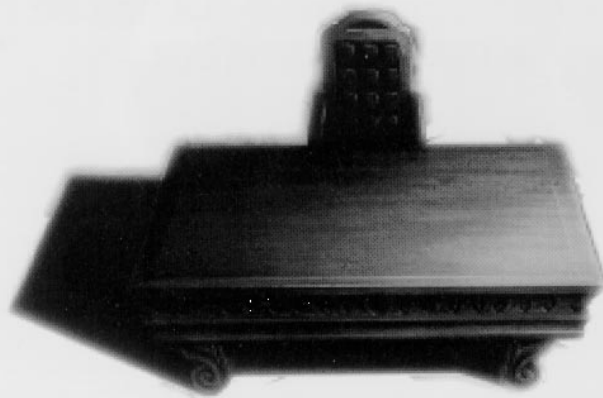


# HIGH COMMAND

EUROPE 1939-45



**REFERENCE MANUAL**

# **HIGH COMMAND**

**Europe 1939-45**

**REFERENCE MANUAL**

**DETAILED GAME DESCRIPTION**

**HISTORICAL GUIDE**

**AND**

**DESIGNER'S NOTES**

**HIGH COMMAND REFERENCE MANUAL**  
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# **High Command Europe 1939-45**

## **REFERENCE MANUAL**

### **INTRODUCTION**

High Command is a strategic-level strategy game that places you, the player, in the role of leader of either the Allied or Axis High Command in Europe during World War II. As leader of your High Command you will have to make numerous political, economic and military decisions in your attempt to achieve your war aims.

High Command is a wargame. However, it is also much more. In fact, High Command is actually three simulations: military, economic and political. These simulations are inter-related throughout the game. Practically any activity in these simulations can be assigned to the computer. Thus, you can assign the politics and economics to the computer so that you can play a pure wargame, or you can play the politics and economics and assign the computer to play the wargame. The choice is yours.

### **The Military Simulation**

The military simulation includes the ability to conduct military campaigns and tactical combat for the purposes of military, economic and/or political advantage. Combat in High Command includes combined-arms combat between ground, air and naval forces. You have the ability to conduct large-scale ground assaults, air attacks, air interdiction, amphibious assaults, attacks on merchant shipping, anti-submarine warfare, strategic bombing campaigns, naval blockades and much more. You can even attack your opponent with rockets and atomic bombs, provided a country under your control has developed these weapons. Your military campaigns will let you conquer countries for eco-



conomic, political and military advantage. You can capture oil fields, industrial regions, air and naval units, or perhaps a strategic port, air base, or straits that can aid you in defeating your opponent. However, you must be careful and selective in your attacks or you might provoke a great power to declare war on you and join your opponent.

### **The Economic Simulation**

The economic simulation includes the ability to produce units, improve production facilities, develop resources, perform research and development and invest in the general economy. You build the numbers and types of units that you require to achieve your objectives. However, a certain amount of your economic resources must be plowed back into your economy for it to grow. Otherwise, the economy can fall into recession or even depression. You can provide economic aid to countries you have conquered or that have joined your cause, or you can pillage them of their resources to advance your immediate war aims. Investment in research and development can pay dividends in improved technology that provides you with better war machinery such as more powerful tanks or longer range aircraft. Or it may increase the likelihood of developing resources, improving production facilities, or developing rockets and atomic bombs.

Your economic decisions can make or break your war effort. You must build units to send into battle, but you can't forget to invest in your economy and research and development. Otherwise your ability to produce capable units later in the war will be severely handicapped. You must walk a fine line between your immediate objectives and your long-term grand strategy.

### **The Political Simulation**

The political simulation includes the ability to initiate diplomatic overtures. You allocate resources to diplomacy that may persuade neutral countries to become more friendly towards you or less friendly to your enemy. It may even persuade them to join you in your cause or result in a favorable coup d'etat. You allo-





cate resources to intelligence activities that can result in sabotage against your enemies, gathering of intelligence information, or the breaking of enemy codes. These can give you a decisive advantage on the battlefield. You decide which countries you should target and how much you should spend on diplomacy and intelligence in each country. Your diplomatic and intelligence activities can play a major role in the outcome of the war.

Persuading a strategically placed country to join your cause may be just the edge you need against your opponent, but you can't forget to counter your opponent's initiatives in another country that may give them an advantage against you. And, just as with economics and military campaigns, you must weigh short-term objectives against your long-term grand strategy.

## THE MAIN DISPLAY

The Main Display is composed of the Title Windows, the Strategic Map, the Tactical Map, the Buttons, the Message Window, the Mode Window and the Help Window. It is from this display that all game actions take place.

### Title Windows

The Title Windows are at the top of the display. There are 3 title windows. These windows show which player is active, the month and year and the phase, in that order from left to right. There is no entry for the player during execution phases. The Title Windows are color-coded: brown for Allied phases, gray for Axis phases and cyan for execution phases.



*Main Display With Strategic Map*

## **The Strategic Map**

The Strategic Map is located in the upper right of the display. This map shows the entire game map and serves 2 functions. Various modes can be displayed on the strategic map by using the Strategic Map Buttons, the first block of buttons below the Strategic Map. The functions of these buttons are described in the section on Buttons.

The strategic map can also be used to move the tactical map area around the strategic map. Clicking anywhere on the Strategic Map will center the tactical map at that location. The area currently visible on the Tactical Map is outlined by a square on the Strategic Map.

## **The Tactical Map**

The Tactical Map is below the Title Windows and occupies most of the Main Display. The Tactical Map displays a close-up view of a region of the game map that is 10 sites high and 16 sites wide.

## **The Buttons**

The buttons are located to the right of the Tactical Map and are divided into 5 groups. These buttons are used activate modes, toggle displays, save the game, etc. The functions of the buttons are described in the section on Buttons.

## **Message Window**

The Message Window is left-most window at the bottom of the display and is used to display various information during the game. Generally, this information falls into 2 classes: messages/prompts and warnings/errors. Messages and prompts are printed in green text and serve to remind the player of the actions to be taken and/or the options that are available. Warnings and

errors are printed in red text and serve to inform the player when

a specified action is invalid or illegal. Unlike most war games, the warnings and errors displayed in the Message Window are very explicit to aid the player in resolving the problem.

### **Mode Window**

The Mode Window is the center window at the bottom of the display. There are many different modes in High Command. This window is used to show the mode that is active.

### **Help Window**

The Help Window is the right-most window at the bottom of the display. This window is used to display a help message that identifies the function of the various buttons. The help message for the function of a button is displayed whenever the button is active and the mouse cursor is over the button.

## **THE MAP**

High Command is played on a map representing the European Theater of Operations. For the purposes of this game, the European Theater of Operations is defined to include North Africa, the Middle East and the North Atlantic. The map includes 39 countries, numerous territories, islands, oceans and seas.

### **Extent and Scale**

The map extends from the Ural Mountains to the Atlantic Ocean in the east-west direction and from the Arctic Ocean to the Sahara and Arabian Deserts in the north-south direction. In order to include the United States, the British Commonwealth and the oil-exporting regions of northern South America, special regions are included on the map. The United States is represented in the north-west corner of the map and the British Commonwealth, principally Canada, just to the east of the United States. The oil-exporting regions of northern South America are represented on the central western border of the map.

The map is constructed as an array of hexagons with a diameter of 50 miles. Each hexagon is referred to as a site. The map constitutes 68 sites in the east-west direction and 72 sites in the north-south direction, for a total of 4,896 sites.

### **Terrain**

Every site comprising the map is either a land, sea, or coastal site. Sea sites consist entirely of sea, coastal sites consist of both sea and land and land sites consist entirely of land. Every land and coastal site has an associated terrain type. 6 different terrain types are represented in High Command. They are clear, forest, desert, rough, mountain and marsh. Without exception, coastal terrain is always clear.

Terrain type is important for several reasons such as cost of movement, combat resolution, etc. as will be described in subsequent sections.



## **In-Hex Contents**

In addition to terrain, sites may or may not have content. The various contents represented in High Command are:

- City
- Port
- Factory
- Shipbuilding
- Oil
- Mining
- Air Base

The rules governing the content of sites are:

- With the exception of air bases, all contents are present at the start of the game and cannot be created during the game.
- Air bases can be created during the game.
- Sites may have more than 1 type of content.
- If the site is a capital, then the symbol for the contents of the site is red.
- All types of contents are considered cities and air bases. For example, a site containing oil is also a city and an air base.



## **Hex-Sides**

High Command includes national boundaries, rivers, fortresses and exclusion zones. These features are represented in High Command by modified hex-sides.

Hex-sides have various effects on game play. For example, there are combat disadvantages for land units attacking across river hex-sides. The various effects of hex-sides are described in the appropriate sections.

## **Sea Zones**

To facilitate game play in High Command, every sea site and coastal site has an associated sea zone. 8 sea zones are represented in High Command. They are:

- North Atlantic
- Mid-Atlantic
- North Sea
- Baltic Sea
- Western Mediterranean
- Eastern Mediterranean
- Black Sea
- Red Sea

Sea zones are important for the purposes of including Merchant Marine assets as will be described in subsequent sections.

## THE COUNTRIES

39 countries are represented in High Command. These countries are divided into major countries and minor countries. The countries included in High Command by group are:

### Major Countries:

Britain	France	Russia
Italy	Germany	United States

### Minor Countries:

Algeria	Arabia	Belgium
Bulgaria	Denmark	Egypt
Estonia	Finland	Greece
Holland	Hungary	Iraq
Ireland	Jordan	Latvia
Libya	Lithuania	Luxembourg
Morocco	Norway	Palestine
Persia	Poland	Portugal
Romania	Spain	Sweden
Switzerland	Syria	Tunisia
Turkey	Yugoslavia	

There are major distinctions between the 2 groups of countries. For example, only major countries can actively produce new military units. The distinctions between the 2 groups are identified and discussed where appropriate in various sections of the manual.

## THE UNITS

Combat and territorial conquest in High Command are performed with units and are represented on the map as colored squares. The color of the units identify their nationality. These units represent the military forces of the various countries.

There are 3 classes of units in High Command. These classes are land, air and naval. Within each class there are different types of units. For example, air units consists of fighter, fighter/bomber and bomber units.

There are certain units on the map at the start of each game. As the game progresses units are eliminated as a result of combat. However, new units can be produced at various sites during the game to replace lost units or to build the military beyond what was available at the start of the game.

### Colors

The color of the unit identifies the ownership of the unit. The following color scheme is used on the Tactical Map:

Allied Minor	Yellow
Axis Minor	Light Gray
Britain	Brown
France	Blue
Germany	Dark Gray
Italy	Purple
Neutral Minor	Cyan
Russia	Red
United States	Green

Note that units belonging to a neutral minor country are colored cyan. However, once the country enters the war the units belonging to that country are given a new color, either yellow or light gray depending on whether the country has joined the war as an Allied or Axis country, respectively.

## **Designations**

Two different types of unit icons, military and pictorial, are available, depending on the player's preference. Military icons have a rectangle (enclosing the unit type designation symbol) on the top half of the unit and a number (representing the strength or size of the unit) on the bottom half. Pictorial icons have a single icon on the unit that is used to indicate the type of unit. The various meanings of the symbols and icons are identified in the data tables as described in the section on Buttons.

## **Combat Strength**

Combat strength represents the size of the unit. For example, the combat strength of a fighter unit represents the number of fighter aircraft in that unit. Although the fighter strength is the main consideration, the combat strength also represents all the support and logistics units necessary for the fighters to be combat ready and effective.

The combat strength of a unit can vary between 0.1 and 9.5. Thus, units in High Command can represent different sizes of actual military units.

Units can lose combat strength in 1 of 3 ways. First, units lose combat strength when disengaging or retreating from combat. Second, units lose combat strength as a result of combat resolution. Third, units may lose combat strength in encounters with partisans. Each type of combat strength loss is discussed in the appropriate sections.

The combat strength is displayed at the bottom of military style units. The combat strength is displayed as a single digit and is rounded to the nearest integer. Should rounding dictate that the digit be displayed as a zero, then it is displayed as a 1 instead. Combat strengths are not displayed on pictorial style units.

## **Combat Capability**

Every unit in the game, with the exception of Merchant Marine units, are rated for their combat capability against land, air and naval units. In addition to these 3 capabilities, some units have a fourth, special, capability:

- Bomber units are rated for their ability to attack strategic targets. Strategic targets include factory, shipbuilding, oil and mining sites.
- Destroyer and cruiser units are rated for their ability in anti-submarine warfare. This capability provides the units with the capability to intercept and engage submarines.
- Submarine units are rated for their stealthiness. This capability provides the units with better chances of running naval blockades and provides submarines with a surprise advantage in the first round of naval combat.

## **Organization**

Every unit in the game, with the exception of Merchant Marine units, has an organizational value. This number represents the level of organization, morale and leadership capabilities for the unit. The number ranges from 0 to 100 with 100 representing a fully organized unit. Organization can decrease in several ways to represent changes in the organization, morale and leadership capabilities for the unit.

Units lose organization when they perform movement. The following rules determine the organization loss when units move:

- Infantry, airborne and mechanized units lose organization equal to twice the movement cost when moving into a site.

- Armor and mechanized units lose organization equal to the movement cost when moving into a site.

- The organization loss for land units moving into a site is doubled in winter and tripled in extreme winter.
- Airborne units lose 10, 25, 50 and 75 organization points when performing airdrop missions in fair, rain, winter and extreme winter, respectively.
- Air units lose organization equal to twice the number of sites they move.
- Naval units lose 10 organization points per mission.
- Land units lose 10 organization point each time they are strategically redeployed.
- Land and air units lose 10 organization points when moved by a naval transport mission.
- Marine units lose 10 organization points on a transport in an amphibious assault mission. Other land units lose 25 organization points.

The organization for a unit can never fall below 10 due to movement.

Units also lose organization when disengaging and/or retreating from combat. Any unit disengaging or retreating from combat loses 10 organization points.

Units also lose organization as a result of combat resolution. These losses are discussed in the section on Combat Resolution.

Finally, units may lose organization in encounters with partisans. These losses are discussed in the section on Intelligence. Any unit whose organization falls below 10 is immediately eliminated from the game.

## **Supply**

Land and air units are either in supply or out of supply. When land units are out of supply they suffer movement and combat



capability penalties. Air units cannot fly when out of supply. The details of supply determination and penalties are discussed in the section Supply Rules.

Naval units are resupplied whenever they end their movement in a port. Thereafter, when they move from port they may stay at sea for up to 8 naval phases. After a naval unit has been at sea for 8 naval phases without returning to port the naval unit is considered unsupplied and is eliminated from the game.

## Movement

Every unit in the game is rated for its movement capability. The movement capability determines how far a unit may move each turn. The movement capability of various units follows:

Unit Type	US	Britain	France	Germany	Italy	Russia
Infantry	4	4	3	4	3	3
Armor	6	6	5	6	5	5
Mechanized	6	6	5	6	5	5
Airborne	4	4	3	4	3	3
Marine	4	4	3	4	3	3
Fighter	8	8	8	8	8	8
Fighter/Bomber	10	10	10	10	10	10
Bomber	12	12	12	12	12	12
Destroyer	120	120	120	120	120	120
Cruiser	120	120	120	120	120	120
Battleship	120	120	120	120	120	120
Aircraft Carrier	120	120	120	120	120	120
Submarine	120	120	120	120	120	120
Transport	120	120	120	120	120	120
Merchant Marine	120	120	120	120	120	120

Every time a land unit moves there is an associated movement cost determined by the terrain and weather as well as the type of unit. Movement costs are given in the tables following. When crossing rivers or fortresses, land units must pay an additional half movement point.

<b>Unit Type</b>	<b>Clear</b>	<b>Forest</b>	<b>Rough</b>	<b>Mountain</b>	<b>Desert</b>	<b>Marsh</b>
Infantry	1.0	1.5	1.5	2.0	1.0	2.0
Armor	1.0	2.0	2.0	3.0	1.0	6.0
Mechanized	1.0	2.0	2.0	3.0	1.0	6.0
Airborne	1.0	1.5	1.5	2.0	1.0	2.0
Marine	1.0	1.5	1.5	2.0	1.0	2.0

*Movement Costs in Fair Weather*

<b>Unit Type</b>	<b>Clear</b>	<b>Forest</b>	<b>Rough</b>	<b>Mountain</b>	<b>Desert</b>	<b>Marsh</b>
Infantry	2.0	3.0	3.0	3.0	N	4.0
Armor	2.0	4.0	4.0	6.0	N	P
Mechanized	2.0	4.0	4.0	6.0	N	P
Airborne	2.0	3.0	3.0	3.0	N	4.0
Marine	2.0	3.0	3.0	3.0	N	4.0

*Movement Costs in Rainy Weather*

<b>Unit Type</b>	<b>Clear</b>	<b>Forest</b>	<b>Rough</b>	<b>Mountain</b>	<b>Desert</b>	<b>Marsh</b>
Infantry	4.0	4.0	4.0	4.0	N	4.0
Armor	3.0	6.0	6.0	P	N	6.0
Mechanized	3.0	6.0	6.0	P	N	6.0
Airborne	4.0	4.0	4.0	4.0	N	4.0
Marine	4.0	4.0	4.0	4.0	N	4.0

*Movement Costs in Winter Weather*

<b>Unit Type</b>	<b>Clear</b>	<b>Forest</b>	<b>Rough</b>	<b>Mountain</b>	<b>Desert</b>	<b>Marsh</b>
Infantry	4.0	4.0	4.0	4.0	N	4.0
Armor	3.0	6.0	6.0	P	N	6.0
Mechanized	3.0	6.0	6.0	P	N	6.0
Airborne	4.0	4.0	4.0	4.0	N	4.0
Marine	4.0	4.0	4.0	4.0	N	4.0

*Movement Costs in Extreme Winter Weather*

P = Prohibited

N = No such weather for this terrain

The movement cost for air and naval units is 1 per site regardless of the terrain or weather.

## Status Indicators

Status indicators can be displayed on both military and pictorial icons. There are 2 sets of status indicators that can be displayed

or not depending on the player's preference. The first set consists of indicators for the organizational and supply status of the unit. The second set consists of an indicator for the mission assignment status of the units. The status indicators are defined in the data tables in the section on Buttons

The organization status indicator takes 1 of 3 different colors. Green if the organization is greater than 66, yellow if it is between 33 and 66 and red if it is less than 33.

The supply status indicator will be either green or red. It is green when the unit is in supply and red when the unit is out of supply.

The mission assignment status indicator will either be solid or hollow. It is displayed as solid whenever the unit is assigned a mission. Otherwise, the center of the indicator is the same color as the unit.

### Unit Limits

Country	Max Units	Country	Max Units
Albania	4	Algeria	2
Arabia	2	Belgium	8
Britain	100	Bulgaria	8
Denmark	4	Egypt	6
Estonia	4	Finland	8
France	100	Germany	200
Greece	8	Holland	8
Hungary	8	Iraq	4
Ireland	4	Italy	100
Jordan	2	Latvia	4
Libya	2	Lithuania	4
Luxembourg	4	Morocco	2
Norway	8	Palestine	2
Persia	4	Poland	16
Portugal	8	Romania	12
Russia	125	Spain	24
Sweden	24	Switzerland	6
Syria	4	Tunisia	2
Turkey	24	United States	125
Yugoslavia	12		

Each country has a maximum number of units that can be in play at any given time. The limits are given in the preceding table.

Actions that would result in the number of units belonging to the country exceeding these limits are not allowed. Thus, if a country is at its limit it cannot split units or have new units deployed from the production cycle.

## **Land Units**

Land units include infantry, armor, mechanized, airborne and marine units. Military style land units have the combat strength displayed at the bottom of the unit. The combat strength is rounded to the nearest integer. The combat strength of the unit is a measure of the number of men, tanks, artillery, trucks, etc. represented by the unit.

Land units cannot move into sea sites. Land movement across straits is prohibited with few exceptions. When permitted, land movement across straits costs a full movement point in addition to that which would otherwise be incurred. Movement across straits is discussed in the subsection on Straits and Canals in the section on Special Rules.

Infantry units represent the foot soldiers in the military force structure. Infantry units are rated for their capability against ground, air and naval units and have a movement allowance of 4. Infantry units are relatively inexpensive to produce and have a defense multiplier in cities. They are limited by their offensive capabilities.

Armor units represent the armored assets in the military force structure. Armor units can move rapidly across open terrain and they possess excellent offensive capabilities. They are relatively expensive to produce and do not have the defense multiplier of other land units in cities.

Mechanized units represent the troop transport trucks, armored personnel carriers and light armor in the military force structure.

Mechanized units can move rapidly across open terrain and have

a defense multiplier in cities. They are relatively expensive to produce and do not possess the offensive capabilities of armor units. Airborne units represent the paratroopers in the military force structure. Airborne units are the only units that can be assigned to Air Drop missions. Airborne units are relatively expensive to produce, have a defense multiplier in cities and can negate the penalties imposed on other land units when attacking across rivers, straits and fortresses. Airborne units cost more to produce and take longer to produce than infantry units.

Marine units represent the amphibious assault forces in the military force structure. Marine units have a defense multiplier in cities and a combat factor multiplier when engaged in combat in coastal sites. Marine units cost more to produce and take longer to produce than infantry units.

## **Air Units**

Air units include fighter, fighter/bomber and bomber units.

Military style air units have the combat strength displayed at the bottom of the unit. The combat strength is rounded to the nearest integer. The combat strength of the unit is a measure of the aircraft represented by the unit.

Fighter units represent the interdiction and escort aircraft in the air force. Fighter units have excellent air-to-air combat capabilities but only moderate capabilities in air-to-ground and air-to-sea combat. They contribute nothing to strategic air attacks.

Fighter/bomber units represent the ground and fleet attack aircraft in the air force. Fighter/bomber units have excellent air-to-ground and air-to-sea combat capabilities but only moderate capabilities in air-to-air combat. They contribute nothing to strategic air attacks. The production costs for fighter/bomber units are greater than those for fighter units.

Bomber units represent the heavy bomber aircraft in the air force. Bomber units have excellent capabilities attacking strategic resources but only moderate capabilities in air-to-ground and air-to-sea combat. They have very poor air-to-air combat capabilities.



## Naval Units

Naval units include destroyer, cruiser, battleship, aircraft carrier, submarine, transport and Merchant Marine units. Military style air units have the combat strength displayed at the bottom of the unit. The combat strength is rounded to the nearest integer. The combat strength of the unit is a measure of the ships represented by the unit.

Destroyer units represent the destroyers in the navy. Destroyers have excellent anti-submarine warfare capabilities but only moderate capabilities in sea-to-sea and sea-to-air combat. They have very poor sea-to-ground combat capabilities. The production costs in time and resources for destroyer units are less than any other surface combatants.

Cruiser units represent the cruisers in the navy. Cruiser units have excellent sea-to-sea and sea-to-air combat capabilities but only moderate capabilities in anti-submarine warfare combat. They have very poor sea-to-ground combat capabilities. The production costs in time and resources are greater than those for destroyer units.

Battleship units represent the battleships in the navy. Battleship units have excellent sea-to-sea and sea-to-ground combat capabilities but only moderate capabilities in sea-to-air combat. They contribute nothing to anti-submarine warfare combat. The production costs in time and resources are greater than those for cruiser units.

Aircraft Carrier units represent the aircraft carriers and associated aircraft in the navy. Aircraft carrier units have excellent sea-to-sea, sea-to-air and sea-to-ground combat capabilities. They contribute nothing to anti-submarine warfare combat. The production costs in time and resources are greater than those for battleship units.

Submarine units represent the submarines in the navy. Submarine units have excellent sea-to-sea combat capabilities, have a combat factor multiplier on the first round of combat and are more difficult to intercept than surface units. They contribute



nothing to sea-to-air, sea-to-ground and anti-submarine warfare combat. The production costs in time and resources are similar

to those for destroyer units.

Transport units represent the ships in the navy capable of transporting land and air units. Transport units can transport a number of combat strength points of land and air units equal to their own combat strength. They contribute nothing to sea-to-sea, sea-to-air, sea-to-ground and anti-submarine warfare combat. The production costs in time and resources are less than those for destroyer units.

Merchant Marine units represent the ships that can transport resources. Merchant Marine units can transport an amount of resources equal to 10 times their combat strength. They contribute nothing to sea-to-sea, sea-to-air, sea-to-ground and anti-submarine warfare combat. The production costs in time and resources are less than those for destroyers and the same as those for transport units.

Merchant Marine units are different from other units in that they are never visible on the maps. They can be divided, combined and moved to a different sea zone through the use of the Examine Merchant Marine Box, only accessible during the Force Allocation Phase.

## THE MOUSE INTERFACE

High Command supports an efficient and user-friendly mouse interface. With the exception of occasional use of the **Esc** button, all input and game play functions are performed with the mouse. Selecting buttons on the Main Display consists of placing the mouse cursor over the button and clicking the left mouse button. This rule holds for the Scroll Pad, although an additional feature is supported: by placing the mouse cursor over the scroll pad and clicking the right mouse button the Tactical Map will scroll 3 sites instead of the 1 site that is scrolled when the left mouse button is clicked. Similarly, centering the Tactical Map on a location on the Strategic Map consists of placing the mouse cursor over the location on the Strategic Map and clicking the left mouse button.

All other game input and functions take place on the Tactical Map. These functions have been divided into 3 different classes. The functions of the mouse buttons in each of these classes are discussed in the following three sections.

### Map Browsing Mode

The Map Browsing Mode is the default mouse mode and is active whenever the Unit Assignment and Box Manipulation modes are not active. The Unit Assignment and Box Manipulation modes are defined in the following 2 sections. When the Map Browsing Mode is active input methods in the table following are available.

<b>Input Method</b>	<b>Effect of Input Method</b>
Left Mouse Click	Select Unit
Double Left Mouse Click	Examine Stack or Examine Merchant Marine
Right Mouse Click	Rotate Stack
Esc Button	Abort Mission; Assignment for the Selected Unit

**Rotate stack** is a function whereby the top unit of the stack is

placed on the bottom of the stack. Repeatedly using this function cycles through all units in the stack.

Finally, only the left mouse click is functional whenever the Examine Unit, Examine Site or Examine Stack modes are activated from the General Features Buttons or the Examine Merchant Marine mode is activated from the Phase Group Buttons for the Force Allocation Phase. When these modes are active the left mouse click selects the unit, site, stack, or sea zone, respectively.

### **Unit Assignment Mode**

The Unit Assignment mode is the mouse mode that is active when a unit has been selected for mission assignment. When this mode is active, input methods in the table following are available.

<b>Input Method</b>	<b>Effect of Input Method</b>
Left Mouse Click	Specify Next Hex in Path Assignment
Double Left Mouse Click	Terminate Mission Assignment
Right Mouse Click	No Effect
Esc Button	Abort Mission Assignment

Details of some of these input methods are discussed in later sections where appropriate.

### **Box Manipulation Mode**

The Box Manipulation Mode is the mouse mode that is active when a Box with function buttons is displayed over the Tactical or Strategic Maps. When this mode is active input methods in the table following are available.

