

GAME MANUAL



WARPLAN



CONTENTS

1. DESIGNER NOTES	5
2. INTRODUCTION	9
3. INSTALLATION REQUIREMENTS	10
4. GAME SCALES	10
5. MAIN MENU	12
6. SEQUENCE OF PLAY	17
7. GAME INTERFACE	17
7.1 Hot Keys and Mouse Functions	18
7.2 Game Toggles	19
7.3 Undo, Previous Unit, Next Unit	20
7.4 End Turn, Help, Options, Save, Quit	20
7.5 Map Information	20
7.6 Menu Items	22
8. UNITS	34
8.1 Land Units	37
8.2 Air Units	40
8.3 Naval Units	41
8.4 Support Units	42
8.5 Unit Attributes	45

9. ADVANCEMENTS	50
10. SPECIALTIES	53
11. THE MAP	54
11.1 Terrain	56
11.2 Resources	57
11.3 Weather	59
11.4 Logistics	60
12. SUPPLY	61
13. MAP INTERFACE	71
14. MOVEMENT	80
14.1 Air Unit	80
14.2 Land Unit	80
14.3 Naval Fleet	82
14.4 Reconnaissance	83
15. COMBAT	84
15.1 Land Combat	85
15.2 Air Combat	89
15.3 Naval Combat	92
16. PRODUCTION	101
17. DIPLOMACY AND WAR	105
18. ADVANCEMENTS	107



19. VICTORY	108
20. MULTIPLAYER	109
21. REFERENCES	109
22. CREDITS	110

1. DESIGNER NOTES

WarPlan is a World War 2 wargame that attempts to simulate the military conflict of the European theatre from 1939 to 1945. It allows many options within the game system that are different from history. It is not a country-building game like other systems that use World War 2 as their background or a historical recreation game. *WarPlan* system focuses on ease of interface to allow players to focus on strategic and operational problems allowing the game to flow quickly. *WarPlan* has a fair amount of game mechanics and thinking depth to it.

The concept for *WarPlan* came from many years of playing early computer and board wargames such as SSI's *War in Russia*, *World in Flames*, SPI's *ETO*, *War in the West/East*, the *Hearts of Iron* series, and famously the *Third Reich* board game. *WarPlan* takes the best game mechanics and incorporates them into the *WarPlan* engine. The scales can range from battles to theatres.

The map scale sets the stage for dynamic strategies to allow a fluid moving front. Each type of terrain has variations within itself in defense, movement, and airfield attributes depending on how much of the hex that terrain fills. I designed a smaller compliment of units with more diversity of abilities. Some units have up to 12 different configurations depending on advancements and specialties without overwhelming the player. I added multiple hex attack with automatic air ground support to minimize the number of mouse clicks.

The production system was designed based on important strategic war materials. Steel is the main production component of the game that produces ships, tanks, and guns. Oil is another component of the

game that highly impacts the Axis powers while being less important for the Allies. Manpower affects Germany and Russia mostly. Logistics is the ability to field an army which replaces the standard force pool model most games have. This creates decision points for the Western Allies more than any of the other countries. With an abstract logistics system, players have greater flexibility without exploiting the game. Advanced unit types use more logistics to put in play so players need to make a balanced force to succeed. Creating too many armor and air units will cause difficulty in rougher terrain and urban areas, use more oil, and use more supply, while generating less physical land forces. Creating all infantry units will slow down frontline progress while being vulnerable to armored and air units. Large navies drastically impact logistics as they are costly to maintain. The advantage the Axis have, specifically Germany, is that of combat unit experience and a large early military vs individual opponents. The Allies have a resource and logistical advantage but start with a smaller number of weaker forces. *WarPlan* is about manipulating resources, logistics, time, and territory.

Most countries have their unique land military forces specific to their country. England is the default average value for land units; France is weaker in experience; the USA has more firepower; the USSR has more strength; Germany has more experience; Italy has less of everything but has a decent air force and a good navy. Minor countries have different attributes which represent their equipment and training at the time of the war. Most naval and air units are the same for all countries.

Advancements represent yearly improvement in technology and combat doctrines. It is a simple system to keep the game balanced.

Advancements are the simplest and most predictable portion of the game but with some choices.

The map is based on a Peter's map scale projection. This means that the map is scaled according to the curvature of the earth. Map areas represent 40–80 km, 25–50 miles, in diameter per hex. *WarPlan* has beach hexes in which an invader can land recreating more accurate situations during invasions. Having a land unit on a beach makes it more vulnerable to air attacks. Invasion forces can be supplied and supported by naval forces from shore. Air forces are there to reduce the effectiveness of the defenders, do some damage, and slow down their movement, but not destroy them outright. Invasions need to be planned, and control of the surrounding sea is paramount for support and supply.

The supply system mimics the complexity and problems of overseas supply. One can't simply place 10 corps in Africa as the Axis and steamroll into Egypt. The Allies can't easily take one port during the Normandy invasions and supply 1,000,000 men. Each port has a supply capacity that allows for a limited amount of strength points and oil it can support. Range from a port also plays a role in supply cost. Players do have other options in using extra supply trucks to maintain a higher supply and effectiveness or dumping supplies on shore from ships. This makes invasions much more difficult to execute.

The naval system is based on stacks of naval groups. The scale is 2 capital ships per unit to match the scale of the game accurately. While aircraft carriers hold considerable firepower, 2 carrier groups, or 4 real carriers, are required to compensate for an equally trained air force on land. Naval units are used to contest sea areas and to support or prevent land forces, air forces, and supply. There are no

interceptions of other naval units as they move along a path. A player can intercept a fleet once it has stopped. A player must move toward an enemy and attack it. Reconnaissance levels provide the ability to detect an enemy fleet and engage it in combat. Naval fleets out at deep sea are very difficult to find.

Half the Royal Navy was sent to hunt down the Bismarck. The naval system allows for some tactical opportunities of maneuver and deception during a naval operation.

The air system is can be automated if a player chooses. Air units can attack production and other units impacting their strength and effectiveness.

Air forces in World War 2 were not as effective in destroying ground forces as reported. This is reflected in *WarPlan* as only a portion of the damage applied to land and air units is actual damage to their strength.

The land system is designed to move and attack as long as a unit has operation points. *WarPlan* makes it as easy as possible to attack a hex from multiple sides. Different land units have different functions in the game. Infantry is more effective at taking difficult terrain while armor is more effective in open terrain. Units can be specialized to help in difficult situations through the accumulation of specialty points.

WarPlan has specific rule sets and modifiers for different situations which make it exclusively a World War 2 game. Some of these include bottoming of ships, truck supply, limited port supply, specialties, and combat modes.

The computer A.I. was designed with a single notion, to not do anything stupid as best it can. It will not follow history but instead follow what makes logical sense for the countries to do. Germany will take key countries earlier in the war to gain operational advantage in France. Italy will not invade Greece on its own. The Axis might not even invade Greece at all if they don't have time. There are limitations on how well a computer opponent can play in a game of this complexity. A computer opponent can't beat a fair human player in this type of game without help. No A.I. in a game of this scale can when the field is balanced, not yet at least. The intricacies of strategy are too complex for a single home computer to handle in a reasonable amount of time. The Allied A.I. is designed to play with absolute historical forces. This means that the Russians will have the massive amounts of men they actually had in the war to compensate for their tactical blunders. The Western Allies will have a vast air force and naval superiority. This game will be best when played vs another person or as the Axis vs the Allied computer. If players want a better challenge, they can adjust the level of experience and supply the A.I. receives to make for a tougher game.

2. INTRODUCTION

WarPlan is a corps/division level wargame that simulates World War 2 campaigns using land, naval, and air forces to represent each of the countries involved in the conflict. There are economic and political aspects of the game that allow flexibility while keeping the play balanced. The play is very similar to board wargames of the same genre. Each side takes its turn moving and attacking. The

turns rotate back and forth between both players. In the main 1939 scenario, there are events that happen throughout the game that mimic important historical events that affect the players. Mostly these events are targeted at neutral minor countries and their part during the war. The game is balanced for heads up play via PBEM.

Included are other variants of the main scenario for flavor and more flexibility. I strongly suggest these scenarios be played exclusively vs another player as there are too many variables to account for with a computer opponent.

3. INSTALLATION REQUIREMENTS

OS: Windows 7 SP1+

Graphics card with DX10 (shader model 4.0) capabilities

CPU: SSE2 instruction set support

Game Play Screen Resolution 1366x768 or higher

Editor Screen Resolution 1920x1080 or higher

4. GAME SCALES

SCALE OF STRENGTH ATTRIBUTE

Land Strength Point = 1,500–2,500 soldiers

Air Strength Point = 15–25 front line combat aircraft

Naval Unit (5–6 strength points) = 2 capital ships or 3–5 cruisers with supporting vessels per unit

UNIT SCALES

Division = 15,000–20,000 soldiers

Small Corp = 30,000–40,000 soldiers – usually paratrooper, mountain

Large Corp = 50,000–60,000 soldiers

Army (USSR only) = 35,000–70,000 soldiers

Air Unit = 300–400 combat aircraft

Carrier Group = 2–3 aircraft carriers with 150–200 combat aircraft

Battle group: 2 battleships/battle cruisers + support ships

Cruiser group: 4–6 heavy cruisers + escorts

Patrol group: 4–6 light cruisers + escorts or a destroyer patrol

Sub group: 10–15 active submarines out at any one time

Escorts: 8–10 frigates, escorts, and corvettes for trade routes

Merchant Marine: approximately 200,000 tons of active convoys

MAP SCALES

The map for the main scenarios is based on a *Peter's Map* design. That type of map defines actual distances between locations accounting for the curvature of the earth. Some locations were purposely made smaller to accommodate better play, for example, Northern Russia where Norway, Sweden, and Finland are. Most of the main scenario maps are 40–80km, 25–30m, per hex scales with the northern part representing more miles per hex.

TURN LENGTH

After each side has performed its turn, the game advances 2 weeks.

5. MAIN MENU

If you are familiar with wargames, you can get into the game right away by loading a scenario and using the help and tooltips. Almost all buttons and toggles have a tooltip to understand their function. An activity report appears before each turn starts to review any important action that has happened militarily, economically, or politically that your side is allowed to see.

Square icons are buttons, hex icons are toggles, circle icons are game functions. The game functions appear on the far right of the screen. The “?” circle button on the far-right side gives information about play, hotkeys, and units. It will describe how to use the mouse to move and attack with units. This is the easiest and quickest way to learn the game system.



Game play buttons



Game Toggles



File and option menus



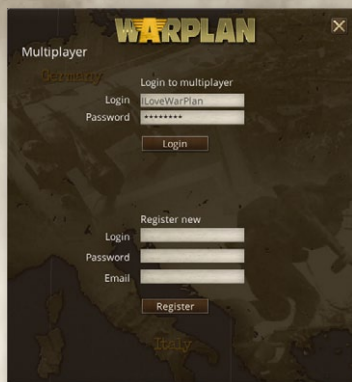
The objective of the game is to expand, capture, and hold as many victory objectives as long as possible throughout the game. The game is scored on how well an individual country performed and how well the Axis or Allies performed. This allows players to work toward higher victory score goals as they play more games.

Main Menu – When the game first loads the main menu will appear. From here you can choose to play a new game vs the computer or hot seat, load a saved computer or hotseat game, multiplayer, edit and create your own scenarios, change options, look at credits, or quit.



New Game (computer or hotseat) – Starting a new game is easy on the main menu. Selecting New Game will bring up a list of scenarios and scenario options. Toggle through the buttons on the left to select which side to play vs the computer, or heads up. If playing the computer chose your computer land experience and supply effectiveness for a more challenging game. Hitting *Start* begins the scenario.

Load Game – This allows you to load a previous computer or hotseat game.



Multiplayer Game Login
– Login to the system, If you have an existing PBEM++ account, or create a new account. Your serial number will automatically be registered on the server.

PBEM Game Menu – After you log in to the account, two windows will appear. The left window allows you to select

your game, side, and a private game password. The right side shows the current challenges issued by other players and the games you are currently playing. Both panels have information about your game and buttons to accept, start your turn, cancel a challenge, or resign a game.



Editor – If you want to make your own scenarios or edit current ones, use the game editor. You can choose from an existing game or create a new one.

If you want to delete a scenario, go to the directory the scenario is in. The ability to delete campaigns from the menus has been purposely removed, so players won't remove key game data or accidentally delete their own work from the game.



Options – These change many of the game play features of the game.

Map Scroll Speed – How fast the map moves when using the arrow keys or the mouse with *Scroll On* option

My Attack Delay – How long before the battle popups vanish on your attacks

A.I. Move Delay – How fast

you see the computer opponent move

A.I. Attack Delay – How long before the battle popups vanish on computer attacks

Land, Air, Naval Statistics – How information is displayed for units on the map

ToolTips – On or off in game and in the main menu

Autosave – When on, a file will be saved at the end of each human turn for hotseat or computer opponent games.

Scroll – When on, the mouse can move the map when on the edge of the screen.

Details – When on, the details panel is always on for a unit.

Battlecam – When on, the camera will follow the computer opponent battles.

Reset Panel – If the information panel has gone off screen, this will reset its position to the lower left.

Centering – When on, a selected unit will center if it is too far away from the center of the screen.

Click – When on, the mouse click will be audible when items are selected.

Unit Text/Bars – Shows numbers or bar for unit information when selecting a unit in the main unit panel.

Counterset 1 and 2 – Counter set 1 is NATO symbols; counter set 2 is silhouettes.

Unit Hover – When on, shows a small panel above units not selected indicating strength and effectiveness.

Diplomacy – When on, allows the use of influence points. For the base scenarios I suggest leaving this selection off.

Default – Resets all options back to the original settings.

Save – Saves the current option settings to file so it will be loaded next time the game is started.

6. SEQUENCE OF PLAY

Each turn calculates all functions of the game before the player is allowed to play their turn. Both players take turns controlling their side's actions. Once they are done, they click *End Turn* and it is the opponent's turn. Once both sides have played, the date changes and the weather is updated. During a turn, players build, move units, perform political actions, and deploy forces. Between turns all other aspects of the game are calculated including production, resource and rail repair, convoy battles, supply, unit upgrades, research, supply, out of supply effects, tracing trade routes, and calculating supply ship interceptions. This allows players to focus on playing rather than micromanaging game resources. The previous turn's movement and battles are shown on the map and can be viewed via the *Combat Logs*.

7. GAME INTERFACE



The far-left side shows the current date and the current side that is taking its turn. To the right of that are the 7 main menu functions. The first 8 hexagon icons are the map toggles for different visuals on the map. Hotkeys are in *bold* for these hexagon toggles in the tooltip shown when hovering over them. Hexagons 9 and 10 are to hold the shift and control key down for land attacks. Next are the Battle Report, Victory hexes, and undo, previous, and next unit

buttons. On the far right are the game functions including ending the current turn, help, options, save, and quit. By default, tooltips is turned on. Most buttons and icon have tooltips. The arrow keys may be used to scroll the map. The mouse may be used to scroll the map, but this option may be disabled in the Options menu.

Using the arrow keys, or moving the mouse to the edge of the screen, moves the map. Using the scroll on the mouse, or the + and – keys, will zoom in and out on the map. Mouse scrolling can be turned off in the Options menu. When a unit is left-click selected, its information and options become available on the left side of the screen. Menu items are selected by left-clicking. Units on the map are selected by left-clicking and doing an action by right-clicking. Placing units on the map from the deployment queue is also done by left clicking.

7.1 HOT KEYS AND MOUSE FUNCTIONS

ESCAPE = Close menu item or unit panel

C = Hex control toggle

A = Enemy Action toggle

H = Hex grid toggle

W = Weather toggle.

L = Logistics map toggle of rail, roads, and convoy routes

U = Units toggle

S = Supply map toggle

T = Active convoys toggle

B = Battles toggle

CTRL + arrow button in *Convoy and Escorts* = Add or subtract 5

CTRL + arrow button in *Production* = Add or subtract 50

CTRL + *move over friendly land units* = Add this unit to the stack for a land attack.

SHIFT + *move over enemy* = Select all land units to attack a hex

ALT + *move over friendly* = Merge selected land units

ARROW KEYS = Scroll the map

Right Mouse Button Hold + *move mouse* = Scroll the map

N = Next unit with operation points

P = Previous unit with operation points

+ and – or Mouse Scroll Wheel *on the map* = Zoom the map in and out

Mouse Scroll Wheel *on a panel* – Scroll list of present panel

7.2 GAME TOGGLES



There are 11 map and function toggles indicated by the hexagon icons. They are from left to right **C**ontrol, **H**exes, **L**ogistics, **S**upply, **E**nemy Action, **W**hether, **U**nits, **T**rades, **L**ock Shift Key, **L**ock Control Key, **B**attles, and **V**ictory Objectives. The bolded letter of each identifier represent the hotkey for that toggle. The Battles toggle is a hover/toggle. Toggling it on shows each battle result on the top center of the screen. Leaving it off allows players to hover over the toggle to view the last battle's results.

