



# COMMANDER

EUROPE AT WAR  
**GRAND STRATEGY**  
EXPANSION

## Chapter 1 Overview

### 1.1 Table of Contents

<u>Chapter 1 - Overview</u>	<u>2</u>
<u>1.1 - Table of Contents</u>	<u>2</u>
<u>1.2 - Manual Coverage</u>	<u>10</u>
<u>1.3 - Editors Comment</u>	<u>11</u>
<u>1.4 - Manual Changes</u>	<u>11</u>
<u>1.5 - Picture and Graphics Sources</u>	<u>11</u>
<u>1.6 - Why Grand Strategy 1.0?</u>	<u>12</u>
<u>1.7 - Developers Highlights on Grand Strategy version 2.0</u>	<u>13</u>
<u>1.8 - GS 1.0 Feature &amp; Change Index</u>	<u>15</u>
<u>1.9 - GS 2.0 Features &amp; Change Index</u>	<u>16</u>
<u>1.10 - GS 2.1 Features &amp; Change Index</u>	<u>17</u>
<u>1.11 - GS 3.0 Features &amp; Change Index</u>	<u>19</u>
<u>1.12 - How To Play The Game</u>	<u>21</u>
<u>1.13 - Slitherine CEaW Forum</u>	<u>22</u>
<u>Chapter 2 - Game Play Specifics</u>	<u>23</u>
<u>2.1 - Chapter TOC</u>	<u>24</u>
<u>2.2 - Game Level Changes</u>	<u>27</u>
<u>2.3 - Game Board Changes</u>	<u>34</u>
<u>2.4 - Game Calendars</u>	<u>65</u>
<u>2.5 - Turn Checklist</u>	<u>71</u>
<u>2.6 - Text “.txt” Files</u>	<u>76</u>
<u>Chapter 3 - Ground Warfare</u>	<u>78</u>
<u>3.1 - Chapter TOC</u>	<u>79</u>



<a href="#"><u>3.2 - General Units</u></a>	<a href="#"><u>81</u></a>
<a href="#"><u>3.3 - Elite Units</u></a>	<a href="#"><u>84</u></a>
<a href="#"><u>3.4 - Airborne Units and Airdrops</u></a>	<a href="#"><u>88</u></a>
<a href="#"><u>3.5 - Partisans</u></a>	<a href="#"><u>94</u></a>
<a href="#"><u>Chapter 4 - Naval Warfare</u></a>	<a href="#"><u>99</u></a>
<a href="#"><u>4.1 - Chapter TOC</u></a>	<a href="#"><u>100</u></a>
<a href="#"><u>4.2 - Submarines</u></a>	<a href="#"><u>102</u></a>
<a href="#"><u>4.3 - Naval Transport</u></a>	<a href="#"><u>107</u></a>
<a href="#"><u>4.4 - Naval Invasion (Amphibious)</u></a>	<a href="#"><u>112</u></a>
<a href="#"><u>4.5 - Naval Action</u></a>	<a href="#"><u>119</u></a>
<a href="#"><u>4.6 - ASW (GS 3.0)</u></a>	<a href="#"><u>123</u></a>
Sub-Sweeps (GS 3.0)	??
<a href="#"><u>Chapter 5 - Air Warfare</u></a>	<a href="#"><u>129</u></a>
<a href="#"><u>5.1 - Chapter TOC</u></a>	<a href="#"><u>130</u></a>
<a href="#"><u>5.2 - Air Combat</u></a>	<a href="#"><u>131</u></a>
<a href="#"><u>5.3 - Air Bases</u></a>	<a href="#"><u>134</u></a>
<a href="#"><u>Chapter 6 - Combat Logistics</u></a>	<a href="#"><u>136</u></a>
<a href="#"><u>6.1 - Chapter TOC</u></a>	<a href="#"><u>137</u></a>
<a href="#"><u>6.2 - Country Research &amp; Laboratories</u></a>	<a href="#"><u>143</u></a>
<a href="#"><u>6.3 - Production Points - PP</u></a>	<a href="#"><u>156</u></a>
<a href="#"><u>6.4 - Technology Factors</u></a>	<a href="#"><u>158</u></a>
<a href="#"><u>6.5 - War Effort</u></a>	<a href="#"><u>170</u></a>
<a href="#"><u>6.6 - Manpower, Experience &amp; Efficiency Level (GS 3.0)</u></a>	<a href="#"><u>171</u></a>
<a href="#"><u>6.7 - Naval Logistics</u></a>	<a href="#"><u>176</u></a>
<a href="#"><u>6.8 - Convoy Logistics</u></a>	<a href="#"><u>179</u></a>