<b>Input Method</b>	<b>Effect of Input Method</b>
Left Mouse Click	Select Button or Unit
Double Left Mouse Click	No Effect
Right Mouse Click	No Effect
Esc Button	Abort Current Operation

Details of some of these input methods are discussed in later sections where appropriate.

## **TERRITORIAL CONTROL**

Every land and coastal site on the map is always under the control of one of the countries represented in the game. During the game, however, control of sites can be transferred from one country to another. Transfer of control of sites typically occurs by one country capturing a site controlled by another country. However, control can also be transferred through conquests, liberations and other methods as described in the appropriate sections.

## **WEATHER**

Weather can play an important role in High Command. Weather affects movement, combat resolution and detection probabilities as described in appropriate sections.

Every site on the map is in 1 of 4 weather zones. The weather zones are Arctic, Temperate, Southern and Desert. The weather in each zone is independent of the others and may be clear, winter, or extreme winter. The boundaries between the zones, as well as the weather in the zones, depends on the time of year and the location on the map. For example, the boundary for the Arctic zone in winter will progress much farther south over Russia than in Western Europe. The only exceptions to the above are that the boundaries for the Desert zone are fixed and the weather is always assumed to be clear in the Southern and Desert zones. Weather zones and effects are included in the game by choosing Zones for the Weather option on the Options Screen. If this option is not chosen, the weather is always assumed to be fair in every site on the map.

Whenever fair weather is in effect for a weather zone, there is the possibility of rain zones developing in that zone. The probability, location and extent of these rain zones is based on actual historical weather data. Rain affects movement, combat resolution and detection probabilities.

Rain zones and effects are included in the game by choosing Rain for the Weather option on the Options Screen. This option can be chosen in conjunction with or in lieu of the Zones option.



## **POLITICAL ALIGNMENTS**

Every country in High Command is either Allied, Axis, or neutral. Furthermore, neutral countries always have a political alignment towards both the Allies and the Axis. The political alignments towards the Allies will be either Allied Friendly, Allied Neutral, or Allied Unfriendly. Similarly, the political alignments towards the Axis will be either Axis Friendly, Axis Neutral, or Axis Unfriendly. The neutral country may have any combination of political alignments towards the Allies and Axis. For example, a neutral country may be Allied Friendly and either Axis Friendly, Axis Neutral, or Axis Unfriendly at the same time.

Political alignments can change during the game through several different processes. Processes that change political alignments are: diplomatic initiatives, declarations of war, conquests, liberations, coups d'etat and violation of airspace.

### **Diplomacy**

Countries can allocate economic resources towards diplomatic initiatives targeted at specific countries. These initiatives can result in a political realignment of the targeted country. The realignment may take the form of a more friendly alignment towards the player performing the diplomatic initiative and/or a less friendly alignment towards the player's opponent.

If a country is friendly towards a player, then a positive political alignment shift towards that player will result in the country entering the war on the side of the player. Similarly, if a country is unfriendly towards the player's opponent, then a negative political alignment shift towards the player's opponent will result in the country entering the war on the side of the player. In either event, the player gains control of the country along with all of its territory, resources and units.

## DECLARATIONS OF WAR

Neutral countries enter the war as either Allied or Axis countries through declarations of war. Declarations of war occur in several different ways. First, a player can declare war on a neutral country at anytime by using the Declare War option. The neutral country responds by joining the opposing side.

Second, a player can attack a neutral country or units belonging to a neutral country. As with the declaration of war, the neutral country responds by joining the opposing side.

Third, diplomatic initiatives may persuade a neutral country to adopt a friendlier political alignment towards the player initiating the diplomatic initiatives and/or adopt a less friendly political alignment towards the opposing player. If the neutral country is friendly towards the initiating player and unfriendly towards the opposing player, the neutral country will join the initiating player. Results of diplomatic initiatives are discussed in more detail in the section on Diplomatic Results.

Fourth, covert activities can result in a coup whereby the neutral country joins the side instigating the coup. A country with any combination of political alignments can join the side of the player instigating the coup; that is, the country need not be friendly to the player instigating the coup. However, only certain countries are susceptible to coups. Coups are explained more fully in the section on Diplomatic Results.

Fifth, as the Axis units attack or declare war on countries, Britain and France may enter the war in response to these aggressions. Each time there is an attack or declaration of war on the part of the Axis, a check is performed to determine if Britain and France declare war on the Axis. The probability that Britain and France declare war is equal to the economic points of the country attacked divided by 100. However, if the country is adjacent or in very close proximity to Britain and France, then the probability is 33%. Countries considered to be neighbors or in close proximity are Italy, Spain, Ireland, Belgium, Holland, Luxembourg, Switzerland and Norway. Furthermore, these probabilities are cumulative. That is, the probabilities are summed for

each country that has been attacked by the Axis. However, the probability that Britain and France declare war is never permit-

ted to be greater than 75%. Finally, Britain and France will both immediately declare war any time the Axis attack or declare war on Britain, France, or Poland.

Sixth, as the Allies or the Axis attack or declare war on countries, Russia may enter the war. With 3 exceptions, this works exactly like the possibility that Britain and France may declare war on the Axis as described in the previous paragraph. The first exception has to do with the fact that Russia may declare war on either the Allies or the Axis, depending on who committed the aggression. The second exception has to do with the countries that are considered adjacent or to be in close proximity to Russia. Countries considered to be adjacent or in close proximity to Russia are Poland, Finland, Rumania, Turkey, Estonia, Latvia, Lithuania and Persia. Poland is a special case that is also subject to the special rules discussed in the section on the Ribbentrop-Molotov Pact. The third exception has to do with the probability for the Baltic States, which is 50% as opposed to 33% for all other adjacent or close proximity countries.

Finally, there are some restrictions on declarations of war. The restrictions are that the United States, Britain and France can never declare war on the Allies. Note that Italy and Russia can declare war on either side and that Germany begins every scenario as Axis.

## **Conquests**

Conquests are an integral part of the military campaigns in High Command. Every time a site with victory points is captured a check is performed to determine if the player capturing the site controls the country where the site is located. If the player does not control the country, then a check is performed to determine if the country is conquered. Two conditions must be satisfied for a conquest to occur. First, the player attempting the conquest must control the capital of the country. Second, the player attempting the conquest must control a sufficient number of victory points in the country as described in the following tables:

<b>Country</b>	<b>Max Units</b>	<b>Country</b>	<b>Max Units</b>
Albania	2	Algeria	4
Arabia	3	Belgium	2
Britain	36	Bulgaria	3
Denmark	6	Egypt	5
Estonia	4	Finland	3
France	16	Germany	43
Greece	4	Holland	3
Hungary	2	Iraq	3
Ireland	4	Italy	22
Jordan	2	Latvia	5
Libya	9	Lithuania	3
Luxembourg	5	Morocco	3
Norway	4	Palestine	2
Persia	4	Poland	6
Portugal	3	Romania	5
Russia	78	Spain	15
Sweden	8	Switzerland	4
Syria	2	Tunisia	5
Turkey	12	United States	
Yugoslavia	4		

#### *Nominal Victory Points For Conquest*

When a conquest occurs, the conquered country becomes the property of the country performing the conquest. All land units belonging to the conquered country are eliminated from the game. Air and Naval units belonging to the conquered country are randomly dispensed with in 1 of 3 ways; they may be captured, they may escape to a country controlled by the same player that controlled the conquered country before the conquest, or they may be eliminated from the game. Units escaping to another country become units of that country. The color and ownership of the units change, but all other attributes remain unchanged.

#### **Liberations**

To be liberated a country must have been conquered by the enemy. Liberation is similar to a conquest with 2 exceptions. First, the capital and all victory points in a country must be taken in order for the country to be liberated. Second, when a lib-

eration occurs, the liberated country becomes sovereign again;  
that is, it does not become the property of the liberating country.

## **Coups D'Etat**

Countries can allocate economic resources towards intelligence initiatives targeted at specific countries. In addition to various purposes such as intelligence gathering and supporting underground activities, intelligence initiatives can result in a political realignment of the targeted country through a coup d'etat. The probability of achieving a coup d'etat depends on the targeted country. For example, Hungary is more susceptible to a pro-Axis coup d'etat than is Greece. The probability of achieving a coup d'etat also depends on the player performing the covert activity so that Iraq is more susceptible to a pro-Axis coup d'etat than to a pro-Allied coup d'etat. Details regarding the probability of achieving a coup d'etat are discussed under Political Allocation in the section on Resource Allocation.

Whenever a coup d'etat takes place, the player initiating the coup d'etat gains control of the country along with all of its territory, resources and units.

## **Overflights**

A player's air units may fly over politically friendly countries without risk of political retribution. However, overflights of politically neutral or unfriendly countries run the risk of alienating the country whose airspace is violated. When a politically neutral or unfriendly country's airspace is violated there is a probability that the country will undergo a political realignment. The realignment may take the form of a less friendly alignment towards the player overflying the country and/or a more friendly alignment towards that player's opponent.

If a country is unfriendly towards the player overflying the country, then a less friendly political alignment shift towards that player will result in the country entering the war on the side of the player's opponent. Similarly, if a country is friendly towards the player's opponent, then a more friendly political alignment shift towards the player's opponent will also result in the country entering the war on the side of the player's opponent. In either

event, the player's opponent gains control of the country along with all of its territory, resources and units.



## **DETECTION**

Units in High Command are either detected or undetected by each player. Units detected by 1 player can be detected by the other and vice versa. Only those units that are detected by a player are visible to the player. If Complete is chosen for the Detection option, then all units are detected by both players at all times. Therefore, each player can see every unit in play. If, on the other hand, Limited is chosen for the Detection option, units can be either detected and visible or undetected and invisible

### **Detection Rules**

Units belonging to a country controlled by the player or to friendly neutral countries are always detected and visible to the player without exception. Units belonging to enemy countries and non-friendly neutral countries may or may not be detected by the player. A given enemy or neutral unit is immediately detected by the player whenever one of the following automatic detection rules occurs.

- The unit moves into a site controlled by the player.
- The unit is detected as the result of intelligence activities.
- The unit is detected as the result of underground activities.
- The unit is in a stack with another detected unit.
- The unit conducts any type of combat against the player.

In addition to the above methods of being detected, an enemy or neutral unit may become detected whenever it is adjacent to a unit or units controlled by the player. Unlike the methods above, this method does not automatically take place; there is only a probability that this type of detection will occur. The probability of detection depends on the terrain and weather in the hex containing the unit. The detection modifiers for terrain and weather are given in the tables following.

<b>Terrain</b>	<b>Terrain Modifier</b>
Clear	1.00
Rough	0.75
Desert	1.00
Forest	0.50
Sea	1.00
Marsh	0.75
Mountain	0.50

*Detection Terrain Modifiers*

<b>Weather</b>	<b>Weather Modifier</b>
Fair	1.00
Rain	0.75
Winter	0.50
Extreme Winter	0.25

*Detection Weather Modifiers*

At the end of each impulse of the Land Execution Phase, the computer checks the location of undetected units to adjacent enemy units. In these cases the computer calculates the probability of detection as the product of the terrain and weather modifiers and determines if the unit should become detected. If the unit is detected, it immediately becomes visible to the player. The unit remains detected for the duration of the turn.

## **Undetection**

Enemy and neutral units that are detected may become undetected at the end of the turn. The probability of becoming undetected depends on the terrain and weather in the hex containing the unit. The undetection modifiers for terrain and weather are given in the following tables.

<b>Terrain</b>	<b>Terrain Modifier</b>
<b>Clear</b>	0.25
<b>Rough</b>	0.50
<b>Desert</b>	0.25
<b>Forest</b>	0.75
<b>Sea</b>	0.25
<b>Marsh</b>	0.50
Mountain	0.75

*Undetection Terrain Modifiers*

<b>Weather</b>	<b>Weather Modifier</b>
Fair	0.25
Rain	0.50
Winter	0.75
Extreme Winter	1.00

*Undetection Weather Modifiers*

At the end of each turn the computer calculates the probability of becoming undetected as the product of the undetection terrain and weather modifiers and determines whether the unit becomes undetected. If the unit is undetected it immediately becomes invisible to the player and remains invisible until it is detected once again. If the unit does not become undetected but remains detected, then it is detected and visible to the player for the duration of the following turn.

## **SUPPLY**

Supply, and the logistics required to deliver it, are an important element in warfare. Supply is used to represent the food, ammunition, fuel, medicine and various other material essential to a fighting force. Cutting the supply lines to an enemy force with the resulting loss of supply can seriously handicap the enemy force. Consequently, inclusion of supply rules is an important aspect of a wargame. The game includes sophisticated supply rules that simulate those that must be considered by the High Command and battlefield commanders. The rules can significantly affect game play.

### **Supply Centers**

Supply is available to units from supply centers. Supplied cities controlled by the player constitute supply centers for that player's land and air units. Capitals and ports are always considered to be in supply. Any city within 6 sites of a supplied city is also in supply, provided the cities are connected by a controlled path. A network of supplied cities can exist, each tracing a supply path, either directly or through a series of other supplied cities, back to a capital or port.

Transports in a coastal site can also form a supply center for land and air units. There must be at least 2 combat strength points of transports on the site and they must be on a coastal site. The supply rules for this coastal site are the same as for any other supply center. Note that once the transports depart from the coastal site it is no longer considered a supply center.

Supply centers for naval units are different from those for land and air units. Only ports controlled by the player serve as supply centers for that player's naval units.

### **Land Units**

To be in supply, a land unit controlled by the player must be connected by a controlled path of no more than 6 sites to a supplied

city also controlled by that player. The path must be no greater in length than the minimum distance between the unit and the supplied city.

Supply for land units is determined at the beginning and at the end of the Land Execution Phase. Thus, if a land unit is in supply at the start of the phase, then it will remain in supply throughout the phase. Similarly, if a land unit is out of supply at the start of the phase it will remain out of supply during the entire phase. The supply status of a land unit cannot change during the Land Execution Phase.

When a land unit is out of supply it suffers a movement penalty. Armor and mechanized units suffer a loss of 3 movement points when out of supply. Infantry, airborne and marine units suffer a loss of 2 movement points when out of supply. In addition to the movement penalty, land units suffer an organization penalty. If the organization of the unit is greater than 50, then the organization is reduced to 50. If the organization is less than 50 then it is reduced by 10. Finally, each impulse that a unit is out of supply it suffers an additional 2 points loss in organization. This means that if the unit is not resupplied, its organization will eventually reach a point where the unit withers away and is eliminated. When a land unit comes back into supply the movement penalty is removed and the unit's movement points are restored. Organization is not restored, however. It must be recovered in the usual manner at the start of a new turn.

## **Air Units**

To be in supply, an air unit controlled by the player must be based in a supplied city. An air base is considered to be a city for this purpose.

Supply for air units is determined at the beginning of each the Air Allocation Phase. The supply status of air units cannot change during the air allocation or air execution phase. Thus, the status of an air unit at the start of the Allocation Phase remains unchanged throughout the air allocation and execution phase.

An air unit cannot fly any missions when out of supply. When an air unit comes back into supply it may once again fly missions without restriction. There are no movement or organization penalties for air units that are out of supply.

## **NAVAL UNITS**

Naval units require supply, but supply is treated quite differently for naval units. The difference is so distinct that instead of referring to supply we refer to turns at sea. Typically, naval units dock at a port where they are resupplied. They then return to sea where they can remain for some period of time before they have to return to port for supplies.

Naval units in High Command can only remain at sea for a maximum of 8 naval phases from the time that they last left a port. When a naval unit returns to a port it is resupplied and may once again go back to sea for up to 8 naval phases. If a ship is still at sea on the 8th consecutive naval phase, then the player will receive a warning that the units should be returned to port for supply. Any ships still at sea after 8 consecutive naval phases will be eliminated.

## **STACKING LIMITS**

Due to the large area of a site in High Command, a large number of forces can be in a site at any given time. However, because of practical program design limitations, a player may never have more than 18 units in a site at any given time. This stacking limit can have important ramifications in the game. For example, if a set of units is assigned to move to a site and the movement would exceed the stacking limits for that site, then the units will not be moved.

Stacking limits do not apply to air and naval units in motion unless the site is at either end point of the path of the units. For example, an air unit assigned to a reconnaissance mission may overfly a site with a stack of 18 friendly units, but the reconnaissance site may not show a stack of 18 friendly units.



## **SURPRISE ATTACKS**

Neutral countries are subject to surprise attacks. When a neutral country is attacked it is considered a surprise attack, and the surprised country suffers a combat disadvantage throughout this phase. Combat factors against the surprised country are divided by 4, 10, or 2 throughout the land, air and naval phases, respectively.

There is a special surprise attack rule for Russia. When a surprise attack against Russia occurs, combat factors for Russia are 12.5% of their normal values for the duration of the surprise attack turn. On subsequent turns, the combat factors for Russia are increased by 12.5% of their normal values over their values on the preceding turn. Thus, normal combat factors are obtained on the 7th turn after the surprise attack turn.

## NEUTRAL DEVELOPMENT

Although not in the war and under the control of one of the players, major neutral countries still experience growth and qualitative improvement of combat units. Economic growth occurs at the end of each month at the rate of 1/4% per month. Unit attribute improvements occur at the end of September 1940, May 1941, September 1942, May 1943, and May 1944. At the end of each of these months, each attribute listed in the table following increases by 5.

<b>Unit Type</b>	<b>Attribute</b>
Armor	Ground-to-Ground Combat Capability
Fighter	Air-to-Air Combat Capability
Fighter/Bomber	Air-to-Ground Combat Capability
Fighter/Bomber	Air-to-Sea Combat; Capability
Bomber	Strategic Bombing Capability
Destroyer	Anti-Submarine Warfare Capability
Cruiser	Anti-Air Capability
Aircraft Carrier	Sea-to-Ground Combat Capability
Aircraft Carrier	Sea-to-Air Combat Capability
Aircraft Carrier	Sea-to-Sea Combat Capability
Submarine	Stealth Capability

### *Neutral Unit Attributes that Improve*

The production at factory, shipbuilding, oil and mining sites in neutral countries also grows at the end of each month. The rate of growth is 1/4% per month. Note that this growth is for all such sites in neutral countries whereas automatic economic growth and improvement in unit attributes occurs only in major neutral countries.

## **SPECIAL RULES**

Due to the complex nature of World War II in Europe it is all but impossible to adequately represent the conflict without the use of special rules. Consequently, High Command makes use of several special rules that can dramatically impact game play. It is highly recommended that the serious player of High Command become very familiar with these special rules, described in detail in the following sections.

### **Pacific Theater**

The progress of the war against Japan had an important effect on the Allied war effort in Europe. This was particularly true for the United States and Britain. In order to account for the progress of the war in the Pacific and to allow a certain amount of what-if speculation, options have been provided for the player to specify the progress of the war against Japan. The options have varying degrees of effect on the resources that the United States and Britain have available to be allocated to the war in Europe. The 3 options and their effects are described in the section on Game Options.

### **United States**

The United States is represented in the upper left corner of the maps. The United States is treated in exactly the same manner as any other country. However, movement in the region around the United States is restricted. Note the exclusion boundary in the ocean near the United States. This boundary defines an exclusion zone around the United States that is used to represent the fact that the United States is farther away from Europe than shown on the map. The exclusion boundary imposes restrictions on unit movement so that Axis units may never move into the exclusion zone and Allied units may move into the exclusion zone

only if the United States is Allied.

## **BRITISH COMMONWEALTH**

Britain was supported by the British Commonwealth during the War. The Commonwealth was a federation of countries, colonies and territories that possessed significant oil and mineral resources. The British Commonwealth is represented east of the United States in the upper left corner of the maps. The British Commonwealth is treated in exactly the same manner as any other territory. However, movement in the region around the British Commonwealth is restricted. Note the exclusion boundary in the ocean near the Commonwealth. This boundary defines an exclusion zone around the Commonwealth that is used to represent the fact that the Commonwealth is scattered in many parts of the world and is farther away from Europe than shown on the map. The exclusion boundary imposes restrictions on unit movement so that Axis units may never move into the exclusion zone and Allied units may move into the exclusion zone only if Britain is Allied.

## **German Oil Imports**

Germany imported significant quantities of oil before Allied naval blockades were put into effect. Most of the oil that Germany imported came from oil fields in Venezuela and the Southern Caribbean. Since these oil fields were so important to Germany before the Allied naval blockades, they are represented on the left edge of the maps directly west of Spain. This area is referred to as German Imports and only Germany can have access to the oil there. Otherwise, this area is treated like any other. However, movement in the region around German Imports is restricted. Note the exclusion boundary in the ocean near the German Imports. This boundary defines an exclusion zone that is used to represent the fact that these oil fields are farther away from Europe than shown on the map. The exclusion boundary imposes restrictions on unit movement so that no units, either Allied or Axis, may ever move into the exclusion zone.

## **Straits and Canals**

High Command includes straits and canals that can prohibit

naval movement that would otherwise be allowed under the general naval movement rules. The straits and canals included in High Command for this purpose are The Kiel Canal, The Straits of Gibraltar, The Bosphorus and The Suez Canal.

Each strait or canal consists of 2 or more sites. The Kiel Canal consists of 4 sites, The Gibraltar Straits consist of 2 sites and The Suez Canal and The Bosphorus each consist of 3 sites. The exact sites comprising the strait or canal can be easily determined by examining sites in the location of the strait or canal.

Naval units are permitted to move through a strait or canal only if the player controlling the naval units also controls all sites comprising the strait or canal. There is one exception to this rule. In order to move through The Straits of Gibraltar the player need only control the site that contains the port of Gibraltar. Note that this implies that only the player controlling the port of Gibraltar may move naval units through the straits.

The straits also permit land movement between some sites whose common side consists entirely of water other than or canals. The straits included in High Command for this purpose are Denmark (2), Sicily and The Bosphorus. Land movement across these straits, otherwise prohibited, is now permitted. However, movement across these straits costs an additional movement point to what would be incurred if the common side of the sites were connected by land. Note that this implies that the units will always require 2 impulses to cross straits.

### **Ribbentrop-Molotov Pact**

On August 23, 1939, German Foreign Minister Joachim Von Ribbentrop met secretly with Soviet Foreign Minister Vyacheslav Molotov in Moscow. During that meeting, an agreement was reached that came to be known as the Ribbentrop-Molotov Pact. Basically, the agreement guaranteed that Russia would not retaliate against a German invasion of Poland if Germany agreed to partition Poland and give the eastern portion to Russia, hand over the Romanian province of Bessarabia to Russia and allow

Russia a free hand in the Baltic Republics of Estonia, Latvia and Lithuania. Just slightly over a week after the agreement,



Germany invaded Poland. In short order Poland was conquered and partitioned and Russia occupied Bessarabia and the Baltic Republics.

High Command includes special rules to account for this important pre-war agreement. The Ribbentrop-Molotov Pact is considered to be in effect at the beginning of the 1939 Scenario and remains in effect through December 1939. During this period, Germany can invade Poland without any retaliation from Russia. When Poland is conquered the country is automatically partitioned with the eastern portion being granted to Russia. Additionally, control of the Romanian province of Bessarabia and the Baltic republics of Estonia, Latvia and Lithuania will be granted to Russia at that time, provided those countries are neutral. If, on the other hand, Germany invades Poland after December 1939, the conquest of Poland occurs as with any other country and the status of Bessarabia, Estonia, Latvia and Lithuania do not change.

Attacking Poland before the end of December 1939 in accordance with the Ribbentrop-Molotov Pact is not without cost for the Axis Player. It is assumed that the Spanish Dictator General Francisco Franco did not approve of the agreement between Germany and Russia. Accordingly, if Germany attacks Poland in accordance with the Ribbentrop-Molotov Pact, then the probability of Spain responding positively to Axis diplomatic overtures is significantly reduced. If, on the other hand, Germany attacks Poland after December 1939, then there is no effect on Spain. There is, however, the possibility that Russia will be provoked into declaring war on the Axis.

## **VICHY FRANCE**

When Germany conquered France in June 1940, the northern part of the country, including Paris, was occupied by the Germans. The southern part of the country, however, was put under the control of a puppet government that was established in the city of Vichy. This government is sometimes referred to as Vichy France and was under the leadership of Marshall Philippe Petain. Many Frenchmen overseas, however, decided to fight the

Germans alongside the British. These forces rallied around the

leadership of General Charles De Gaulle and were referred to as the Free French.

Historically, the French forces in the territories of Morocco, Algeria, Tunisia and Syria sided with the Vichy government. However, had circumstances been slightly different, they may very well have sided with the Free French. High Command includes special provisions to account for the existence of Vichy France and the Free French. If Germany conquers France, then the territories of Morocco, Algeria, Tunisia and Syria will either become Vichy or Free French, provided they are under the control of France at the time of the conquest. If the Historical option is in effect then the territories will become Vichy. If, on the other hand, the Random options is in effect, then each territory will have a 50% chance of becoming Vichy and a 50% chance of becoming Free French. The players will be notified as to the result for each of the territories.

### **Lend-Lease**

During the course of the war, the United States supplied vast resources to the other Allied countries. This program was known as Lend-Lease. This program can easily be recreated once the United States has entered the war. However, under this program, Britain was supplied with war materiel before the United States was at war with the Axis. Of particular importance was the transfer to Britain of destroyers in September 1940.

High Command includes special provisions to account for this American willingness to help the Allies. If Historic is chosen for the Progress option, then the transfer of destroyers will occur in September 1940. If, however, Random is chosen for the progress option, then the transfer of destroyers will occur randomly. On and after July 1940 there is a 20% chance each turn that the United States will transfer the destroyer units to the Allies. If the destroyers have not been transferred by November 1940, they will automatically be transferred then.

The United States must be Allied friendly and not be Axis friendly

for the transfer to occur. The transfer will go to Britain if that country is Allied. If not, then the transfer will go to France. If

France is not Allied, then the transfer will go to Russia, provided it is Allied. The destroyers will be transferred to a sea site near the coast of the receiving country and the Allied player will be notified of the transfer.

### **Russian Far-East Reinforcements**

Soon after the German invasion the Russians began redeploying forces from the Far-East to the heartland to defend Mother Russia. Most of these forces were among the finest in the Red Army. At first Russia was hesitant to redeploy these forces since they served as a defense against Japanese territorial ambitions in the eastern regions of the Soviet Empire. The situation changed drastically after the Japanese attack on Pearl Harbor, however. At this time the situation was critical in the Russian heartland as the Axis had surrounded Leningrad, made stunning advances in the south of Russia and were threatening Moscow itself. This, coupled with the American entry into the war and its resulting counter-weight to Japanese ambitions on the Pacific rim, was all that was needed for the Russians to begin redeploying forces from the Far-East.

High Command includes special provisions to account for the Russians' ability to redeploy these forces from the Far-East. If Historic is chosen for the Progress option, then the redeployment of the Far-East forces to the heartland will occur in December 1941. If, however, Random is chosen for the Progress option, then the transfer of the far-east reinforcements will occur randomly. On and after December 1941 there is a 25% chance each turn that the redeployment of the forces will occur.

When the forces are redeployed they appear in Kazan, Kuybyshev, Saratov, Stalingrad, Perm, Urals and Astrakhan. Should any of these cities not be controlled by Russia at the time of the redeployment, then the forces dedicated to that city do not redeploy.