Enemy action for land units will only show if their origin or reconnaissance level is higher than the lowest value.

7.3 UNDO, PREVIOUS UNIT, NEXT UNIT



Undo Move – On the right is the undo move button. This button is available when the moving land unit has not affected the map or enemy units in any form including revealing information.

Previous and Next Unit – This moves to the previous/next unit that has operation points remaining.

If your resolution is 1366x768, the undo and previous/next unit icons will appear as smaller icons to the left of the production button.

7.4 END TURN, HELP, OPTIONS, SAVE, QUIT












On the far right will be found the end of turn, help, options, save, and quit buttons.

7.5 MAP INFORMATION

Critical Display Buttons –

The right side of the screen is reserved for important information about the game. When something of importance occurs relative to supply or partisan activity, a column of buttons will appear on the right side. A player may click the button

Right Side Information Buttons

-  No transports available to send supplies to port
-  Port supply interdicted by enemy naval or air forces
-  Unit can't access main or port map supply
-  Unit supply level is zero
-  Unit supply level is low
-  This country is out of oil
-  This country is low on oil
-  This country is low on manpower
-  Partisan activity

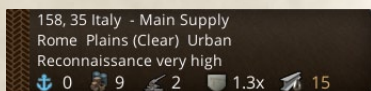
to take them to the location of the information. Hovering over the button will give information about the warning. The icons also tell you what kind of problem it is. Clicking the button takes you to the location and removes the button.



Mini Map – On the lower right corner of the map there is a smaller version of the map. When players click a location on the mini map, the

large map will move to that location.

Information Panel – The lower left corner of the map shows a moveable hex information panel showing information about the hex over which the mouse is hovering. The panel has a grip on the left side so it can be moved anywhere on the screen. This panel



can be reset to its original position from the *Options* menu item *Reset Panel*.

Country Selector – Within each menu item appears a row of flags of countries that are currently in your alliance, Axis or Allies. A player may select any one of these flags in the current menu item to perform menu actions for that country.

Map Selector – The map uses a map selector icon to indicate where you are clicking and on what you are clicking. Different colors differentiate units and locations.



7.6 MENU ITEMS

Production

Germany

Economy x1.01	Upkeep	Stockpile	Reinf./Upgrade	Support Pool	In Use
Production 204	0	204	100	Supply Trucks 40	
Oil 50	14	86 22%		Air Transports 7	
Manpower 41	0	1230 99%		Transports 120	1
Logistics 4250		2556		Landing Ships 40	
Shipyards 44		10		Supply Oilers 1	
Strategic Res. 1				Escorts 2	0
Specialty Prod. 13		0		Merchant Marine 45	25

Army

Navy

Air Force

Support

Unit Type	Name	Advancement	
<input checked="" type="checkbox"/> Headquarters	12th Army HQ	39	Headquarters '39'
<input checked="" type="checkbox"/> Infantry Division	15th Army HQ	Assault	Strength 10
<input checked="" type="checkbox"/> Infantry Corps Small	16th Army HQ	Anti-Tank	Oil Use 0
<input checked="" type="checkbox"/> Infantry Corps Large	17th Army HQ		Firearms 4
<input checked="" type="checkbox"/> Cavalry Corps	18th Army HQ		Guns 3
<input checked="" type="checkbox"/> Marine Division	19th Army HQ		Artillery 2
<input checked="" type="checkbox"/> Paratrooper Corps	1st Army HQ		Anti-Air 2
<input checked="" type="checkbox"/> Mountain Corps	1st Panzer Gruppe		Defense 5
<input checked="" type="checkbox"/> Mechanized Corps	2nd Army HQ		Operation 4
<input type="checkbox"/> Armor Corps	Custom		Range 1

Production 100

Logistics 10

Manpower 10

Shipyards 0

Build Days 120

Experience 70%

Purchase

Production – The top half lists the country's economic multiple and all the information on production, oil, manpower, logistics, shipyards, strategic resources, and specialty points available to that country with easy color coding. The left column shows the country's currently owned assets. The center column, called upkeep, shows last turn's production spent on repairs and upgrades, manpower spent on repairs, and supply oil costs for unit maintenance. The right column shows the current remaining stockpiles of each. The setting in the center panel lets players devote production to upgrades and reinforcements. The far-right panel shows the pools for the support units along with how many are currently in use. Merchant marine

appear green when a player has more than enough ships to transport resources and red when a player is short of ships for the resources it is shipping.

The extra merchant marine of a non-neutral allied partner in a trade agreement can fill the gap if there is a shortage from the destination country.

Economic Multiple and Production – The total production of a country is multiplied by this number and by their current entry status percentage. The total is the production stockpile generated this turn. As time goes on each country's economic multiple increases reflecting their gearing from a consumer-based economy to a military one. On the production screen this is shown as the word Economy with a multiple after it.

It is May 1940 and the USSR generates 200 production points. Their entry status is 25% and their economic multiple is 1.2x. $200 \times 0.25 \times 1.2 = 60$ production points are generated for the USSR this turn.

Oil – The total oil produced each turn. When countries are not at war their oil production is modified by their status in the War Panel. Status how close they are to joining an alliance.

Italy starts the 1939 scenario at a 75% status. They are getting 10 oil from Romania. The 10 oil is multiplied by the status to determine the total amount available to the military rounded down which is 7 oil.

Manpower – This shows the total manpower generated each turn.

Logistics – This indicates the total logistics for the country which allows it to build units. A country is limited in how many units it can build by the logistics number. Each type of unit costs a different logistics amount.

Shipyards – As with logistics a naval unit also needs shipyards in which to build. Shipyards are in use while the unit is being built and released when it is complete. Each naval group has its own shipyard cost.

Strategic Resources – This shows how many strategic resources the player currently controls. As long as the strategic resource is in supply of any kind it increases the economy of the country by +1%.

Specialty Production – This allows players to give special abilities to units. The points gained each turn are based on the production of the country. Countries with higher production yield greater specialty points.

Upkeep – After each turn, this displays how much production and manpower was used to reinforce and upgrade units and maintain them with oil.

Stockpile – This lists what a country has left for use in each category shown.

Reinforcement and upgrade – The amount set is allocated to repair and upgrade units on the map. No more than the amount set will be spent on repairs and upgrades per turn. If a player sets the amount to 0, then no production will be used to repair and upgrade units. If it is set to equal to or more than what is available in the stockpile, then all production will be used.

Support Pool – This shows how much a player has of each support item and how much of it is in use. Some items are consumed upon use. Others are used until released.

Buying Units – The bottom half of the production screen is dedicated to producing military and support units. Players can select the tab of the military arm for which they want to buy. This will list the units, advancements, names, costs, and features of the unit. If a particular unit can't be bought, the purchase button will be in red. A player may type in a custom name for the unit. If a player types in a custom name for a unit this name will be used instead of the names on the list.

If the purchase button is red, a player is lacking in one or more resources required to produce the selected unit.

Help button – In the upper right corner just below the close button, there is a help file for production. This explains all the small panels in the game in case you need to refresh yourself.

Command Point Production – Each turn players generate command points for their countries. Command points are only shown on headquarter units. While part of an alliance, a country generates 1 command point per turn. While neutral they have a 50% chance to generate a command point per turn. Command points are used to assign generals to headquarters. A country also has a chance to generate a second command point based on how much of its logistics is used. The more of its logistics is used, the more command points and the higher the chance the country will get a 2nd command point. The better the generals, the more command points they cost.











Convoys and Escorts – Here a player can find all overseas convoys and trades between countries. A player can view, setup, and cancel trades during the game. Trades transfer the selected production and oil every turn to the target trade partner. No more than 25% of a country's total production and 25% of its stored oil can be traded away. Conquered and owned countries resources only show up on the trade list if they are traveling by naval convoy. Trades travel via undamaged rail or convoy routes.

All production resources yield full value to the country that owns and controls the resource. If a player controls but does not own the resource, it will yield 1/3 of its amount.

The bottom left panel of the screen shows all current trades and their status. Trade types can be allied, agreement, conquest, or

owned. A green arrow indicates an import, a red arrow an export. Trades that travel by convoy use merchant marine and are subject to raiders and submarine attack along their route. Each resource point sent requires one merchant marine. A trade can be blocked if the route can't be connected to its destination port. Trade routes follow convoy routes in water hexes. Trades created in this menu may also be canceled or altered during a turn. Event-created trades may not be canceled manually. Some neutral countries offering resources might cancel their trade if certain events happen during the game. Some neutral countries might create a trade for the same reasons.

The bottom right panel shows all the convoy routes, unused escorts, and assigned escorts next to each convoy route name. Escorts are a support unit. They can be transferred from one zone to another or removed from a zone and placed in the available pool. Escorts protect convoys from submarine units attacking them. Escorts have no effect on non-submarine naval fleets nor can they be affected by them. Only subs have a small chance of sinking an escort during the convoy attack calculations.

CONVOY ROUTE ICONS		
IMPORT	DESIGNATION	EFFECT
	Allied	An allied minor country is sending 50% of its production and all of its unused oil.
	Agreement	A country is sending resources due to a trade agreement setup or part of the scenario
	Owned	Owned and controlled hexes not in main supply overseas
	Conquest	Conquered resources yield only 1/3 their value while conquered oil yields the full value
	Supply	This convoy is providing supply to a port
	Import	Resources are coming into the country
	Export	Resources and supplies are leaving the country to the destination
	Route	Convoy route hexes for transporting resources appears on hexes which are considered water. Hovering over the icon on the map will show the name of the convoy route

Romania sends Germany most of its oil via rail. This is a trade agreement via rail. Sweden sends Germany resources via rail and convoy. The latter will be on the convoy route list while the former will not.

Advancements – Attaining advancement levels allows upgrades to units. A player may use available research points to increase investments in a specific advancement field. The left panel shows the name, acquired year, investment, and days left until the next year's advancement. Once the days reach zero days, the advancement will be moved to the next year and the number of days will reset to 365. Each turn a player has a small chance to get new research points. The chance is based on the current production regardless of how

Advancements

Germany

0

Advancement Fields

Year

Investment

Progress

Assault	'39'	4	275 days
Anti-Tank	'39'	4	275 days
Breakthrough	'40'	4	275 days
Heavy Armor	'39'	2	275 days
Interceptors	'40'	4	275 days
Escort Fighters	'39'	0	
Fighter Bombers	'39'	3	275 days
Close Support	'39'	4	275 days
Strategic Bombing	'39'	0	
Naval Air Training	'39'	2	275 days
Detection & Electronics	'39'	0	
Large Warships	'39'	0	
Warships	'40'	0	
Carrier Operations	'39'	0	
Convoy Escort	'39'	0	
Attack Submarine	'40'	3	275 days
Long Range Submarine	'39'	0	

Reset

Assault

1939 1940 1941 1942 1943 1944 1945

Firearms	0	0	1	1	2	2	3
Guns	0	0	0	1	1	1	1
Artillery	0	1	1	1	1	2	2
Tanks	0	0	0	0	0	0	0
Air Combat	0	0	0	0	0	0	0
Tactical	0	0	0	0	0	0	0
Strategic	0	0	0	0	0	0	0
Naval Air	0	0	0	0	0	0	0
Surface	0	0	0	0	0	0	0
Anti-Sub	0	0	0	0	0	0	0
Anti-Air	0	0	0	0	1	1	1
Defense	0	0	0	1	1	2	2
Operation	0	0	0	0	0	0	0
Range	0	0	0	0	0	0	0

Assault - Firearms, artillery, machine guns, assault guns, and infantry tactics.

much was spent or saved. The more spent on a field, the greater chance it advances, but it has diminishing returns per point invested. As a player increases in an advancement, field the success rate also drops to attain the next level but more research centers may be assigned to that advancement.

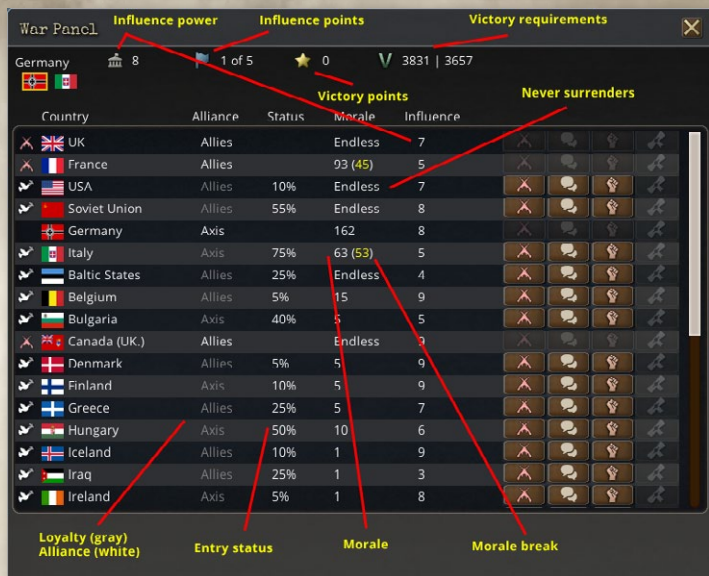
A maximum of 4 researchers can be placed in a 1939 level field. Each new advancement year allows a maximum of 1 more researcher to be allocated to that field. When a new research point is available, the advancement menu button will light up. The number of unassigned researchers appears on the top far right of the advancement screen.

The year is 1941 and the USA has an anti-tank of 1939. A maximum of 4 researchers is allowed. But their strategic bombing field has advanced to 1941. A maximum of 6 researchers is allowed to advance that field with the base of 4 + 1 for each year after 1939.

All units will have 2 to 4 advancement fields available to them depending on their type and branch of the military. Clicking an advancement allows a player to see the table for that advancement on the right side of the menu item. The highlighted column is the current advancement level.

The right panel shows the unit attribute bonuses for each year. The column highlighted in yellow is the current year for that advancement.

War Panel – Players may declare war, force peace, influence another country, or intimidate another country. The status of all countries is revealed here along with how far they are along toward joining the Axis or the Allies. If diplomacy is enabled from the options bar, players gain influence points throughout the game based on their



production. The War Panel icon will light up when a new influence point is available to be used.

At the top are shown the influence power, influence points, victory points, and its victory point requirements for a major and minor victory.

The far left of the panel lists the status of the currently selected country at the top to those countries in the panel. Red crossed rifles mean this country is at war with the selected country. If the icon is a dove, the two countries are at peace. Clicking on a flag of the listed country will move the map to the capital of that country.

The Alliance column shows what alliance a country is part of. A dimmed alliance name indicates this country is favoring an alliance

but is presently neutral. It will be more susceptible to influence by nations of that alliance.

The Status column shows how close a country is to becoming part of an alliance. When the status reaches 100%, the country will align to the closest major power of that alliance.

The Morale column shows how close the country is to surrendering and at what morale level it will surrender. When the morale break is greater than its morale, the country can be forced to surrender. If morale goes to zero, a country automatically surrenders. A country with Endless morale never surrenders. All the Allies except France will never surrender. Italy can surrender without losing its capital. Germany surrenders when its morale is at zero. Taking brown or green circle hexes reduces the morale. Surrendering nations usually have their convoys, escorts, and naval units transferred to the control of the closest ally. On the map naval units are sent to their controlling major power's build queue to come out next turn or be destroyed in some cases. Morale also shows if a country has surrendered.

The *Influence* column shows how strong or weak the political situation is in the country. Countries with weaker influence are more prone to being influenced and have less influence on others.

On the far-right side there are 4 buttons for actions that a player can take vs another country.

Crossed Rifles (Declare War) puts both countries and all their current allies at war with each other. Neutral countries with a status of less than 100% may not declare war on another country.

Dialog Bubbles (Influence Country) uses an influence point to bring that country closer to your alliance by a little.

Fist (Intimidate) is a high-risk, high-reward action with a small chance to succeed. It generates a lot more of a status shift if successful but will cause a reverse status shift if it isn't successful. Intimidate can be used only on minor countries.

