's May you never have a Friend here, or a Bottle to give him. And to conclude--- Here's the *FRENCH FLAG* where it ought to be, under the English.

BOB <sup>HIS</sup> X ROUSEM,  
<sup>MARK.</sup>

P. S. You see as I couldn't write, our Captain's Clerk put the Lingo into black and white for me, and says *bell charge it to you*. Doubt Your Name

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# The Unit Icons

## Supplies

These icons represent basic supply units (measured in Supply Points). Supply icons are used by all national forces and belong to no particular nation. Any unit sharing a map square with a supply point may add to its current store of Supply Points (up to the unit type maximum of Supply Points per Strength Point) by reducing the same amount from the Supply unit's Supply Points. See Chapter 10 of the manual for more details. Supply units can be created by all provinces in this scenario.



## The Emperor Napoleon

This icon represents the Emperor Napoleon Bonaparte in the French command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of the Grande Armee.



## French Army or Corps

This icon represents either an army or corps in the French command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of its subordinate units.



## French Imperial Guard Infantry

A "corps d'elite around which many legends have been woven," wrote Philip J. Haythornthwaite in Napoleon's military Machine of the Imperial Guard. The cream of the Grande Armee, these troops are rated the highest of all ground units in the scenario. With the highest morale and efficiency ratings it was truly written, in blood, "the Guard dies; it does not surrender." (General Pierre Cambronne's reply to an offer of surrender at Waterloo).



**Imperial Guardsman**

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### French Imperial Guard Cavalry

The Imperial Guard included a full complement of superb cavalry regiments, which in order of seniority were: the Horse Grenadiers (Grenadiers a Cheval - The Gods) the Chasseurs a Cheval, the Mamelukes, the Elite Gendarmes, the Dragoons, the Gendarmes d'Ordonnance, the Light Horse, the Lancers of the Guard, the Polish Lancers, the Gardes d'Honneur, the Scouts, the Seamen (Marines). These units are rated as the highest of all cavalry units in the scenario and are considered even odds equals to the fabled Russian Cossacks.



Chasseurs a Cheval

### French Line Infantry

The legend on their banners read: VALEUR ET DISCIPLINE. The most precious possession of each line regiment was its Eagle; which assumed almost mystic significance. The loss of a regiment's Eagle brought disgrace. Though at the end of the age of Napoleon, the fabled French line infantry had degenerated almost to the level of an armed mob, in 1805 it was well disciplined and had extremely high morale.



### French Cavalry

French cavalry was comprised of the Cuirassiers (heavy), Hussars (light reconnaissance), Lancers and Chasseurs a Cheval (light) and Dragoons (medium). Napoleon was quoted as saying that, "it is impossible to fight anything but a defensive war, based on field fortification and natural obstacles, unless one has practically achieved parity with the enemy cavalry; for if you lose a battle, your army will be lost." The French cavalry, however, was severely handicapped by a lack of horses at the beginning of this scenario, in preparation for embarkation of the invasion of England.



### French Supply Wagons

It has been estimated that "not far short of a third of the rations carried were required for the draught animals, and this clearly restricted the number of days it was possible to feed an army forward of its depots or supply dumps." (William Seymour, Decisive Factors in Twenty Great Battles of the World. St. Martin's Press;1988: New York; p.132)

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**French Ship of the Line**

Though at a decided disadvantage to the equivalent British Ship of the Line, the French Ship of the Line was a formidable military vessel bearing up to 94 large caliber cannons mounted on three decks. However, the officer corps of the French navy was decimated following the revolution and never gave a good accounting of itself during the age of Napoleon. Indeed, morale in the French navy was so poor that over 300 men deserted Villeneuve's fleet at Cadiz before the battle of Trafalgar.



**French Naval Transports**

In 1805, the largest armada ever assembled lay at anchor along the shores of northwest France awaiting the Emperor's command to embark for an invasion of southern England. It consisted of 2,343 vessels capable of transporting 167,590 men and 9,149 horses. This slow moving collection of prames (from the Dutch praam, a flat barge), bomb-ketches, packet-boats, sloops, gun-brigs, gunboats caiques (light skiffs), transport-ships, horse-transports, artillery transports, baggage transports Newfoundland boats, whalers and other assorted light craft was highly vulnerable to hostile fire.



**British Royal Navy**

This icon represents the British Royal Navy commanders in the British command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of the Royal Navy.



**British Army or Corps**

This icon represents either an army or corps in the British command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of its subordinate units.