Finally, the number of forces that redeploy depend on the option chosen for the Pacific War. If Historic is chosen, then the full complement of forces are redeployed. If Stalemate is chosen, then

only half of the forces redeploy. If Japanese Victory is chosen, then none of the forces redeploy.

## **DELEGATION OF AUTHORITY**

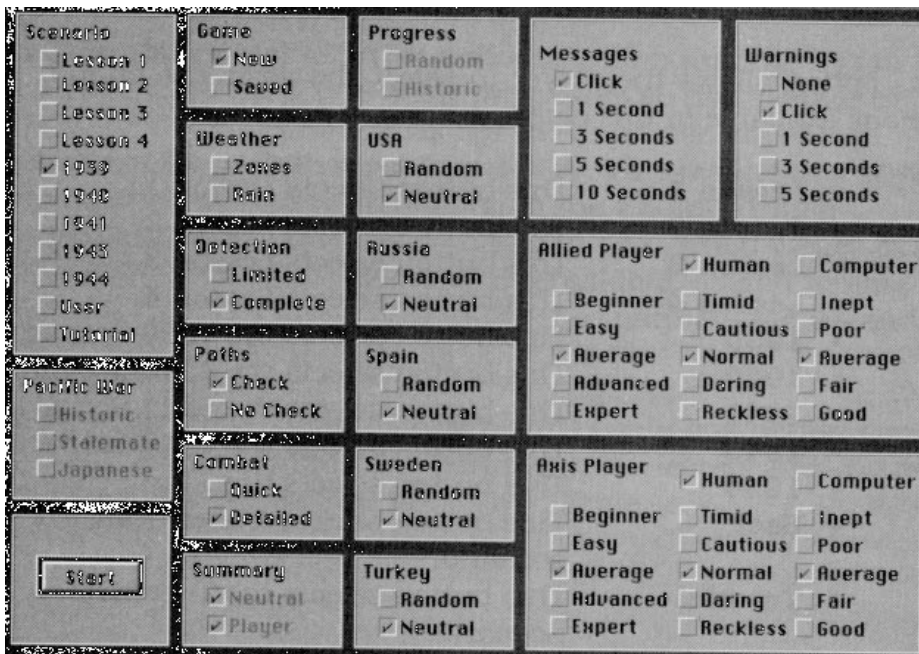
High Command allows the player to delegate responsibility for numerous actions to the player's computer-assisted High Command. The computer acts as the player's subordinates in these situations. In all cases, the player can review the computer's actions and negate and modify those actions as desired. The following sets of actions can be delegated to the computer-assisted High Command:

- Force Allocation
- Resource Transportation
- Production
- Political Allocation
- Air Mission Assignment
- Naval Mission Assignment
- Land Mission Assignment

As you can see, delegation of authority in High Command provides a great deal of flexibility as to what the player can choose to control. This feature allows the player to actively control those aspects of the war that are of particular interest and delegate the others to the High Command. As a consequence, the player can just sit back and dictate the grand strategy to be implemented by subordinates or micro-manage the myriad decisions of any or all of the different phases of the game. Details regarding delegation of authority are described in the appropriate sections

## GAME OPTIONS

After the opening sequence you will see the Options Screen. The Options Screen is where the player specifies the various options desired for the game. The screen has several categories of options. Each category of options is enclosed in a box with the title of the option category printed in the upper left corner of the box. Below the title are 2 or more buttons with the option corresponding to the button printed in black text just to the right of the button.



*The Game Options Box*

An option is selected whenever the button is depressed and flagged with a check-mark. Frequently, an option is not available. In this case, the option title printed to the right of the button will be displayed in gray text.

Some option categories only allow one option at a time to be selected. Typically, these options toggle between two exclusive options. Other option categories allow more than one option at a time to be selected. The following sections specify the rules for each option category.



It is important to note that the availability of many options depend on other options. For example, the Historic and Random progress options for the game are only available if one (or more) of the players is (are) controlled by the computer. Otherwise, the option is meaningless. In this case whenever the computer is chosen to control one of the players, the Historic and Random progress options are available. Conversely, whenever the computer is not chosen to control one of the players, these options are disabled.

## Scenario

This option allows the player to select the desired scenario. The options available in this category are:

<b>Lesson 1</b>	This button selects Lesson 1.
<b>Lesson 2</b>	This button selects Lesson 2.
<b>Lesson 3</b>	This button selects Lesson 3.
<b>Lesson 4</b>	This button selects Lesson 4.
<b>1939</b>	This button selects the 1939 Scenario.
<b>1940</b>	This button selects the 1940 Scenario.
<b>1941</b>	This button selects the 1941 Scenario.
<b>1943</b>	This button selects the 1943 Scenario.
<b>1944</b>	This button selects the 1944 Scenario.
<b>User</b>	This button selects a user-designed scenario.
<b>Tutorial</b>	This button selects the Tutorial Scenario.

The button labeled **User** is used to access user-designed scenarios that can be created or edited with the High Command Scenario Editor.

The rules for this option category are 1) only one option can be selected and 2) one option must always be selected.

## Pacific War

This option category allows the player to specify the progression

of the war in the Pacific. The options available and their effects are:

Historic	This option specifies that the war in the Pacific progresses as it did historically. No effect on US and British resources.
Japanese	This option specifies that the war in the Pacific progresses to a Japanese victory. This results in a 40% reduction in the US and British economies and production values of all factory, shipbuilding, oil and mining sites under the control of the US and Britain.
Stalemate	This option specifies that the war in the Pacific progresses so that neither the Allies nor the Japanese are able to achieve victory. This results in a 20% reduction in the US and British economies and production values of all factory, shipbuilding, oil and mining sites under the control of the US and Britain.

The rules for this option category are 1) only one option can be selected, 2) one option must always be selected and 3) these options cannot be changed for a saved game.

## Game

This option category allows the player to specify whether a new or saved game is to be played. This applies to the scenario selected under the Scenario option category. The options available and their effects are:

New	This option selects a new game.
Saved	This option selects the saved game for the selected scenario. All other option selections in all categories on all screens will be set to the values used in the saved game.

The rules for this option category are 1) only one option can be selected and 2) one option must always be selected.

## **Weather**

This option category allows the player to specify the weather options for the game. The options available and their effects are:

Zones	This option specifies whether or not weather zones are used during the game. If selected, weather zones are used. If not selected, weather zones will not be used and all sites will have fair weather every turn.
Rain	This option specifies whether or not rain zones are generated during the game. If selected, rain zones may be generated in fair weather zones. If not selected, rain zones will not be generated.

The rules for this option category are 1) any number of options can be selected and 2) these options can be changed for saved games.

## **Detection**

This option category allows the player to specify which detection mode will be in effect. The options available and their effects are:

Limited	This option specifies that the detection rules are in effect and that only those units detected by a player are visible to that player.
Complete	This option specifies that all units are always detected by both players so that all units are always visible to both players. Since this option negates the purpose of reconnaissance missions and

intelligence, all buttons concerning

reconnaissance missions and intelligence are disabled and all game actions relating to intelligence are eliminated. Since intelligence activities are eliminated, the economy of every country is reduced by 10%.

The rules for this option category are 1) only one option can be selected, 2) one option must always be selected and 3) these options cannot be changed for a saved game

## **Paths**

This option category allows the player to specify whether path checking will be performed during resource transportation. The options available and their effects are:

Check	This option specifies that path checking is to be performed during resource transportation. That is, a controlled path between the resource origination and destination sites must exist before resource transportation can take place. This option results in slightly slower game play in 2 ways than is the case when the No Check option is chosen. First, when a human player selects a resource transportation destination site, there will be a slight delay before the Resource Transportation Box is displayed since the computer must confirm that a controlled path exists. If one does not exist, the player will be notified of this fact. Second, when the computer is performing resource transportation, whether for a computer player or a human player, the completion of the resource transportation by the computer requires a longer time than is the case when the No Check option is cho-
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sen. This is because the computer performs detailed checks to determine the

resource sites under its control that are connected by controlled paths. Thus, the player must be prepared to accept significantly longer computer processing times when choosing this option.

No Check      This option specifies that path checking is not to be performed and that Merchant Marine are not required during resource transportation. Instead, a controlled path between the origination and destination sites is always assumed to exist and any amount of resources can be transported between the origination and destination sites. Since this option does not require Merchant Marine for resource transportation, it results in the elimination of all Merchant Marine units and the disabling of the Merchant Marine Escort and Merchant Marine Attack missions in the naval allocation phases and the disabling of the Examine Merchant Marine button in the Phase Button Group in the Force Allocation phase.

The rules for this option category are 1) only one option can be selected, 2) one option must always be selected and 3) these options cannot be changed for a saved game.

## **Combat**

This option category allows the player to specify whether detailed or quick combat resolution will be used. The options available and their effects are:

Quick      This option sets inflated losses in combat so that the number of rounds of



combat required to eliminate one of the combatants is reduced. The losses are

inflated such that, in general, one of the combatants will be eliminated in the first round. The total losses incurred by each combatant will, in general, be equal to those that would have been incurred through detailed combat continued to the elimination of one of the combatants. This option speeds game play at the expense of sacrificing options for retreat and disengagement during the combat.

Detailed	This option sets the standard losses in combat so that multiple rounds of combat will ensue with each side having the option to retreat or disengage some or all of their units from the combat.
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The rules for this option category are 1) only one option can be selected, 2) one option must always be selected and 3) these options can be changed for a saved game.

## Summary

This option category allows the player to specify which boxes will be displayed during combat resolution. The options available and their effects are:

Neutral	This option specifies that the Combat Status Box be displayed.
Player	This option specifies that the Combat Summary Box be displayed after combat resolution.

The rules for this option category are 1) the Combat Status Box will always be displayed for 2 human players to serve as a buffer screen between the Combat Options Box and/or Combat Summary Box for each of the players, 2) these options can be changed for a saved game and 3) the Player option affects both the Axis and Allied players.



## PROGRESS

This option category allows the player to specify whether the computer player will act in a historical or random manner. The options available and their effects are:

Random	This option specifies that the computer player is to act in a random manner. The computer player's actions will likely be very different what occurred historically. Additionally, development of rockets and atomic bombs will occur randomly based on investment in these technologies.
Historic	This option specifies that the computer player is to act in a historic manner. Thus, attacks on other countries, voluntary declarations of war and amphibious invasions will occur at the same time as they did historically unless such events have been precluded by the actions of a human player. Additionally, development of rockets by Germany and the atomic bomb by the US will occur as they did historically. No other development of rockets and atomic bombs will occur. Since this option negates the purpose of diplomatic initiatives, all buttons concerning diplomacy are disabled and all game actions relating to diplomacy are eliminated. Since diplomatic activities are eliminated, the economy of every country is reduced by 10%.

The rules for this option category are 1) an option can be selected only if there is a computer player, 2) these options are not available for the lesson scenarios, 3) only one option can be selected and 4) these options cannot be changed for a saved game.

## **UNITED STATES**

This option allows the player to specify whether the US will enter the war randomly or whether the US will remain neutral for the entire war. The options available and their effects are:

Neutral	This option specifies that the US will remain neutral for the entire war unless attacked.
Random	This option specifies that the US will respond randomly subject to the actions of other countries involved in the war.

The rules for this option category are 1) these options are only active if the Random option has been chosen for the Progress option category on the Options Screen, 2) only one option can be selected, 3) one option must always be selected and 4) these options cannot be changed for a saved game.

## **Russia**

This option allows the player to specify whether Russia will enter the war randomly or whether Russia will remain neutral for the entire war. The options available and their effects are:

Neutral	This option specifies that Russia will remain neutral for the entire war unless attacked.
Random	This option specifies that Russia will respond randomly subject to the actions of other countries involved in the war.

The rules for this option category are 1) these options are only active if the Random option has been chosen for the Progress option category on the Options Screen, 2) only one option can be selected, 3) one option must always be selected and 4) these

options cannot be changed for a saved game.

## Spain

This option allows the player to specify whether Spain will enter the war randomly or whether Spain will remain neutral for the entire war. The options available and their effects are:

Neutral	This option specifies that Spain will remain neutral for the entire war unless attacked.
Random	This option specifies that Spain will respond randomly subject to the actions of other countries involved in the war.

The rules for this option category are 1) these options are only active if the Random option has been chosen for the Progress option category on the Options Screen, 2) only one option can be selected, 3) one option must always be selected and 4) these options cannot be changed for a saved game.

## Sweden

This option allows the player to specify whether Sweden will enter the war randomly or whether Sweden will remain neutral for the entire war. The options available and their effects are:

Neutral	This option specifies that Sweden will remain neutral for the entire war unless attacked.
Random	This option specifies that Sweden will respond randomly subject to the actions of other countries involved in the war.

The rules for this option category are 1) these options are only active if the Random option has been chosen for the Progress option category on the Options Screen, 2) only one option can be selected, 3) one option must always be selected and 4) these

options cannot be changed for a saved game.



## Turkey

This option allows the player to specify whether Turkey will enter the war randomly or whether Turkey will remain neutral for the entire war. The options available and their effects are:

Neutral	This option specifies that Turkey will remain neutral for the entire war unless attacked.
Random	This option specifies that Turkey will respond randomly subject to the actions of other countries involved in the war.

The rules for this option category are 1) these options are only active if the Random option has been chosen for the Progress option category on Options Screen 1, 2) only one option can be selected, 3) one option must always be selected and 4) these options cannot be changed for a saved game.

## Messages

This option category allows the player to specify how long Message Boxes will be displayed on the screen. The options available and their effects are:

Click	This option removes the Message Boxes upon a click of the left mouse button.
1 Second	This option removes the Message Boxes after being displayed for 1 second.
3 Seconds	This option removes the Message Boxes after being displayed for 3 seconds.
5 Seconds	This option removes the Message Boxes after being displayed for 5 seconds.
10 Seconds	This option removes the Message Boxes after being displayed for 10 seconds.

The rules for this option category are 1) only one option can be selected, 2) one option must always be selected and 3) these options can be changed for a saved game.

## **Warnings**

This option category allows the player to specify how long warnings and error messages will be displayed in the Message Bar. The options available and their effects are:

None	This option specifies that warnings and error messages are not to be displayed in the Message Bar.
Click	This option specifies that warnings and error messages are removed upon a click of the left mouse button.
1 Second	This option specifies that warnings and error messages are removed after being displayed for 1 second.
3 Seconds	This option specifies that warnings and error messages are removed after being displayed for 3 seconds.
5 Seconds	This option specifies that warnings and error messages are removed after being displayed for 5 seconds.

The rules for this option category are 1) only one option can be selected, 2) one option must always be selected and 3) these options can be changed for a saved game.

## **Allied Player**

This option category is different from the others in that it is actually 4 separate sets of categories that are used to specify the options for the intelligence, personality and odds adjustment for the Allied player and whether the player is human or computer.

## **Allied Player Type**

This option category allows the player to specify the type of the Allied Player. The options and their effects are:

Human	This option specifies that the Allied Player will be human.
Computer	This option specifies that the Allied Player will be computer.

The rules for this option category are 1) only one option can be selected, 2) one option must always be selected and 3) this option cannot be changed for a saved game.

## **Allied Player Intelligence**

This option category allows the player to specify the intelligence level of the computer artificial intelligence used for the Allied Player. The options and their effects are:

Easy	This option selects the lowest Allied computer intelligence.
Beginner	This option selects the next-to-lowest Allied computer intelligence.
Intermediate	This option selects the intermediate Allied computer intelligence.
Advanced	This option selects the next-to-highest Allied computer intelligence.
Expert	This option selects the most advanced Allied computer intelligence.

The rules for this option category are 1) only one option can be selected and 2) one option must always be selected. Selection of the options is relevant even if the Allied Player is human, since the selection will determine the competency of actions delegated by the human player to the computer.

Selection of this option affects the time required for the computer

to perform various activities. The time required increases with increasing intelligence level since the computer is required to perform more complicated processing at the higher levels. The player should be prepared to accept somewhat longer computer processing times at the Advanced and Expert intelligence levels.

### **Allied Player Personality**

This option allows the player to specify the personality for the computer artificial intelligence used for the Allied Player. The personality is a measure of what risks the computer artificial intelligence will take. The options available and their effects are:

Timid	This option selects the most cautious Allied computer personality.
Cautious	This option selects a cautious Allied computer personality.
Normal	This option selects the average Allied computer personality.
Daring	This options selects a reckless Allied computer personality.
Reckless	This option selects the most reckless Allied computer personality.

The rules for this option category are 1) only one option can be selected and 2) one option must always be selected. Selection of the options is relevant even if the Allied Player is human, since the selection will determine the competency of actions delegated by the human player to the computer.

### **Allied Odds Adjustment**

This option category allows the player to specify an adjustment to all Allied combat factors during the game. The options and their effects are:

Inept	This option multiplies Allied combat factors by 0.50.
Poor	This option multiplies Allied combat factors by 0.75.
Average	This option multiplies Allied combat factors by 1.00.
Fair	This option multiplies Allied combat factors by 1.25.
Good	This option multiplies Allied combat factors by 1.50.

The rules for this option category are 1) only one option can be selected and 2) one option must always be selected.

### **Axis Player**

This option category is different from the others in that it is actually 4 separate sets of categories that are used to specify the options for the intelligence, personality and odds adjustment for the Axis player and whether the player is human or computer.

### **Axis Player Type**

This option category allows the player to specify whether the Axis Player will be human or computer. The options and their effects are:

Human	This option specifies that the Axis Player will be human.
Computer	This option specifies that the Axis Player will be computer.

The rules for this option category are 1) only one option can be selected, 2) one option must always be selected and 3) this option cannot be changed for a saved game.

## **Axis Player Intelligence**

This option category allows the player to specify the intelligence level of the computer artificial intelligence used for the Axis Player. The options and their effects are:

Easy	This option selects the lowest Axis computer intelligence.
Beginner	This option selects the next-to-lowest Axis computer intelligence.
Intermediate	This option selects the intermediate Axis computer intelligence.
Advanced	This option selects the next-to-highest Axis computer intelligence.
Expert	This option selects the most advanced Axis computer intelligence.

The rules for this option category are 1) only one option can be selected and 2) one option must always be selected.

Selection of the options is relevant even if the Axis Player is human, since the selection will determine the competency of actions delegated by the human player to the computer.

Selection of this option affects the time required for the computer to perform various activities. The time required increases with increasing intelligence level since the computer is required to perform more complicated processing at the higher levels. The player should be prepared to accept somewhat longer computer processing times at the Advanced and Expert intelligence levels.

## **Axis Player Personality**

This option allows the player to specify the personality for the computer artificial intelligence used for the Axis Player. The personality is a measure of what risks the computer artificial intelligence will take. The options available and their effects are:

Timid	This option selects the most cautious Axis computer personality.
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Cautious	This option selects a cautious Axis computer personality.
Normal	This option selects the average Axis computer personality.
Daring	This options selects a reckless Axis computer personality.
Reckless	This option selects the most reckless Axis computer personality.

The rules for this option category are 1) only one option can be selected and 2) one option must always be selected.

Selection of the options is relevant even if the Axis Player is human, since the selection will determine the competency of actions delegated by the human player to the computer.

### **Axis Odds Adjustment**

This option category allows the player to specify an adjustment to all Axis combat factors during the game. The options and their effects are:

Inept	This option multiplies Axis combat factors by 0.50.
Poor	This option multiplies Axis combat factors by 0.75.
Average	This option multiplies Axis combat factors by 1.00.
Fair	This option multiplies Axis combat factors by 1.25.
Good	This option multiplies Axis combat factors by 1.50.

The rules for this option category are 1) only one option can be

selected and 2) one option must always be selected.

## Command Line Options

When issuing the DOS command to execute the game program, command line options may be specified by following the execute command with the 2-letter identifier of the desired option. The following options are available:

**Turn Length** This option allows the player to specify whether or not short turns are to be used. The short turn eliminates the second air and naval phases, thereby speeding game play. The results of air-to-ground, air-to-sea, sea-to-ground and strategic air attack combat are doubled for the air and naval execution phases when the short turn option is in effect. The 2-letter identifiers for this option are:

st = Activate the short turn option.

lt = Activate the long turn option.

The default is to activate the long turn option.

**Notebook** This option allows the player to specify whether or not the General's Notebook is to be written to disk. The two-letter identifiers for this option are:

wm = Write General's Notebook to disk

nn = Do not write General's Notebook to disk

The default is to write the General's Notebook to disk.



## **THE BUTTONS**

High Command has numerous buttons that are used to activate various modes, access displays and boxes and toggle various displays on the maps.

There are 2 types of buttons used in High Command; those that are used to implement an action that is immediately executed and those that activate a particular mode that remains in effect until canceled. These types of items will hereafter be referred to as Action Buttons and Mode Buttons respectively.

Quite often there are multiple modes possible for a given category of mode. In this case, the associated buttons are grouped into a Mode Category. Thus, only one mode may be activated at any given time within a Mode Category.

Finally, buttons may be either Enabled or Disabled. Enabled buttons are those buttons that are currently available for selection. Enabled buttons are displayed with an icon on the button. Disabled buttons are those buttons that, for any of a number of different reasons, may not be currently available for selection. Disabled buttons are displayed without an icon on the button. Selection of a disabled button has no effect.

## **STRATEGIC MAP BUTTONS**

The Strategic Map Buttons are used to display various things on the Strategic Map. The buttons and their functions are described following. The buttons are listed from left to right for the first row followed by the second row.

- Toggle Display of Land Units on the Strategic Map
- Toggle Display of Air Units on the Strategic Map
- Toggle Display of Naval Units on the Strategic Map
- Toggle Display of Factory Sites on the Strategic Map
- Toggle Display of Shipbuilding Sites on the Strategic Map
- Toggle Display of Oil Sites on the Strategic Map

## Toggle Display of Mining Sites on the Strategic Map

- Display Supply Net on the Strategic Map
- Display Terrain on the Strategic Map
- Display Allied Political Alignments on the Strategic Map
- Display Axis Political Alignments on the Strategic Map
- Toggle Display of Weather on the Strategic Map
- Toggle Display of Sea Zones on the Strategic Map
- Display the Legend for the Strategic Map

The legend defines all of the conventions used on the Strategic Map.

### **The Phase Buttons**

The Phase Buttons vary from phase to phase. For this reason these buttons and their functions are defined in the corresponding sections on the associated phase.

### **General Features Buttons**

The General Features Buttons activate various modes and toggle various displays on the Tactical Map. The buttons and their functions are described below. The buttons are listed from left to right for the first row followed by the second row.

- Activate Examine Unit Mode
- Activate Examine Site Mode
- Activate Examine Stack Mode
- Toggle Display of Small Unit Info Box
- Toggle Display of Hex Grid on the Tactical Map
- Toggle Display of Supply Net on the Tactical Map
- Toggle Display of Units on the Tactical Map
- Toggle Between Military Icons and Pictorial Icons
- Toggle Display of Organization and Supply Status on Units
- Toggle Display of Mission Assignment Status on Units
- Toggle Display of Weather on the Tactical Map
- Toggle Sound and Music On and Off
- Toggle Beeps On and Off
- Activate Declare War Mode

## **Scroll Pad**

The Scroll Pad Buttons are used to scroll the Tactical Map. Left clicking on an arrow will scroll the map one site in that direction. Right clicking on an arrow will scroll the map 3 sites in that direction. Left clicking on the center button will return the Tactical Map to the default position.

## **Game Buttons**

The Game Buttons are used for various game functions. The buttons and their functions are described below. The buttons are listed from left to right for the first row followed by the second row, then the third row.

- Display About High Command Box
- Access Scenario Briefing
- Access General's Notebook
- Access Data Tables
- Display Game Score
- Toggle the Suppression of Form Alerts
- Proceed to the Next Phase
- Save the Game
- Quit the Game

## **THE BOXES**

High Command features numerous boxes that display information and/or allow the player to implement specific actions. Accordingly, the boxes are divided into 2 categories; Information Boxes and Action Boxes. Information Boxes display information only and do not require any action on the part of the player. Action Boxes, on the other hand, require some type of action on the part of the player.

All Action Boxes have Function Buttons that allow the player to select the actions that are to be performed. Once a Function Button is selected it remains selected as long as the mode corresponding to the button is active. The Examine Stack Box and the Merchant Marine Box sometimes have buttons whose actions are not available at all times. When these actions are not available the button will be disabled. Disabled buttons are identified with a button title written in dark text.

Some boxes are specific to a particular phase. These boxes are discussed in the section for that phase. Many boxes, however, appear or are available throughout the game turn. These boxes are discussed in the following sections.

### **The About High Command Box**

The About High Command Box displays the version number and other information about the game.

The About High Command Box is an Information Box and requires no action on the part of the player. It is removed from the screen as specified in the Messages option of the Options Screen.

### **The Message Box**

At various times during the game Message Boxes are displayed

on the screen. These boxes contain information that is important

for the player to see in a timely manner. Thus they are displayed on the screen, as opposed to the Message Bar, in order to ensure that the player sees them.

The Message Boxes are Information Boxes and require no action on the part of the player. They are removed from the screen as specified in the Messages option of the Options Screen.

### **The Processing Box**

Anytime the computer is performing actions a Processing Box is displayed on the screen. These boxes inform the player as to the type of processing that the computer is performing. The Processing Box is similar to the Message Box except that the player must wait for the computer to finish processing before the box is removed from the screen. Processing Boxes are printed in red text so that they can be clearly distinguished from Message Boxes, printed in green text.

Processing Boxes are Information Boxes and require no action on the part of the player. They are removed from the screen automatically upon completion of the computer processing.

### **The Form Alert Box**

At various times during the game, the computer will request that the player confirm certain actions. This is done through the use of Form Alert Boxes. Form Alert Boxes display messages and one or more Option Buttons. The player must select one of the Option Buttons in response to the message in the Form Alert Box in order to remove the box from the screen and proceed with the game.

There are 3 different types of Form Alert Boxes used in High Command. They differ from one another only by the type of messages displayed and the available Option Buttons.

The first type of Form Alert Box has only one Option Button; the **OK** Button. This type of Form Alert Box simply requests that the

player respond before an action is initiated. There is no decision making required here, just an acknowledgment that the action is being undertaken.

The second type of Form Alert Box has 2 Option Buttons; the **Yes** Button and the **No** Button. This type of Form Alert Box requests that the player answer the question posed in the Form Alert Box before the action is initiated. Selecting the **Yes** Button initiates the action and selecting the **No** Button cancels the action.

The third type of Form Alert Box also has 2 Option Buttons; the Continue Button and the Abort Button. This type of Form Alert Box request that the player respond to the message in the Form Alert Box before an action is initiated. Selecting the Continue Button continues the action and selecting the Abort Button aborts the action.

The Form Alert Boxes are Action Boxes and require the player to select an Option Button before proceeding with the game. They are removed from the screen upon the selection of an Option Button.

### **The Game Score Box**

The Game Score Box displays the current score for the Allies and the Axis as well as an assessment as to the current game situation. five assessment results are possible. They are Allied Decisive Victory, Allied Marginal Victory, Stalemate, Axis Marginal Victory and Axis Decisive Victory. These victory assessments are based on the Allied and Axis scores (the sums of their respective victory points).