Treaty (Negotiate Surrender) – This is available when a country's morale is below its morale break point and above zero. This allows a negotiated surrender without reducing morale to zero. France and Italy can be forced to surrender. Players do not have to force a country to surrender. In a negotiated surrender all of the country's fleets are removed from the game as part of the surrender so they don't fall into enemy hands. In surrender by conquest all the fleets go to the enemy side.

The major power with the most land units within the country that surrenders will gain control of all the hexes of that country under the surrendering nation's control.

Cooperation – The U.S.S.R. and Poland do not cooperate with other countries. A non-cooperating major power will not allow units to enter its country. A non-cooperating minor power will not send its major power ally any resources.

Reports and Statistics – This section has 3 tabs that display important information about the current turn, forces, and casualties since the start of the game.

Reports – This shows the current turn report at the start of the turn for review.

Forces – This shows how much strength each country has on the map at the moment.

	Reports	Forces	Casualties	Units
	Land	Air	Naval	Merch. Escorts
UK	300	120	121	195 24
France	720	65	54	29 3
USA	75	40	48	89 46
Soviet Union	610	250	31	20 3
Germany	1080	200	36	45 2
Italy	360	80	59	34 5
Belgium	125	10	0	4 0
Bulgaria	30	0	0	0 0
Canada	15	0	2	0 0
Denmark	0	0	0	12 0
Finland	160	20	0	5 0
Greece	140	0	5	10 2
Hungary	100	20	0	0 0
Iceland	0	0	0	0 0
Iraq	3	0	0	0 0
Ireland	0	0	0	0 0
Luxembourg	0	0	0	0 0
Netherlands	55	10	0	30 2
Norway	0	0	0	48 2

Casualties – This shows how much strength has been removed from the game on the map throughout the game.

Current	Last	Losses
170, 64 Land Combat		
169, 64 Land Combat		
168, 63 Land Combat		
169, 64 Land Combat		
169, 64 Ground Strike		
168, 63 Ground Strike		
170, 56 Land Combat		
169, 58 Land Combat		
169, 58 Ground Strike		
167, 60 Land Combat		
167, 61 Land Combat		

Attacking Units
15th Div
II Fliegerkorps

Defending Unit
Pomorie East Group

Odds: 2 to 1

Attacker Losses
Air: 0
Land: 0

Defender Losses
Air: 0
Land: 3 HOLDS

Combat Logs – A player may review combat that has occurred during his current turn or during the opponent's turn. Clicking a battle on the list will show the results and move the cursor to the location of the combat. When the Enemy Action is enabled clicking an Enemy Action icon on the map will show that battle in the Combat Log.



Deploy New Units – Purchased units are listed with their arrival date to be deployed. Air units that are overrun will also be placed on the deployment queue. When a unit is selected that is ready to be deployed, the

Deployment menu item will light up. Units on the deployment list that are ready will also show a *Deploy* button to reveal all available locations to place the new unit. Left-clicking on a location will place the unit. A land or air unit may only be placed in a main supply center or any hex around it that is in main supply. A naval unit may only be placed in a port with a size 5 or more in main supply. Support units, such as fortifications or anti-air guns, may be placed in any appropriate location that is controlled and in any kind of supply.

8. UNITS

Unit Types – Countries are limited in the unit types they can build depending on the organization of their military. A country's logistics



impacts how many units it can have on the map and in the deployment queue at any one time. Units are divided into land, naval, air, and support units. All types of units, except some



support units, use logistics. Each unit has its own abilities and rules of where it can move and what it can do. Naval units, called naval groups, are the only units that form up in stacks, called a fleet, within a single counter on the map. Land and air units are themselves individual counters on the map. A hex may contain 1 land, 1 air, and 1 fleet counter. Stacked hexes show as a shift in the unit types that are there. It is possible for an allied land or air unit to occupy the same hex as an enemy naval unit on some partial hexes and vice versa.

Unit Appearance – In the options menu players may select from 3 different informational displays for land, air and naval counters

Land Unit Appearance Option #1, 2, 3

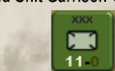


Combat value Operation points

Attack combat value Defense combat value

Strength Operation points

Land Unit Garrison Option #1



White value indicates attack combat value halved

Air Unit Appearance Option #1, 2, 3

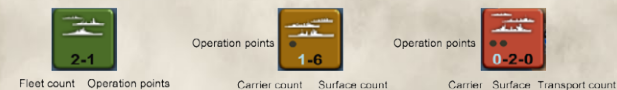


Air combat Tactical Operation points

Air combat Tactical Naval air

Tactical Naval air Strategic

Naval Unit Appearance Option #1, 2, 3



Fleet count Operation points

Carrier count Surface count

Carrier Surface Transport count

on the map. Players have a choice between NATO and silhouette counter images.

Default Experience – Land, air, and naval forces each have their own default experience levels that vary per country. This is the experience a new unit will start with when constructed and when reinforcements are issued. Usually minor countries have lower default experiences than major countries. Default experience goes down when manpower drops below 50% of its maximum. Countries with less than 50% may increase their default experience through combat to a maximum of 50% default experience.

Some countries have higher than the default maximum of 50% experience in different branches.

Reserve Units – Scenarios include some units on the deployment queue labeled as “reserve.” Reserve units are trained men that can be called up at any time to serve in the army. They will be available for deployment once the nation is not neutral. Reserve units take time to ready and may be able to be deployed in as short as 1 turn, usually come in within 3 turns, but may take longer.

Upgrading and Reinforcing – All unit types automatically upgrade and reinforce over time if in supply. A player may choose to set a unit to priority reinforcements and upgrades. Priority ensures those units get reinforcements first. It also ensures those units are upgraded immediately. Units upgrade and reinforce in a particular order and condition.

REINFORCEMENT AND UPGRADE ORDER		
CONDITION	TYPE	ORDER ^a
Priority	Naval	1 st
Priority	Land	2 nd
Priority	Air	3 rd
Normal	Naval	4 th
Normal next to enemy	Land	5 th
Normal not next to enemy	Land	6 th
Normal	Air	7 th
Reinforcements off	Naval, Land, Air	Doesn't reinforce or upgrade

^a All units will be repaired in the order of lowest strength first per category

8.1 LAND UNITS

Land units operate on land tiles and beaches, may be transported, may invade, have 2 advancement types, and have 6 specialty types allowing for a single land unit to have 14 different configurations. Land units attack other enemy land units and overrun unguarded enemy air and naval units. Air units that are overrun are partially damaged based on their effectiveness and go on the deployment queue of the enemy. Overrun naval units retreat to an empty sea hex. Land units have a lot of operation points and a range of 1.

Headquarters – HQs increase supply in their area and improve surrounding units' combat effectiveness depending on the general assigned to the HQ. HQs defend but can't attack. A supply truck used on a headquarter will supply all units within a 1 hex radius of the headquarters using the appropriate amount of supply trucks for each unit. The HQ must be in a supplied hex to use this ability. HQs also increase the map supply level of friendly hexes within a 5-hex radius by +1 to a maximum of 8. Hexes not in supply will have a map supply level of 1.

Infantry Units – There are up to 4 different types of infantry units depending on the country: divisions, small corps, large corps, and armies. All infantry corps and armies generally have the same attributes and function in the same way. Some countries have slightly different factors for their own infantry class units. Instead of generating a large number of infantry units with different minor purposes *WarPlan* allows players to detach smaller units from larger ones to cover garrison duty or activity behind the line while assigning specific advancements and availability of reinforcements. Infantry units are the only units that may be divided and split up. Large and small corps can be merged or split off into small corps and divisions. Armies can be split into two smaller armies. A division can merge with a division or a small corps to make a small or large corps. A small infantry army can merge with another small infantry army to create a large infantry army. The merging unit will adapt the advancement of the unit into which it is merging. The lower of the two advancement levels will be the new advancement level of the merged unit. Some countries, such as Italy, can't split or merge due to the small size of their historical division and inherit lack of combat effectiveness as a single division within the scale of the game. Small corps can't merge into a division.

To split a corps or armies, go to the details of the unit. To merge smaller infantry units into a larger one, hover over a friendly unit while holding down the ALT key and right-click on the target unit. When merging only divisions can merge into other units. A split army can merge into another split army. Small corps can't merge into a division.

Only infantry units can be set to *garrison status* if they are in supply. Garrison units have 50% movement and 50% offensive firepower but return 25% logistics and 25% production, and use 25% less supply stockpile. A garrison status unit that has not moved can be returned to *active status* at any time as long as a country has the logistics and production available to do so. It costs the same amount to bring units back to active status as the amounts returned from setting them on garrison status. Setting a unit on garrison status or active status uses all the unit's operation points.

Infantry Division – 10 strength, can form a small corps with another division or a large corps with a small corps

Infantry Corps Small – 20 strength, can form a large corps with a division or split into 2 divisions

Infantry Corps Large – 30 strength, can be split into a small corps and a division

Infantry Army – 15 to 36 strength, can be split in half forming 2 smaller armies of 7–18 strength each

The only major power to have army units is Russia.

Cavalry Corps – 20 strength, lightly armed, fast moving unit

Marine Division – 10 strength, does not suffer damage when invading next to enemy units, has slightly higher attributes than other infantry type units, resists invasion landing damage

Paratrooper Corps – 20 strength unit, with the capacity of using an air transport to drop on an enemy hex without moving within 8 hexes of its location. They have higher firearms but lower guns and artillery. To parachute onto a hex the paratrooper needs to have 100% effectiveness and an available air transport, and not be next to an enemy unit.

Mountain Corps – 20–30 strength, with a +15% combat bonus when fighting in mountains or hills as an attacker or defender

Mechanized Corps – 30 strength infantry unit, with armored transports, tank battalions, and assault guns. They are less effective vs hexes that have natural tank defenses such as forest, hills, mountains, or urban. They increase the chances a defender will retreat in open terrain more than do infantry units. There is a +3% retreat bonus for each tank factor.

Armor Corps – 30 strength balance units, with a combination of infantry and armor divisions. They are less effective vs hexes that have natural tank defenses such as forest, hills, mountains, or urban. They increase the chances a defender will retreat in open terrain more than do mechanized units. There is a +3% retreat bonus for each tank factor.

8.2 AIR UNITS

Air units operate on land in a valid terrain type that allows for air placement or an airfield. They may be transported by rail or sea. Each air unit has 2 to 4 advancements available. Air units have 4 mission attack types: naval, land, airfield, and production. Air units have 2 operation points and varying ranges. They can move and/or attack twice in a turn.

Air Superiority Group – 20 strength, only air unit that can intercept enemy air units

Ground Attack Group – 20 strength short-range attack aircraft, with escorts, that are most effective supporting land attacks or attacking naval groups

Tactical Air Group – 20 strength medium-range versatile aircraft, with escorts, that can perform all bombing missions with fair effectiveness

Strategic Air Group – 20 strength long-range aircraft, with long-range escorts, that are primarily used to attack an enemy's production

8.3 NAVAL UNITS

Naval units operate on water tiles and friendly ports. Some tiles are both land and water tiles. Enemy and neutral minefields and ports block their movement. They can provide invasion supply, resupply at sea, escort transports, attack other enemy navies, and interdict enemy port supply. Aircraft carrier units also have the ability to act like an air unit. They contain an air strength component that is replaced as the ship repairs automatically. A maximum of 9 naval units may occupy a fleet counter at sea. Any number of ships may be in a port. Submarines may only be in a fleet of their own type outside of a port. No more than 3 aircraft carriers may be in a single fleet at sea.

Submarine Group – 5 strength, may attack enemy fleets and convoy lanes. Only air groups, carrier groups, or escorts protecting a convoy route may target a submarine group in any hex type. Other naval groups may attack a submarine group only if the submarine group is next to a hex that is not all water. Submarines are the only surface naval group that can attack another fleet at a range of 5 hexes representing their patrol area. If they attack another naval group, they have a chance to surprise that group and deal damage first. Submarines have a unit supply level 5, compared to 3 for all other

units. If a submarine has the long-range submarine advancement, their unit supply level is increased to 8.

Patrol Group – 5 strength weak surface group with excellent submarine defense

Cruiser Group – 5 strength fair surface combat group with fair submarine defense

Battle Group – 6 strength good surface combat group with good defense

Carrier Group – 5 strength with 10 strength of naval air, act as an air unit at sea capable of striking targets, does not intercept other air units. Carrier groups have a range of 5 hexes to attack other units. Only 3 carriers may be in any one fleet.

8.4 SUPPORT UNITS

Support units are abstract units that support map units in their operations. Some are used for the turn while others are expended upon use.

SUPPORT UNITS NAVAL						
ATTRIBUTE	TRANSPORTS	LANDING CRAFT	SUPPLY OILER	SHIPYARD	MERCHANT MARINE	ESCORTS
Production Cost	60	15	30	20	100	40
Manpower	5	5	1	1	5	1
Logistics Cost	0	0	0	0	0	1
Shipyard Cost	5	5	1	0	5	1
Build Days	180	90	60	400	180	210
Purchase Quantity	10	10	1	1	10	1

SUPPORT UNITS LAND					
ATTRIBUTE	SUPPLY TRUCK	AIR TRANSPORT	COASTAL DEFENSE	AIRFIELD	ANTI-AIR GUNS
Production Cost	30	120	30	30	15
Manpower	0	10	1	1	1
Logistics Cost	0	10	0	0	0
Build Days	90	150	120	45	90
Purchase Quantity	10	1	1	1	1

Transports – Each transport point holds 1 strength of land or air unit. Port supply also uses transports to deliver supplies. Only 1 transport point is required to deliver supplies to a port. Transports are used and return to availability once they are not in use. The production menu item shows how many transports a country has and how many are being used.

Landing Craft – Each craft point allows 1 strength of a land unit to invade or disembark onto a hex. Landing craft are permanently expended upon use.

Supply Oiler – Each oiler resupplies a fleet at sea and is expended. It does not improve effectiveness of a fleet. Oilers appear as an option on the fleet when they are selected. Oilers are permanently expended upon use. Enemy submarine fleets within 5 hexes of a fleet receiving oiler supply have a chance that the oiler is destroyed in transit. The chance is 1% per strength point of the enemy sub groups to intercept the oiler.

Supply Truck – A land or air unit may use supply trucks once per turn if the unit is in a hex with a map supply level of 1 or higher. Supply trucks increase the effectiveness of a unit by 6% and their unit supply level by +1 for a potential maximum of 4. A player may raise the effectiveness of a unit beyond 100% for a total of

3 turns in a row if the unit does nothing for those 3 turns. This represents an accumulation of oversupplying the unit, usually for a major offensive. Supply trucks are permanently expended upon use. For every 10 strength of a unit, 1 supply truck is expended. If there are not enough supply trucks for a unit due to its strength, a player can't use the function. If a supply truck is used on an HQ, then all land and air units within 1 hex of the HQ will get the supply trucks instead of the HQ.

The Soviet player wants to use a supply truck for the 4th Guards Mechanized Corps which starts the turn in map supply level 5. He can only use the supply truck ability while the unit has a map supply level of 1 or higher in main or port supply. If the unit moves into enemy territory, it won't be able to use a supply truck. The unit has 30 strength and will use 3 supply trucks to increase its effectiveness and unit supply level.

Air Transport – Used for dropping paratroopers or giving supply to an out of map supply unit that hasn't moved yet. They may be intercepted and shot down. Their availability resets each turn. Supply via air transport adds 2 unit-supply levels and the base effectiveness amount of 6%. A player must have an air unit within 8 hexes of the land unit to perform a supply airlift.

Shipyard – Allows for the construction of naval groups and naval support units. Each naval group or naval support unit logistics cost requires the same amount of shipyard to build. Once the unit is built, those shipyards will be available for other units.

Coastal Defense – Reduces attacks that come from coastal hexes.

Airfield – Allows a hex to be an airfield even if the terrain does not permit it. Impassable hexes and terrain may not be improved.

Anti-Air Defense – May be added to any hex. Up to 6 points of anti-air may be added to a hex. Anti-air points defend against any air attack.

Hexes with an anti-air symbol show that the hex has at least 1 anti-air defense factor.

Merchant Marine – Used for transporting resources overseas.

Escorts – Used to defend merchant marine from submarine attacks. Escorts scatter vs surface fleets.

Note: Hexes that already have a resource on them may not be improved to coastal defense or an airfield.

A city already has natural defenses and is an airfield. A player may not put a coastal defense or airfield on this hex.

8.5 UNIT ATTRIBUTES

Units have attributes that affect different parts of the combat sequence, their actions, and their defense. Different countries have different attributes for similar units. Advancements increase these attributes as units upgrade.