<a href="#"><u>6.9 - Unit Logistics</u></a>	<a href="#"><u>182</u></a>
<a href="#"><u>6.10 - Rail Logistics</u></a>	<a href="#"><u>187</u></a>
<a href="#"><u>6.11 - Rail Depots</u></a>	<a href="#"><u>197</u></a>
<a href="#"><u>6.12 - Russian Rail Changes</u></a>	<a href="#"><u>201</u></a>
<a href="#"><u>6.13 - Truck Resupply</u></a>	<a href="#"><u>203</u></a>
<a href="#"><u>6.14 - Supply Logistics</u></a>	<a href="#"><u>205</u></a>
<a href="#"><u>6.15 - Oil &amp; Iron Resources</u></a>	<a href="#"><u>211</u></a>
<a href="#"><u>6.16 - Technical Order of Battle Charts (OOB)</u></a>	<a href="#"><u>215</u></a>
<a href="#"><u>Chapter 7 - Combat Environment</u></a>	<a href="#"><u>224</u></a>
<a href="#"><u>7.1 - Chapter TOC</u></a>	<a href="#"><u>225</u></a>
<a href="#"><u>7.2 - Terrain and Movement Factors</u></a>	<a href="#"><u>228</u></a>
<a href="#"><u>7.3 - The Weather</u></a>	<a href="#"><u>234</u></a>
<a href="#"><u>7.4 - The Mapboard</u></a>	<a href="#"><u>241</u></a>
<a href="#"><u>7.5 - Map Changes - 2.0</u></a>	<a href="#"><u>247</u></a>
<a href="#"><u>7.6 - Map Changes - 2.1</u></a>	<a href="#"><u>250</u></a>
<a href="#"><u>7.7 - Map Changes - 3.0</u></a>	<a href="#"><u>256</u></a>
<a href="#"><u>7.8 - Infrastructure</u></a>	<a href="#"><u>257</u></a>
<a href="#"><u>7.9 - Leaders (The General's List)</u></a>	<a href="#"><u>259</u></a>
<a href="#"><u>Chapter 8 - Historical Alignment</u></a>	<a href="#"><u>272</u></a>
<a href="#"><u>8.1 - Chapter TOC</u></a>	<a href="#"><u>273</u></a>
<a href="#"><u>8.2 - Military/History Background</u></a>	<a href="#"><u>277</u></a>
<a href="#"><u>8.3 - Game Calendars</u></a>	<a href="#"><u>279</u></a>
<a href="#"><u>8.4 - DoW</u></a>	<a href="#"><u>285</u></a>
<a href="#"><u>8.5 - Axis Powers</u></a>	<a href="#"><u>287</u></a>