The Game Score Box is an Information Box and requires no action on the part of the player. It is removed from the screen as specified in the Messages option of the Options Screen.



## The Examine Site Box

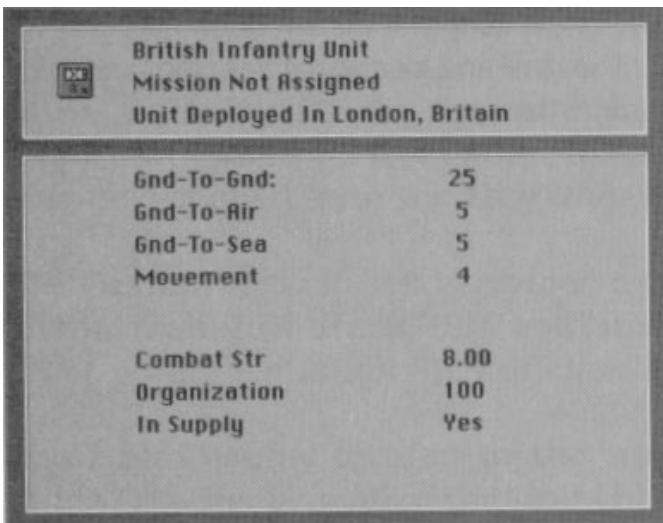


*The Examine Site Box*

The Examine Site Box displays information of interest for a selected site. The information displayed varies from site to site.

The Examine Site Box is an Information Box and requires no action on the part of the player. It is removed from the screen as specified in the Messages option of the Options Screen.

## The Show Unit Box



*The Show Unit Box*

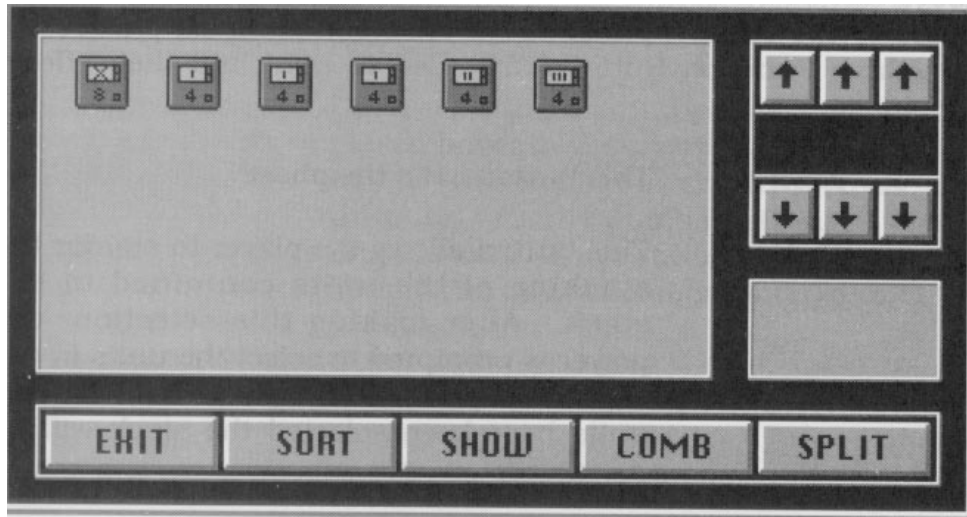
The Show Unit Box displays information of interest for a selected unit. The information displayed varies with unit class and type. The Show Unit Box is divided into 4 parts. At the top of the box the unit is displayed along with a

description that provides the owner, class and type for the unit. The left center part of the box contains the Unit Attributes Box, the right center part of the box contains the Unit Status Box and the bottom part of the box contains the Unit Mission/Deployment Box.

Following are definitions of the various terms that appear in the Unit Box Show:

GND-TO-GND	The ground-to-ground capability for land units
GND-TO-AIR	The ground-to-air capability for land units
GND-TO-SEA	The ground-to-sea capability for land units
AIR-TO-GND	The air-to-ground capability for air units
AIR-TO-AIR	The air-to-air capability for air units
AIR-TO-SEA	The air-to-sea capability for air units
SEA-TO-GND	The sea-to-ground capability for naval units
SEA-TO-AIR	The sea-to-air capability for naval units
SEA-TO-SEA	The sea-to-sea capability for naval units
MOVEMENT	The movement capability for land and air units
STRATEGIC	The strategic air attack capability for bombers
ANTI-SUB	The anti-sub capability for destroyers, cruisers and battleships
STEALTH	The stealthiness for submarines
COMBAT STR	The combat strength of the unit
ORGANIZATION	The organization of the unit
IN SUPPLY	The supply status for land units
MONTHS AT SEA	The number of months at sea for naval units
CAPACITY	The capacity of transport units
LAND AND AIR	The land and air combat strength embarked on a transport

## The Examine Stack Box



*The Examine Stack Box*

The Examine Stack Box displays every unit in the selected stack. The Examine Stack Box is used for much more than just displaying the units in the stack, however. From the Examine Stack Box the player can 1) order the units in the stack, 2) display the Show Unit Box for any unit in the stack, 3) combine units of the same class and type, 4) divide units into 2 units, 5) assign units to missions, 6) show the path for units that have been assigned missions and 7) unassign units that have been assigned missions. As a result, the Examine Stack Box is one of the most important boxes in the game. In fact, some mission types can only be assigned from the Examine Stack Box.

The Examine Stack Box is divided into 2 parts. The upper portion of the Examine Stack Box contains the Unit Display and the lower portion contains the Function Buttons.

The Unit Display located in the upper portion of the Examine Stack Box displays all of the units in the stack.

The Function Buttons located in the lower portion of the Examine Stack Box allow the player to perform various actions on the units in the stack.

It should be noted that the Function Buttons change slightly

depending on the phase so that not all of the actions identified above can be performed at all times. Only those functions appropriate to the current phase are available. During all phases the first three Function Buttons, from left to right and their effects are:

- Exit:** This button exits the phase.
- Order:** This button allows the player to reorder the stacking of the units contained in the stack. After making this selection, the player is prompted to select the units in the Unit Display in the desired order. When all units have been selected the stack will be reordered.
- Show:** This button allows the player to display information for any unit in the stack. After making this selection, the player will be prompted to select the unit in the Unit Display for which information is desired. Upon selecting the unit the Show Unit Box for the unit will be displayed. The Show Unit Box is removed by clicking the left mouse button.

During the Force Allocation and Resource Allocation phases, the last 2 Function Buttons and their effects are:

- Comb:** This button allows the player to combine 2 units of the same class and type. After making this selection the player will be prompted to select the first unit. Then the player will be prompted to select the second unit. At this time the 2 units will be combined into one unit provided the 2 units were of the same class and type and the combined combat strength is less than 9.5.
- Split:** This button allows the player to split a unit into 2 units. After making this selection the

Select Button will change to the Done

Button and the player will be prompted to select a unit in the Unit Display that will be split.

Upon selecting a unit, two units will be displayed beneath the counter. The initial values for the combat strengths of these two units is 1/2 the combat strength of the original unit. The counter can be used to specify the desired combat strengths of the two new units.

When the desired combat strengths are obtained, the Done Function Button should be selected to create the new units.

During all other phases the last 2 Function Buttons and their effects are:

**Select:** This button allows the player to assign missions to units from within the Examine Stack Box. Valid mission types are active on the Tactical Map Display when the Examine Stack Box is displayed. After making this selection the Select Button will change to the Done Button. Select the units in the Unit Display that will be assigned to the mission. When all units that are to be assigned to the mission have been selected the Done Function Button should be selected to assign the units to the mission. At this point, the Examine Stack Box will be removed from the screen and the player will be prompted to assign a path for the mission. This is done as described in the sections on path assignment for the appropriate type of mission; i.e., land, air, or naval. When the path assignment is completed, the Examine Stack Box will be re-displayed on the screen and the player will be prompted to select a Function Button.

**Path:** This button allows the player to unassign missions and show the path assignment for units that have been assigned to missions. After making this selection the Select button will change to the Abort button and the player will be prompted to select a Function Button or a unit in the Unit Display. If a unit in the Unit Display is selected, the Examine Stack Box will be removed from the screen and the assigned path for the unit will be displayed on the Tactical Map Display. After the path assignment has been inspected, clicking the left mouse button will re-display the Examine Stack Box. If, instead of selecting a unit in the Unit Display after selecting the Path button, the Abort button is selected, the player will be prompted to select a unit in the Unit Display to unassign. Selecting a unit will unassign the unit and every other unit in the stack assigned to the same mission.

Under some circumstances, both Allied and Axis units may be in the same site. If this is the case and the Examine Stack Box is displayed for the site, then the operation of the Examine Stack Box changes somewhat although the basic structure remains the same. The fact that the Examine Stack Box has been displayed for a mixed stack is identified by the message "Mixed Stack" printed in red next to the units in the box.

When examining a mixed stack, the first difference in the Examine Stack Box is that it is displayed twice, first for the units belonging to the player and second for the opposing player. When the box is first displayed for the player the **EXIT** button is replaced by the **NEXT** button. All other buttons remain unchanged. Selecting the **NEXT** button will result in the second display of the Examine Stack Box and the **EXIT** button will replace the **NEXT** button. The **EXIT** button functions as in the standard Examine Stack Box.

It should be noted that the player will be able to show units,

assign and unassign missions, and show assigned paths for



units, provided the player controls the units. However, ordering, combining and splitting of units is not allowed from the Examine Stack Box for any units in a mixed stack.

The Examine Stack Box is an Action Box and is removed from the screen by selecting the **EXIT** button.

### **The Examine Redeployment Box**

The Examine Redeployments Box displays information concerning the number of strategic redeployments available to every major power under the control of the player. For each country, two numbers are displayed and separated by a "/". The first number represents the remaining strategic redeployments. The second number represents the number of strategic redeployments that country had at the start of the current game turn.

The Examine Redeployments Box is an Information Box and requires no action on the part of the player. It is removed from the screen as specified in the Messages option of the Options Screen.

### **The Combat Status Box**

The Combat Status Box displays the Allied and Axis units engaged in combat and is divided into two parts. The upper portion of the Combat Status Box displays the Allied units engaged in combat and the lower portion displays the Axis units engaged in combat. Units that have retreated or disengaged from combat will also be displayed. The combat strengths displayed on the units are estimates so that information regarding the other side cannot be gleaned by the players. Any units displayed with zero combat strength have been eliminated.

The Combat Status Box is followed by the Combat Options Box, displayed once for each human player and contains detailed and exact information regarding the player's units involved in the combat. Thus, in addition to displaying the units involved in

combat, the Combat Status Box also serves as a buffer screen

when the game is being played by two humans so that the players can prevent one another from gaining detailed knowledge concerning their units.

The Combat Status Box is an Information Box and is removed from the screen by clicking the left mouse button.

### **The Combat Options Box**

The Combat Options Box is used to specify actions during combat and is divided into 3 parts. The upper portion of the Combat Options Box contains the Unit Display, the center portion contains the Function Buttons and the lower portion contains the Combat Information Box.

The Unit Display located in the upper portion of the Combat Options Box is used to display the player's units involved in the combat. Units that were involved in the combat on previous combat rounds but have since retreated or disengaged are included in the Unit Display. Unlike the Combat Status Box, combat strengths displayed on the units are exact, although they are still rounded to the nearest integer. Any units displayed with zero combat strength have been eliminated.

The Function Buttons located in the center portion of the Combat Options Box allow the player to perform various actions during combat. Three Function Buttons are provided. The Function Buttons and their effects are:

**Retreat:** Selection of this button prompts the player to select a single unit in the Unit Display. Upon selecting the unit, the unit is retreated from the combat with no possibility of reentering the current or subsequent rounds of combat. This Function Button can be selected repeatedly to retreat as many single units as desired by the player.

- Exit:** Selection of this button retreats all of the player's units engaged in the combat. Thus, selection of this button will mean that this combat will cease after the current combat round.
- Combat:** Selection of this button removes the Combat Options Box and proceeds with the combat. All of the player's units that have not been retreated will continue combat.

For some types of missions, the **EXIT** button will be replaced by the **END MISSION** button. The effect of this button is the same as the **EXIT** button. The terminology is changed to remind the player that there is no penalty involved in terminating the combat. This is not the case when retreating units.

The Combat Information Box located in the lower portion of the Combat Options Screen displays important data regarding the units involved in the combat. In each case, two numbers are displayed separated by "/". The first number is the total for those units that have not been retreated. The second number is the total for all units engaged in the combat at the start of the opening round.

The Combat Information Box can be used to display the combat strength and organization for a single unit by selecting the unit in the Unit Display. Again, for each attribute two numbers are displayed. The first number is the current value of the attribute and the second number is the starting value for the combat. Return to the display of values for all units involved in the combat is accomplished by selecting the Combat Information Box.

The Show Unit Box for a unit can be displayed if more information than that displayed for the unit in the Combat Information Box is desired. To display the Show Unit Box for a unit, select the unit in the Unit Display when the Combat Information Box is displaying data for the unit. The Show Unit Box is removed from the screen by clicking the left mouse button.

The Combat Options Box is an Action Box and will be removed from the screen when the Combat Button is selected.

### **The Combat Summary Box**

The Combat Summary Box is used to show the results of combat after all combat rounds have been completed. The Combat Summary Box is divided into two parts. The upper portion of the Combat Summary Box contains the Unit Display and the lower portion contains the Summary Information Box.

The Unit Display located in the upper portion of the Combat Summary Box is used to display all of the player's units that were involved in the combat. Combat strengths displayed on the units are exact, although they are still rounded to the nearest integer. Any units displayed with zero combat strength have been eliminated.

The Summary Information Box located in the lower portion of the Combat Summary Box displays important data regarding the units involved in the combat. The exact combat strength and organization for the player's units are displayed at the top of the Summary Information Box. Estimated values for the opposing side's units are displayed at the bottom. In each case, three numbers are displayed separated by "/". The first number is the remaining combat strength or organization of any units still assigned to their original missions. The second number is the remaining combat strength or organization of all the units. The third number is the combat strength or organization of all the units at the start of the opening round of combat.

The Combat Summary Box is an Information Box and is removed from the screen by clicking the left mouse button.

## PLAY SEQUENCE

High Command is a turn-based game. A game turn in High Command represents one month of actual time and is divided into the following phases in the order given:

1. Allied Start-of-Month Phase
2. Allied Force Allocation Phase
3. Allied Resource Allocation Phase
4. Axis Start-of-Month Phase
5. Axis Force Allocation Phase
6. Axis Resource Allocation Phase
7. Allied First Air Allocation Phase
8. Axis First Air Allocation Phase
9. First Air Execution Phase
10. Allied First Naval Allocation Phase
11. Axis First Naval Allocation Phase
12. First Naval Execution Phase
13. Allied Land Allocation Phase
14. Axis Land Allocation Phase
15. Land Execution Phase
16. Allied Second Air Allocation Phase
17. Axis Second Air Allocation Phase
18. Second Air Execution Phase
19. Allied Second Naval Allocation Phase
20. Axis Second Naval Allocation Phase
21. Second Naval Execution Phase
22. Allied End-of-Month Phase
23. Axis End-of-Month Phase
24. End-of-Turn Phase

Phases are divided into two types; Player Phases and Execution Phases. Player Phases are those phases specific to a given player. The title of Player Phases begins with either Allied or Axis and denotes the player specific to that particular phase. Only that player may perform actions during that particular phase. The remaining phases are Execution Phases. Either, both, or neither of the players may perform actions during these phases depending on the phase and the results that occur during the phase. For convenience, text in the title bars is color-coded brown for Allied player phases, gray for Axis player phases and cyan for execution phases.

The phases are executed in the order given and then the next game turn commences. Allied or Axis Players can perform actions during phases labeled Allied or Axis, respectively.

## **FORCE ALLOCATION PHASE**

This phase is designed to provide the player with the ability to restructure his or her forces through splitting, combining and strategic redeployments. Although other actions are possible, force restructuring is the emphasis of this phase.

Two series of automatic events may occur at the beginning of this phase. First, if the player has any units in production that complete the production cycle on this turn, the player will be notified and the units will be deployed. Second, intermediate and minor countries that are controlled by the player may produce units. If this occurs, the player will be notified. After these two series of events, the Strategic Redeployment Mode will be activated and the player will be prompted to select a unit for strategic redeployment.

The Phase Button Group for this phase contains the following buttons:

- Activate Unit Redeployment Mode
- Activate Examine Merchant Marine Mode
- Move Russian Factories
- Delegate Force Allocation to the High Command
- Examine Redeployments

Each of these buttons are discussed in detail in the following sections.

### **Activate Unit Redeployment Mode**

Selection of this button activates the Strategic Redeployment Mode and prompts the player to select a unit for strategic redeployment. Strategic redeployment represents the ability of the player to redeploy units over long distances via railroads. The player has a limited number of redeployments that can be performed each turn. At the beginning of each turn, each major country is provided with a number of strategic redeployment points equal to 1/2 the economic points of the country. Each strategic redeployment has a cost in strategic redeployment points that is equal to the combat strength of the unit times the

distance, along the controlled path, to the redeployment site.  
Strategic redeployment points cannot be carried over from one



turn to another. The rules governing the selection of units for strategic redeployment are:

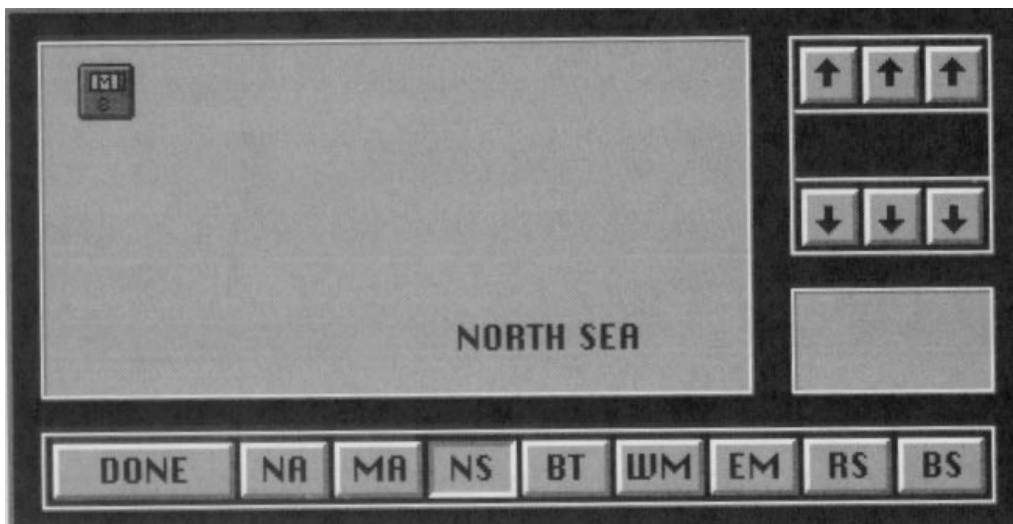
- The unit must be controlled by the player.
- The unit must belong to a major country.
- The unit must be a land unit.
- The unit must be in a site containing a city.
- The unit must be in supply.

Upon selection of a valid unit for strategic redeployment, the player will be prompted to select the redeployment site. The rules governing the selection of sites for strategic redeployment are:

- The site must be controlled by the player.
- The site must contain a city.
- There must be a controlled path of no more than 6 sites between the unit and the site.
- The country owning the unit must have sufficient strategic redeployment points to perform the redeployment.

Upon selection of a valid redeployment site, the unit will be transferred and the strategic redeployment points for the country owning the unit will be decremented by the cost of the redeployment.

### **Activate Examine Merchant Marine Mode**



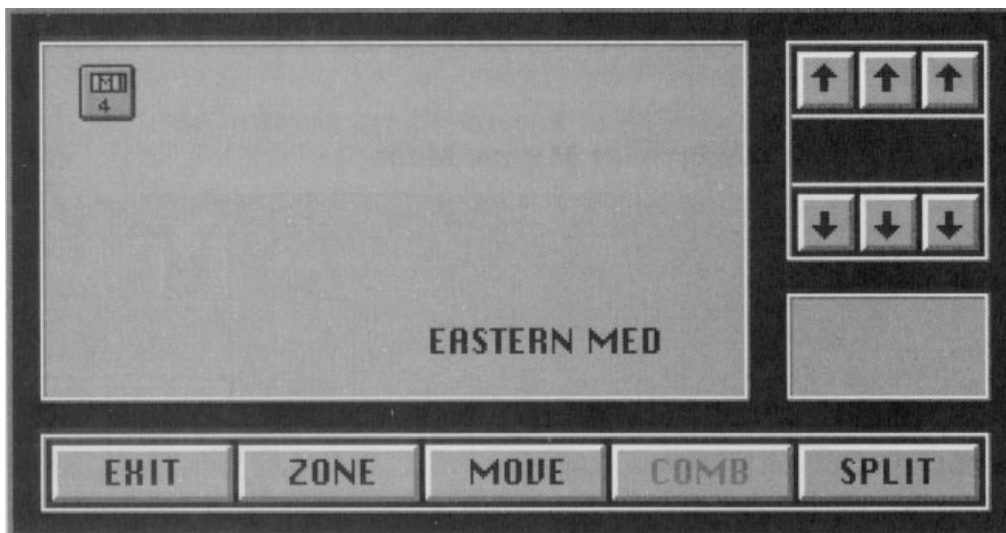
*Examine Merchant Marine Box with Sea Zone Buttons*

Selection of this button activates the Examine Merchant Marine Mode and prompts the player to select a sea zone for examination. Upon selection of a sea zone the Examine Merchant Marine Box is displayed for that sea zone. The Merchant Marine Box is used to examine and manipulate Merchant Marine units. Using this box the player can show, move, split and combine Merchant Marine units.

The Merchant Marine Box is divided into 3 parts. The upper portion of the Merchant Marine Box contains the Unit Display and Sea Zone Title Box, the upper right portion contains the counter and the lower portion contains the Function Buttons.

The Unit Display located in the upper portion of the Merchant Marine Box displays all of the Merchant Marine units in the selected sea zone that belong to the player.

The Sea Zone Title Box displays the sea zone for currently displayed Merchant Marine units.



*Examine Merchant Marine Box*

The Function Buttons located in the lower portion of the Merchant Marine Box allow the player to perform various func-

tions on the Merchant Marine units in the selected sea zone that belong to the player. The Function Buttons and their effects are:

- Exit:** This button exits the Merchant Maine Box.
- Zone:** This button allows the player to switch sea zones without exiting the Merchant Marine Box. After making this selection the Merchant Marine units for the current sea zone will remain displayed but the Function Buttons will be replaced by the Done Button and the Sea Zone Buttons. The Done Button and the Sea Zone Buttons and their effects are:
- Done:** This button returns to the original Merchant Marine Box to examine the currently selected sea zone as selected by the selection buttons described following.
- NA:** This button selects the North Atlantic Sea Zone.
- MA:** This button selects the Mid-Atlantic Sea Zone.
- NS:** This button selects the North Sea Zone.
- BT:** This button selects the Baltic Sea Zone.
- WM:** This button selects the Western Mediterranean Sea Zone.
- EM:** This button selects the Eastern Mediterranean Sea Zone.
- RS:** This button selects the Red Sea Zone.
- BS:** This button selects the Black Sea Zone.

- Move:** This button allows the player to move Merchant Marine units from one sea zone to another. After making this selection the player will be prompted to select the Merchant Marine unit in the Unit Display. After selecting the unit the Function Buttons will be replaced by the Sea Zone Buttons. The player will be prompted to select a sea zone to move the unit. Upon selecting the Sea Zone Button the unit will be moved to that sea zone and the player will be returned to the Unit Display and Function Buttons for the initial sea zone.
- Comb:** This button allows the player to combine Merchant Marine units. This function works the same as in the Examine Stack Box described above.
- Split:** This button allows the player to split Merchant Marine units. This function works the same as in the Examine Stack Box described above.

The Merchant Marine Box is an Action Box and is removed from the screen by selecting the Exit button.

### **Move Russian Factories**

Selection of this button attempts to move Russian factories. Moving Russian factories represents the ability of the Russians to move their factories eastward from the invading Axis forces from the west. The rules governing the movement of Russian factories are:

Russia must be Allied.

Only the Allied Player may attempt movement of Russian factories

Only one movement attempt per month is allowed.

A given factory may only be moved once.

Each movement attempt affects all Allied Russian factories that

have not been moved.

The probability that a given factory is moved is 20% on the first attempt and increases by 20% on each subsequent attempt up to a maximum probability of 50%.

The player will be immediately notified of any factories that have been successfully moved.

### **Delegate Force Allocation To The High Command**

Selection of this button will delegate force redeployments to the player's High Command. This will include splitting, combining and strategic redeployments. The actions of the High Command cannot be undone. However, the player can still initiate force redeployments to modify those performed by the High Command, provided sufficient redeployment points remain.

This button is enabled at the start of the phase but will be disabled after selection or after any combining, splitting, or strategic redeployment performed by the player.

### **Examine Redeployments**

Selection of this button accesses the Examine Redeployments Box and displays information concerning the number of strategic redeployments available to every major power under the control of the player. For each country, two numbers are displayed and separated by a "/". The first number represents the remaining strategic redeployments. The second number represents the number of strategic redeployments that country had at the start of the current game turn.

The Examine Redeployments Box is an Information Box and requires no action on the part of the player and is removed from the screen.

## **RESOURCE ALLOCATION PHASE**

This phase is designed to provide the player with the ability to transport resources, transfer economic points, produce units, build air bases, perform investments and allocate economic points to diplomacy and intelligence.

This phase begins with the Resource Transportation Mode activated and the player is prompted to select a resource origination site. Details for performing resource transportation are given following in the section on Activate Resource Transportation Mode.

The Phase Button Group for this phase contains the following buttons:

- Activate Resource Transportation Mode
- Activate Production Mode
- Activate Political Allocation Mode
- Display Units In Production
- Display Economic Investment on the Strategic Map
- Display Diplomatic Investment on the Strategic Map
- Display Intelligence Investment on the Strategic Map
- Delegate Resource Transportation to the High Command
- Delegate Production to the High Command
- Delegate Political Allocation to the High Command

Each of these buttons are discussed in detail in the following sections.

### **Activate Resource Transportation Mode**

Selection of this button activates the Resource Transportation Mode and prompts the player to select a resource origination site. Resource origination sites are factory, oil and mining sites from which materiel, oil and minerals, respectively, can be transported. Shipbuilding sites are never resource origination sites. Only those resource origination sites controlled by the player may be

selected. The one exception to this rule is that the Axis player may select German Imports as a resource origination site. After selecting a valid resource origination site, the player will be prompted to select a resource destination site. Resource destination sites are factory, shipbuilding, oil and mining sites. Oil and minerals can be transported to factory sites and materiel to shipbuilding, oil and mining sites. However, according to the exclusions noted above, not all combinations of resource origination and destination sites are allowable. Only those combinations and transportation types identified in the table following are permitted.

<b>Origination Site</b>	<b>Destination Site</b>	<b>Transportation Type</b>
Factory Site	Oil Site	Materiel
	Mining Site	Materiel
	Shipbuilding Site	Materiel
Oil Site	Factory Site	Oil
Mining Site	Factory Site	Minerals

Finally, only those resource destination sites controlled by the player may be selected.