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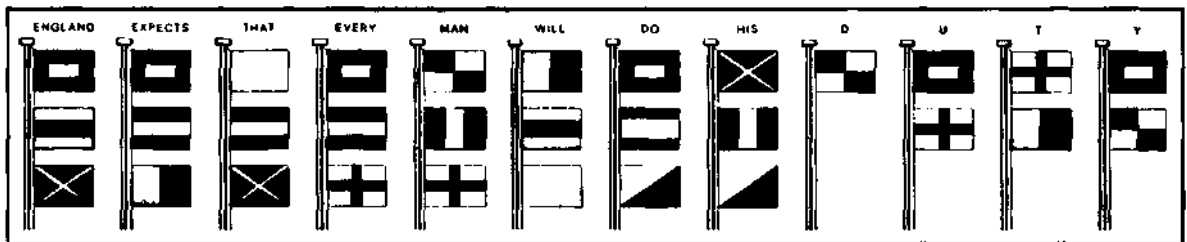
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### British Fleet or Squadron

This icon represents either a fleet or squadron in the British command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of its subordinate units. N.B. the signal pennants on the icon are derived from Nelson's famous charge to the British seamen before the battle of Trafalgar, "England expects every man to do his duty."



### British Ship of the Line

Ships of the line were rated as follows "1st Rate" (100 or more guns); "2nd Rate" (98 guns); "3rd Rate" (80, 74, 70 or 64 guns); "4th Rate" (50 or 60 guns) and "Fifth Rate" (28, 24 or 20 guns). The British navy, with its superb leadership, was certainly the most powerful force on the sea during the age of Napoleon.



### British Naval Transport

Though slow and extremely vulnerable to enemy raiders and frigates, these ships were the workhorses that moved supplies and troops from one end of the British Empire to another.



### British Line Infantry

When the Duke of Wellington was asked for his thoughts just before the battle of Waterloo, he pointed to a British infantry private and replied, "There, it all

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depends upon that article whether we do the business or not. Give me enough of it and I am sure." British Line infantry was an all volunteer force, composed, as Wellington said, "of the scum of the earth." Lest one be misled that the volunteers were starry eyed patriots, Wellington elaborated, "People talk of their enlisting from their fine military feeling - all stuff - no such thing. Some of our men enlist from having got bastard children - some for minor offenses - many more for drink." The bounty paid for each recruit in 1803 was £7. 12s. 6d. Seventy six percent of the recruits enlisted for life terms.



**British Cavalry**

British cavalry was of a decidedly superior quality to its French counterpart and an equal to that of the other European cavalry formations, though probably inferior to the Russian cossacks (this is, of course, supposition as British and Cossack cavalry did not cross blades until the Crimean War some fifty years after this time).



**British Wagons**

The British ground transport system was not as well organized as the French and often broke down, especially during long campaigns. George Wood of the 82nd (Prince of Wales' Volunteers) wrote that during four days in the Pyrenes his regiment ate nothing but leaves of trees, 'which we chewed as we passed along to assuage the craving of hunger.'



**United States Army or Corps**

This icon represents either an army or corps in the United States command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of its subordinate units.



**United States Frigate**

Though of decidedly smaller displacement and armament than the great ships of the line of the European navies, the United States frigates produced during this time should not be lightly dismissed. These superbly built ships, manned by volunteer seamen with the highest morale handed the British navy a string of



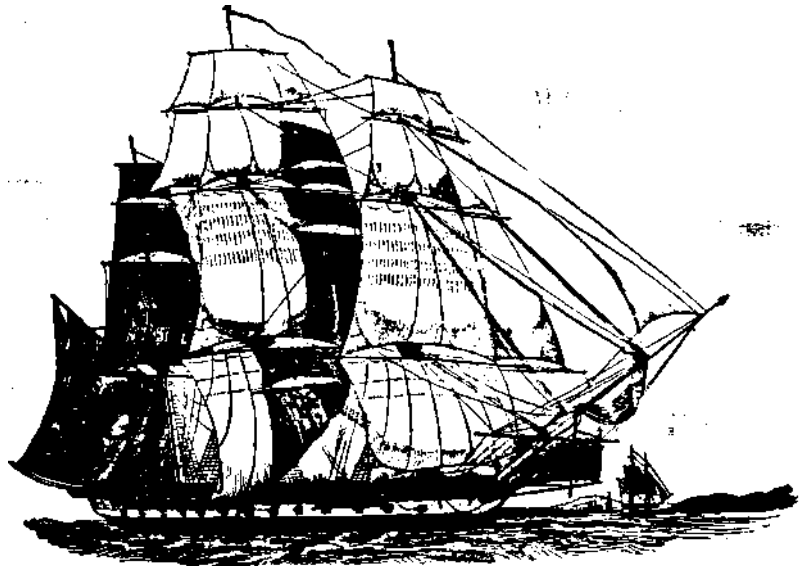
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defeats including the Constitution's destruction of the Java, the United States captures of the Macedonian and the Argus over the Barbadoes. The frigates could be especially damaging to commerce and could decimate an unprotected convoy traveling between the New and Old Worlds.