Strength – How much damage a unit can take before being removed from the map

Effectiveness – Moral, fatigue, and damaged equipment a unit has; the higher the number, the better the unit fights

Experience – How trained a unit is; the more a unit fights, the more its experience goes up; the lower the experience, the faster a unit gains experience

Supply – How many turns a unit has for supply before it starts suffering negative effects

Entrenchment – How well a unit's position is fortified and prepared for an attack. To increase its entrenchment level, a unit cannot have moved. The maximum entrenchment level is 2. Each level of entrenchment decreases the damage a unit takes by 10%.

Firearms – Rifles, machine guns, heavy mounted machine guns

Guns – Anti-tank weapons, tank destroyers, assault guns

Artillery – Mortar, howitzers, large siege artillery guns

Tanks – Light, medium, and heavy tanks

Air Combat – Machine guns, cannons, and maneuverability

Tactical – Precise bombing of land units and airfields

Strategic – Bombing of strategic targets such as production and oil

Naval Air – Navigation and targeting of naval assets at sea or in a port

Surface – Naval gunnery for surface combat or shore bombardment

Anti-Sub – Sonar, hedge hogs, and convoy escort tactics for attacking submarines

Anti-Air – Anti-aircraft artillery, radio proximity shells, spotting, chaff, radar

Defense – Armor, detection, and maneuverability of a unit

Range – How far a unit can move or attack in one operation point

Operation Points – How often a unit may move and attack according to its range. Land units have a range of 1 and many operation points allowing them to move and attack often. Air and naval units have 2 operation points but a much greater range.

Different air units vary on their ranges which are affected by advancements. Naval units have a fixed range of 24 hexes with 2 operation points. Attacking any unit requires an operation point. Land units show their operation points as a number. Naval and air units have the option of showing their operation points as dots as they have only 2.

A player may modify the display to have unit statistics appear in different ways including showing numbers for air and naval units.

Move Effectiveness Cost – The effectiveness loss each time a unit uses 1 operation point

Combat Effectiveness Loss – The effectiveness a unit uses when engaging in combat; defending land units use 50% less effectiveness cost

The above two values only show in the editor and not on the unit when playing the game.

Days – Length of time it takes to build the unit

Production Cost – Production cost to create the unit; repair costs are based on production cost as a fraction of their strength being repaired and their technology level

Logistics Cost – The cost per strength point of the unit for logistics; infantry have the lowest cost while naval groups have the highest cost per strength

Oil Use – How much oil a unit uses to move and attack. An oil-dependent unit uses oil only once for movement no matter how many times it stops to attack. Land and air units use oil each time

they attacks. Naval units use oil each turn if they are away from a port, no matter their action.

DEFAULT VALUES FOR LAND UNITS								
ATTRIBUTE	HQ	INFANTRY	CAVALRY	MARINE	PARA	MOUNTAIN	MECHANIZED	ARMOR
Strength	10	10–36	20	10	20	20–30	30	30
Firearms	4	4	3	5	5	4	4	3
Guns	3	2	1	2	1	1	3	1
Artillery	2	3	3	3	2	3	2	4
Tanks	0	0	0	0	0	0	2	5
Anti-Air	2	1	0	1	1	1	2	2
Defense	5	5	4	6	5	5	6	7
Range	1	1	1	1	1	1	1	1
Operation Points	4	6	7	6	5	6	8	8
Move Eff. Cost	1%	1%	1%	1%	1%	1%	1%	1%
Combat Eff. Cost ^a	–	6%	6%	6%	6%	6%	6%	6%
Days	120	60	120	120	200	120	130	200
Production Cost	60	60–180	120	100	100	180	300	360
Logistics Cost	1	1	1	2	2	2	2	2
Oil Use	0	0	0	0	0	0	2	2
Unit Supply Level	3	3	3	3	3	3	3	3
Movement Cost ^b	1%	1%	1%	1%	1%	1%	1%	1%
Combat Cost ^c	6%	6%	6%	6%	6%	6%	6%	6%

USA infantry corps large: +1 tanks, +1 oil use, +1 operation point

USSR infantry corps: –10 strength, –1 artillery, can't build

USSR infantry army: +6 strength, –1 artillery

Germany: starts with higher default experience and average statistics

Italian infantry corps: –1 firearms, –1 artillery, can't build large corps

^a Defending land units use 50% less effectiveness

^b The amount of effectiveness lost per operation point

^c The base costs per attack; defending units use 50% of the listed amount to defend

DEFAULT VALUES FOR AIR UNITS				
ATTRIBUTE	AIR SUPERIORITY GROUP	GROUND ATTACK AIR GROUP	TACTICAL AIR GROUP	STRATEGIC AIR GROUP
Strength	20	20	20	20
Air Combat	8	4	5	6
Tactical	2	8	5	3
Strategic	0	1	5	8
Naval Air	1	3	2	1
Anti-Sub	1	3	3	3
Anti-Air	2	2	2	2
Defense	7	4	6	6
Range	6	6	10	20
Move Eff. Cost	15%	15%	15%	15%
Combat Eff. Cost	6%	6%	6%	8%
Days	180	120	150	180
Production Cost	250	250	300	400
Logistics Cost	3	3	3	4
Oil Use	2	2	3	4
Unit Supply Level	3	3	3	3
Movement Cost	15%	15%	15%	15%
Combat Cost	6%	6%	6%	8%

England and USA ground attack air group: +2 range

DEFAULT VALUES FOR NAVAL UNITS					
ATTRIBUTE	SUBMARINE GROUP	PATROL GROUP	CRUISER GROUP	BATTLE GROUP	CARRIER GROUP
Strength	5	5	5	6	5
Air Combat	–	–	–	–	4
Tactical	–	–	–	–	3
Strategic	–	–	–	–	2
Naval Air	–	–	–	–	8
Surface	7	4	6	9	4
Anti-Sub	0	4	2	2	4
Anti-Air	0	3	3	5	4
Defense	6	4	5	8	5
Range	5	1	1	1	5
Move Eff. Cost	0%	0%	0%	0%	0%
Combat Eff. Cost	8%	8%	8%	8%	8%
Days	100	210	240	700	540
Production Cost	200	300	450	600	800
Logistics Cost	2	3	3	4	5
Oil Use	1	2	2	4	3
Unit Supply Level	5 ^a	3	3	3	3
Movement Cost	0%	0%	0%	0%	0%
Combat Cost	8%	8%	8%	8%	8%

^a Submarine groups with long-range advancement will have an 8-unit supply level

9. ADVANCEMENTS

There are 17 different advancements representing research into different improvements of unit armament and doctrines. Most advancements increase combat ability; some increase operation points or range. Units automatically start updating their advancement level each turn. Countries with less of their logistics filled upgrade faster. There is no manual upgrading for a unit. Upgrading a unit uses production points.

INFANTRY TYPE UNITS

Assault – Increases the firepower of infantry type units in a balanced method for offense and defense

Anti-Tank – Increases the firepower of infantry type unit's defense giving up some offense capabilities

ARMOR AND MECHANIZED UNITS

Breakthrough – Mechanized and armor units gain extra operation points at the sacrifice of firepower and armor.

Heavy Armor – Mechanized and armor units gain more firepower and defense but no bonus operation points.

AIR SUPERIORITY

Interceptors – Focus on increasing air-to-air combat ratings of air superiority groups

Escort Fighters – Focus on increasing range of air superiority groups at a slight cost to air combat

Fighter Bombers – Focus on increasing bombing capabilities of air superiority groups with some loss to air combat

BOMBERS ALL UNIT TYPES

Close Support – Focuses on increasing tactical ratings of bomber groups

Strategic Bombing – Focuses on increasing strategic ratings of bomber groups

Naval Air Training – Focuses on increasing naval air ratings of bomber groups

Detection and Electronics – Focus on electronic anti-sub detection increasing anti-submarine values

NAVAL BATTLE GROUPS

Large Warships – Greatly increase surface combat ratings and defense for battle groups only. No other group type may use this advancement.

Germany's H-Class battleships or the USA's Iowa-class battleships would be an example of the large warship advancement.

ALL NAVAL SURFACE GROUPS

Warships – Increase surface combat ratings for any type of naval group

Convoy Escort – Increases anti-submarine ratings for any naval group

CARRIER GROUPS

Carrier Operations – Increase naval air ratings for carrier groups. No other naval group may take this advancement.

SUBMARINES

Attack Submarine – Increases surface and defense for submarine groups

Long-Range Submarine – Increases the maximum supply for submarine groups to 5 at the expense of firepower and defense

10. SPECIALTIES

There are 6 different specialties that only land units can acquire. Countries gain specialty points based on their production. The production screen shows on average how many specialty points a country receives per turn. Land units may specialize which gives them an added benefit for certain actions in combat. When a country gains 100 specialty points, the player may use them to assign any of the abilities to any non-HQ land unit selected. Neutral countries gain at half this rate. As the game gets further along this number increases due to production increases.

Specialties

-  Elite
-  Engineer
-  Heavy Artillery
-  Infiltrator
-  Tank Destroyer
-  Winter Combat

Elite – The unit is composed of highly trained and experienced veterans. The unit gains a permanent +10% experience.

Engineer – The unit gains a specialized engineer battalion that reduces the penalties of attacking across a river by 50%.

The Soviet 12th Army is attacking across the Dnieper River. Due to its engineer specialization, the river penalty is only 25% instead of 50%.

Heavy Artillery – The unit gains a battalion of specialized artillery for offensives. This removes 1 entrenchment from a unit when attacking. An attacker may benefit from only one heavy artillery per attack.

Infiltrator – The unit specializes in mobile combat tactics of infiltration to penetrate enemy defenses gaining +5% bonus to force a defender to retreat. An attacker may benefit from only one infiltrator per attack.

Tank Destroyer – The unit gains a self-propelled gun attachment of assault guns and tank destroyers increasing their guns values by +2.

Winter Combat – The unit is trained with special winter combat tactics and equipment that allow them to fight better in snow or blizzard weather. They gain a 30% bonus in combat during these weather conditions.

11. THE MAP

The map consists of hexes which may be land, water, or both. Each hex may have features due to its terrain and resources. A hex may be the same terrain or resource as another hex but have different values affecting movement or combat depending on how much of that hex is filled.

Reconnaissance Level and Fog of War – Reconnaissance levels determine how often a fleet is found at sea and how much information a player gets from enemy units of all types. High reconnaissance levels are present near a country's territory and drop off as the player gets farther from the country's controlled land. Enemy land and air units that have a low reconnaissance level do not show any information unless if they are a land unit or air unit. Naval units still have their original symbol but their type and quantities are unknown. The only distinction is from submarines fleets and surface fleets. Submarine fleets have one naval symbol while other fleets have multiple ship symbols on their counter. Units with a medium to high reconnaissance level not next to a friendly land unit have their general types identified but not their combat values. If an enemy unit is next to a friendly land unit an

approximate value will be given of that unit, the type, and the name of the unit. Reconnaissance levels may be very low, low, medium, high, and very high.

Ownership – A hex has an owner and a controller. The owner is the original country to which that hex belongs. The controller is who is occupying it at the moment. Ownership is displayed only on the map with the country's border. The information panel will show the hex's current controller.

In some cases, ownership includes other territory. Corsica is French owned and controlled. It is part of their home country.

Partisans – Each country has a partisan value. Partisans turn rail into damaged rail and only affect countries in which their owned territory is now occupied by a country they are at war with. Any unit protects vs partisans in their own hex. Corps and Armies protect vs partisans in their hex and the surrounding 6 hexes.

Control – When a country controls a hex, the hex will change to that country's color. Control allows the use of resources in that hex.

Modifiers – Rugged, airfield, combat modifier, land movement modifier, supply source, morale, production, oil, naval repair.

Rugged – Oil dependent land units cost 1 more operation point to move into the hex; tank factors and retreat chance is halved.

Airfield – The terrain type allows for air units to be placed there.

Combat Modifier – Resources, terrain, and rivers modify the attacker's strength.

Land Movement Modifier – Some terrains increase movement costs for land units. But not all of a specific terrain type generates the same effects on units. It depends on how much of the hex is that type of terrain.

Supply Source – This resource is a main supply source.

Morale – This resource generates manpower and morale.

Production – This resource generates production points, manpower, and morale.

Oil – This resource generates oil points.

Naval Repair – A port of 5 capacity or more can repair naval units. Naval units automatically repair 1 strength per turn unless set not to repair or the owner doesn't have enough production to repair the unit.

11.1 TERRAIN

Terrain



Resources



There are many types of terrain in the game. Each terrain type also has different possibilities that affect units.

TERRAIN ATTRIBUTES				
TERRAIN TYPE	RUGGED	LAND/AIR COMBAT MODIFIER	AIRFIELD	OPERATION POINT COST
Depression, Alpine, Ice Sheet	–	–	No	Impossible
Plains	No	None	Yes	1
Woods > 50% cover	Yes	–5%	No	1
Woods < 51% cover	No	–5%	Yes	1
Forest ^a	Yes	–10%	No	1
Rough	Yes	–20%	No	2
Mountains	Yes	–60%	No	3
Marsh	Yes	–40%	No	2
Swamp ^b	Yes	–40%	No	2
Desert	No	–10%	No	2
Desert (with hills)	Yes	–10%	No	2
Tundra	Yes	–10%	No	1
Jungle	Yes	–25%	No	2
Bocage	Yes	–20%	No	1
Polder	Yes	None	No	2
River ^c	No	–50%	No effect	0

^a Most forests in Northern Russia and Scandinavia are 2 operation point cost movement

^b Swamps are treated as forest in snow or blizzard.

^c Rivers only affect land combat if those units are attacking a hex across it. Engineer specialization reduces the penalty to –25%.

11.2 RESOURCES

Resource Types – Ports, fortifications, urban large or small, oil fields, synthetic oil plant, airfield, strategic resource, coastal defense, supply source, minefield, loops, and iron ore.

Strategic Resource – Rare metals, Agriculture, Coal, Bauxite

RESOURCE ATTRIBUTES						
RESOURCE TYPE	NAVAL	LAND COMBAT MODIFIER	AIRFIELD	SUPPLY SOURCE	PRODUCTION	OIL
Port > 4	Repair + Protection	None	Yes	Port	None	None
Port < 5	Protection	None	Yes	Port	None	None
Fortifications	None	-35% to -66%, Rugged	Some	None	None	None
Urban Large	None	-25% to -66%, Rugged	Yes	Main	5-25 + Morale	None
Urban Small	None	-10%, Rugged	Yes	None	None	None
Oil Field	None	None	No	None	None	5-40
Synthetic Oil Plant	None	None	No	None	None	5
Airfield	None	None	Yes	None	None	None
Strategic Resource	None	None	No	None	+1%	None
Coastal Defense	None	-20% vs beach attacks, Rugged	No	None	None	None
Supply Source	Repair	None	Yes	Main	None	None
Minefield	Move if control	None	No	None	None	None
Loop	Movement	Movement	No	None	None	None
Iron Ore	None	None	No	None	5-0	None

Ports – Ports range from a size 1 to a size 9. A port with a capacity of 5 or higher repairs naval units. Ports generate 20 port supply stockpiles for every point of capacity they have. Each supply stock provides supply for 1 strength point of land or air unit. Ports also protect ships from being attacked. Ships reduced to zero strength in a port have a high chance of not being sunk and of having 1 strength. A port has a minimum of 3 naval gun defenses and a maximum of 9, scaling with its size. Any number of naval groups may supply at a major port. Minor ports are limited to supplying as many naval groups as their port size. Ports can hold any number of naval groups but minor ports have a supply and repair limitation.

PORT ATTRIBUTES			
PORT SIZE	NAVAL GROUPS SUPPLIED	DEFENSIVE GUN VALUE	REPAIR SHIPS
1	1	3	No
2	2	3	No
3	3	3	No
4	4	4	No
5	Unlimited	5	Yes
6	Unlimited	6	Yes
7	Unlimited	7	Yes
8	Unlimited	8	Yes
9	Unlimited	9	Yes

Urban – Urban hexes are considered rugged as a terrain type.

Strategic Resource – Each strategic resource a player controls increases production by +1%


Minefield – A naval unit may move through a minefield only if it controls the hex it is in. Minefields appear only on beach hexes.

11.3 WEATHER


Weather – Land, air, and sea hexes are affected by weather. This can impact air units, movement, spotting, and land combat. The game has many weather zones that change during a year.