### **Resource Transportation Paths**

After a valid resource destination site has been selected, the computer will search for a resource transportation path between the origination and destination sites. If No Check was selected under the Paths option on the Options Screen, then a resource transportation path is always assumed to exist,. The Resource Transportation Box is displayed immediately upon selecting a valid resource destination site and the player may transport a number of resources no greater than those available at the origination site. On the other hand, if Check was selected under the Paths options, then there must be a resource transportation path between the resource origination and destination sites. A



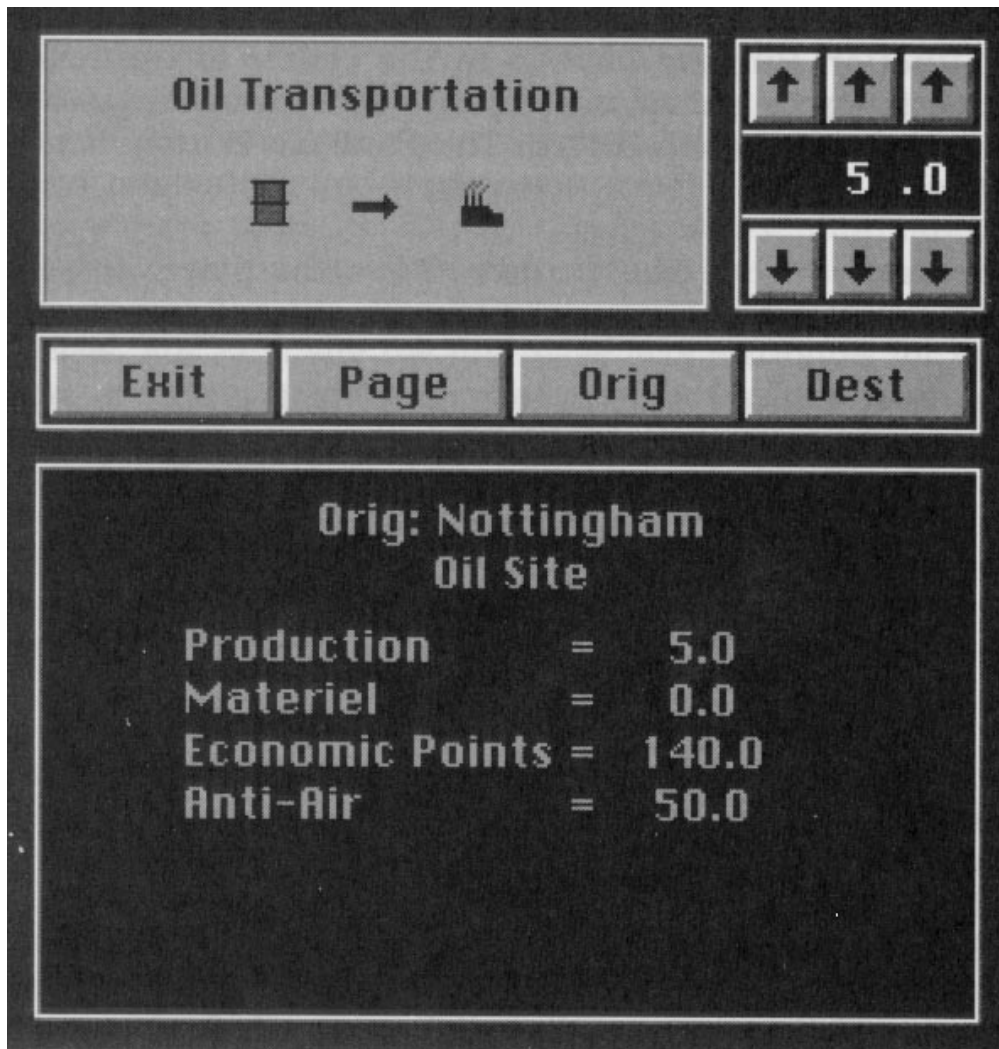
resource transportation path is a controlled land path or a combined land-sea path.

The method for determining a resource transportation path is as follows. First, the computer searches for a controlled land path between the resource origination and destination sites. A controlled land path is a continuous series of controlled land sites. If a controlled land path is found, then the Resource Transportation Box is displayed and the player may transport an amount of resources that is limited only by those available at the origination site. Details on the use of the Resource Transportation Box is described following in the section The Resource Transportation Box.

If a controlled land path between the origination and destination sites does not exist, then the computer will search for a combined land-sea path. A land-sea path is one where the origination and destination sites are each connected by a controlled land path to at least one port and where these ports are connected by a series of one or more sea zones each containing Merchant Marine units controlled by the player. The computer begins by searching for at least one port on each of the 8 sea zones that is connected by a controlled land path to the origination site. If one cannot be found, then a resource transportation path is not possible and the player is notified of this fact. If at least one is found, then the process is repeated for the destination site. Again, if one is not found, then a resource transportation path is not possible and the player is notified and resource transportation between the origination and destination sites is not possible.

If a controlled land path between the destination site and a port is found, then the computer evaluates all possible sea paths between the origination and destination ports and selects the sea path requiring the least number of sea zones. This is then taken as the sea path portion of the combined land-sea path. At this point, the Resource Transportation Box is displayed and the player may transport an amount of resources that is limited by those available at the site or the Merchant Marine along the sea path, whichever is less.

## The Resource Transportation Box



As noted above, when valid origination and destination sites have been chosen the Resource Transportation Box will be displayed. The Resource Transportation Box is used to specify the quantity of resources transported from one site to another and is divided into 4 parts. The upper left portion of the box contains the Transportation Title Box, the upper right portion contains the Counter, the center portion contains the Button bar and the lower portion contains the Site Information Box. The Transportation Title Box located in the upper left portion of the Resource Transportation Box displays the resource that can be transported from the origination site to the destination site. Selecting the Transportation Title Box has no effect. The Transportation Title Box serves simply as a reminder as to the

type of resource transportation being specified from within the Resource Transportation Box.

The Function Buttons located in the center of the Resource Transportation Box allow the player to perform various actions. 4 Function Buttons are provided. The Function Buttons and their effects are:

- Orig:** This button allows the player to select a new origination site.
- Dest:** This button allows the player to select a new destination site.
- Page:** This button changes pages in the Site Information Box.
- Exit:** This button exits the Resource Transportation Box.

The Counter located in the upper right portion of the Resource Transportation Box allows the player to specify the quantity of the resource transportation. When the Resource Transportation Box is first displayed, the quantity of the resource in reserve at the destination site will be displayed on the counter. Selecting the arrows above or following a digit in the counter will increment or decrement the corresponding digit, respectively. Incrementing the counter specifies that the difference in the new counter value and the displayed value when the Resource Transportation Box was first displayed will be transported to the destination site. Decrementing the counter specifies that the difference in the counter values will be transported to the origination site.

It is important to remember that the number in the counter is not the quantity to be transported, but is the quantity that will be at the destination site. Thus, entering a number smaller than the number in the counter when the box is first displayed serves to move the resource from the destination site to the origination site. In the case of materiel being transported back to a factory, the materiel is reconverted to the industrial production, oil, minerals and economic points that were used to produce the materiel. Note that the ability to transport resources from the



destination site to the origination site means that oil can be transported from one oil site to another, provided it is transported to a factory first.

The Site Information Box located in the lower portion of the Resource Transportation Box displays important data for the selected origination and destination sites. The Site Information Box requires 4 pages to display the necessary information; the first 2 pages are for the origination site and the last two pages are for the destination site. The **PAGE** button is used to flip through the pages. For each site the first page lists attributes for the site and the second page lists investments that have been made during the phase. For each type of site the following information is displayed in the Site Information Box:

*Industrial Site*

Production:	The industrial production at the site
Oil Reserves:	The oil in reserve at the site
Mineral Reserves:	The minerals in reserve at the site
Economic Points:	The unused economic points for the country controlling the site
Anti-Air:	The anti-air assets at the site
Production:	The economic points allocated at the site to increasing the industrial production of the site
Economy	The total number of economic points allocated at all industrial sites to the economy of the country controlling the site
Research	The number of economic points allocated at the site to research and development
Rockets	The number of economic points

allocated for the development of  
rockets

Atomic Bomb                      The number of economic points allocated for the development of the atomic bomb

*Shipbuilding Site*

Production:                      The shipbuilding production at the site

Materiel:                         The materiel in reserve at the site

Economic Points:                The unused economic points for the country that controls the site

Anti-Air:                         The anti-air assets at the site

Production:                      The number of economic points allocated at the site to increasing the industrial production at the site

*Industrial/Shipbuilding Site*

Indus Production:                The industrial production at the site

Shipb Production:                The shipbuilding production at the site

Oil Reserves:                    The oil in reserve at the site

Mineral Reserves:                The minerals in reserve at the site

Materiel:                         The materiel in reserve at the site

Anti-Air:                         The anti-air assets at the site

Indus Production                 The number of economic points allocated at the site to increasing the industrial production at the site

Shipb Production                 The number of economic points allocated at the site to increasing

the shipbuilding production at the  
site



Economy	The total number of economic points allocated at all industrial sites to the economy of the country that controls the site
Research	The number of economic points allocated at the site to research and development
Rockets	The number of economic points allocated at the site to the development of rockets
Atomic Bomb	The number of economic points allocated at the site to the development of the atomic bomb

*Oil Site*

Production:	The oil production at the site
Materiel:	The materiel in reserve at the site
Economic Points:	The unused economic points for the country that controls the site
Anti-Air:	The anti-air assets at the site
Production	The number of economic points allocated at the site to increasing the oil production at the site

*Mining Site*

Production:	The mineral production at the site
Materiel:	The materiel in reserve at the site
Economic Points:	The unused economic points for the country that controls the site

Anti-Air:	The anti-air assets at the site
Production	The number of economic points allocated at the site to increasing the mineral production at the site

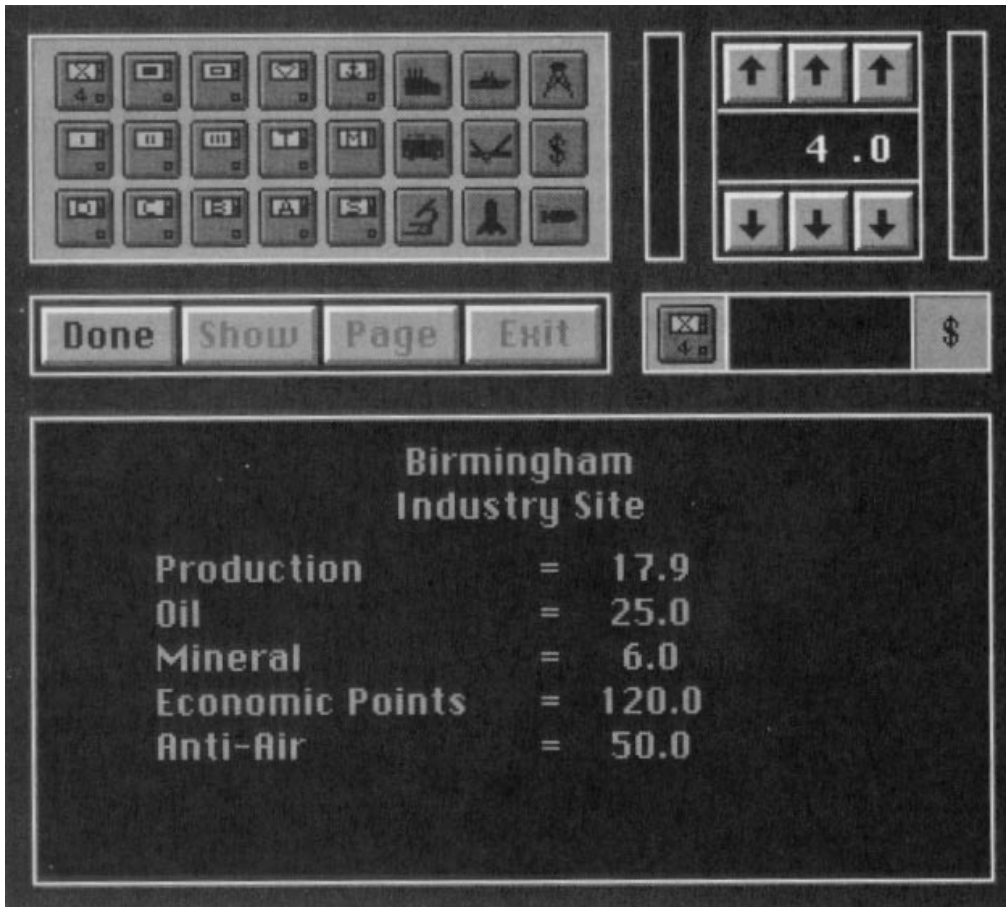
The Resource Transportation Box is an Action Box and will be removed from the screen when the **EXIT** button is selected. It is important to keep in mind that when the Resource Transportation Box is exited, the resources are transported and the available Merchant Marine in each of the sea zones used in the transportation is decreased by the amount used for the transportation. The Merchant Marine used for the transportation cannot be recovered until the next turn.

Finally, materiel, a manufactured resource, is treated differently from the raw materials oil and minerals. Materiel represents manufactured goods such as steel, instruments, equipment, etc. If the player attempts to transport materiel from a factory to a shipyard, materiel will not show up as being in reserve at the factory. That is because the materiel is manufactured or produced only as required as when transportation is specified. The production capacity and oil and mineral reserves will be decreased at the factory, along with economic points, to reflect the cost of production of the materiel that is being transported.

### **Activate Production Mode**

Selection of this button activates the Production Mode and prompts the player to select a production site. Production sites are factory, shipbuilding, oil and mining sites. Only those production sites controlled by the player may be selected. After a valid production site has been selected the Production Box will be displayed and the player can perform the desired production and investment as described in the section Production Box.

## The Production Box



*The Production Box*

When a valid production site has been chosen the Production Box will be displayed. The Production Box is used to produce units, build air bases, improve production facilities, invest in the economy and invest resources in research and development. The Production Box is divided into 3 parts. The upper left portion of the box contains the Production Icons, the upper right portion contains the counter, the lower portion contains the Site Information Box.

The Production Icons located in the upper left portion of the Production Box are used to select the type of production or investment that is to be performed. The icons for units are identical to the representation of the units on the tactical map. In addi-

tion to the fifteen unit icons, the following 9 types of production and investment are provided:

- Industrial Production Capacity
- Shipbuilding Production Capacity
- Oil Production Capacity
- Mineral Production Capacity
- Air Base Construction
- Economic Development
- Research and Development
- Rocket Development
- Atomic Bomb Development

The counter located in the upper right portion of the Production Box allows the player to specify the amount of the production or investment. When a Production Icon is selected, the amount of the production or investment currently entered will be displayed on the counter. Selecting the arrows above or following a digit in the counter will increment or decrement the corresponding digit, respectively. The value in the counter always displays the current amount of production or investment for the selected production or investment type. Details on each type of production and investment are described in the appropriate sections following.

The Function Buttons located in the lower portion of the Production Box allow the player to perform various actions. Four Function Buttons are provided. The Function Buttons and their effects are:

- Prod:** Selection of this button prompts the player to select the Production Icon representing the type of production or investment to be performed. Upon selecting a Production Icon, the icon is highlighted and the desired production can be entered with the counter.
  
- Show:** Selection of this button prompts the player to select the unit icon to be shown. Upon selecting the unit icon the Show Unit Box for that unit is displayed. The information for a unit that can be produced is slightly



different from that for a unit in production or a unit that is deployed. The Show Unit Box is removed by clicking the left mouse button.

**Page:** Selection of this button changes pages in the Site Information Box.

**Exit:** Selection of this button exits the Production Box and returns to the Tactical Map Display.

The Site Information Box located in the lower right portion of the Production Box displays important data for the selected production site. The Site Information Box requires 2 pages to display the necessary information. The **PAGE** button is used to flip through the pages. For each site the first page lists attributes for the site and the second page lists investments that have been made during the current phase. For each type of production site the information displayed is identical to that displayed for the same type of site in the Site Information Box in the Resource Transportation Box.

The Production Box is an Action Box and will be removed from the screen when the Exit Function Button is selected.

### **Production and Development Considerations**

All production and development has associated costs in production capacity, oil, minerals, materiel and/or economic points. These costs, shown in the table following, vary depending on the type of production or development.

<b>Production Type</b>	<b>Pro.</b>	<b>Oil</b>	<b>Minerals</b>		<b>Material</b>	<b>Eco.</b>
Infantry	5	5	5	0	5	
Armor	10	20	20	0	10	
Mechanized	5	20	20	0	10	
Airborne	15	25	25	0	15	
Marine	5	5	5	0	5	
Industry	1	1	1	0	1	
Shipping	0	0	0	1	0	
Mining	0	0	0	1	0	
Fighter	10	20	20	0	10	
Fighter//Bomber	10	20	20	0	10	
Bomber	10	20	20	0	10	
Transport	5	0	0	5	0	
Merchant	10	0	0	10	0	
Oil	0	0	0	1	0	
Air Base	0	0	0	0	10	
Economy	0	0	0	0	1	
Destroyer	10	0	0	10	0	
Cruiser	10	0	0	10	0	
Battleship	15	0	0	15	0	
Carrier	20	0	0	20	0	
Submarine	10	0	0	10	0	
R8D	1	1	1	0	1	
Rockets	1	1	1	0	1	
Atomic Bomb	1	1	1	0	1	

### **Production Costs**

To understand how the computer determines results for investment in the economy, research and development, rocket development and atomic bomb development, the concept of full and partial investment must be understood. For these types of investments, the first economic point invested achieves half of the effect of full investment and each subsequent economic point invested is only half as efficient as the preceding economic point invested. Thus, one economic point invested achieves 50% of the benefit of full investment, 2 economic points achieve 75% of the benefit, 3 economic points achieve 87.5% and so on. Clearly, full investment is never obtained but is only approached closer and

closer as economic points are invested. Details on each type of investment is discussed in the appropriate sections following.

### **Unit Production**

The production of land and air units can only be performed at factory sites and has an associated cost in economic points, industrial production capacity and oil and mineral reserves. The costs for each type of unit production are shown in the Production Costs table following. The costs in industrial production capacity and oil and mineral reserves are incurred at the factory where the production is performed. The cost in economic points is subtracted from the country's global economic point pool.

The production of naval units can only be performed at shipbuilding sites and has an associated cost in shipbuilding production capacity and materiel. The costs are shown in the Production Costs table. The costs are incurred at the shipbuilding site where the production is performed.

After a unit is put into production it remains in production for a number of turns until it is completed and deployed. The number of turns required to produce a unit is given in the following table:

<b>Production Type</b>	<b>Turns</b>
Infantry	2
Armor	4
Mechanized	4
Airborne	2
Marine	2
Fighter	4
Fighter/Bomber	4
Bomber	4
Destroyer	6
Cruiser	8
Battleship	12
Aircraft Carrier	18
Submarine	6
Transport	4
Merchant Marine	4



It is very important to note that the oil, mineral, materiel and economic points costs for the unit are incurred only at the time the unit is put into production. However, the industrial production capacity or shipbuilding production capacity is incurred each and every turn the unit is in production

### **Investment in Industrial Production**

Investment in industrial production capacity at a factory site results in increased industrial production capacity at that site. Full investment will yield a 2% increase in industrial production capacity. Thus, a 1 point investment will yield a 1% increase, a 2 point investment will yield a 1.5% growth and so on. The increase occurs at the end of the game turn.

### **Investment in Shipbuilding Production**

Investment in shipbuilding production capacity at a shipbuilding site results in increased shipbuilding production capacity at that site. Full investment will yield a 2% increase in shipbuilding production capacity. Thus, a 1 point investment will yield a 1% increase, a 2 point investment will yield a 1.5% growth and so on. The increase occurs at the end of the game turn.

### **Investment in Oil Production**

Investment in oil production capacity at an oil site may result in increased oil production capacity at that site. Full investment results in a 10% chance of increased oil production capacity. Thus, a 1 point investment will yield a 5% chance, a 2 point investment will yield a 7.5% chance and so on. If an increase occurs, a 5% increase in oil production capacity will be achieved. The increase occurs at the end of the game turn.

## **Investment in Mineral Production**

Investment in mineral production capacity at an mineral site may result in increased mineral production capacity at that site. Full investment results in a 10% chance of increased mineral production capacity. Thus, a 1 point investment will yield a 5% chance, a 2 point investment will yield a 7.5% chance and so on. If an increase occurs, a 5% increase in mineral production capacity will be achieved. The increase occurs at the end of the game turn.

## **Air Base Construction**

Upon specifying 1 point in air base construction the Production Box will be removed and the player can scroll around the map to place the air base. Air bases can only be placed on clear and desert terrain. The air base is placed by left-clicking on the selected site. The air base is placed on the selected site and the Production Box is redisplayed.

Note that air bases are considered to be cities for the purposes of computing supply nets. Thus, air bases can be used to develop the supply net into areas that would otherwise be out of supply.

## **Investment in the Economy**

A country must put half of its economic points back into its economy for the economy to remain static. Investments over this amount result in economic growth and investments less than this amount result in negative economic growth. The level of growth is determined using the concept of full and partial investments. Full investment results in a 1/2% growth in the economy. Thus a 1 point investment results in a 1/4% growth, a 2 point investment results in a 3/8% growth and so on. The increase occurs at the end of the game turn. Zero investment results in a 1/2% decrease in the economy.

The total investment in economic development for a major country is the sum of the investment in economic development at each

factory site belonging to the country. Thus, it doesn't matter whether a fixed amount investment is made at one factory or is spread over many factories.

The total investment in economic development for a minor country is equal to all unused economic points for the country. Note that economic points may be transferred into and out of minor countries during this phase using the Political Allocation Box.

### **Investment in Research and Development**

The total investment in research and development for a country is the sum of the investment in research and development at each factory site belonging to the country. Thus, it doesn't matter whether a fixed amount investment is made at one factory or is spread over many factories. Full investment in research and development results in:

A 10% chance of economic growth for the country performing the research and development. If economic growth occurs, a 1% increase will be achieved.

A 10% chance of increased industrial production for the country performing the research and development. If increased industrial production occurs, a 1% increase at each factory belonging to the country will be achieved.

A 10% chance of increased shipbuilding production for the country performing the research and development. If increased shipbuilding production occurs, a 1% increase at each shipbuilding site belonging to the country will be achieved.

A 10% chance of increased oil production for the country performing the research and development. If

increased oil production occurs, a 1% increase at each oil site belonging to the country will be achieved.

A 10% chance of increased mining production for the country performing the research and development. If increased mining production occurs, a 1% increase at each mining site belonging to the country will be achieved.

A 1% chance of improved units. Each of the categories will have a 1% chance of being improved by the amount specified in the table.

A 5% chance of achieving cryptographic breakthroughs. If cryptographic breakthroughs occur, it is assumed the player has broken the codes of the opposing player. All combat factors for the player are increased by 50% during the next game turn.

### **Investment in Rocket Development**

The total investment in rocket development for a country is the sum of the investment in rocket development at each factory site belonging to the country. Thus, it doesn't matter whether a fixed amount investment is made at one factory or is spread over many factories.

Rocket development is a long term development effort and, as such, fluctuating spending levels are penalized. During any given month, if the investment in rockets is greater than that for the previous month, the amount in excess of the previous month is only half as effective. Thus, constant funding levels are most efficient.

Regardless of the level of investment, rockets cannot be developed prior to January 1944. On and after January 1944 the computer will determine whether a country develops rockets. The computer uses the average monthly investment by a country for computing the level of investment. The average monthly investment is the sum of all monthly investments divided by the total

number of months that have elapsed since the beginning of the scenario. The average monthly investment is then used to deter-

mine the fraction of full investment achieved. If a country averages full investment, the probability of developing rockets is given in the table following.

Note that if the Historic option is chosen for Progress on the Options Screen, then rocket development occurs as it did historically. That is, only Germany will develop rockets and this will occur as it did historically.

<b>Country</b>	<b>Probability of Developing Rockets</b>
Britain	2%
France	1%
Germany	10%
Italy	1%
Russia	1%
United States	5%

### **Investment in Atomic Bomb Development**

The total investment in atomic bomb development for a country is the sum of the investment in atomic bomb development at each factory site belonging to the country. Thus, it doesn't matter whether a fixed amount investment is made at one factory or is spread over many factories.

Atomic bomb development is a long term development effort and, as such, fluctuating spending levels are penalized. During any given month, if the investment in the atomic bomb is greater than that for the previous month, the amount in excess of the previous month is only half as effective. Thus, constant funding levels are most efficient.

Regardless of the level of investment, the atomic bomb can only be developed on and after August 1944. On and after August 1944 the computer will determine whether a country develops the atomic bomb. The computer uses the average monthly investment by a country for computing the level of investment. The average monthly investment is the sum of all monthly invest-

ments divided by the total number of months that have elapsed since the beginning of the scenario. The average monthly investment is then used to determine the fraction of full investment achieved. If a country averages full investment, the probability of developing the atomic bomb is given in the table following.

Note that if the Historic option is chosen for Progress on the Options Screen, then atomic bomb development occurs as it did historically. That is, only the United States will develop the atomic bomb and this will occur as it did historically.

<b>Country</b>	<b>Probability of Developing the Atomic Bomb</b>
Britain	2%
France	1%
Germany	5%
Italy	1%
Russia	1%
United States	10%

### **Activate Political Allocation Mode**

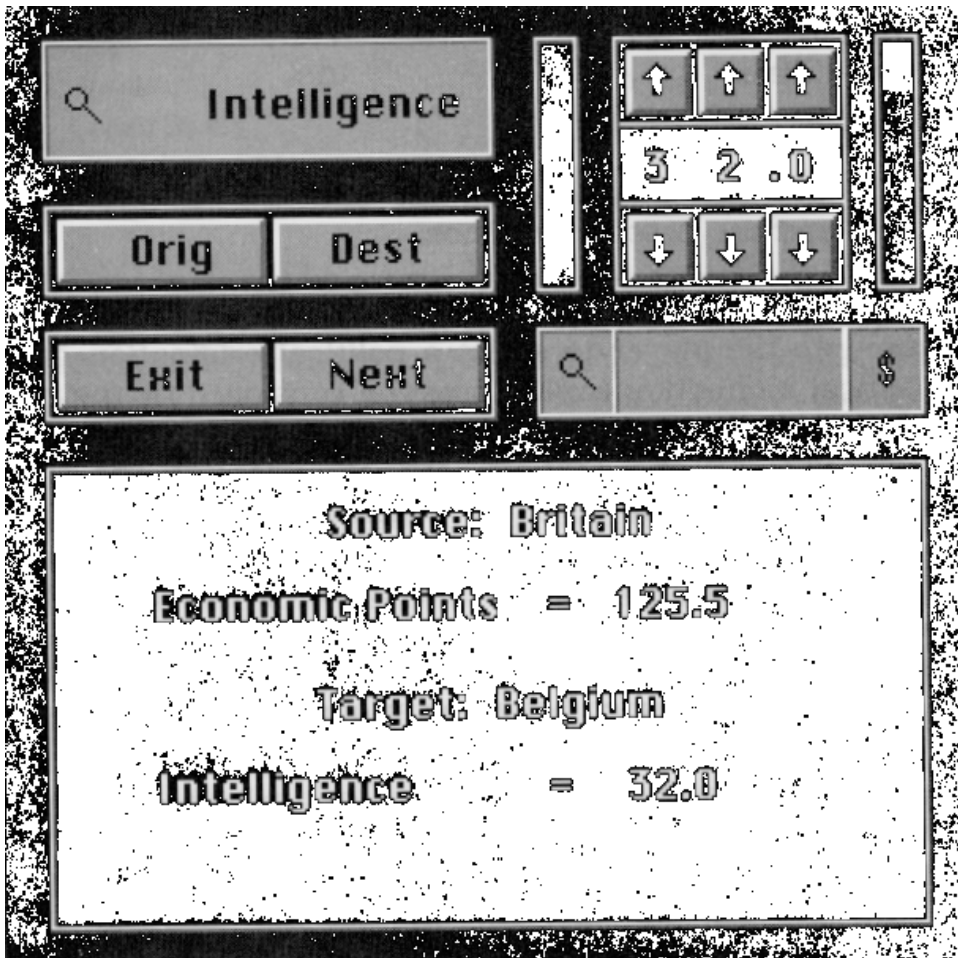
Selection of this Mode Item activates the Political Allocation Mode and prompts the player to select a political origination capital. The political origination capital must be controlled by the player. After selecting a valid political origination capital, the player will be prompted to select a political destination capital. The political destination capital may be either controlled by the player, neutral, or controlled by the opposing player, depending on the type of political allocation desired. However, not all combinations of political origination and destination capitals and types of allocation are allowed. The table following identifies the types of allocation that can be performed between various types of capitals.