*U.S.S. United States*



#### **United States Infantry**

The United States had almost no standing army at this time (see the Political and military Situation in 1805 for details) and relied entirely on a militia system. The United States infantry gave a very poor showing of itself whenever it encountered European troops with two notable exceptions: Winfield Scott routed a superior British force south of the Chippewa River during the War of 1812; and Andrew Jackson utterly destroyed Sir Edward Pakenham's 5,300 man expedition at New Orleans.



#### **United States Cavalry**

Like its infantry, the United States cavalry was dependent on a militia system for its men and horses. At this time the United States cavalry was an untested commodity never having been used in a pitched battle. Though it well fulfilled its role

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when used for scouting and reconnaissance purposes it is unlikely that it could have held up against the shock of the finest European horsemen.



### **United States Wagons**

The United States supply transportation, like all of its ground forces, was, at best, an ad hoc affair. Often merchants that had been contracted to supply food-stuffs and materiel to the army were contracted to provide the transportation as well.



### **Russian Army or Corps**

This icon represents either an army or corps in the Russian command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of its subordinate units.



### **Russian Infantry**

The Russian infantry, composed of conscripts, poorly led, trained and fed never acquitted itself well until Napoleon's disastrous invasion of Russia in 1812.



### **Russian Cavalry**

At the battle of Borodino (September 7, 1812) less than 30% of the almost 25,000 Russian cavalry consisted of Cossacks. Nonetheless, it was the Cossacks that spearheaded the attack on the exposed French left flank and gave Napoleon cause for concern. The Cossacks roughly handled the French cuirassiers and chasseurs but were turned back by the French divisions in squares. Consequently, it is fair to rank Russian cavalry near the top of its class of arms, only slightly below that of French Imperial Guard cavalry.

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**Russian Wagons**

The Russian transportation system was so poor and ineffectual that Kutusov had to borrow wagons from Austrian authorities to move supplies during the Ulm campaign in 1805.



**Austrian Army or Corps**

This icon represents either an army or corps in the Austrian command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of its subordinate units.



**Austrian Infantry**

The Austrian infantry had a long tradition of professionalism and esprit de corps though were poorly led.



**Austrian Cavalry**

Brigadier General Vincent J. Esposito in his authoritative A military History and Atlas of the Napoleonic Wars credits the Austrian troops, especially the cavalry, of performing better than their Russian allies at Austerlitz. Indeed, he singles out Kienmaier's cavalry for special gallantry in covering the army's retreat from that battle.



**Austrian Wagons**

With the possible exception of the French transportation services, the Austrians were probably the most efficient. Indeed, the ability to 'lease' spare cartage to the Russians on the way to Austerlitz speaks volumes of their organization.



**Spanish Ship of the Line**

The most massive of all the ships of the line created during the age of Napoleon

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was the Spanish battleship Santissima Trinidad at 130 guns. While the largest ships were Spanish, they were often poorly constructed, considerably slower than their English and French counterparts, and manned by poorly disciplined and ill-fed troops.



### Prussian Army or Corps

This icon represents either an army or corps in the Prussian command structure (Order of Battle table). This unit has no intrinsic value itself, but rather represents the cumulative Strength Points of its subordinate units.



### Prussian Infantry

Prussian infantry, especially when under the command of a popular leader like Blucher, could be an exceptionally powerful force on the battlefield. Prussian infantry had a well deserved reputation for fighting spirit and was called by the renowned Napoleonic scholar, Philip J. Haythornthwaite, "magnificent." However, the army had fallen into disrepair since the days of Frederick the Great and by 1805, for reasons of economy, was placed on leave most of the year.



Prince Von Blucher



### Prussian Cavalry

Prussian cavalry was composed in a large part by mercenaries. "The officers generally were educated and hard-working, but old for their grades, drowned in inconsequential minutiae, and disdainfully ignorant of modern warfare." (Esposito, *A military History and Atlas of the Napoleonic Wars*, p. 57).



### Prussian Wagons

Considering how the Prussian army was mothballed between time of emergency, the Prussian transportation system was surprisingly efficient. Indeed, Prussian soldiers were accustomed to regular delivery of rations and firewood supported by an elaborate system of depots and supply trains.

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**Mike Morton** designed and implemented the quad-tree map compression and machine independent memory paging schemes (you would be well rewarded to take a moment to read his explanation of these features in Chapter 14). It is impossible to overstate his contribution to this project; without his efforts UMS II would have died stillborn. In his spare time Mike also wrote the Macintosh version of UMS II and the UMS II Planet Editor.

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