Weather


Clear


 Cold (clear no invasions)

 Rain

 Heavy Rain

 Snow

 Blizzard or Frozen

 Frozen Port

WEATHER ATTRIBUTES

WEATHER	MOVEMENT EFFECT	LAND/AIR COMBAT MODIFIER	RECONNAISSANCE LEVEL MODIFIER	INVASION
Clear	None	None	None	Yes
Cold	None	None	None	No
Rain	+1	-50% / 50%	-1	Yes
Heavy Rain	+2	-50% / Can't Attack	-2 only surface combat	No
Snow ^a	+1	-35% / 50%	-1	No
Blizzard ^a	+2 ^b	-50% / Can't Attack	-3 only surface combat	No
Frozen Port ^a	+2 ^b	-50% / Can't Attack	No surface combat	No

^aThe USSR and Finland are winterized countries that fight better when there is snow or blizzard compared to non-winterized countries. A winterized country has no snow or blizzard effectiveness penalties. If they also have winterization specialty, they gain +30% combat bonus.

^bFleets in water hexes that are under blizzard conditions are considered frozen and can't move.

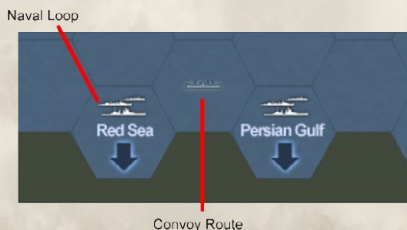
11.4 LOGISTICS

Rail – Land and air units may use rail points to move across the map. This kind of movement uses no oil. Each strength that a unit has costs a rail point to move. Rail also moves supply and resources to the country's capital.

Some countries have a *scorched earth* policy. Countries with this policy automatically damage rail as the enemy occupies hexes that switch control. Rail is repaired at a rate of 2 hexes per turn. Both Germany and the USSR have scorched earth policies.

Road – Terrain effects are ignored when moving on a road.

Naval Loop – Naval units entering a loop appear at its other end in a certain amount of turns. The naval loops at



the bottom of the map take 2 turns to move through. Units in a loop may not be attacked.

Convoy Route – They are indicated in ocean hexes by a small transport symbol. These routes are used to carry resources from locations not connected by land to the Capital of the resource's controller. Merchant marine are used to carry the resources on a 1 for 1 basis per production or oil point. Convoy routes have no effect on port supply.

Convoy Route Name – Each route has a name signifying its escort zone. Convoy escorts are assigned to a zone. Any escorts in that zone will protect all production and oil going through that zone from enemy submarines. A maximum of 10 escorts can be used to attack a submarine regardless of the number of escorts in the zone. When resources travel through a zone, they are in one large convoy being protected by any escorts in that zone.

12. SUPPLY

All units need supply to recover strength, effectiveness, and upgrade.

Main Supply Source – Any urban resource with production in a home country hex that is owned and controlled by a country which has not surrendered is a main supply source.

It is January 1945. London generates production and is owned and controlled by the United Kingdom. It is a main supply source for the USA and the United Kingdom. Paris generates production and is controlled by the United Kingdom but owned by France which has surrendered to the Germans. It is not a supply source for the United Kingdom.

Port Supply Source –

Any controlled port is a supply source providing a limited supply stockpile for units.

Supply Stockpile – This amount determines how many strength points of units a supply source can supply. For each strength a land or air unit has, 1 stockpile is used to supply it. Main supply sources provide an unlimited



stockpile. Port supply sources provide 20 supply stockpiles per port size level. Port supply increases in cost the farther it is from the source. Oil dependent units cost 20% more supply stockpile for every oil they use. When there isn't enough supply stockpile to supply a unit, the land or air unit only recover 3% of their effectiveness but their full unit supply level. This represents getting the bare minimum for the soldiers and local repairs of damaged equipment using what is available. If a partial amount is recovered, then the unit recovers effectiveness based on the ratio of what they received from the stockpile relative to what they need.

The Axis have a German armored corps (20 strength costing 28 stockpile because it is oil dependent), 2 Italian infantry corps (20 strength and 20 stockpile each), 1 German air superiority group (20 strength costing 28 stockpile), and 1 Italian ground attack group (20 strength costing 28 stockpile) for a total of 100 strength and a

132 stockpile cost near Tobruk. Tobruk is a size 3 port and Bengasi a size 5 port within 10 hexes of the units. Together they can supply $(5 + 3) * 20 = 160$ strength of units in Libya. If the Axis were near Alexandria, they would be short supplies as Bengasi would be more than 10 hexes away and the cost to transport supply to these units would increase.

PORT SUPPLY EFFECTS		
PORT DISTANCE	SUPPLY STOCKPILE COST PER STRENGTH	SUPPLY EFFECT WITH MAP SUPPLY LEVEL 1+
0-10	1 for 1	Base + HQ bonus + map supply level x 2
11-20	4 for 3	Base + HQ bonus + map supply level x 2
21-30	2 for 1	Base + HQ bonus + map supply level x 2
31+	Can't receive supply stockpile	Base / 2 or 3%, can use supply truck
Out of port supply stockpile	-	Base / 2 or 3%, can use supply truck

Naval Unit Port Supply – When naval units are at a major port, size 5 or greater, all naval units are resupplied at no cost to supply stockpile. When naval units are in a minor port, the number of naval groups that can be supplied is equal to the port size. All other naval groups will not be supplied.

The UK controls Pyla in Cyprus which is a port size 2. Up to 2 naval groups can port here and get supply from the port. If there are 3 naval groups the 3rd naval group will not be resupplied and will suffer a supply loss as if it is at sea.

Map Supply Level – The supply level of a hex affects the amount of effectiveness recovered each turn by any units in that hex. Hexes with zero supply level are considered out of supply. Map supply levels start at 9 from the supply source. For each hex away from the

supply source, this number is reduced by the motorized movement cost of the hex. A map supply level of 9 does not reduce when connected by undamaged rail.

Germany controls Kiev which is continuously connected by undamaged rail to the Berlin main supply source in Germany. Kiev will have a supply level of 9 as supply levels are not reduced when moving across rail. The supply level is reduced as it spreads to non-railway hexes or damaged railway hexes. If the hex 3 tiles to the left of Kiev had rail damage, Kiev would be a map supply level 5 in clear weather provided the Axis had no other rail lines connecting to Kiev.

Unit Supply Level – This indicates how long a unit can stay in a hex of zero map supply level before suffering negative effects. A unit loses 1 unit supply level each turn in zero map supply level hexes. Naval groups lose 1 unit supply each turn from being at sea. Land and air units suffer penalties from having a zero unit supply level when their unit supply level is 1 or lower. Naval units can't attack when their unit supply level reaches zero and defend at 50% their effectiveness.

Effectiveness Modifier – The total of supply is discounted by how high in effectiveness a unit is. The less effectiveness it has, the more it recovers as part of the full amount. This reflects normal wear and tear usage of supplies and parts, soldiers getting ill, errors in logistics.

UNIT SUPPLY LEVEL EFFECTS		
UNIT SUPPLY LEVEL	EFFECT ON LAND AND AIR	EFFECT ON NAVAL
Zero	A unit takes an additional 10% effectiveness loss and is at 50% their operation points. Land units lose 20% of their strength	Can't attack, defends at 50% effectiveness
1	A unit takes an additional 10% effectiveness loss	Normal operations
2	Normal operations	Normal operations
3	Normal operations	Normal operations
4	Using supply trucks when in supply	Normal operations ^a
5	–	Normal operations – Submarine groups
6	–	Normal operations – Submarine groups ^a
7	–	Normal operations – Submarine groups ^b
8	–	Normal operations – Submarine groups ^b
9	–	Normal operations – Submarine groups ^b

^a Fleet in port using oilers

^b Submarine groups with long-range advancement

Oil Supply – Oil-dependent units use oil to move and attack. Oil-dependent units also cost 20% more supply stockpile per each oil use point. These units include naval groups, armor, mechanized, USA infantry, and air groups. The table below shows the impact of a nation having no oil on oil dependent units.

Land Unit Oil Dependency – There are 2 unit classifications for oil dependency. Land units that have more tank factors than anti-tank factors are considered fully motorized. Land units with more anti-tank than tank factors are considered partially motorized. The only partially motorized unit in the game is the USA infantry unit which has an oil use of 1.

OIL EFFECTS ON UNIT MOVEMENT AND COMBAT

UNIT TYPE	MOVEMENT OIL USE	MOVEMENT	COMBAT
Land non-motorized	0	No effect	No effect
Land partially motorized	1	No effect	No effect
Land fully motorized	1	50% operation points ^b 3% effectiveness loss per operation point Loses 20% of their strength	Can't attack, can defend
Air	1	No effect	Can't attack or defend ^a
Naval	0 Only uses oil to stay at sea	Uses oil if stays at sea	Can't attack, can defend

^a An air unit defending over friendly territory has a 50% chance of using no oil to defend.

^b A fully motorized is a land unit which has more tank than anti-gun factors. They can't lose more than half their strength from this action.

Supply Convoy Interdiction – After supply is calculated for a port, friendly and enemy fleets are automatically calculated for interdicting the supply line. Port supplies can be affected by enemy naval and air forces in the area with at least 1 operation point at the end of the turn. Naval forces need to be within 4 hexes and enemy air forces within 8 hexes, or less if the air unit range is less, of the port to have a chance to affect supply delivered. Friendly air and naval forces automatically escort within the same ranges. Port levels can't be reduced lower than 1. The further away an interdicting enemy fleet is from the enemy port, the less chance the fleet has to interdict the supplies. There is a small chance a transport point will get sunk if the supply convoy is interdicted. Escorts have no such penalty as they are considered as being with the supply transport coming into the port.

A truck supply or beachhead supply is in addition to other supply sources. Beachhead supply does not use trucks to generate extra supply. The supplies are considered dropped on shore.

Effectiveness Recovery – Map supply levels increase the effectiveness recovery of a unit. Headquarters also increase the effectiveness recovery of a unit. The base recovery is 6%. Each map supply level adds 2% recovery. A unit within the range of a headquarters adds another 4% to its recovery. Using a supply truck, beachhead, or air transport supply option on a unit gains a base recovery of 6% and +1 unit supply. A maximum of 34% effectiveness may be recovered per turn. A unit can benefit from only one HQ per turn.

Weather Effects – Snow and blizzard reduce effectiveness recovered by 20% and 40%, respectively. If a country is winterized, the weather has no effect on their units.

The USSR and Finland are winterized countries that have no adverse effects from snow or blizzard.

Special Hexes – Some hexes are impassable such as Alpine, blocked off map corners, and blizzard blocked hexes. The last are special hexes where the weather is so bad during blizzards no trains can pass. These hexes allow no supply to pass into them.

Only Sweden has blizzard blocked hexes which impact the Nordic route iron ore shipments in the 1939–1945 scenarios.

Logistics Recovery Bonus – Each country gets a bonus +0 to +2 effectiveness recovery per unit depending on how the ratio of logistics is used to their maximum. The closer a country is to their maximum, the lesser bonus they may have. This reflects the ease of supplying a small army with a larger military capacity.

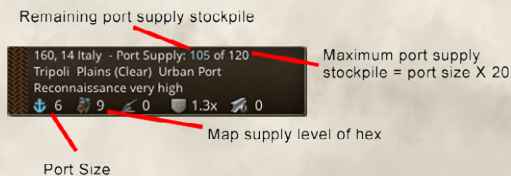
Supply Trucks – The use of a supply truck on a land or air unit already in map supply increases the unit's supply level by +1 and increases their effectiveness by +6%. Effectiveness can exceed 100% for a maximum of 110% over 3 turns with the unit doing nothing but using supply trucks. A player can't use a supply truck with a unit not in supply.

The German player declares war on the USSR. For the last 3 turns the IV Panzer Corps has been receiving extra supplies with trucks to maximize its effectiveness at 110%.

Oiler – Oilers replenish the fleet's supply level to maximum but have no effect on effectiveness. Oilers can be used at port to put fleets above their standard unit supply level.

Headquarters – Each headquarter unit increases the map supply level by +1, to a maximum of 8 map supply, and gives a +4% effectiveness recovery to units within 5 hexes. This bonus also extends to level 0 map supply levels as long as the headquarters is in map supply level 1. A truck used on a headquarters will not supply the HQ but will supply all non-HQ units within a 1 hex radius of the headquarters using the appropriate number of trucks.

Railway – Railway does not reduce map supply levels for main or port supplies.



SUPPLY AND EFFECTIVENESS RECOVERY TABLE

MAP SUPPLY EFFECT	UNIT SUPPLY LEVEL	EFFECTIVENESS RECOVER
Base Recovery	Maximum to 3	+6%
HQ Bonus	–	+4% to units within 5 hexes
Main Supply, map supply level 1 or higher	Maximum to 3	Base + (2 x map supply level) + HQ bonus
Port Supply, map supply level 1 or higher	Maximum to 3	Base + (2 x map supply level) + HQ bonus ^b
HQ command range friendly hexes	Maximum to 3	+1 map supply level even if zero ^a
Port, no stockpile remaining, any level	Maximum to 3	Base / 2
No supply source	–1 per turn	–
Using supply truck	+1	Base bonus
Using beachhead supply ^c	+1	Base bonus
Weather is snow	–	–10% effectiveness recovery
Weather is blizzard	–	–20% effectiveness recovery
Impassable, blocked, blizzard blocked	0	None

^a HQ command range is 5 hexes

^b Port supply effectiveness recovery is based on the port supply stockpile available

^c A fleet may not supply an invasion if it is carrying land or air units

The HQ with Rommel and the German D.A.K. Armor is near Alexandria and is in port map supply level 0. The armor corps is getting 50% of base effectiveness recovery but may use a supply truck or beachhead supply to recover more effectiveness.

Putting It All Together – The blue port stockpile number, on the information panel, indicates how much supply stockpile a port has left for units within the 30-hex range. This tells a player roughly how many more units a player can send to that port within 30 hexes and supply it. A player only needs 1 available transport to send supplies to a port. Enemy ships within 4 hexes, or enemy planes within 8 hexes, can interfere with the supply stockpile of a port. The

closer the interdicting force is to the port, the higher the chance of success. Friendly naval and air forces within those ranges will protect the incoming supply transport. Their range is irrelevant to the protection level they provide. Thus, it is harder to attack supplies than to protect them. No port can be completely put out of action. At the very least units within range of the port will get the very basics of supplies so they don't wither and die.

Port supply and invasions are a matter of sea control. Losing control means the quick death of any invasion force that is challenged.

Oil Maintenance – All units require oil to keep them in. If no oil is available for an oil unit, the units do not get the base recovery for effectiveness but do get the supply level and headquarters effectiveness recovery. For land, air, and naval units in port, 1 oil stockpile of maintenance is used for every 10 units/naval groups on the map. For naval units not in port the naval group's oil use factor is used keep them at sea. Keeping naval units at sea is very expensive. Units on a map supply level 9 do not use oil as they get supplies directly from the train. Oil maintenance reflects trucks driving supplies to the units from the rail.

Oil Use In Combat – Oil dependent units also use oil to attack and defend. Land and air units will use their oil use factor every time they attack in a turn. They will use it once if they move. Naval units are not subject to combat oil use as this is already factored into their maintenance. Defending air superiority groups have a 50% chance not to use oil when defending over friendly territory.

Repairing and Upgrading Units – Units are automatically repaired and upgraded if they are in supply. Units will automatically

upgrade their advancement levels as time passes. The closer a player is to the maximum logistics, the slower the units will automatically upgrade. A player may also turn off automatic repair/upgrade when the unit is selected. A unit will repair 20% of its full strength each turn if possible. Repairs and upgrades happen before the turn starts.

Repairing Resources – Resources are repaired automatically at a rate of 2 per turn if they are in a main or port supply hex.