Origination Capital	Destination Capital	Allocation Types
Major Country	Same Country	Intelligence
Major Country	Controlled Country	Intelligence and Economy
Major Country	Neutral Country	Diplomacy and Intelligence
Major Country	Enemy Country	Intelligence
Minor Country	Controlled Country	Economy

*Allocation Types*

Remember that functions associated with intelligence and diplomacy are not available when the Complete Detection and Historic Progression options, respectively, are chosen on the Options Screens.

**The Political Allocation Box**





The Political Allocation Box is used to transfer economic points between countries and to allocate economic points for diplomacy and intelligence.

The Political Allocation Box is divided into 3 parts. The upper left portion of the box contains the Allocation Title Box and the Function Buttons, the upper right portion contains the Counter and the lower portion contains the Allocation Information Box.

The Allocation Title Box located in the upper left portion of the Political Allocation Box displays the type of allocation that can be performed from the source country to the target country. Selecting the Allocation Title Box has no effect. The Allocation Title Box serves simply as a reminder as to the type of political allocation being specified from within the Political Allocation Box.

The Function Buttons located in the upper left portion of the Political Allocation Box allow the player to perform various actions. Four Function Buttons are provided. The Function Buttons and their effects are:

- |              |   |
|--------------|---|
| <b>Orig:</b> | Selection of this button allows the player to select a new source country for the selected target country.  |
| <b>Dest:</b> | Selection of this button allows the player to select a new target country for the selected source country.  |
| <b>Next:</b> | Selection of this button changes the type of allocation that is performed from within the Political Allocation Box. The new type of allocation that can now be performed is displayed in the Allocation Title Box. If only one type of allocation is possible between the source and target countries, then selection of this button has no effect. |
| <b>Exit:</b> | Selection of this button exits the Political Allocation Box.  |

The Allocation Information Box located in the lower portion of the Political Allocation Box displays important data for the selected source and target countries. The current available economic points are displayed for the source country and the current values for each of the possible types of allocation are displayed for the target country. Note that, unlike resource transportation, these values reflect the allocation that has been entered in the counter.

The Political Allocation Box is an Action Box and will be removed from the screen when the Exit Function Button is selected.

### **Economic Aid and Exploitation**

If economic allocation is permitted between the origination capital and the destination capital, then the Political Allocation Box can be used to transfer economic points into the destination capital and country. Conversely, economic points can be transferred out of the destination capital and country. Thus, this technique can be used to provide economic aid to a country or to exploit the country of its economic resources.

### **Allocation of Diplomacy**

The diplomacy allocated to a country by a player can be countered by the opposing player. In order to account for this, the computer computes 2 numbers. The first number is  $1/2$  the diplomacy allocation to the country and the second number is the diplomacy allocation to the country less  $1/2$  of the opposing player's diplomacy allocation to the country. The computer then takes the larger of these 2 numbers as the player's effective diplomacy allocation to the country. In this way, if the opposing player allocates diplomacy to the country, then an equal amount, up to  $1/2$  of the total of the player's diplomacy allocation will be used to counter the opposing player's allocation.

After the computer determines the effective diplomacy allocation, a correction is performed to account for the size of the targeted country. This accounts for the fact that a given allocation is more effective in a small country than in a large one. The effective diplomacy allocation is divided by  $1\%$  of the targeted country's economic points. This gives the final diplomacy allocation for the

targeted country. For full investment, the probability of a diplomatic result is given in the table following. It is important to note that these probabilities are the probabilities for a diplomatic response over the course of a full, 72 turn game and not the single event probabilities. However, the probability of a diplomatic response on any given turn is proportional to the probabilities given in the following table.

<b>Country</b>	<b>Allied Prob</b>	<b>Axis Prob</b>
Albania	0	0
Algeria	0	0
Arabia	0	0
Belgium	40	25
Britain	0	0
Bulgaria	40	95
Denmark	25	25
Egypt	0	0
Estonia	25	25
Finland	40	95
France	0	0
Germany	0	0
Greece	40	40
Holland	40	25
Hungary	40	95
Iraq	40	40
Ireland	25	25
Italy	40	90
Jordan	0	0
Latvia	25	25
Libya	0	0
Lithuania	25	25
Luxembourg	25	25
Morocco	0	0
Norway	25	25
Palestine	0	0
Persia	40	40
Poland	40	25
Portugal	25	25
Romania	40	95
Russia	40	40
Spain	40	40
Sweden	25	25
Switzerland	0	0
Syria	0	0
Tunisia	0	0
Turkey	25	<b>25</b>
United States	40	0
Yugoslavia	40	40

For some countries, the probabilities given in the table above are adjusted based on several considerations. These adjustments are based on aggressions by the Allies and Axis and on the political status of other countries. The adjustments are discussed on a country-by-country basis in the following paragraphs.

For the United States the probabilities given in table above are adjusted to account for aggressions by the Allies and the Axis.

For each country attacked, the probability of a diplomatic response to the attacker is decreased by 0.02 times the economic points of the country divided by 100. The probability for the other side is increased by an equal amount.

For Italy the probability of a diplomatic response to the Axis is increased by 0.10 times the economic points for France divided by 100 if France has been conquered by the Axis.

Russia, like the United States, is sensitive to aggressions by the Allies and the Axis. However, Russia is only sensitive to aggressions against Poland, Estonia, Latvia, Lithuania, Finland, Romania, Turkey and Persia. The adjustments are computed in a manner identical to that for the United States.

For Spain the probabilities are adjusted to account for the Ribbentrop-Molotov Pact and for the status of the major countries. The Ribbentrop-Molotov Pact is discussed in section on Special Rules. If Germany and Russia execute the Ribbentrop-Molotov pact, then the probability of a diplomatic response to the Axis is decreased by 0.02 times the economic points of Poland divided by 100. The probability for the Allies is increased by an equal amount. As for the status of the major countries, the Allied probabilities in the table above are increased by 0.02 times the

economic points of each Allied major country divided by 100. The Axis probabilities are increased by 0.02 times the economic points of each Axis major country divided by 100.

For Sweden the probabilities are adjusted to account for the status of Norway, Finland and the major countries. The adjustments to the probabilities in the table above are computed in the same way the adjustments for major country status are computed for Spain described in the previous paragraph. The only difference is that the status of Norway and Finland are included.

For Turkey the probabilities are adjusted to account for the status of Greece, Bulgaria and the major countries. The adjustments are computed in the same way that they are computed for Sweden except that consideration of Norway and Finland is replaced by consideration of Greece and Bulgaria.

Finally, diplomatic initiatives can result in coups in selected countries. The probabilities for coups are the same as those for diplomatic initiatives. However, only certain countries are susceptible to pro-Allied and pro-Axis coups. Pro-Allied coups can only occur in Yugoslavia, Greece, Bulgaria, Romania and Iraq. Pro-Axis coups can only occur in Denmark, Hungary, Greece, Bulgaria, Rumania and Iraq.

### **Allocation of Intelligence**

The intelligence allocated to a country by a player can be countered by the opposing player. In order to account for this, the computer computes two numbers. The first number is  $1/2$  the intelligence allocation to the country and the second number is the intelligence allocation to the country less  $1/2$  of the opposing player's intelligence allocation to the country. The computer then takes the larger of these two numbers as the player's effective intelligence allocation to the country. In this way, if the opposing player allocates intelligence to the country, then an equal amount, up to  $1/2$  of the total, of the player's intelligence allocation will be used to counter the opposing player's allocation.

After the computer determines the effective intelligence allocation, a correction is performed to account for the size of the tar-

geted country. This accounts for the fact that a given allocation is

more effective in a small country than in a large one. The effective intelligence allocation is divided by 1% of the targeted country's economic points. This gives the final intelligence allocation for the targeted country.

Intelligence allocated to a country can have 2 different types of effects. The first has to do with detection and the second has to do with sabotage. Detection can occur in any country that the player has targeted. Sabotage, on the other hand, can only occur in countries that have been conquered by the opposing player. For detections, full investment in intelligence in a country results in a 10% chance of detection for each undetected stack of units in that country. The detection may be reported as having occurred due to intelligence or underground activities. For sabotage, full investment in intelligence in a country results

A 10% chance at each factory site in the country of sabotaging the industrial production at the site. If sabotage occurs, the industrial production at the site will be decreased by 5%.

A 10% chance at each shipbuilding site in the country of sabotaging the shipbuilding production at the site. If sabotage occurs, the shipbuilding production at the site will be decreased by 5%.

A 10% chance at each oil site in the country of sabotaging the oil production at the site. If sabotage occurs, the oil production at the site will be decreased by 5%.

A 10% chance at each mining site in the country of sabotaging the mining production at the site. If sabotage occurs, the mining production at the site will be decreased by 5%.

A 1% chance of sabotaging the economy of the country. If sabotage occurs, the economy of the country will be decreased by 1%.

Each enemy unit in the country having a 1% chance of being attacked by partisans. Units attacked by partisans lose 10% of their combat strength and organization.

### **Display Units In Production**

Selection of this button removes all units from the map and then displays units in production. Only those units belonging to the player are displayed. The player can freely move around the map and examine units in the same way as for deployed units. Selection of this button a second time removes the units in production and redisplay the units already deployed.

### **Display Economic Investment On The Strategic Map**

Selection of this button displays the level of allocation to the economy on the Strategic Map. Each country under the control of the player is displayed on the strategic map in a color that defines the level of the player's investment in the economy for that country. The Strategic Map Legend defines the colors by a level of allocation in terms of the anticipated result.

### **Display Diplomatic Investment On The Strategic Map**

Selection of this button displays the level of allocation of diplomacy on the Strategic Map. Each neutral country is displayed on the strategic map in a color that defines the level of the player's investment in diplomacy for that country. The Strategic Map Legend defines the colors by a level of allocation in terms of the anticipated result.



### **Display Intelligence Investment On The Strategic Map**

Selection of this button displays the level of allocation of diplomacy on the Strategic Map. Each country is displayed on the strategic map in a color that defines the level of the player's investment in intelligence for that country. The Strategic Map Legend defines the colors by a level of allocation in terms of the anticipated result.

### **Delegate Resource Transportation To The High Command**

The selection of this Action Item will delegate resource transportation to the player's High Command. Assignments made by the High Command can be undone as desired by the player. Resource transportation here includes economic points among countries controlled by the player. This Action Item is enabled at the start of the phase but will be disabled if any resource transportation is initiated by the player.

### **Delegate Production To The High Command**

The selection of this Action Item will delegate production to the player's High Command. Assignments made by the High Command can be undone as desired by the player. This Action Item is enabled at the start of the phase but will be disabled if any resource transportation is initiated by the player.

### **Delegate Political Allocation To The High Command**

The selection of this Action Item will delegate political allocation to the player's High Command. Assignments made by the High Command can be undone as desired by the player. This Action Item is enabled at the start of the phase but will be disabled if any resource transportation is initiated by the player.

## **AIR ALLOCATION PHASE**

This phase is designed to provide the player with the ability to allocate air assets to missions. Missions assigned during this phase are executed simultaneously with those assigned by the opposing player during the Air Execution Phase.

This phase begins with the Air Mission Assignment Mode activated and the player prompted to select an air unit for mission assignment. The Movement Mission is the default mission type that is activated.

## **AIR PATH ASSIGNMENT**

The assignment of air missions is a 3-step process. First, the type of air mission to be assigned is selected from the Phase Button Group. Second, the units to be assigned to the mission are selected from the Tactical Map Display or the Examine Stack Box. Missions containing multiple units must be selected from the Examine Stack Box. Third, the path of the air mission is assigned.

Path assignment is the same regardless of the mission type. After selection of the units to be included in the mission, the site containing the units will be highlighted and the Message Bar will display the mission type and the remaining moves for the mission. The first site in the path is assigned by selecting a site adjacent to the site containing the units. Adjacent is always defined to include the site as well as the 6 surrounding sites. Subsequent sites in the path are assigned by selecting sites adjacent to the previously assigned site. The site for termination of the mission is selected by clicking the right mouse button on the site after it has been assigned as a site in the path assignment. After clicking the right button, the Path Assignment Mode will be exited and the Air Mission Assignment Mode will be activated.

The Phase Button Group for this phase contains the following buttons:

Activate Movement Mission Mode  
Activate Area CAP Mission Mode  
Activate Regional CAP Mission Mode  
Activate Area Recon Mission Mode  
Activate Regional Recon Mission Mode  
Activate Ground Attack Mission Mode  
Activate Naval Patrol Mission Mode  
Activate Fleet Attack Mission Mode  
Activate Strategic Air Attack Mission Mode  
Activate Rocket Attack Mode  
Activate Atomic Bomb Attack Mode  
Show Planned Moves  
Unassign All Assigned Missions  
Delegate Air Allocation to the High Command

Each of these buttons are discussed in detail in the following sections.

### **Activate Movement Mission Mode**

Selection of this button activates the Movement Mission for assignment. The Movement Mission is designed to allow the player to move air units between air bases. The rules governing the assignment of Movement Missions are:

The missions may move their full movement allowance.

The missions must terminate at a controlled air base.

### **Activate Area CAP Mission Mode**

Selection of this button activates the Area Combat Air Patrol Mission for assignment. The Area Combat Air Patrol Mission is designed to allow the player to patrol a site and intercept opposing air missions that attempt to move through the site during the

Air Execution Phase. The rules governing the assignment of Area Combat Air Patrol Missions are:

The missions always return to the air base from which they were assigned.

The missions may only move 1/2 of their full movement allowance rounded down to the nearest integer.

The missions patrol the termination site in their path assignment.

### **Activate Regional CAP Mode**

Selection of this button activates the Regional Combat Air Patrol Mission for assignment. The Regional Combat Air Patrol Mission is designed to allow the player to patrol a site and the 6 adjacent sites and intercept opposing air missions that attempt to move through these sites during the Air Execution Phase. The rules governing the assignment of Regional Combat Air Patrol Missions are:

The missions always return to the air base from which they were assigned.

The missions may only move 1/2 of their full movement allowance rounded down to the nearest integer.

The missions patrol the termination site in their path assignment and the 6 sites adjacent to the termination site excluding sites in neutral countries.

### **Activate Area Recon Mission Mode**

Selection of this button activates the Area Reconnaissance Mission for assignment. The Area Reconnaissance Mission is

designed to allow the player to patrol a site and detect opposing units in this site during the Air Execution Phase. The rules governing the assignment of Area Reconnaissance Missions are:

The missions always return to the air base from which they were assigned.

The missions may only move 1/2 of their full movement allowance rounded down to the nearest integer.

The missions patrol the termination site in their path assignment.

The missions are not available if the Complete Detection option is selected.

### **Activate Regional Recon Mission Mode**

Selection of this button activates the Regional Reconnaissance Mission for assignment. The Regional Reconnaissance Mission is designed to allow the player to patrol a site and the 6 surrounding sites and detect opposing units in these sites during the Air Execution Phase. The rules governing the assignment of Regional Reconnaissance Missions are:

The missions always return to the air base from which they were assigned.

The missions may only move 1/2 of their full movement allowance rounded down to the nearest integer.

The missions patrol the termination site in their path assignment and the 6 sites adjacent to the termination site.

The missions are not available if the Complete Detection option is selected.

### **Activate Ground Attack Mission Mode**

Selection of this button activates the Ground Attack Mission for assignment. The Ground Attack Mission is designed to allow the player to attack opposing land and air units on the ground during the Air Execution Phase. The rules governing the assignment of Ground Attack Missions are:

The missions may move their full movement allowance.

The missions attack the termination site in their path assignment.

The missions may not terminate at a controlled site.

The missions may not terminate on a sea site.

### **Activate Fleet Attack Mission Mode**

Selection of this button activates the Fleet Attack Mission for assignment. The Fleet Attack Mission is designed to allow the player to attack opposing naval units during the Air Execution Phase. The rules governing the assignment of Fleet Attack Missions are:

The missions may move their full movement allowance.

The missions attack the termination site in their path assignment.

The missions may not terminate at a controlled site.

The missions may not terminate on a land site.

### **Activate Strategic Air Attack Mission Mode**

Selection of this button activates the Strategic Air Attack Mission for assignment. The Strategic Air Attack Mission is designed to allow the player to attack the resource sites of the opposing player. The rules governing the assignment of Strategic Air Attack Missions are:

The missions may move their full movement allowance.

The missions attack the termination site in their path assignment.

The missions may not terminate at a controlled site.

The missions must terminate on a resource site.

### **Activate Rocket Attack Mode**

Selection of this button activates the Rocket Attack Mission for assignment. The Rocket Attack Mission is designed to allow the player to attack the opposing side with rockets. This mission type is different from others in this phase in that air units are not selected or assigned to this mission. After selecting this button, the player will be prompted to select the target site. The rules governing target site selection for Rocket Attack Missions are:

The attacks can only be assigned against resource sites that are within 6 sites of a site controlled by the player.

The attacks are available only if one or more countries under the control of the player has developed rockets.

The attacks may be assigned during a phase only as many times as countries controlled by that player have developed rockets.

Upon selecting a valid target site, the attack is assigned and the Air Mission Assignment Mode is activated.

### **Activate Atomic Bomb Attack Mode**

Selection of this button activates the Atomic Bomb Attack Mission for assignment. The Atomic Bomb Attack Mission is designed to allow the player to attack the opposing side with atomic bombs. This mission type is different from others in this phase in that air units are not selected or assigned to this mission. After selecting this button, the player will be prompted to select the target site. The rules governing target site selection for Atomic Bomb Missions are:

The attacks can only be assigned against sites that are within 8 sites of a site controlled by the player.

The attacks are available only if one or more countries under the control of the player has developed atomic bombs.

The attacks may be assigned during a phase by a player only as many times as countries controlled by that player have developed atomic bombs.

Upon selecting a valid target site, the mission is assigned and the Air Mission Assignment Mode is activated.

### **Show Planned Moves**

Selection of this button will move all air units to their assigned locations. The units do not actually execute their mission, but are simply placed at their destinations. This is a helpful tool for quickly summarizing what missions have been assigned. Reselecting the button will return the units to their actual locations.



### **Unassign All Missions**

Selection of this button will unassign all missions that have been assigned during the phase.

### **Delegate Air Allocation To The High Command**

Selection of this button delegates the assignment of air missions to the High Command. After the High Command has assigned all missions the player may modify, unassign, or reassign any missions desired and in any manner whatsoever consistent with other rules.

It is important to note that this button is no longer active once the player has performed any mission assignment action whatsoever during the phase. However, if all missions are unassigned using the Unassign All Assigned Missions button, then this button once again becomes active and the player may select it to delegate air allocation to the High Command.

## **AIR EXECUTION PHASE**

All air missions assigned by both players during the Air Allocation Phase are executed during the Air Execution Phase. Since the computer is a serial processor, the missions are executed one at a time. However, the concurrent execution of missions is simulated.

### **Rocket And Atomic Bomb Attacks**

The Air Execution Phase begins with the execution of all rocket and atomic bomb attacks assigned during the Air Execution Phase. Rocket attacks are executed first followed by atomic bomb attacks. Each rocket attack has a 25% chance of successful execution. The probability of a success for each atomic bomb attack is 50%. Details of the effect of successful rocket and atomic bomb attacks are discussed in Combat Resolution.

### **Combat Air Patrol Missions**

After all rocket and atomic bomb attacks have been executed, all Combat Air Patrol missions are executed. The order of execution is random. Once Combat Air Patrol missions are on patrol, they are considered to remain on patrol for the duration of the phase unless they are disengaged and/or eliminated as the result of air-to-air combat. After all of the Combat Air Patrol missions have been executed, the computer determines whether combat patrol zones by opposing players overlap and, if so, whether interceptions occur. Details of interception probabilities are discussed in the section on interceptions in this chapter. If interceptions occur, then air-to-air combat is initiated. Each player will be provided the opportunity to direct the actions of their respective units engaged in the combat. Combat is conducted in rounds and continues until all of the units of one or both players are disengaged and/or eliminated. Units assigned to Combat Air Patrol missions that are disengaged return to the air base from which they were assigned.

## **Reconnaissance Missions**

After all Combat Air Patrol missions have been executed and aU combat between overlapping missions has been resolved, Air Reconnaissance missions are executed in random order. All Air Reconnaissance missions are assumed to have arrived at their recon zone successfully. However, once they have reached their recon zone the computer determines whether the recon zone overlaps with the Combat Air Patrol zone of the opposing player and, if so, the reconnaissance mission is intercepted by the opposing Combat Air Patrol mission. Details of interception probabilities are discussed in the section on interceptions in this chapter. If interception occurs, then air-to-air combat is initiated. Each player will be provided the opportunity to direct the actions of their respective units engaged in the combat. Combat is conducted in rounds and continues until all of the units of one or both players are disengaged and/or eliminated. Units assigned to reconnaissance missions that are disengaged return to the air base from which they were assigned.

Reconnaissance missions that are not intercepted or that survive an interception execute their reconnaissance patrol of all sites in their patrol zone. Undetected land, air and/or naval units in these sites may become detected. Probabilities of detection are discussed in Detection.

After all reconnaissance missions are executed, the remaining air missions are executed. The order for Allied and Axis air missions is preserved. However, whether to execute an Allied or Axis mission next is decided in a random fashion. Each mission is moved towards its destination one site at a time along its assigned flight path. At each site, the computer determines whether the path passes through the patrol zone of an opposing Combat Air Patrol mission and, if so, whether the mission is intercepted by the opposing Combat Air Patrol mission. Details of interception probabilities are discussed in the section on interceptions in this chapter. If interception occurs, then air-to-air combat is initiated. Each player is provided the opportunity to direct the actions of their respective units engaged in the combat. Combat is conducted in rounds and continues until all of the units or one or both players are disengaged and/or eliminated. Units assigned to

Combat Air Patrol missions that are disengaged return to the air

base from which they were assigned. Units assigned to the mission attempting to pass through the patrol zone that are disengaged will automatically be returned to an air base. These units have a 75% chance of returning to the air base from which they were assigned and a 25% chance of returning to the nearest air base controlled by the player. If the computer decides that a disengaged unit is to return to the air base from which it was assigned but the unit does not have sufficient movement points remaining to do so, then the unit will return to the nearest air base controlled by the player. If the units on the Combat Air Patrol mission are all disengaged and/or eliminated, then the units on the mission attempting to pass through the patrol zone that have not been disengaged continue on their flight path towards their destination and can be intercepted again by another Combat Air Patrol mission either at that site or at another site farther along their flight plan.

### **Movement Missions**

Movement missions that reach their destination land at that air base.

### **Ground Attack Missions**

Ground Attack missions that reach their destination execute a ground attack at that site. Ground attack missions attack land units and unassigned air units in the attack site. Naval units or assigned air units in the site are ignored. Note that air units in the site may have been assigned at the start of the phase but may be unassigned at the time of the attack.

If opposing land units or unassigned air units are located in the attack site, then air-to-ground combat is initiated. The player controlling the attacking air units is provided the opportunity to direct the action of the air units attacking the site. The player that is being attacked has no options to disengage the units that



are being attacked. Combat is conducted in rounds and continues until either of the following is satisfied:

All of the attacking units are disengaged and/or eliminated.

All the units being attacked are eliminated.

2 rounds of combat have been conducted and all of the remaining air units attacking the site will be automatically disengaged.

Attacking air units that are disengaged before the completion of 2 combat rounds will automatically return to an air base. These units will have a 75% chance of returning to the air base from which they were assigned and a 25% chance of returning to the nearest air base controlled by the player. If the computer decides that a disengaged unit is to return to the air base from which it was assigned but the unit does not have sufficient movement points remaining to do so, then the unit will return to the nearest air base controlled by the player. If a disengaged unit does not have sufficient movement points remaining to return to the nearest air base controlled by the player, then the unit is eliminated. However, those attacking air units that were not disengaged during the combat will have an option as regards the return air base. The player will be prompted to choose a return air base for the mission, the air base from which they were assigned will be highlighted and the remaining movement points will be displayed in the Message Bar. A return air base is chosen by selecting the site.

### **Fleet Attack Missions**

Fleet Attack missions are executed exactly like Ground Attack missions except that they attack naval units in a site. Land or air units in the attack site are ignored. If opposing naval units are located in the attack site, then air-to-sea combat is initiated. In

all other respects Fleet Attack missions are identical to Ground Attack missions.

### **Strategic Air Attack Missions**

Strategic Air Attack missions are executed exactly like Ground Attack missions except that they attack the strategic resources in the attack site. Land, air, or naval units in the attack site are ignored. If opposing strategic resources are located in the attack site, then strategic air combat is initiated. In all other respects Strategic Air Attack missions are identical to Ground Attack missions.

### **Interception**

There are 2 types of interception for combat air patrol missions. First there is the interception of an opposing combat air patrol mission when the patrol zones of the 2 missions overlap. For each combat air patrol mission, the computer tests for interception at each overlap site for the 2 patrol zones.

Second, there is the interception of an opposing air mission when the opposing air mission moves through the patrol zone of a combat air patrol. The computer tests for interception at each site of the patrol zone that the opposing mission moves attempts to move through. The probability of interception at each site is the same as that for overlapping combat air patrol missions.



## **NAVAL ALLOCATION PHASE**

This phase is designed to provide the player with the ability to allocate naval assets to missions. Missions assigned during this phase are executed simultaneously with those assigned by the opposing player during the Naval Execution Phase.

This phase begins with the Naval Mission Assignment Mode activated and the player prompted to select a naval unit for mission assignment. The Movement Mission is the default mission type that is activated.

## **NAVAL PATH ASSIGNMENT**

The assignment of naval missions is a 3-step process. First, the type of naval mission to be assigned is selected from the Phase Button Group. Second, the units to be assigned to the mission are selected from the Tactical Map Display or the Examine Stack Box. Missions containing multiple units must be selected from the Examine Stack Box. Third, the path of the naval mission is assigned.

Path assignment is the same regardless of the mission type. After selection of the units to be included in the mission, the site containing the units will be highlighted and the Message Bar will display the mission type and the remaining moves for the mission. The first site in the path is assigned by selecting a site adjacent to the site containing the units. Adjacent is always defined to include the site as well as the 6 surrounding sites. Subsequent sites in the path are assigned by selecting sites adjacent to the previously assigned site. The site for termination of the mission is selected by clicking the right mouse button on the site after it has been assigned as a site in the path assignment. After clicking the right button, the Path Assignment Mode will be exited and the Naval Mission Assignment Mode will be activated. The rules governing the assignment of naval paths are:

Naval movement can only occur on sea and coastal sites.

Naval movement cannot occur between sites whose common side consists entirely of land.

Although naval paths can be assigned through any strait or canal, movement through the strait or canal during the Naval Execution Phase can only take place if the player attempting the movement controls all sites comprising the strait or canal. There are 4 straits and canals in High Command. They are discussed in the section on Straits and Canals.

Since naval missions can be up to 120 sites long, it can become tedious to assign long naval paths. To help alleviate this, a special function has been included for the assignment of naval paths. If, at any time during the path assignment, a site is selected that is not adjacent to the previously assigned site, then the computer will assume that the path between the new site and the previously assigned site should be assigned by the High Command. Once the High Command has assigned the path between these sites, the player can continue or terminate the path assignment at the last assigned site. This process of delegating portions of the path assignment to the High Command can be repeated as many times as necessary during any given path assignment.

The Phase Button Group for this phase contains the following buttons:

- Activate Movement Mission Mode
- Activate Transport Mission Mode
- Activate Naval Patrol Mission Mode
- Activate Amphibious Assault Mission Mode
- Activate Shore Bombardment Mission Mode
- Activate Merchant Marine Escort Mission Mode
- Activate Merchant Marine Attack Mission Mode
- Show Planned Moves
- Unassign All Missions
- Delegate Naval Allocation to the High Command

Each of these buttons are discussed in detail in the following sections.

### **Activate Movement Mission Mode**

Selection of this button activates the Movement Mission for assignment. The Movement Mission is designed to allow the player to move naval units between specified sites. The rules governing the assignment of Movement Missions are:

The missions may move their full movement allowance.

The missions may not terminate in an uncontrolled port.

### **Activate Transport Mission Mode**

Selection of this button activates the Transport Mission for assignment. The Transport Mission is designed to allow the player to transport land and air units across bodies of water. Since the Transport Mission assumes 2 or more units will be assigned, the mission must be assigned from within the Examine Stack Box. The land and/or air units that are to be transported on a given transport unit must be selected immediately after the transport is selected although the transport may be selected at any point in the selection of units for the mission. After all land and/or air units that are to be transported on the transport have been selected, the player may select another naval unit, including a transport that is to be loaded with land and/or air units, or the player may terminate the selection of units for this mission by selecting the Done Function Button in the Examine Stack Box. The rules governing the assignment of Transport Missions are:

The missions may move their full movement allowance.

The missions may only be assigned to units in port.

The missions must terminate in a controlled port.

### **Activate Naval Patrol Mission Mode**

Selection of this button activates the Naval Patrol Mission for assignment. The Naval Patrol Mission is designed to patrol an area and attempt to intercept opposing naval missions that move through the area during the Naval Execution Phase. The patrol area is centered on a central patrol site and consists of all sea and coastal sites within a radius of 4 sites of the central patrol site. The rules governing the assignment of Naval Patrol Missions are:

The missions always return to the port from which they were assigned.

The missions may only move 1/2 their full movement allowance rounded down to the nearest integer.

The missions may only be assigned to units in port.

The missions patrol a circular area with a radius of 4 sites, excluding land sites, centered on the termination site in their path assignment.

### **Activate Amphibious Assault Mission Mode**

Selection of this button activates the Amphibious Assault Mission for assignment. The Amphibious Assault Mission is designed to allow the player to transport land forces across bodies of water and land them on coastal sites. Since the Amphibious Assault Mission assumes 2 or more units will be assigned, the mission must be assigned from within the Examine Stack Box. The land units that are to be transported on a given transport unit must be selected immediately after the transport is selected although the transport may be selected at any point in the selection of units for the mission. After all land units that are to be transported on the transport have been selected, the player may select another naval unit, including a transport that is to be loaded with land units, or the player may terminate the selection of units for this mission by selecting the Done Function Button in

the Examine Stack Box. The rules governing the assignment of Amphibious Assault Missions are:

The missions may move their full movement allowance.

The missions may only be assigned to units in port.

The missions must terminate in a coastal site.

The missions may not terminate in a port.

The missions may only be assigned in the First Naval Allocation Phase.

### **Activate Shore Bombardment Mission Mode**

Selection of this button activates the Shore Bombardment Mission for assignment. The Shore Bombardment Mission is designed to allow the player to attack opposing land units in a coastal site. The rules governing the assignment of Amphibious Assault Missions are:

The missions may move their full movement allowance.

The missions must terminate in a coastal site.

The missions may not terminate in a port.

The missions may not terminate in a controlled site.

### **Activate Merchant Marine Escort Mission Mode**

Selection of this button activates the Merchant Marine Escort Mission for assignment. The Merchant Marine Escort Mission is

designed to allow the player to allocate naval units for escort of

controlled Merchant Marine units in a sea zone. The rules governing the assignment of Merchant Marine Escort Missions are:

The missions may only be assigned to units in port.

The missions provide escort for controlled Merchant Marine units in the sea zone that contains the escorting units.

The missions are not assigned paths.

### **Activate Merchant Marine Attack Mission Mode**

Selection of this button activates the Merchant Marine Attack Mission for assignment. The Merchant Marine Attack Mission is designed to allow the player to allocate naval units for attack of opposing Merchant Marine units in a sea zone. The rules governing the assignment of Merchant Marine Attack Missions are:

The missions may only be assigned to units in port.

The missions attack enemy Merchant Marine units in the sea zone that contains the attacking units.

The missions are not assigned paths.

### **Show Planned Moves**

Selection of this button will move all naval units to their assigned locations. The units do not actually execute their mission, but are simply placed at their destinations. This is a helpful tool for quickly summarizing what missions have been assigned. Reselecting the button will return the units to their actual locations.

### **Unassign All Missions**

Selection of this button will unassign all missions that have been assigned during the phase.

### **Delegate Naval Allocation To The High Command**

Selection of this button delegates the assignment of naval missions to the High Command. After the High Command has assigned all missions the player may modify, unassign, or reassign any missions desired and in any manner whatsoever consistent with other rules.

It is important to note that ~Ais button is no longer active once the player has performed any mission assignment action whatsoever during the phase. However, if all missions are unassigned using the Unassign All Assigned Missions button, then this button once again becomes active and the player may select it to delegate air allocation to the High Command.



## **NAVAL EXECUTION PHASE**

All naval missions assigned by both players during the Naval Allocation Phase are executed during the Naval Execution Phase. Since the computer is a serial processor, the missions are executed one at a time. However, the manner in which the missions are executed simulates simultaneity.

### **Naval Patrol Missions**

The Naval Execution Phase begins with the execution of all Naval Patrol missions. The order for Allied and Axis naval missions is preserved. However, whether to execute an Allied or Axis mission next is decided in a random fashion. Once Naval Patrol missions are on patrol, they are considered to remain on patrol for the duration of the phase unless they are disengaged and/or eliminated as the result of sea-to-sea combat. After all of the Naval Patrol missions have been executed, the computer determines whether combat patrol zones by opposing players overlap and, if so, whether interceptions occur. Details of interception probabilities are discussed in Interceptions. If interceptions occur, then sea-to-sea combat is initiated. Each player will be provided the opportunity to direct the actions of their respective units engaged in the combat. Combat is conducted in rounds and continues until all of the units of one or both players are disengaged and/or eliminated. Units assigned to Naval Patrol missions that are disengaged return to the port from which they were assigned.

### **Movement Missions**

Movement missions that reach their destination dock at that port.

## **Transport Missions**

Transport missions that reach their destination dock at that port. Any land and air units loaded on a transport are immediately disembarked.

## **Shore Bombardment Missions**

Shore Bombardment missions that reach their destination execute a shore bombardment attack at that site. Shore Bombardment missions attack only the land units, if any, in the attack site. Air and naval units in the site are ignored.

If opposing land units are located in the attack site, then sea-to-ground combat is initiated. The player controlling the attacking naval units is provided the opportunity to direct the action of the naval units attacking the site. The player that is being attacked has no options to disengage the units that are being attacked. Combat is conducted in rounds and continues until

All of the attacking units are disengaged and/or eliminated.

All the units being attacked are eliminated.

Two rounds of combat have been conducted and all of the remaining naval units attacking the site will be automatically disengaged.

Attacking naval units that are disengaged before the completion of two combat rounds will automatically return to port. These units will return to the nearest controlled port. If a disengaged unit does not have sufficient movement points remaining to return to the nearest port controlled by the player, then the unit is eliminated. However, those attacking naval units that were not disengaged during the combat will remain in the coastal site.

## **Amphibious Assault Missions**

Amphibious Assault missions that reach their destination immediately commence an amphibious assault. An amphibious assault begins with a shore bombardment of the coastal site. The details of the shore bombardment attack are described in Shore Bombardment.

Once the shore bombardment is completed, any surviving naval units in the Amphibious Assault mission will execute an amphibious assault attack on the attack site. An amphibious assault consists merely of all land units loaded on transports being disembarked. These land units will be located in the attack site and the naval units will remain in this site. The land units will then be available for allocation and execution of missions in the succeeding Land Allocation and Land Execution Phases, respectively.

There are two important points that must be kept in mind regarding Amphibious Assault missions. First, it is possible that opposing land units can survive the shore bombardment portion of the assault. If so, then land units belonging to both players will be located in the same site and will remain there until the commencement of the Land Execution Phase. This is the only instance in the game where land units of opposing players can be located in the same site at the end of a phase. However, these units will immediately enter into ground-to-ground combat in the Land Execution Phase. Second, control of the attack site is not transferred to the attacking player until after the first impulse of the Land Execution Phase, and then only if the attacking units eliminate and/or force the retreat of any opposing units that occupy the site. Control will not be transferred if all of the attacking units also retreat.

## **Merchant Marine Escort And Attack Missions**

Merchant Marine Escort and Attack missions are executed very differently from other types of naval missions. This has primarily to do with the fact that the Merchant Marine units are not actually deployed on the map. All units assigned to Merchant Marine

Escort and Attack missions automatically execute their missions simultaneously. These missions cannot be intercepted by opposing units. After these missions have been executed the computer checks each sea zone for Merchant Marine Attack missions. Merchant Marine combat is initiated for any sea zone that has a Merchant Marine Attack mission by one player and Merchant Marine units controlled by the other player. The units assigned to the Merchant Marine Attack mission in that sea zone attack the Merchant Marine units and the units assigned to the Merchant Marine Escort mission that are in that sea zone and controlled by the opposing player.

Two important points that must be kept in mind regarding Merchant Marine attack missions. First, each player can execute a Merchant Marine Attack against the opposing player in a given sea zone. Thus, there may be two executions of Merchant Marine Combat in a given sea zone. Second, all units assigned to Merchant Marine Escort or Attack Missions are not actually moved and will end the phase in the same port where they were docked at the beginning of the phase.

### **The Merchant Marine Combat Report Box**

The Merchant Marine Combat Report Box displays the result of Merchant Marine attack missions. There are actually 2 different Merchant Marine Combat Report Boxes; 1 for the Merchant Marine units and 1 for the combatants.

Merchant Marine Combat Report Boxes are displayed for each particular player. This is done since friendly losses are exact and enemy losses are only estimates. The player is identified at the top of the box.

Merchant Marine Combat Report Boxes are displayed for each sea zone that was the subject of Merchant Marine attacks. The second line of text in the box identifies the sea zone.

The remaining information in the box varies. For Merchant Marine units, the remaining information relates to the losses of Merchant Marine units in the sea zone. The losses for the player

are listed first, followed by those for the opposing player. In each case, 2 numbers are displayed separated by "/". The first number is the surviving number of Merchant Marine units in the sea zone, the second number is the original number of Merchant Marine units in the sea zone.

For combat units, the remaining information relates to the losses of units in the sea zone that were assigned to Merchant Marine attack and escort missions. The losses for the player are listed first, followed by those for the opposing player. 2 sets of numbers are displayed for each player. The first set of numbers is for the combat units assigned to Merchant Marine attack missions and the second set of numbers is for the combat units assigned to Merchant Marine escort missions. In each case, 2 numbers are displayed separated by "/". The first number is the surviving number of combat units assigned to that particular mission in the sea zone, and the second number is the original number of combat units assigned to that particular mission in the sea zone. The Merchant Marine Combat Report Box is an Information Box and is removed from the screen by clicking the left mouse button.

## **Interception**

There are 2 types of interception for naval patrol missions. First there is the interception of an opposing naval patrol mission when the patrol zones of the 2 missions overlap. For each naval patrol mission, the computer tests for interception at each overlap site for the 2 patrol zones. Sub modifier is 1 unless the opposing mission is constituted entirely of submarines. In that case, sub modifier is given by:

$$P = (0.25 * \text{asw}) / \text{Stealth}$$

where ASW is the average anti-submarine warfare capability of all units in the patrol mission attempting interception and stealth is the average stealth capability of all submarines in the opposing mission. The sub modifier is never greater than 1. Note that patrol missions with good ASW capability have a better chance of

intercepting missions constituted entirely of submarines, that missions constituted entirely of submarines with good stealth capability have a better chance of avoiding interception, and that missions constituted entirely of submarines always have a better chance of avoiding interception than missions containing surface ships.

Second, there is the interception of an opposing naval mission when the opposing naval mission moves through the patrol zone of a naval patrol. The computer tests for interception at each site of the patrol zone that opposing mission moves attempts to move through. The probability of interception at each site is the same as that for overlapping naval patrol missions including the considerations for opposing missions constituted entirely of submarines.

## **LAND ALLOCATION PHASE**

This phase is designed to provide the player with the ability to allocate land assets to missions. Missions assigned during this phase are executed simultaneously with those assigned by the opposing player during the Land Execution Phase.

This phase begins with the Land Mission Assignment Mode activated and the player prompted to select a land unit for mission assignment. The Movement Mission is the default mission type that is activated.

### **Land Path Assignment**

The assignment of land missions is a 3-step process. First, the type of land mission to be assigned is selected from the Phase Button Group. Second, the units to be assigned to the mission are selected from the Tactical Map Display or the Examine Stack Box. Missions containing multiple units must be selected from the Examine Stack Box. Third, the path of the land mission is assigned.

There are 2 mission types available for land units and the path assignment method is different for each. Before proceeding with the details of path assignment for each of these mission types, a brief discussion of the way land missions are executed is in order.

The Land Execution Phase consists of a series of 6 impulses. During each impulse, all land units assigned to move during that impulse are moved to their assigned site. It is important to note that most units will only move in some of the 6 impulses. In fact, only armor and mechanized units assigned to move into clear terrain sites in fair weather have the ability to move during each of the 6 impulses.

## **MOVEMENT MISSION PATH ASSIGNMENT**

After selection of the units to be included in the mission, the site containing the units will be highlighted and the first line in the Message Bar will display the mission type, the impulse to be plotted, and the remaining movement points for the mission. The second line in the Message Bar will display the cost in movement points for each of the 6 directions. Movement costs displayed as "xx" are moves that are prohibited. The direction and the cost in movement points are separated by either "-" or "=" . The "-" signifies that the movement will take one impulse to occur. The "=" signifies that the movement will take 2 impulses to occur. Movement that takes 2 impulses to occur will always take place on the second of those 2 impulses. Each time a movement is plotted, the next impulse to be plotted will advance by the number of impulses that it took to plot the movement.

The first site in the path is assigned by selecting a site adjacent to the site containing the units. Selecting the site containing the units signifies that the units are not to move during that impulse. Upon assigning the first movement, the impulse to be plotted will be advanced and the next movement is plotted. The next site in the path is assigned by selecting a site adjacent to the previously plotted site. As before, selecting the previously plotted site signifies that the units are not to move during that impulse. This process is repeated until all 6 impulses have been plotted or the unit has insufficient movement points remaining to plot any further movement. Note that if a unit is not using its full allowance of movement points, it will still be necessary to plot all 6 impulses even though the unit will not move during some of those impulses.

### **Air Drop Path Assignment**

After selection of the units to be included in the mission, the site containing the units will be highlighted and the first line in the Message Bar will display the mission type and the impulse to be plotted. The units can be dropped on the target site during any 1 of the 6 impulses during the Land Execution Phase. Selecting the



site containing the units will advance the impulse to be plotted.

When the desired impulse is obtained, the target site is selected. The air drop mission is then assigned and the units will be dropped on the target site during the specified impulse of the Land Execution Phase.

The Phase Button Group for this phase contains the following buttons:

- Activate Movement Mission Mode
- Activate Air Drop Mission Mode
- Show Planned Moves
- Unassign All Missions
- Delegate Land Allocation to the High Command

Each of these buttons are discussed in detail in the following sections.

### **Activate Movement Mission Mode**

Selection of this button activates the Movement Mission for assignment. The Movement Mission is designed to allow the player to allocate land units for movement whether for attack, retreat, or simple redeployment. The rules governing the assignment of Movement Missions are:

- Land movement can only occur on land and coastal sites.

- Land movement cannot occur between sites whose common side consists entirely of water other than rivers or canals. There are 4 exceptions to this last rule. These exceptions are discussed in the section on Straits and Canals.

### **Activate Air Drop Mission Mode**

Selection of this button activates the Air Drop Mission for assignment. The Air Drop Mission is designed to allow the player to

allocate land units for airborne landings. The rules governing the assignment of Air Drop Missions are:

The missions must be targeted against land or coastal sites.

The missions are limited to a range of twelve sites.

### **Show Planned Moves**

Selection of this button will move all land units to their assigned locations. The units do not actually execute their mission, but are simply placed at their destinations. This is a helpful tool for quickly summarizing what missions have been assigned. Reselecting the button will return the units to their actual locations.

### **Unassign All Missions**

Selection of this button will unassign all missions that have been assigned during the phase.

### **Delegate Land Allocation To The High Command**

Selection of this button delegates the assignment of land missions to the High Command. After the High Command has assigned all missions the player may modify, unassign, or reassign any missions desired and in any manner whatsoever consistent with other rules.

It is important to note that this button is no longer active once the player has performed any mission assignment action whatsoever during the phase. However, if all missions are unassigned using the Unassign All Missions button, then this button once again becomes active and the player may select it to delegate air allocation to the High Command.

## **LAND EXECUTION PHASE**

All land missions assigned by both players during the Land Allocation Phase are executed during the Land Execution Phase. The Land Execution Phase begins with the computer determining supply centers. A supply center is defined as a city or air base that is in supply and remains in supply for the duration of the phase although control of the site may change. After all supply centers have been determined, the execution of land missions begins.

### **Impulses**

The execution of land missions is divided into 6 impulses. At the start of each impulse, the computer determines the supply status for all units. After the supply status has been determined, all land units that are in supply and that have been assigned to move during the impulse are moved to their assigned movement site. Movement is executed in random order during each impulse.

### **Combat**

After all units assigned to move during an impulse have moved, the computer surveys all sites. Whenever units of opposing sides are in the same site, ground-to-ground combat is initiated. Each player is provided the opportunity to direct the actions of their respective land units engaged in the combat. Air and naval units in the site are ignored. Combat is conducted in rounds and continues until all of the units of one or both players are retreated and/or eliminated.

### **Retreat**

Units that are retreated during ground-to-ground combat will automatically attempt to retreat from the combat site. The com-

puter determines the site for retreat. The following sites are not eligible for retreat:

- Sea or marsh sites
- Sites across impassable straits
- Sites in neutral countries
- Sites containing opposing land units
- Sites containing 18 units
- The origin site of the advancing opposing land units

If there are no eligible retreat sites, then the unit is eliminated. If there are multiple eligible retreat sites, then the eligible retreat sites are evaluated for desirability and a retreat site chosen automatically by the computer. Retreat results in a nominal combat strength loss of 25% and an organization loss of 25. If this results in a combat strength less than 0.1 or an organization less than 10, then the unit is eliminated.

### **Delayed Movement**

Finally, whenever units are engaged in ground-to-ground combat, there is a possibility that the units will be delayed executing movement in subsequent impulses. That is, there is a possibility that movement in subsequent impulses will occur one impulse later than scheduled. This also means that movement scheduled, if any, for the sixth impulse will not occur.

### **Gaining Control Of Sites**

After all ground-to-ground combat has been resolved, opposing land units cannot occupy the same site. At this time, control of sites is transferred. The computer surveys all sites containing land units and sets the control of the sites to the player controlling the land units in the sites. Note that control of sites can be transferred without ground-to-ground combat if units moved into a site unopposed.

Several events may occur when control of a site is transferred.

Any air or naval units in the site belonging to the player losing control of the site will either flee, be destroyed, or be captured. The probabilities are 25%, 50% and 25%, respectively, for each unit in the site. Units that flee will attempt to move to the nearest friendly air base or port. If the unit does not have sufficient movement points to perform the movement, then the unit will be eliminated.

If the site is a factory or shipbuilding site, then all units in production are eliminated and the production of the site is eliminated by 50%.

If the site is worth 1 or more victory points and the player gaining control of the site controls the capital of the country but not the country itself, then the computer checks for conquest of the country. Details for conquests of countries are described in the section Conquests.

After these actions are performed, the next impulse is executed until all 6 impulses have been executed.

### **Check Hex Control**

After all impulses have been executed, the computer performs a check of all land and coastal sites to determine if control of any unoccupied sites should be transferred. This check proceeds sequentially from left to right and top to bottom beginning in the upper left corner of the map. This transfer of control represents the takeover of sites by opposing local, partisan, and/or other small-unit forces that are too small to include in High Command but can play a significant role behind the front lines. The rules for transfer of control are as follows:

The site must be adjacent to at least one site controlled by the opposing player in order for transfer of control to take place.



If friendly land units are in any site adjacent to the site, then transfer of control cannot take place under any circumstances.

If the site is adjacent to more sites controlled by the opposing player than controlled by the player, then transfer of control takes place.

If the site is adjacent to equal numbers of sites controlled by the player and the opposing player, then transfer of control takes place only if the opposing player has units in one or more of the adjacent sites.



## COMBAT RESOLUTION

### Air-To-Air Combat

In order to resolve air-to-air combat, the computer first calculates the air-to-air combat factors for each group of units engaged in the combat. The air-to-air combat factor for an air unit is the product of the combat strength, air capability and organization. The combat factor for a group of units is the sum of the combat factors for all units in the group. After the combat factors for each group of units have been computed, they are multiplied by the odds correction factors selected for the respective players on the Options Screen. Using the corrected combat factors, the computer calculates the combat ratio. The combat ratio is the largest combat factor divided by the smallest combat factor.

After the combat ratios have been calculated, the total combat strength losses for each side are calculated. The method of calculation depends on whether Detailed or Quick combat was selected under Combat on the Options Screen. For Quick combat, the combat strength loss for the side with the smallest combat factor is equal to the combat strength of the group. The combat strength loss for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. For Detailed combat on the first round, the combat strength loss for the side with the smallest combat factor is equal to 50% of the strength of the group. The combat strength for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. On subsequent rounds, the combat factors, combat ratio and losses are calculated in exactly the same way except that the losses are multiplied by the square-root of the round.

After combat losses for each group have been calculated, the losses are distributed among the units in the group based on the percentage of the total combat strength contributed by each unit. Organization losses for each unit are the same percentage loss as for combat strength losses.

## **Air-To-Ground Combat**

In order to resolve air-to-ground combat, the computer first calculates the combat factors for each group of units engaged in the combat. The air-to-ground combat factor for an air unit is the product of the combat strength, ground capability, organization and the Air-to-Ground Terrain Effects Modifier. The Air-to-Ground Terrain Effects Modifiers are only used in the calculation of combat factors for air units. The ground-to-air combat factor for a land unit is the product of the combat strength, air capability and organization. Land units that are not in supply have their combat factors halved. The combat factor for a group of units is the sum of the combat factors for all units in the group. If the combat is part of a surprise attack, then the combat factor for the land units is divided by 10. After the combat factors for each group have been computed, they are multiplied by the odds correction factors selected for the respective players on the Options Screen. Using the corrected combat factors, the computer calculates the combat ratio. The combat ratio is the largest combat factor divided by the smallest combat factor.

After the combat ratios have been calculated, the total combat strength losses for each side are calculated. The method of calculation depends on whether Detailed or Quick combat was selected under Combat on the Options Screen. For Quick combat, the combat strength loss for the side with the smallest combat factor is equal to the combat strength of the group. The combat strength loss for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. For Detailed combat on the first round, the combat strength loss for the side with the smallest combat factor is equal to 20% of the strength of the group. The combat strength for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. On subsequent rounds, the combat factors, combat ratio and losses are calculated in exactly the same way except that the losses are multiplied by the square-root of the round.

After combat losses for each group have been calculated, the losses are distributed among the units in the group based on the percentage of the total combat strength contributed by each unit.

Organization losses for each unit are the same percentage loss as for combat strength losses.

### **Air-To-Sea Combat**

In order to resolve air-to-sea combat, the computer first calculates the combat factors for each group of units engaged in the combat. The air-to-sea combat factor for an air unit is the product of the combat strength, sea capability and organization. The sea-to-air combat factor for a naval unit is the product of the combat strength, air capability and organization. Naval units that are in a port site have their combat factors halved. The combat factor for a group of units is the sum of the combat factors for all units in the group. If the combat is part of a surprise attack, then the combat factor for the naval units is divided by 10. After the combat factors for each group have been computed, they are multiplied by the odds correction factors selected for the respective players on the Options Screen. Using the corrected combat factors, the computer calculates the combat ratio. The combat ratio is the largest combat factor divided by the smallest combat factor.

After the combat ratios have been calculated, the total combat strength losses for each side are calculated. The method of calculation depends on whether Detailed or Quick combat was selected under Combat on the Options Screen. For Quick combat, the combat strength loss for the side with the smallest combat factor is equal to the combat strength of the group. The combat strength loss for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. For Detailed combat on the first round, the combat strength loss for the side with the smallest combat factor is equal to 20% of the strength of the group. The combat strength for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. On subsequent rounds, the combat factors, combat ratio and losses are calculated in exactly the

same way except that the losses are multiplied by the square-root of the round.

After combat losses for each group have been calculated, the losses are distributed among the units in the group based on the percentage of the total combat strength contributed by each unit. Organization losses for each unit are the same percentage loss as for combat strength losses.