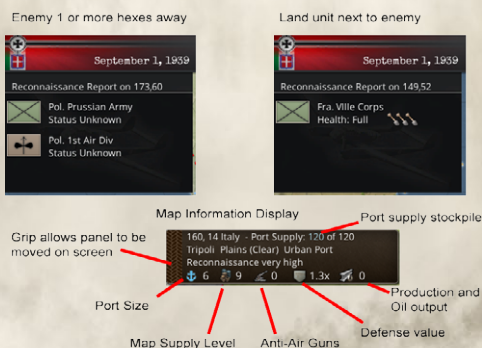
13. MAP INTERFACE

Clicking on Enemy

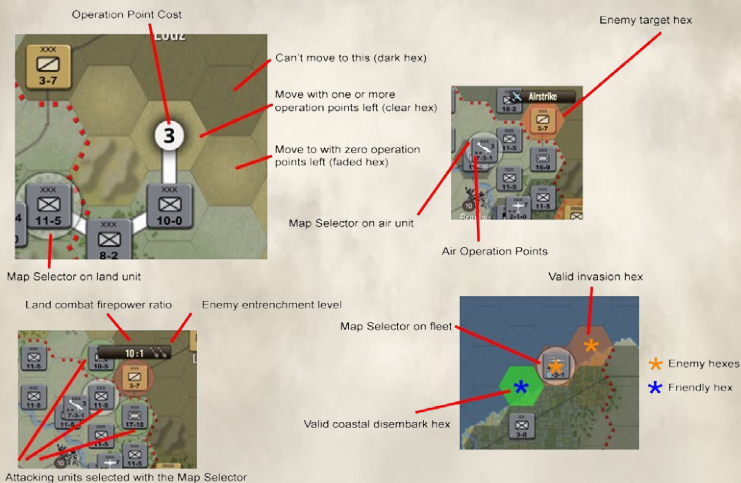
– Selecting an enemy gives a player some information about that unit. How much information is given on a unit depends on the reconnaissance level of the unit. If the

enemy unit is far from the front line, no information will be given. The counter will only indicate if it is a land, naval, or air unit.

Information Display – At the bottom left of the screen is the hex information display. It will show various kinds of data about the hex. That bar may be moved anywhere around the screen by grabbing the left side grip of the bar. If the bar does not show on the screen, it can be reset in the Options menu with the Reset Panel button.



MOVE GRIP	X, Y, Controller, Supply Source and port supply stockpile, Zone of Control indicator
	Name of location, resource name, terrain, weather
	Reconnaissance level
	Port size, supply level, anti-air guns, defense value, production or oil with damage



Map Selector Icon – The map selector is a semi-transparent white hex shape when it rests on no unit or when an enemy unit is selected, and it is a white circle when a unit is selected. If you have a stacked hex with multiple units, left-clicking cycles through the units and changes the position of the map selector to show the unit type selected. Selected units are allowed to move, attack, and do other functions.

Map Action Icon – After you select the unit you want to use, moving the mouse will show the operation point cost to move the unit. For air and naval units enemy hexes that can be attacked are lit

in red. For land units hovering over an enemy will indicate if you can attack it. This icon displays the movement point cost. All hexes not within the full movement of the unit darken. All hexes that are within movement range are lighted or partially lighted. Partially lighted hexes represent hexes a unit can move into, but the unit may not attack enemy units nearby because the move will expend all operation points.

Map Transport Icons – These icons display hexes which land units can transfer from sea to land or vice versa which include ports, beach hexes, and land hexes next to a sea hex.

Enemy Target Icons – These display hexes which land, naval, and air units can attack.

When a friendly land is selected and the mouse hovers over an enemy land unit next to it, a red hex appears over the enemy signifying it may be attacked.

When a friendly air unit, or fleet with carriers, is selected, enemy targets will be red according to the air mission selected.

When a friendly naval unit is selected, enemy fleets will only light up in red if that fleet is next to the friendly naval unit.

Targets will only light up if the unit has at least 1 operation point remaining.

UNIT INFORMATION AND OPTIONS

General Information

Unit Mode
Land - Defend / Hold
Air - Support / Mission
Naval - Fleet / Raider

Oil Stockpile

Reinforcements and upgrades on / off

Unit details

Prioritize reinforcements and upgrades

Combat values

Strength
Effectiveness
Experience
Supplies

Supply stockpile cost

The screenshot shows a unit information box for 'Ger. V Fliegerkorps'. At the top, there are icons for Land (a shield), Air (a propeller), and Naval (a ship). Below these are icons for Defend (a shield), Hold (a hand), Support (a propeller), Mission (a propeller), Fleet (a ship), and Raider (a ship). The box displays the unit's name, a health bar at 100%, and various statistics: Air Combat 3, Tactical 6, Strategic 1, Operation 6, Anti-Air 1, Naval Air 2, and Supply Cost 24. There are also icons for Reinforcements and upgrades, and a button to Prioritize reinforcements and upgrades. Red arrows point from the text labels to the corresponding elements in the screenshot.

When a unit is selected, a box will appear in the upper left corner detailing information about the unit's condition. This will show available options for the unit and supply condition. Actions that are available will have a button or toggle appear to allow the action. If tooltips are enabled, all the icons will display their functions.

Land Modes

Defend

Hold

Air Modes

Support

Mission

Naval Modes

Fleet

Raider

Mode Toggle – Each unit, or fleet, has a mode toggle in the upper left corner to indicate how the unit will behave in combat situations.

Repair/Upgrade Toggle – By default all units are enabled for upgrades and repairs. A player may disable that feature on a unit to save production.

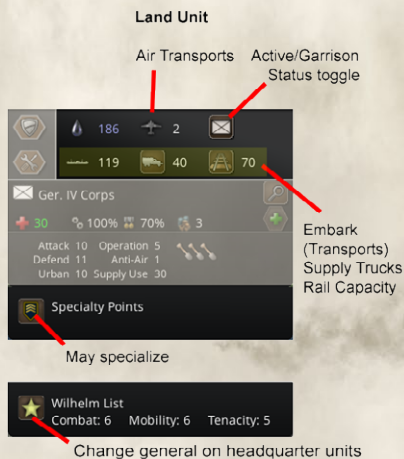
Details Button – This shows specifics of a unit's statistics. It allows the unit to be disbanded or renamed.

Land units have a split or detach option. A player may disband a unit to recover its logistics cost and half of its production. Only a land or air unit in supply may be disbanded to recover the manpower and 50% of its production value. Naval units may not be disbanded.

A unit may only disband if it is in map supply.

Priority Button – Below the details button is the priority button. Enabling this means the unit will get reinforcements before any other unit if production is allocated and available to reinforce and repair a unit.

Embark – When the land unit is at a port, it may use a transport point for every strength point to embark to sea. When a unit embarks, it will use transports of the major power controlling the land unit. Land units starting in a port with full operation points may embark and perform a naval move. Land units with less than full operation when at a port may embark but the naval fleet may not move. Land units that are in port with zero land movement may not embark.



Air Supply – Any unit that is out of supply may call an air transport to drop supplies to it. These supplies are not as good as being in

primary or port supply. They raise the unit supply amount +1. Air transports are subject to interception and can be destroyed.

Supply Trucks – Using a truck increases the unit supply level and effectiveness. Supply trucks can be used only on land and air units.

Rail Move – A unit on a rail hex can strategically move to any other level 9 supply rail hex connecting to its origin. One rail point is required for each strength point being moved. Land and air units may use rail move.

Modes – Land units have two different configurations

Defend – The unit will hold position as best it can until forced to retreat by combat.

Hold – Two retreat checks are made instead of one. If the first retreat check is successful the unit takes an additional 33% combat losses instead of retreating. If the second retreat check is also successful the unit retreats but still takes the additional damage.

Specialty – A non-HQ unit may have a specialty. If enough specialty points are available, a bottom panel will appear on a land unit giving it the option to specialize. Only land units may gain specialties.

HEADQUARTER SPECIAL ABILITIES

Command Range – HQs have a command range of 5. Units within 5 hexes may use the HQ's benefits. HQ actions taken and benefits affect units within the command range.

General – If the unit is an HQ, it will also have a general panel attached at the bottom. A player may change the HQ's general for another using command points. A player can always choose a subordinate for no cost. The better the general, the more command

points that general costs. Each country generates command points every turn to add generals to new or existing HQs. When a unit is in combat, it will locate the closest HQ to its location within 5 hexes to call upon its general for support in the battle. In each battle fought in land combat, the general has a chance to increase mobility or combat attributes. There is a very small chance a general will get killed in action. If this happens, a subordinate will replace him. A player can replace the general if that player has enough command points.

Call Air Offensive – An HQ may call an air offensive to bomb all enemy land units within the HQ's command range. Air offensives use every available bomber in support mission mode. Each enemy unit within range will be attacked once by a bomber.

Air Missions – Players select the air mission for the unit to perform.

Naval – Lights up naval targets within range

Land – Lights up land targets within range

Airfield – Lights up air targets within range

Strategic – Lights up strategic targets within range

Embark – Same as land units but in addition air units require full operation points to embark.

Supply Truck – Same as land units.

Strategic Move – Same as land units.



Mode – Air units have two different support modes

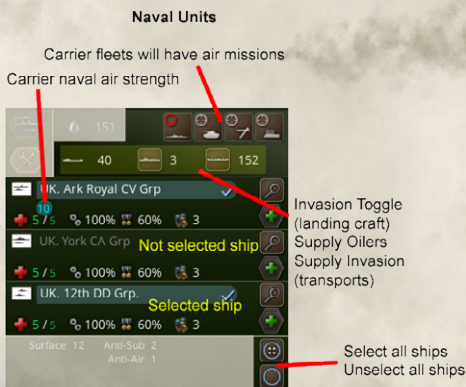
Mission Support – Air units fly player-directed missions only on their turn. Air superiority doesn't escort or intercept. Bomber groups do not support ground units in land combat even on an enemy turn.

Full Support – Air superiority groups automatically fly intercept and escort missions even on an opponent's turn. Bomber groups automatically fly ground support missions even on an opponent's turn.

Use Mission Mode to set air units to rest so they can recover strength and effectiveness.

NAVAL UNIT (NAVAL GROUP)

Naval groups make up a fleet. Fleets function as a larger unit comprising 1 or more naval groups. They fight together, take damage together, and move together. Operation points are shared. Naval groups may be selected or unselected by clicking on the name of the group. Any selected group moves with the fleet. Any group not selected are left behind. Fleets in port have no stacking limit. Fleets sent out to sea have a stacking limit of 9 total ships with a limitation of 3



carrier groups per fleet. Submarines can only stack with themselves outside of a port. Carrier groups have the same air missions as land-based air unit have.

Invade – The invade toggle lights up available landing locations: red if an invasion landing hex (enemy controlled) and green if a disembark landing hex (friendly control without a port). Each strength point of a land unit uses 1 landing craft when invading or disembarking to a coast. Landing craft are consumed when a unit invades or disembarks into a friendly non-port hex. Invading puts a fleet in fleet mode, uses all remaining operation points, and removes the night movement indicator. A fleet may move and invade if it has 2 operation points.

The key to successful invasions is control of the surrounding sea area with naval and air.

Oiler Resupply – This restores the unit supply of each naval group to its maximum.

Beachhead Supply – A fleet may act as a supply truck for every land unit within a 1 hex radius of the fleet. This action uses the fleets remaining operation points and puts the fleet in fleet mode. A fleet may not perform a beachhead supply if it is carrying land or air units.

Mode – Fleets may raise or lower their ability to search and be found by its mode.

Fleet – The fleet is actively searching for other fleets to engage in combat. Fleets that perform an invasion or a beach disembark are automatically placed in fleet mode.

Raider – The fleet purposely tries to avoid combat except when attacking convoys for production or supply. When the fleet is in raider mode, the reconnaissance level of the hex is lowered by 1. Fleets in raider mode can't attack enemy fleets but can defend vs attack. A fleet needs at least 1 operation point to change modes.

14. MOVEMENT

Movement is done with operation points. Naval fleets have 2 operation points. Land units have many operation points, and their movement is affected by terrain and weather. Air units have 2 operation points, and their movement is not affected by weather but may be affected by terrain.

14.1 AIR UNIT

An air unit may move only to a friendly controlled land hex that is an airfield by terrain type or constructed airfield. Only 1 air unit per hex is permitted. Each operation point allows the unit to move its range. Terrain hexes that prohibit an air unit without an airfield are mountains, forest, alpine, jungle, swamp, and marsh. Air units lose 15% of their effectiveness when they move. Players may purchase airfields to allow air unit movement to the terrains normally not allowed.

14.2 LAND UNIT

A land unit may move according to its operation points. Terrain, weather, and zones of control determine how many operation points are used to enter a hex. A defender that retreats loses its zone

of control in the hex it just left. Enemy air units overrun by land units lose strength according to their current effectiveness and go to the deployment queue to be redeployed next turn. A land unit may not enter a hex if it does not have all the operation points to do so unless it has not moved. Land units are always allowed to move at least 1 hex regardless of weather, zone of control, or terrain. Land units may not move into lakes or beach hexes but may invade or disembark on them. Units lose 1% effectiveness per operation point they use to move.

Oil-Dependent Land Units – These units require oil to attack. This includes armor, mechanized, and sometimes infantry classes depending on the country.

Out of Supply – Land units with unit supplies of 0 get 50% fewer operation points.

Motorized Movement Penalty – Land units that are oil dependent are subject to a motorized movement penalty of +1 in any terrain that is considered and rugged unless it also contains a road or undamaged rail.

Overrun – Land units may overrun enemy fleets and air units. Fleets retreat to sea and air forces are placed on the deployment queue taking damage according to their effectiveness.

Zone of Control (ZoC) – All corps and army-sized land units exert a zone of control in the 6 hexes surrounding them if they can normally move to those hexes. The ZoC costs an additional 2 movement points to enter. Divisions do not exert a ZoC. ZoC is exerted even if there is an enemy unit in the hex.

14.3 NAVAL FLEET

A naval fleet may move only to empty water hexes, beach hexes, friendly canals, friendly minefields, or friendly ports but may not pass or enter enemy ports, canals, or minefields. Naval units get 2 operation points. Each operation point allows the fleet to move 24 hexes.

Surface Fleet – This fleet has only surface naval units which include battle, cruiser, and patrol groups. This group can only engage in surface combat. Surface combat is fighting other fleets, , or submarines that are next to or on a non-ocean tile.

Carrier Fleet – This fleet has a mix of surface and carrier units. This group engages other fleets with air missions. Carrier fleets may attack any other fleet type.

Transport/Invasion Fleet – This is any fleet with a land or air unit. This fleet may not attack other fleets but does defend vs attacks.

Submarine Fleet – Submarine units may base at a port with other naval units but may only travel outside the port with other submarine units. Submarine fleets may be attacked by surface fleets only if they border a non-ocean hex. Carrier fleets and air units may always attack submarine fleets.

Night Move – A fleet that starts in a port, has 2 operation points, and has moved 6 hexes or fewer will be considered doing a night move. Fleets with carrier units can't perform a night move. Night moves are not subject to air attacks from air units or carriers. Night moves drop the chance of being found and finding other fleets by 50%.

14.4 RECONNAISSANCE

Naval ID Level – Information on enemy fleets is determined by the reconnaissance level of the hex the enemy fleet is in. At the start of a turn all enemy fleets have a check run on their current reconnaissance level for information on the fleet. Only fleets with a low reconnaissance level or higher have a chance of revealing information. If a player left-clicks an enemy unit, the reconnaissance report on that unit will be shown.

Very low – No identification is shown. Only counter identification shows if it is a submarine fleet or a ship fleet.

Low – The number of ships in the fleet is estimated and will show on the unit.

Medium – As low level but information on one capital ship is revealed. *High* – The full composition of the fleet is shown.

Italy has a fleet of 3 naval units in Naples and a fleet of 3 naval units just outside Cyprus which is owned by the U.K. The Allies player doesn't know the composition of the fleet in Naples because the reconnaissance level is very low. But the fleet off Cyprus has a high reconnaissance level. There is a high chance of detailed information about this fleet at the start of the Allied turn.

Land and Air ID Level – Land and air units are also subject to reconnaissance. Land and air units next to an enemy reveal the most information with estimated combat value shown. If enemy unit is at a reconnaissance level of high or better, the type and name will be shown. If enemy unit is at a reconnaissance level is less than high a land or air symbol will be shown.

15. COMBAT

Units may keep attacking as long as they have operation points. Land units and surface naval fleets have a range of 1 and can only attack units next to their hex. Air units, Submarine fleets, and Carrier fleets have ranges greater than 1 and can attack without being next to an enemy unit. Fleets with carrier groups that attack use only the carrier groups to attack but defend vs air strikes with all the ships in the fleet. Fleets with carrier groups can't conduct surface attacks against naval surface groups, only air attacks. After each combat all units involved in an attack lose readiness and gain experience from the combat. Attackers and defenders suffer effectiveness loss from attacks.

Land, Air, and Naval Combat



Note: For a fleet to qualify as a carrier fleet, it must have at least 1 carrier group that has a supply level of 1 or higher. Otherwise it will be considered a surface fleet. Carriers with supply levels of zero can't fly their aircraft.

15.1 LAND COMBAT

Land combat is the most important combat aspect of the game. Land units take victory hexes and protect territory. *WarPlan* is primarily a land combat game.