### **Strategic Air Attack Combat**

In order to resolve Strategic Air Attack combat, the computer first calculates the combat factor for the attacking group of aircraft. The combat factor for a unit is the product of the combat strength, strategic air attack capability and organization. The combat factor for a group of units is the sum of the combat factors for all units in the group. After calculating the combat factor for the attacking aircraft, the computer calculates the combat factor for the anti-air defending the site. The combat factor for the anti-air is 400 times the anti-air in the site. If the combat is part of a surprise attack, then the combat factor for the anti-air is divided by 10. After the combat factors have been computed, they are multiplied by the odds correction factors selected for the respective players on the Options Screen. Using the corrected combat factors, the computer calculates the combat ratio. The combat ratio is the largest combat factor divided by the smallest combat factor.

After the combat ratios have been calculated, the losses for each side are calculated. The method of calculation depends on whether Detailed or Quick combat was selected under Combat on the Options Screen. For Quick combat, the loss for the side with the smallest combat factor is equal to the combat strength of the group or the anti-air in the site depending on whether the attacking aircraft or the defending anti-air, respectively, is the one with the smallest combat factor. The loss for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. For Detailed combat on the first round, the loss for the side with the smallest combat factor is equal to 20% of the

combat strength of the group or the anti-air in the site, again

depending on whether the attacking aircraft or the defending anti-air, respectively, is the one with the smallest combat factor. The loss for the side with largest combat factor is equal to the loss for the other group divided by the combat ratio.

After combat losses for each group have been calculated, the losses for the attacking aircraft are distributed among the units in the group based on the percentage of the total combat strength contributed by each unit. Organization losses for each unit are the same percentage loss as for combat strength losses.

In addition to suffering anti-air losses, the production site also suffers production losses. These losses are equal to 1% times the square root of the ratio of the combat factor for the attacking aircraft to the combat factor of the defending anti-air. The losses can never be greater than 5%. Production losses at factory and shipbuilding sites result in proportionate losses for any units in production at the site. Additionally, the turn for deployment of units in production may be delayed.

## **Ground-To-Ground Combat**

In order to resolve ground-to-ground combat, the computer first calculates the ground-to-ground combat factors for each group of units engaged in the combat. The ground-to-ground combat factor for a land unit is the product of the combat strength, ground capability, organization and Ground-to-Ground Terrain Effects Multipliers. Land units that are not in supply have their combat factors halved. A land unit may also have its combat factor modified in the following ways:

If a unit is in the combat site at the start of the combat impulse, the unit is considered to be entrenched.

The level of entrenchment depends on how many prior impulses the unit has been in the combat site. If a unit has been in the combat site every impulse of the phase up to and including the combat impulse, then the combat factor for the unit is multiplied by 1.30. If on the other hand, the unit has been in the combat site for  $n$  consecutive impulses of the phase up to and

including the combat impulse, then the combat factor for the unit is multiplied by  $(1.0 + (0.05 \times n))$ .

If a unit is entrenched in bad weather, then the combat factor is multiplied by 1.10, 1.25, or 1.50 depending on rain, winter, or extreme winter, respectively.

If the combat site is a city site and the unit is not an armor unit, then the combat factor for the unit is multiplied by 1.10.

If the unit is attacking across a river, then the combat factor for the unit is multiplied by  $(0.50 + (\text{airborne}/\text{defense}))$ , where airborne is total combat strength of airborne units attacking the combat site and defense is the total combat strength of opposing land units in the site. This multiplier cannot be greater than 1.00.

If the unit is attacking across a straits, then the combat factor for the unit is multiplied by  $(0.75 + (\text{airborne}/\text{defense}))$ , where airborne is total combat strength of airborne units attacking the combat site and defense is the total combat strength of opposing land units in the site. This multiplier cannot be greater than 1.00.

If the unit is attacking across a fortress, then the combat factor for the unit is multiplied by  $(0.10 + (\text{airborne}/\text{defense}))$ , where airborne is total combat strength of airborne units attacking the combat site and defense is the total combat strength of opposing land units in the site. This multiplier cannot be greater than 1.00.

If the combat site is a coastal site and the unit is a marine unit, then the combat factor for the unit is multiplied by 1.25.

If the unit is Norwegian, Swedish, Finnish, or Russian and the weather is winter or extreme winter, then the combat factor for the unit is multiplied by 1.5 or 2.0, respectively.





The adjustments to the combat factor above are multiplicative. That is, all adjustments that apply to a particular unit are successively used as multipliers to the combat factor for the unit. The combat factor for a group of units is the sum of the combat factors for all units in the group. If the combat is part of a surprise attack, then the combat factor for the land units that are surprised is divided by 4. After the combat factors for each group of land units have been computed, they are multiplied by the odds correction factors selected for the respective players on the Options Screen. Using the corrected combat factors, the computer calculates the combat ratio. The combat ratio is the largest combat factor divided by the smallest combat factor.

After the combat ratios have been calculated, the total combat strength losses for each side are calculated. The method of calculation depends on whether Detailed or Quick combat was selected under Combat on the Options Screen. For Quick combat, the combat strength loss for the side with the smallest combat factor is equal to the combat strength of the group. The combat strength loss for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. For Detailed combat on the first round, the combat strength loss for the side with the smallest combat factor is equal to 50% of the strength of the group. The combat strength for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. On subsequent rounds, the combat factors, combat ratio and losses are calculated in exactly the same way except that the losses are multiplied by the square-root of the round.

After combat losses for each group have been calculated, the losses are distributed among the units in the group based on the percentage of the total combat strength contributed by each unit. Organization losses for each unit are the same percentage loss as for combat strength losses.

## Sea-To-Ground Combat

In order to resolve sea-to-ground combat, the computer first calculates the combat factors for each group of units engaged in the combat. The sea-to-ground combat factor for a naval unit is the product of the combat strength, ground capability and organization. The ground-to-sea combat factor for a land unit is the product of the combat strength, sea capability and organization. Land units that are not in supply have their combat factors halved. The combat factor for a group of units is the sum of the combat factors for all units in the group. If the combat is part of a surprise attack, then the combat factor for the land units is divided by 10. After the combat factors for each group have been computed, they are multiplied by the odds correction factors selected for the respective players on the Options Screen. Using the corrected combat factors, the computer calculates the combat ratio. The combat ratio is the largest combat factor divided by the smallest combat factor.

After the combat ratios have been calculated, the total combat strength losses for each side are calculated. The method of calculation depends on whether Detailed or Quick combat was selected under Combat on the Options Screen. For Quick combat, the combat strength loss for the side with the smallest combat factor is equal to the combat strength of the group. The combat strength loss for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. For Detailed combat on the first round, the combat strength loss for the side with the smallest combat factor is equal to 20% of the strength of the group. The combat strength for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. On subsequent rounds, the combat factors, combat ratio, and losses are calculated in exactly the same way except that the losses are multiplied by the square-root of the round.

After combat losses for each group have been calculated, the losses are distributed among the units in the group based on the percentage of the total combat strength contributed by each unit.

Organization losses for each unit are the same percentage loss as for combat strength losses.

### **Sea-To-Sea Combat**

Sea-to-sea combat resolution is somewhat different from other combat resolutions in that there are really 2 types of combat that are resolved; namely, sea-to-sea combat and anti-submarine warfare combat. In order to resolve the sea-to-sea and anti-submarine warfare combat, the computer first calculates the 3 different combat factors for each group of units engaged in the combat. These combat factors are the sea-to-sea, asw-to-sub and sub-to-sea combat factors. The sea-to-sea combat factor for a group is the product of the combat strength, sea capability and organization summed over all units in the group with the exception of submarines. The asw-to-sub combat factor for a group is the product of the combat strength, anti-submarine warfare capability and organization summed over all destroyers and cruisers in the group. The sub-to-sea combat factor for a group is the product of the combat strength, sea capability, organization and stealth modifier summed over all submarines in the group. The stealth modifier accounts for the surprise element of submarines. On the first round of combat, the stealth modifier for a submarine is the stealth capability of the submarine divided by 33. In no case can the stealth modifier be less than 1. On subsequent rounds the stealth modifier is always 1. After the combat factors for each group have been computed, they are multiplied by the odds correction factors selected for the respective players on the Options Screen.

The computer assumes that some of the surface ships in a group are allocated to sea-to-sea combat and the rest of the surface ships in the group are allocated to asw-to-sub combat. The total combat strength allocated to sea-to-sea combat is the total combat strength of the group times the ratio of the combat strength of opposing surface ships to the total combat strength of the opposing group. The total combat strength allocated to asw-to-sub combat is the total combat strength of the group times the ratio of the combat strength of opposing submarines to the total combat strength of the opposing group. Similarly, the sea-to-sea

and asw-to-sub combat factors are also modified to account for this. The sea-to-sea combat factors are multiplied by the ratio of the combat strength of opposing surface ships to the total combat strength of the opposing group. The asw-to-sub combat factors are modified by the ratio of the combat strength of opposing submarines to the total combat strength of the opposing group. After the combat factors have been calculated, 3 different combat resolutions are performed simultaneously. The combat strengths and combat ratios for each type of combat resolution are calculated as follows:

Combat between surface ships allocated to sea-to-sea combat in each group: The combat strengths for each group are those allocated to sea-to-sea combat. The combat ratio is the largest sea-to-sea combat factor divided by the smallest sea-to-sea combat factor.

Combat between surface ships allocated to asw-to-sub combat in the first group and submarines in the second group: The combat strength for the first group is that allocated to asw-to-sub combat. The combat strength for the second group is the total submarine combat strength in the second group. The combat ratio is the larger of the asw-to-sub and sub-to-sea combat factors to the smaller of the 2 combat factors.

Combat between submarines in the first group and surface ships allocated to asw-to-sub combat in the second group: The combat strength for the first group is the total submarine combat strength in the first group. The combat strength for second group is that allocated to asw-to-sub combat.

After the combat strengths and combat ratios have been calculated, the total strength losses for each side in each type of combat are calculated. The method of calculation for each type of combat is the same but depends on whether Detailed or Quick combat was selected under Combat on the Options Screen.

For Quick combat, the combat strength loss for the side with the smallest combat factor is equal to the combat strength allocated

to that type of combat. The combat strength loss for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. For Detailed combat on the first round, the combat strength loss for the side with the smallest combat factor is equal to 20% of the combat strength allocated to that type of combat. The combat strength for the side with the largest combat factor is equal to the loss for the other group divided by the combat ratio. On subsequent rounds, the combat factors, combat ratio and losses are calculated in exactly the same way except that the losses are multiplied by the square-root of the round.

After combat losses for each type of combat have been calculated, the total loss of surface ships and submarines for each side is calculated by summing the losses for each type of combat. The total loss for surface units is distributed among the surface units in the group based on the percentage of the total surface combat strength contributed by each surface unit. The loss for submarines is distributed among the submarine units in the group based on the percentage of the total submarine strength contributed by each submarine unit. Organization losses for each unit are the same percentage loss as for combat strength losses.

### **Merchant Marine Combat**

Merchant Marine combat resolution is performed for each of the 8 sea zones. For each sea zone the computer determines if there is a Merchant Marine attack mission assigned by one player and Merchant Marine controlled by the other player. If so, then Merchant Marine combat is resolved. If both players have assigned Merchant Marine attack missions in a sea zone and both players have Merchant Marine units in the sea zone, then 2 resolutions of Merchant Marine combat occur; 1 for the first player and 1 for the second player. Whether there are 1 or 2 resolutions of Merchant Marine combat, the units assigned to Merchant Marine attack by one player attack those units controlled by the other player in the sea zone that are Merchant Marine units or units assigned to Merchant Marine escort. Combat resolution is identical to that for sea-to-sea combat with one exception. The

exception is that surface losses incurred by the Merchant Marine

escort missions are distributed over the Merchant Marine units and the surface units assigned to the Merchant Marine escort mission and not just the surface units. The losses are distributed based on the percentage of the total surface combat strength contributed by each Merchant Marine unit and surface unit.

### **Rocket Attacks**

Rocket attacks have a 25% chance of success. Successful rocket attacks cost the resource site attacked 5% losses in any production, oil, minerals and/or materiel at the site. If the site attacked is a factory or shipbuilding site, then there is a loss of units in production equal to the production loss at the site. Additionally, the turn for deployment of units in production may be delayed.

### **Atomic Bomb Attacks**

Atomic bomb attacks have a 50% chance of success. Successful atomic bomb attacks are devastating. Any units in the site are eliminated. Any port, air base, factory, shipbuilding, oil, or mining in the site is eliminated and the site becomes a city.

## HIGH COMMAND ECONOMICS

High Command has an economic system that includes investment in the economy, development of resources, research and development and development of rockets and atomic bombs, in addition to the production of combat units. There has been some confusion regarding exactly how the economic system in High Command works. The system is addressed at some length in the game manual, but there are those parts that are not as clearly explained as they should be. In order to address this situation I have put together some material that, hopefully, will help clarify some of these issues. Issues having to do with the political system in High Command will be addressed in a separate installment on High Command Politics.

### More On Full Investment

The economic system in High Command uses the concept of full investment to determine the result of investment in many types of economic activities. Thus, in order to understand the economic system in High Command it is necessary to understand the concept of full investment.

First of all, it is important to understand that full investment is impossible to achieve. However, you can come as close to full investment as you need/want and can afford. Full investment works this way. The first economic point (EP) invested gets you 50% of the benefit of full investment and each additional EP invested gives you 1/2 of the benefit of the previous EP. So the second EP gives you an additional 25% (1/2 of 50% that was obtained with the first EP) for a total of 75% of the benefit of full investment. The chart following shows the increase for the first 5 EPs invested:

EPs	Benefit of this EP	% of Full Investment
1	50.000%	50.000%
2	25.000%	75.000%
3	12.500%	87.500%
4	6.250%	93.750%



5      3.125%      96.875%

As you can see, each additional EP invested gives you less benefit than the preceding EP invested. You obtain very little benefit from investing more than 4-5 EPs per turn.

### **Economic Investment: Major Countries**

The economy of a country in High Command can grow or shrink depending on the number of EPs that a player invests in it. The first point to understand is that you must actively invest EPs in the economies of all of the major countries you control. This is done from the Production Box using the \$ icon. When you invest using this icon you are investing in the economy of the country that controls the production site. The total investment for a country is the sum of the investments at all factories controlled by that country. Thus, it doesn't matter if you invest all the EPs at one factory or spread the investment over all factories.

To maintain a static economy (no growth or shrinkage) for a country, you must invest each turn an amount equal to 1/2 of the EPs produced by that country. For example, if a country is generating 200 EPs for a turn, you must invest 100 EPs to maintain the economy at that size. Suppose you wish to make the economy grow. After investing the 100 EPs to maintain the economy, the concept of full investment comes into play. Full investment would give you a 1/2% (or 1 EP) growth in the economy for that turn. Suppose you invest 101 EPs in the economy. The first 100 EPs maintains the economy and the 101st EP gets you 50% of the benefit of full investment. You could expect a 0.5 EP (50% of 1 EP) growth in the economy for that turn. Suppose you invest 102 EPs. The 102nd EP gets you an additional 25% of the benefit of full investment. You could then expect a 0.75 EP (75% of 1 EP) growth in the economy for that turn.

Finally, investing less than the amount required to maintain an economy will result in the economy shrinking. The level of recession or depression works the same way as growth except that it is in the negative direction with zero investment resulting in a 1/2% shrinkage.

## **Economic Investment: Minor And Intermediate Countries**

Economic growth for minor and intermediate countries is determined in the same way as for major countries except that the economic investment for these countries is the number of EPs remaining in the country during the End-of-Month Phase.

Remember that you can transfer EPs into or out of these countries in the Resource Allocation Phase using the Political Allocation Box.

## **Resource Development**

Resources in High Command can be developed during the game. Resources include industrial and shipbuilding production in addition to oil and mining production.

To develop the production capacity at a site, you must invest in the icon corresponding to the type of production capacity that you wish to develop. For example, to increase the production capacity at a factory you must invest in the factory icon at that factory site.

Development of production capacity at a factory has a cost in terms of production, oil, minerals and EPs. Development of production capacity at shipbuilding, oil and mining sites has a cost in terms of materiel. Thus, you cannot develop the production capacity at these latter sites if you have not transported from a factory the materiel necessary to develop the production capacity.

The results of investment in development of production capacity uses the concept of full investment. An investment of 1 EP will give 0.5% growth, 2 EPs will give 0.75% growth, 3 EPs will give 0.875% growth and so on as explained in the section Full Investment. Investment in shipbuilding production works the same way.

For oil and mining production there is no guarantee that an increase in production will occur.

## **Research And Development**

Players in High Command can invest in Research and Development (R&D). This can result in many things including improved combat units, increases in production capacities and more.

Investment in RRD is done from the Production Box using the microscope icon. When you invest using this icon you are investing the R&D for the country controlling the site. The total investment for a country is the sum of investments at all factories controlled by the country. Thus, it doesn't matter if you invest 4 EPs at one factory or 1 EP at each of 4 factories.

The determination of results for investment in R&D uses the concept of full investment.

## **Rockets And Atomic Bombs**

Players in High Command can invest in the development of rockets and atomic bombs. Investment in rockets and atomic bombs is done from the Production Box using the rocket and atomic bomb icons, respectively. When you invest using these icons you are investing for the country that controls the production site. The total investment for a country is the sum of investments at all factories controlled by the country. Thus, it doesn't matter if you invest 4 EPs at one factory or 1 EP at each of 4 factories.

The determination of results for investment in rockets and atomic bombs uses the concept of full investment. Unlike other investments, however, the investments in rockets and atomic bombs is based on the average level of investment over the entire game. Suppose you invest in rockets on Turn 1 so that you get 50% of the benefit of full investment and on Turn 2 you do not invest at all so that you get 0% of the benefit of full investment. Then your

average investment in rockets over the entire game is 25% (  $(50\% + 0\%)/2$  ) of the benefit of full investment.

Rockets and atomic bombs are unlike other investments in another way: rockets will not be awarded prior to January 1944 and atomic bombs will not be awarded prior to August 1944.

Consider this example. The date is May 1944 and you have invested 2 EPs in both rockets and atomic bombs every turn of the game. Thus, you got 75% of the benefit of full investment every turn of the game so that your average benefit is 75%. For this example, the date is prior to August 1944 so there is no chance whatsoever that you will develop atomic bombs.

## DESIGNER'S NOTES

Our goal in creating High Command was to develop a World War II strategy game that encompassed a wargame but that had significant economic and political aspects as well. That is to say, we wanted to create a strategy game that included important aspects, other than military, that had a significant effect on the outcome of the total war.

We chose World War II in Europe for two reasons. First, it is a favorite theme of ours based on numerous board and computer games that we have played in the past. Second, World War II was a global confrontation with political realities and economics, including access to resources, playing a significant role. World War II, the last classical great-power conflict, probably required more consideration of all these facets than any other war in history. In fact, not only were military, political and economic considerations of paramount importance, but there was a great deal of synergy among them. For example, access to raw materials such as oil was often the driving force behind military and political initiatives just as military campaigns sought political gains and access to raw materials in addition to the obvious conquest of territory.

Early in the design of High Command we also decided that we did not want to design a pure wargame. We wanted to design a game that could also be interesting to players that are interested in the political and/or economic aspects of the war. In the same vein, we wanted pure wargamers to be able to enjoy the game even if they did not want to be bothered with the politics and economics. That is to say, we wanted there to be a wargame subset within High Command while, at the same time, designing High Command to be more than a pure wargame.

To accomplish these design objectives we developed the artificial intelligence in such a way that we could provide the player with the ability to delegate practically any activity to the subordinate, computer-controlled High Command. In this way the player has the ability to tailor the game to suit his or her particular tastes. For example, the pure wargamer that is not interested in conducting political and economic activities can delegate these activ-

ities to the computer. Similarly, the player that is not that interested in conducting the military campaigns can focus on the political and economic aspects of the war and assign the dirty work of tactical warfare to the computer. There are, of course, some limits to what can be assigned to the computer. For example, the computer will not develop a grand strategy for a human player. However, most tactical decisions can be delegated to the computer whether they are military, economic, or political.

Anyone that has become even slightly familiar with High Command can see that the game design was influenced by board wargames. This was very intentional since board wargames have been around considerably longer than computer games and have been refined considerably during this time. Yet the medium of the board has always limited the options of the game designer. Limited detection of units and simultaneous movement are just two of the features that are not practical for implementation in board wargames. Our design goal was to design High Command in the tradition of the great board wargames while preserving as many of the positive aspects of board wargames as possible and simultaneously incorporating the advantages of the computer medium. Thus, we implemented limited detection rules and simultaneous movement, to cite just two examples. Of course, the computer medium is not perfect. As recognized time and again by other designers, an overall view of the game is one of the areas where the board medium has an advantage over the computer medium. We have attempted to solve this problem by implementing a strategic map. Our solution is by no means perfect, but it does allow the player to get a feel for the strategic situation. We asked ourselves what strategic information one really wants and then defined methods whereby such information could be displayed. The result is 20 different display modes that can be activated on the strategic map either alone or in combination with others. While not necessarily permitting the strategic situation at a glance that is possible with board games, this approach does have its merits. For example, it allows the player to see the amount of diplomacy allocated to each country in the game while at the same time allowing the player to see the location of oil

resources on the map. Thus, this sort of strategic situation at a glance would never be possible with a board wargame.

One of the most important and driving considerations in the development of High Command was the level of computer intelligence. It is safe to say that the amount of code and computer processing to drive the artificial opponent for this game is as great as any wargame that has been designed. Not only does the computer opponent have to wage tactical battles, it must also adopt and implement a strategic military, economic and political plan that must be adjusted as the game progresses. The single fact that the computer must be able to transport reinforcements across seas is a considerable undertaking when one considers that it has to assess where the forces are needed, where the forces are available, embark the forces on transports, allocate escorts, choose a destination port and then plot a detailed path to the destination port. When this is coupled with the numerous other activities that the computer must be capable of performing, the problem becomes not so much of how is this accomplished as it is how is this accomplished within the code size restrictions and processing time limitations. In light of these considerations, we decided to create levels of intelligence. These different intelligence levels are not mere adjustments of combat odds, although we have included options for these adjustments. Instead, when a higher computer intelligence is chosen, algorithms are processed more thoroughly and new algorithms are added that perform actions that are not present in lower intelligence levels. In this sense then, the computer opponent actually plays a smarter game. Of course the penalty incurred is that of increased processing time. We chose to make this level of intelligence flexible so that the casual gamer who wants a quick response from the computer and the dedicated gamer who wants competition and is willing to accept the time penalty can both tailor the computer opponent to their particular style of play. Still, we have tried to keep the processing time to a minimum. However, we decided that when it is a matter of choosing between longer processing time or a less capable computer opponent, we would choose longer processing time. We felt that a capable computer opponent is currently an important factor in computer wargames. Nevertheless, with the practically-infinite possibilities that can



occur in High Command, we're sure that smart gamers will find ways of systematically defeating the computer opponent.

This brings up another point. As pointed out by Alan Emrich of Computer Gaming World, there is something of an ongoing debate concerning the relative importance of artificial intelligence versus modem play (see Broadsides & Gripeshots in recent issues of Computer Gaming World; e.g. May, June and July 1992). As designers we feel that both artificial intelligence and modem play are important features to include in a computer wargame.

However, modem play is not a feature of High Command. There is a reason for this. High Command was begun over four years ago and at that time modem play was not a feature that was particularly in demand. However, since the inception of designing and programming High Command modem play has become more of an in-demand feature. During this time High Command has undergone major surgery several times to incorporate what we felt were important features. Incorporation of these features was time consuming and one of the principal reasons the game took as long to develop as it did. When we considered incorporating modem play, we made the decision that it was time to get the game in the hands of the gaming public. Another delay simply was not acceptable. However, we believe that there are very convincing reasons to incorporate modem play, artificial intelligence and the capability for two players to play at the same machine. We did incorporate the artificial intelligence and the two player mode. We feel very strongly about the inclusion of modem play and are already studying how to incorporate it in Version 2.0.

We also designed High Command so that many facets of the game are randomized. The rules in the manual do not generally mention randomization. For example, in the discussion of combat resolution it is stated that after total combat losses have been computed they are distributed among the units participating in the combat. This is correct. However, what is not stated is that the loss for each unit is then randomized. Thus, as you play High Command keep in mind that very few things are certain and that a great deal of randomization is taking place. After all, in the real world you may have a feel for the outcome but you cannot sit

down with pencil and paper and calculate the exact results. So it is in High Command.

Another of our design goals was to keep High Command as historically accurate as possible. Thus, relative economic strengths, the location and relative production of resources, leaders of countries, political alignments at the start of the scenarios and so on are fairly accurate reflections of the historical situation. However, another of our design goals was to provide the player with a medium to experience the decision making dilemmas similar to those faced by the various leaders during the war while keeping the game as fun and as easy to learn and play as possible. In order to meet this design goal, it was occasionally necessary to sacrifice historical accuracy and/or realism. One example is that we chose not to identify units by their historical designations. There were three principal reasons for this. First, as stated above, the game was not designed as a detailed historical wargame but as a game that confronts the player with similar decisions as those faced by the various leaders during the war. In this respect, historically detailed simulation of actual units is not necessary. Second, in order to achieve the proper play balance the relative force levels of units are not always exactly as they were historically. Thus, had we included historical unit designations, some would have been deleted in some cases and we would have had to create fictional designations in other cases. Third, since the players have a great deal of flexibility in producing units, it is unlikely that the players will produce the same types and numbers of units that were actually produced during the war so that historical units will not be produced in some cases while in other cases units will be produced that were not present historically.

We have made every attempt to produce the best quality computer strategy simulation available. We have been very thorough regarding play-testing and quality control. However, it is impossible to evaluate every situation that can occur in a computer software package as large and as complex as High Command. It is inevitable that the gaming public will discover flaws in the game. However, we are committed to High Command and will make every reasonable effort to correct these flaws as they arise. We believe that such flaws will fall into three general classes; mechanical, design and artificial intelligence. By mechanical flaws we mean programming errors, machine incompatibility

errors, and flaws of that sort. We plan on correcting these errors in a reasonable manner as they become known. Design flaws are features of the design that, while correct from a programming standpoint, are not implemented as they should have been or are not as good as they could have been. Examples of design flaws include awkward user interfaces and scenarios that have an imbalance that can be systematically exploited. Design flaws such as awkward user interfaces are often identified by users wishing the game did this or that, or that the game had this or that feature. We plan to update High Command and include new and modified design features based on feedback from the people who play the game. Flaws in the artificial intelligence are usually identified after a large number of bright and creative people have played the game and developed strategies that systematically defeat the computer opponent. As stated before, we are committed to supporting High Command and plan to update the artificial intelligence routines so that they can respond more effectively to those strategies and tactics identified as being able to systematically defeat or outsmart the computer opponent.

Finally, we hope you enjoy playing High Command and will let us know what you like, don't like, what you would like to see incorporated, how you beat the computer opponent, what you find awkward, and so on. If you support High Command, then we're sure that Version 2 will be even better than Version 1.

Gregg Carter  
Joey Nonnast  
June 30, 1992

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A considerable amount of research has gone into High Command to keep the game as historically accurate as possible. The majority of this research was conducted at the United States Air Force Academy Library. We would like to thank all of the people there for their support and for making their wonderful library and its wealth of research material available to us.

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Gregg Carter

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