Once a land unit is selected, it can attack alone or add other units that are adjacent to the potential enemy as long as they are on the same land mass. Holding down the Control key and hovering over a friendly land unit adds that unit to the attack. Holding down the Shift key and hovering over the enemy land unit adds all the units surrounding the enemy to the attack. Left-clicking anywhere on the map clears the attack. Attacking costs 1 operation point and 6% effectiveness. A defending unit loses 3% effectiveness per attack.

Hovering over an enemy hex during an attack will display the attack odds and levels of defender entrenchment. Attacks with 2:1 odds or less are generally poor attacks. Attacks with 4:1 odds or greater are generally good attacks. Those with 3:1 odds have a fair chance of success. The higher the attack odds, the greater chance an enemy unit will retreat. Defender entrenchment levels lower the amount of damage inflicted on the defender and impact the odds.

During a land battle attackers and defenders have a chance to send in a bomber to support ground units with a fighter escort/interceptor if the air unit has operation points available. Any air units set to *support mode* will assist with air support. The strongest air units in ground support mode are called in for support on both sides.

Land attacks also use the general closest to their location within the 5-hex command radius to the battle. If no headquarters are within 5 hexes, then a subordinate commander will be used for the battle. Subordinate commanders have lower ratings than named generals. Each country has different values for their subordinate commanders.

When performing land combat, the odds might not seem correct in some cases. All units and odds are rounded as part of the fog of war system. For example, an enemy unit might show as a 4 defensive combat factor but might actually be 4.1 or 4.4. The odds might show as 3:1 but actually be 2.5:1.

Contested Hex – The hex a land combat occurs marks that hex as contested until the end of the turn. Empty contested hexes may not be used for calculated retreat.

Land Retreat – The combat odds, experience, and some modifiers determine if the defender retreats. Terrain, tanks, generals, entrenchment, and the defender's ant-tank gun factor modify the base chance of retreat. High odds, 4:1, tank factors, and infiltrator specialty increase the chance the enemy retreats. Terrain, tanks, anti-tank specialty, and guns lower the retreat chance. A land unit may retreat up to 2 hexes. They retreat to their closest friendly supply source. If a hex is not available within one move, then a unit checks if it can retreat 2 hexes. It may always retreat over friendly land units. If it can't retreat within 2 hexes, it shatters if it can trace to a supply source or surrenders if it can't. A land unit can't retreat through enemy controlled or empty contested hexes. Retreating land units will select hexes not next to enemy land units as a priority when retreating. The hex of the retreated unit loses its ZoC.

Shatter Overwhelming Odds – Defending land units in which the odds are 10:1 or greater have a very good chance of being destroyed regardless of their remaining strength. When a unit shatters it is completely destroyed with some manpower returning to the owner's pool. Units also shatter if they have no retreat path and are next to a friendly land unit. When a unit shatters, each strength point has a 10% chance to escape being destroyed. Strength points that escape are added back to the player's manpower pool along with the production for those strength points.

Shatter with No Retreat Path – Defending units that are forced to retreat but can't due to too many friendly units surrounding can shatter as long as they can trace a friendly path to a supply source. When a unit shatters in this manner, each strength point has a 90% chance to escape from being destroyed.

Land Combat Rounds – Each round of land combat fires a certain attribute of the units involved in the battle. In each round damage is applied to each side by that type of attribute.

Round 1 – Artillery

Round 2 – Defender Guns

Round 3 – Tanks (halved in rugged terrain)

Round 4 – Attacker Guns (halved attacking)

Round 5 – Firearms

Damage – Units receive and defend against damage taken. Damage that isn't blocked by a unit's defense has a 40% chance to be converted to an effectiveness loss representing injured men and equipment.

Invasions – For a player to invade a location the player must embark a land unit on to a transport at a port. If there is a fleet at the port already, the embarked land unit will be part of the fleet. The fleet then can move to a location next to or on top of hexes that can be invaded. Any hex that has water on it can be invaded. Full land hexes can't be invaded. Hexes in which more of the hex is water are coastal hexes. Hexes in which there is more land than water are land hexes. Disembarking is unloading on a friendly hex that meets the criteria for an invasion.

When a fleet is on or next to a valid invasion/disembark hex, the player clicks the Show Invasion Hexes toggle within the fleet. This will display invasion hexes in red and disembark hexes in green. Now a player selects the land unit to invade or disembark and right-clicks one of the lighted hexes. The game will auto select the first unit in the fleet by default. Invading or disembarking will use all of the fleet's remaining operation points and the amount of landing craft required for the unit to disembark the unit onto the hex. A fleet may travel up to 24 hexes and invade in the same turn.

Invaders will take 1 strength point damage for each enemy around the hex they are invading. Armor and mechanized will take double the amount of damage. If the weather is not clear, this amount will be tripled. Marine divisions take half the total amount.

The US VII corps attempts an invasion at hex 135, 53 (Normandy beach). The weather is clear and there are enemy units in Cherbourg and the forest west of Caen. VII Corps will lose 2 strength points on their invasion. If it was raining, they would lose 6 strength points during their invasion. If an American armor was invading, it would take 12 strength points of damage next to two units, in the rain, and for being an armor unit.

Generals – HQs may have generals attached to them which affect all units within its command range in land combat. If no general is assigned, then a default general, called a subordinate, will be assigned who will be weaker than a selected general. Generals have 3 attributes: combat, mobility, and tenacity. When land combat occurs, the attacking and defending generals compare their attributes which affects combat. Generals improve with combat experience.

Combat – Affects how well each general is at inflicting damage on the enemy and reducing damage to their forces

Mobility – Affects the chances of retreating

Tenacity – Affects the intensity of combat and the chance a defender surrenders in low attacks with a less than 34% retreat chance

Assigning a high combat and mobility general to an HQ would be a good idea when attacking. Putting a high combat, low tenacity general would be better when delaying. And putting a high combat, high tenacity general would be better when defending a position you don't want to give up. Generals with a 9 tenacity rarely surrender.

15.2 AIR COMBAT

When an air unit flies a mission manually or automatically, the defender of the attack hex will send up its strongest air superiority unit that is at least half its maximum strength to intercept. This unit must be in *support mode*. The attacker will also fly escorts to defend the air unit performing the mission using the same requirements as the defender. Air combat is fought between the 2 players and then the mission continues if the air unit is still alive. All air missions are subject to weather, ground anti-air factors, resources, and terrain effects. At most

4 air units are involved in air combat. An air unit may fly a mission, support, escort, or intercept twice a turn including the enemy's turn.

Air Strike Military Units – Players may use an air unit to attack another unit. Air units damage the effectiveness of other units. Some hits damage the strength of a unit. An air unit can't destroy another unit except a naval unit or a unit that is being transported by sea. An air or land unit destroyed at sea also destroys the transport points it is using. Land units subject to an air strike have diminishing returns on their effectiveness from further ground strikes. Each air strike on a land unit also has a fair chance to interdict its movement. If a unit becomes interdicted, it will lose 33% of its operation points on the opponent's turn. An interdicted unit's Operation points show as a red down arrow on the unit information panel of the opponent. It will not show up on the attackers turn. Any land unit on a beach hex will take three times as much strength damage from air attacks as land units on a partial or full land tile.

Air Strike Production – Bombers may bomb and damage resource hexes with production or oil. Land anti-air fire in the hex will shoot at attacking bombers before strategic bombing damage is applied. Resources repair over time on their own at a rate of 2 per turn.

Ground Support – During land combat air units in *support mode* on the attacker's side will attempt to provide directed air attacks toward the defending unit adding bombing factors to the attack. The defender will attempt to do the same. Only one bomber unit can be sent by either side to a single combat. Air units must have operation points to perform ground support.

Naval Damage – Naval units are subject to damage more often than land and air units. Each damage on naval units has a chance of

scoring two levels of critical hits. It is possible for one damage hit to sink a naval unit. Each critical hit level doubles the initial damage point. A maximum of 4 strength damage is possible from one hit due to critical hits.

Supply Convoy Raider – Air units within 8 hexes, or fewer if their range is shorter, of an enemy port that have remaining operation points at the end of their turn might intercept and attack the supply convoy of an enemy and reduce its stockpile for the port.

Air Transport Supply Drop or Paratrooper Drop – An unescorted air transport is always shot down if the defender has air superiority groups in range in support mode. An escorted air transport mission has a high chance of success depending on air-to-air combat results. The more losses the escort receives, the greater the chance of the air transport being destroyed. If a paratroop mission is unsuccessful, the player loses an air transport, the paratroop unit loses 50% of its strength, and its effectiveness is drastically reduced.

Malta has a garrison in a land hex and a coastal hex. Paratroopers can't occupy coastal hexes and can't land on a land hex that already has a unit. Last turn the Axis embarked the German XII Corps in Taranto, moved it to hex 162,21 and successfully invaded the coastal hex using 1 operation point to move and 1 operation point to invade. The Italian fleet and air force have drastically lowered supply to Malta by consistently air striking the garrison there from the air for the last 6 turns. The garrison's effectiveness is low. This turn the German XII Corps attacks and with its last operation point forces the Malta garrison to surrender. The XII Corps does not have any operation points left to move into Malta. The Royal Navy has a fleet and unit ready to move into Malta on the next turn. The Italians use their Folgore Paratrooper to directly land in Malta's land hex that is now unoccupied by land forces.

Anti-Air – Anti-air values are a separate factor that fire before any air mission applies its damage. Each anti-air point has a chance to damage an air unit or carrier air factor. Anti-air in a hex adds to the anti-air value of a unit. Hex anti-air may not be moved once placed.

15.3 NAVAL COMBAT

All naval units are visible on the map. What is not known is their composition and numbers. At the start of every turn reconnaissance levels are calculated for the map. The level of reconnaissance is higher closer to land a player controls and lower the farther away the hex is from land controlled. Players must find enemy naval units at sea to engage them in combat and identify their composition. Different modifiers affect the reconnaissance level of the hex which affects how often they are spotted.

Targeting Profile – Depending on the type of naval engagement, target profiles will be different. In naval air or air to naval attacks carrier and battle groups have a higher target profile for attackers and are more likely to get targeted. In surface engagements cruisers and destroyers are more likely to get hit since they are usually the screening force. When a submarine fleet attacks any other kind of fleet, damaged carrier groups get targeted even more often. Targeting is done by adding all the target values together on a list then rolling a random number from zero to the total of the list.

TARGET PROFILE VALUES			
NAVAL GROUPS	AIR ATTACK	SURFACE ATTACK	SUBMARINE ATTACK
Carrier group	6	1	6 or 9 if damaged
Battle group	4	2	4
Cruiser group	2	3	2
Patrol group	1	3	1
Submarine group	1	1	1
Transported Unit	4	1	4

The Italian fleet was attacked by two carrier groups of the Royal Navy in the Central Mediterranean while trying to support an invasion of Malta. The Italian fleet consists of a battle group, 2 cruiser groups, and 2 patrol groups. In total they have a 10-point target profile. For each hit a roll of 1–4 hits the battle group, 5–8 hits one of the cruiser groups, and 9–10 hits one of the patrol groups.

Surface or Carrier Attack Qualification – Each group in a fleet must have a supply level of 1 or higher for the whole fleet to attack. Any naval group that has a zero supply level will prevent the fleet from attacking. A player may remove zero supply naval groups by moving them to another location so the fleet can attack. Fleets that are transporting land or air units may not attack but can defend. Fleets in a port may not attack but can defend. Defending naval fleets have no requirements about supply but any ship at zero unit supply will fight at 50% its current effectiveness.

Zero Supply Naval Groups – If a naval group has a zero supply level, it defends at half its values.

RECONNAISSANCE TABLE

CONDITION	RECONNAISSANCE LEVEL MODIFIER
Clear	None
Rain	-1
Heavy Rain	-2
Snow	-1
Blizzard	-3
Night Move	Spotting chance halved
ID Level of the enemy fleet	+0 to +3
Raider mode	-1

NAVAL COMBAT PERMISSION TABLE

ATTACKER FLEET	DEFENDER FLEET	DEFENDER LOCATION	ATTACK POSSIBLE
Carrier	Carrier	Any	Yes Clear, Cold, Rain, Snow
Carrier	Surface	Any	Yes Clear, Cold, Rain, Snow
Carrier	Sub	Any	Yes Clear, Cold, Rain, Snow
Carrier	Surface or Sub	Night Mission at sea	No
Surface	Carrier	At sea	Lower chance to spot
Surface	Carrier	In Port	Yes
Surface	Surface	Any	Yes
Surface	Submarine	In Port or next to coast	Yes
Surface	Submarine	Sub is on or touches all ocean hexes	No
Submarine	Carrier	Any	Yes
Submarine	Surface	Any	Yes
Submarine	Submarine	In Port	Yes

Note: No fleet can attack out of a port. It must move to a non-port hex to attack an enemy.

The hex just outside Kiel will be a high reconnaissance level on the Axis turn. Axis fleets will have an easy time spotting Allied fleets that enter that hex. On the Allied turn the reconnaissance level of that hex is very low. Allied fleets will have a difficult time searching for Axis fleets on their turn.

Searching – When a fleet right-clicks on another fleet to initiate combat, a search is performed based on the reconnaissance level and information available of the unit. Different modifiers apply due to mode, day or night mission, fleet size, and weather. A larger fleet has a greater chance of spotting and being spotted. If a search is successful, combat occurs. If the search is unsuccessful, an operation point is spent and combat does not occur. Regardless of results, any fleet that attempts to engage in combat will have its own reconnaissance level increased.

The Allied player notices a German fleet counter in the North Atlantic raiding its convoys but doesn't know the composition of the enemy fleet. Unknown to them this fleet includes a single naval group, the Bismarck battle group. The Allies send 4 fleets to hunt it down. Each fleet is trying to increase the identification level of the Bismarck to make it easier to find and to gain information on the Axis fleet. The Bismarck's reconnaissance level is very low. The Allies will have a hard time trying to find the evasive battleship.

Patrolling Enemy Naval and Air forces – Enemy air, submarine naval forces, and surface naval forces have a chance to intercept a moving fleet at their destination hex. Enemy fleets need to be within a 5 hex range of the destination. Air units need to be within a 10 hex range, or less if their range is less, of the destination hex. The closer a moving fleet is to the actual location of the patrolling unit the higher the chance of interception. Units patrolling do not change positions. They simply attack any fleets entering their radius. A moving fleet may only be intercepted once per operation point used. An enemy fleet or air unit may only intercept twice during a turn. If a moving fleet is intercepted a round of combat is fought.

Fleets must be set to fleet mode at a non-port water hex to patrol.
Air units must be in support mode to patrol.

The Italian navy sails an invasion force of 2 patrol groups and a division to invade Cyprus. A fleet of 3 Royal Navy cruiser groups are patrolling next to Cyprus. The Italians move to the Northwest coast to attempt an invasion and get intercepted. The cruiser fleet inflicts more than 50% damage on the enemy patrol groups. The Italian fleet retreats.

Surface Combat – Fleets with only battle, cruiser, or patrol groups may engage in surface combat with other carrier, surface, or transport fleets. A surface combat fleet attacking a carrier fleet has a much smaller chance of being able to engage it in surface fleet. Surface combat uses the surface factors of a fleet. Each surface factor has a 25% chance to score a hit. Each hit has 2 chances to score a critical hit which can cause 4x the initial damage. A ship's defense check can halve the damage. An experience check can reduce additional effectiveness loss from damage. If a defending fleet suffers more than 50% of their total maximum strength, not including transports, it will retreat to the lowest reconnaissance level sea hex within 3 hexes.

A German Patrol fleet, with 5 strength points, and an infantry division are just off Narvik ready to invade. After an ineffective air strike from a small carrier fleet the British player sends a fleet with one battle group to engage the German fleet. It spots and inflicts 2 points of damage on the German patrol fleet, not enough to make it retreat. The German invasion continues. If 3 points were inflicted or the German patrol group had only 3 strength, they would retreat as the damage would be over 50% of their maximum strength.

Carrier Units – Carriers act as floating air units. They can fly air missions vs land, air, naval, and production targets just as an air unit can. It still must search for enemy naval fleets. Carrier fleets that engage with other carrier fleets exchange air attacks. Opposing carrier fleets will fly air missions vs one another in an attempt to win the naval battle. Naval air ability to fly is affected by how much damage a carrier group has taken as well as how much air strength it has left. If the carrier fleet has taken more than half damage of its maximum strength, the air component can't fly. A carrier can carry twice as much air as it has maximum strength.

Ambush – If the random factor of a naval combat favors one side or another greatly, the word *ambush* will appear next to the fleet to indicate they received a favorable result from chance.

An example would be when the Bismarck sank the Hood with one shot. The Royal Navy had the advantage in this engagement but luck favored the Kriegsmarine.

Surface Naval Combat Targeting – In surface combat most damage will be applied to cruiser and patrol groups over other group types with carriers having the lowest target profile when damage is applied.

Naval Air Combat Targeting – In naval air combat most damage is targeted at battle and carrier groups.

It is best to have a mixed fleet of various ships to help take losses. The difference in naval combat values is minimal compared to the ability to absorb losses.

Convoy Attacks – Naval units in convoy lanes attack production points with their surface combat value. If the fleet is a carrier fleet, then it attacks with its air bombing values. All naval units use the naval combat system to attack convoys except there are no critical hits. Submarines have a 50% chance to convert a surface factor to a damage point on a merchant marine. These attacks destroy merchant marine factors and occasionally an escort factor.

Supply Convoy Attacks – Naval units near an enemy port that has its port supply active are subject to having their supply convoys attacked. Transports may be sunk when raiding a supply convoy. The closer a fleet is to the enemy port, the higher chance of intercepting the supply convoy. A naval unit must be within 4 hexes of the enemy port to have any chance of affecting the supply convoy. The supply interdiction targets the port capacity. A port can't be reduced below 1 from a supply convoy attack.

Convoy Escorts Attacking Submarines – Players can assign escorts to production convoys. The escorts attack only submarines but will scatter vs a surface or carrier fleet as best they can. A submarine has a 10% chance to hit an escort. Convoy defense is determined by two factors: the number of escorts and the ratio of escorts to merchant marine. An escort can defend 5 merchant marine at maximum capability. A maximum of 10 escorts can defend vs a convoy attack at maximum efficiency no matter the size of the convoy. This means for every 5 merchant marine only 1 escort is required to maximize protection in any one convoy route. Escorts have 1 anti-sub value that increases as the convoy escort advancement increases.

MERCHANT MARINE AND ESCORTS

ESCORT COUNT IN ZONE	PROTECTS MERCHANTS FULLY	ESCORT COUNT IN ZONE	PROTECTS MERCHANTS FULLY
1	5	6	30
2	10	7	35
3	15	8	40
4	20	9	45
5	25	10+	Any amount

On September 1, 1939 the United Kingdom has 57 resources in the North Atlantic convoy route, 60 resources in the South Atlantic convoy route, and 65 resources in the African Coast convoy route they need to protect vs German U-boats. They start the game with 24 escorts. Their escorts can work at full capability if they are split between the 3 convoy zones. But they will not maximize protection. If the United Kingdom player places 10 in two zones and 4 in the African Coast, they can fully protect and maximize the capability of their escorts in the North and South Atlantic but the African Coast convoy line will be weaker in the capacity for escorts to protect the merchant marines.

The only way to defend vs surface and carrier fleets attacking a convoy route is to attack them with fleets.

Anti-Submarine Operations – A surface combat fleet may only attack a submarine that is adjacent or on any non-ocean hex. The attacking fleet uses its anti-sub factors vs the submarine. The submarine uses half its surface factors vs the surface fleet.

Submarine Attacks – A submarine fleet may attack any unit within 5 hexes of its position. Submarine fleets have a chance to surprise the enemy fleet and be able to attack and apply damage before being attacked back. It is possible for a submarine fleet to attack twice in a turn if positioned correctly. When attacking submarine fleets, use their full surface factors.

Invasion – A fleet with land units and enough landing craft may toggle the invasion button to show the potential hexes. The map selector will choose the first land unit in the stack of ships but any land unit may be selected. Right-clicking a red-lighted hex will move the selected land unit to that hex as an invader. If the hex is lit green, the land unit will disembark to the friendly target hex. If more than one land unit is selected, the 1st land unit in the fleet will invade instead. Land units that invade lose half their operation points. If they land next to enemy land units, they may take damage. A player may toggle off the invasion icon to cancel the invasion. Invading uses all of the fleet's operation points.

Naval Shore Support – A naval unit will automatically provide offensive and defensive shore support with its surface factors if it is in a hex with a land unit to support attacks out or attacks directed at the land unit.

Strength Loss in Combat for Land and Air Units – Any unit that takes damage in combat has a chance to resist damage with its defense value. If a defense check is successful, the damage is resisted. If the defense check is missed, a casualty check is made. A successful casualty check converts the damage to a loss of effectiveness.

Strength Loss in Combat for Naval Groups – If damage is scored on a naval group, there are 2 chances of doubling that damage with critical hits, 30%, and 10%. This has the capability to quadruple the damage a naval group takes. Any unit that takes damage in combat has a chance to resist damage with its defense value. A resist chance halves the damage. A naval group also makes an experience check. If the check is missed, additional effectiveness is lost.

COMBAT EFFECTIVENESS LOSS						
UNIT TYPE	ATTACKING	DEFENDING	AMOUNT	CONVERT DAMAGE	ADDITIONAL	SECONDARY LOSS
Land	6%	3%	3%	Yes 40%	No	None
Air	6% ^a	6%	2%	Yes 33%	No	None
Naval	8%	8%	2%	No	Yes ^b	Up to 4x damage
1 st naval critical chance 30% 2 nd naval critical chance 10% ^a Strategic bombers lose 8% effectiveness. ^b If random roll 0–100% < Experience % the unit takes addition effectiveness loss.						

16. PRODUCTION

Countries generate production points from urban areas, iron ore resources, strategic resources, and trade that represents mostly steel. Countries generate oil from oil fields and oil synthetic plants to be used to move and engage in combat with oil-dependent units. Production and oil are connected via supply lines, railways, and convoy routes. Resources must be transported to the capital of a country to be used. Resources that generate production are always on a railway or have port access. Production may be affected by the enemy in only two ways: strategic bombing a resource or attacking a convoy. Production is modified by status level, strategic resources, and a country's economic multiple. As the game progresses each country's economy multiple increases. Each country has a different economic multiple value. Unused production and oil is saved each turn in the stockpile. There is a limitation to the amount of oil a country can save based on their oil silo capacity.

Economy Multiple – This is how much of the industry and workers a country is utilizing for military production.

Production, and Oil in owned and controlled in supply via rail or convoy – Full value is added to the stockpile. Any resources going over convoy routes are subject to being raided. If a production resource is conquered and controlled, it yields 33% of its original value. Oil resources always yield 100% of their value even if conquered.

Strategic Resource Controlled in Supply – Each strategic resource increases the total production by 1%

Saved Production from Allied Minor – Major power gets 50% of the production from its cooperating minors that are part of its alliance. The player is responsible for building minor country units with any resources that the minor saves.

Saved Oil from Allied Minor – Major power gets any extra oil from the minor country that cooperates. A minor will first use its own oil to supply oil-dependent units. Some minor countries produce no oil and need oil shipped to them so their armies can be maintained properly.

Oil Silos – Each country has a limited amount of oil they can refine into fuel and store based on the total of their base 200 + production (with economic multiple) + base oil production or 200 oil whichever is greater.

The USSR produces a large amount of oil and can store a significant amount. But if the Axis powers take the Caucasus with all its oil fields, the USSR is dependent on its oil current stockpile to recapture this area before it becomes critical.

Production might be transferred overseas in cases where there is no direct land route to a nation's capital. Resources follow the closest convoy route available.

Merchant Marine – Resources transferred over a convoy route require merchant marine. The game automatically calculates how many merchant marine a country will need to transport the resources. If a player lacks the ships required, the difference percentage is taken from the total shipped. Production and oil are equally affected. The game pulls merchant marine from the receiver of the trade. If the country that is the origin of the trade is a major power, it will then pull its merchant marine if the destination country doesn't have enough ships to transport the resources and the originator is part of the destination players alliance. Convoy attacks are only conducted vs any countries at war involved in the trade.

Sweden delivers 25 production points to Germany via a trade agreement. Germany has only 20 convoy ships. This means only 80% (20 ships / 25 ships required) will be delivered to Germany. Only German convoys are used.

Germany trades 20 oil to Finland. Finland only has 5 merchant marine. Germany will provide the other 15 merchant marine to trade the resources.

Manpower – Each country produces manpower. Manpower is used to create new units. Each strength point of a unit consumes 1 manpower to purchase it. Repairing units requires production and manpower. If manpower drops below 50% of its maximum, the default experience also begins to drop. Manpower production

drops when home country resources with production or morale are captured by the enemy.

Logistics – Each country has a set amount of logistics. This value determines how many units a player may purchase and have on the map or deployment queue. Each unit uses logistics for each strength point it has. Some units use more logistics than others per strength point. Regular infantry type units use the least amount of logistics while naval units use the most. Once logistics reaches zero, a player may only build support units with no logistical cost. Logistics is measured from a unit's maximum strength not its current strength.

Shipyards – A country may only purchase, or have in the deployment queue, the shipyard value of naval groups no greater than the number of shipyards it owns. Shipyard cost is based on the logistical cost of the naval unit being built.

Trade Agreements – Countries may send production and oil to their allies. Some trade agreements are already set up as events in the game depending on certain situations occurring. Event trade agreements may not be canceled, but voluntarily created agreements may be canceled. Trade agreements follow the same resource transport rules as controlled production.

Oil from Romania goes directly to Berlin via rail as part of their trade agreement. This oil can't be attacked. The Swedish iron ore shipments use a convoy route for some of its travel to Berlin. This trade can be attacked by fleets.

Unit Cost – Each unit comes with a specific cost in production points. A unit's advancement year increases the base production cost of the unit. When replacements are sent to reinforce a unit, these same costs apply.

17. DIPLOMACY AND WAR

Countries have 7 different attributes that impact how diplomacy: morale, morale break point, status level, loyalty, alliance, influence points, and political power. They have 4 different actions vs other countries: declare war, influence, intimidate, and force surrender.

Major and Minor Countries – U.K., France, U.S.A., U.S.S.R., Germany, and Italy are major countries in the game. All other countries are minor countries. A minor country automatically declares war on its major country's enemies when it joins an alliance or declares war on another country. Minor countries have their own production and statistics. With few exceptions the closest major power to a minor country will be the one it aligns to if it joins an alliance either by game event, entry, or being declared war on. If its major country ally surrenders, it will choose a new major allied country.

Morale – Morale is the willingness of the country to fight. If morale is reduced to zero, a country will surrender. Morale also impacts manpower. As morale drops, manpower production also drops for that country. Morale is directly linked to large urban areas which affect population.

Morale Break Point – Most countries have a morale break point of zero. This means all the major urban production resources must be captured to force them to surrender. Some countries such as France and Italy will have a higher than zero break point. If the morale drops below the break point the enemy can be forced to surrender. Some countries have endless morale and will never surrender.

Status Level – This reflects how close a country is to entering an alliance based on its loyalty. When the status level is 100%, it becomes part of that alliance.

Loyalty – Loyalty is the alliance a country is leaning towards. Influencing countries of the same loyalty as your alliance has a better success chance than influencing countries of opposite loyalty.

Alliance – When a country is 100% status, it joins an alliance. Only a non-neutral major power may declare war on any country not of their alliance. Minor countries automatically declare war on enemies of that alliance based on which major power is their ally. The alliances are Axis or Allies. An alliance of *Neutral* simply means the country has not chosen a side. Neutral countries may not declare war on another country but may influence or intimidate another country.

Once Italy's status is at 100%, it may declare war on any country but is not forced to declare war on all countries that are part of the Allied alliance.

Influence Points – Each country generates influence points during the game. Up to 5 influence points may be saved at any one time.

Influence Power – This reflects how politically strong a country is. Stronger countries have a better chance to influence other countries and a lower chance to be influenced.

Note: It is highly recommended that scenarios are played with diplomacy turned off.

18. ADVANCEMENTS

Advancements represent new technologies and strategies learned throughout the war in different categories. They improve the attributes of a unit with each higher level. Most units have at least 2 advancements in their category. Once a unit selects an advancement category, it may not change it. Some countries start with advancements ahead of the current game year. The maximum advancement year is 1945.

INFANTRY UNITS

Infantry – A balanced advancement build for attack and defense

Anti-Tank – A unit defending better than it attacks

ARMOR UNITS

Breakthrough – More operation points

Heavy Armor – More tank firepower and defense

FIGHTERS

Interceptors – Highest air combat values

Escort Fighters – Longer range

Fighter Bombers – Better tactical bombing attributes, worst air combat values

BOMBERS

Close Support – Improved tactical bombing

Strategic Bombing – Improved range and strategic bombing values

Naval Air Training – Improved naval air values

Sonar and Electronics – Improved anti-sub warfare values

NAVAL GROUPS

Large Warships – Battle groups gain the best surface and defense values. Other naval types may not take this advancement.

Warships – Battle, cruiser, and patrol group naval gun and defense improvements

Carrier Operations – Improves carrier group attributes. Only carrier units may take this advancement.

Convoy Escort – Improves anti-sub warfare for escorts and ships

SUBMARINE

Submarine – Improves defense of submarines

Long-Range Submarine – Improves attack and gives +3 unit supply

Units are automatically updated with new advancements. The more units a country has on the map, the slower the improvements are distributed. Advancements cost 10% of the production value per level to upgrade a unit.

19. VICTORY

During the game each side and each country on each side score victory points by capturing and holding objectives. Objectives can be viewed in the *War Panel*. A side that scores the greatest number of victory points by the end of game and still has a major power that is not conquered wins the game. Victory is also scored per individual country. If Italy takes more territory and holds out later, it can win the game for itself more than Germany. This allows the game to be played as a team or as individual victory.

Each scenario will detail the victory points required for a minor victory or a major victory. It is possible that neither side achieves its victory point conditions and the game is a draw. At the end of the game a tally of all victory points is shown. An alliance automatically wins if it conquers all the major powers on the opposing side.

20. MULTIPLAYER

Play by email uses Matrix's Multiplayer server system. This uploads and downloads turns to the matrix server. Players that need to save in the middle of the turn save their games to the server.

21. REFERENCES

Brute Force, John Ellis

The World War II Database, John Ellis

Why the Allies Won, Richard Overy

The Military Atlas of World War II, Chris Bishop

How to Make War, James F. Dunnigan

Wages of Destruction, Adam Tooze

Encyclopedia of the Second World War, Wheal, Pope, and Taylor

Black May, Michael Gannon

Eagle Against the Sun, Ronald H. Spector

Japan's War, Edwin P. Hoyt

When Titans Clashed: How the Red Army Stopped Hitler, David M. Glantz and Jonathan M. House

22. CREDITS

I would like to thank the following people for making *WarPlan* possible.

Angy Brooks – She is wife and soul mate who pushed me to do what I am passionate about. She is also an amazing UX designer. Angy assisted me in developing the interface and user experience for the game to make it flow well.

Hubert Cater and Bill Runacre – They are Fury Software and put out an excellent series called Strategic Command. I created a popular mod based on World in Flames for Strategic Command 2 and designed 2 expansion packs for their Strategic Command 2 Series. I created their image importer for Strategic Command 3. Hubert helped me get my foot in the door with Slitherine/Matrix to make my game come to life. They are both incredibly good people and I enjoyed working with them. They create great games which are available at Matrix Games.

Lane Brody – He has been a friend of mine for over 20 years who is well versed in World War 2 military history and an excellent war gamer. Our countless hours of discussion and play testing improved the A.I. systems for Assault on Communism. He assisted me in designing and balancing the game model that led to *WarPlan*.

The Game Testers – Thank you for all your patience and input to make this game a reality. It took 4 years from conception to Beta testing. Without all of you this game would have never come to

market. Finding flaws in the game system, making recommendations, putting in features I missed, and finding bugs is a difficult and long process that one man can't do alone.

Art – Jose Ramon Faura designed the map, resources, game play icons, and unit counters art.

Art – Jeremy Simmons designed map, logo, and background art.

Music – Ian Laurence created 12 pieces of music for the game.

Editing – Carol Gustafson

SLITHERINE

Chairman

JD McNeil

Development Director

Iain McNeil

Technical Director

Philip Veale

Creative Director

Richard Evans

Marketing Director

Marco A. Minoli

Senior Producer

Bart Schouten

Producers

Tamas Kiss, Adam Grace, Erik Rutins

Product Manager

Alberto Casulini, Daniele Meneghini

Media Relations

Paolo Paglianti

Production Design

Adriana Bienati

Manual Layout

Myriam Bell

Production Lead

Matthew Ravenwood

Production Team

Joe Stephenson, Sam O'Neill

Administration

Dean Walker, Annick Tuesley

Customer Support Staff

Paulo Costa, Joseph Miller

Web Development

Valery Vidershpan, Andrea Nicola, Fernando Turi