<a href="#"><u>8.6 - Allied Powers</u></a>	<a href="#"><u>290</u></a>
<a href="#"><u>8.7 - Scandinavian</u></a>	<a href="#"><u>298</u></a>
<a href="#"><u>8.8 - Neutral Countries</u></a>	<a href="#"><u>300</u></a>
<a href="#"><u>8.9 - Tension in the Balkans</u></a>	<a href="#"><u>302</u></a>
<a href="#"><u>8.10 - Greece and Turkey</u></a>	<a href="#"><u>305</u></a>
<a href="#"><u>8.11 - Middle East</u></a>	<a href="#"><u>306</u></a>
<a href="#"><u>8.12 - Additional Naval Units - Alignment</u></a>	<a href="#"><u>308</u></a>
<a href="#"><u>8.13 - Fall of France - Statistics (GS 1.0 &amp; 2.0)</u></a>	<a href="#"><u>309</u></a>
<a href="#"><u>Chapter 9 - AI Changes</u></a>	<a href="#"><u>314</u></a>
<a href="#"><u>9.1 - Changes</u></a>	<a href="#"><u>314</u></a>
<a href="#"><u>Chapter 10 - Scenarios</u></a>	<a href="#"><u>316</u></a>
<a href="#"><u>10.1 - Chapter TOC</u></a>	<a href="#"><u>317</u></a>
<a href="#"><u>10.2 - Initial Setups</u></a>	<a href="#"><u>319</u></a>
<a href="#"><u>10.3 - Scenario Start Capabilities</u></a>	<a href="#"><u>323</u></a>
<a href="#"><u>Chapter 11 - Tactics</u></a>	<a href="#"><u>336</u></a>
<a href="#"><u>11.1 - Chapter TOC</u></a>	<a href="#"><u>337</u></a>
<a href="#"><u>11.2 - Editor Note on Tactics</u></a>	<a href="#"><u>339</u></a>
<a href="#"><u>11.3 - The Basics</u></a>	<a href="#"><u>340</u></a>
<a href="#"><u>11.4 - General Tactics</u></a>	<a href="#"><u>344</u></a>
<a href="#"><u>11.5 - Combat Operations</u></a>	<a href="#"><u>347</u></a>
<a href="#"><u>11.6 - How to Conserve Oil</u></a>	<a href="#"><u>356</u></a>
<a href="#"><u>11.7 - Strategic Bombers</u></a>	<a href="#"><u>358</u></a>
<a href="#"><u>Chapter 12 - Strategies</u></a>	<a href="#"><u>359</u></a>
<a href="#"><u>12.1 - Chapter TOC</u></a>	<a href="#"><u>360</u></a>
<a href="#"><u>12.2 - Editor Note on Strategy Section</u></a>	<a href="#"><u>368</u></a>

<a href="#"><u>12.3 - References</u></a>	<a href="#"><u>368</u></a>
<a href="#"><u>12.4 - Lab Strategies</u></a>	<a href="#"><u>369</u></a>
<a href="#"><u>12.5 - Axis Early War Strategy Guidelines</u></a>	<a href="#"><u>371</u></a>
<a href="#"><u>12.6 - Axis - Early War Execution</u></a>	<a href="#"><u>372</u></a>
<a href="#"><u>12.7 - Axis - A Case White Strategy</u></a>	<a href="#"><u>376</u></a>
<a href="#"><u>12.8 - Axis - Take Holland &amp; Belgium in '39 (GS 2.2)</u></a>	<a href="#"><u>389</u></a>
<a href="#"><u>12.9 - SnapKrieg - Taking Holland &amp; Denmark Early</u></a>	<a href="#"><u>397</u></a>
<a href="#"><u>12.10 - Blitz-Sitz - Denmark &amp; Norway Invasion Strategy</u></a>	<a href="#"><u>400</u></a>
<a href="#"><u>12.11 - Axis Invasion of Other Countries</u></a>	<a href="#"><u>415</u></a>
<a href="#"><u>12.12 - Balkan Blitz</u></a>	<a href="#"><u>417</u></a>
<a href="#"><u>12.13 - Sea Lion</u></a>	<a href="#"><u>420</u></a>
<a href="#"><u>12.14 - Sea Lion - Alternative Strategy</u></a>	<a href="#"><u>422</u></a>
<a href="#"><u>12.15 - Alternatives to Sea Lion</u></a>	<a href="#"><u>425</u></a>
<a href="#"><u>12.16 - Sea Lion Defense</u></a>	<a href="#"><u>426</u></a>
<a href="#"><u>12.17 - Tallinn Gambit</u></a>	<a href="#"><u>428</u></a>
<a href="#"><u>12.18 - Barbarossa</u></a>	<a href="#"><u>433</u></a>
<a href="#"><u>12.19 - How to Defeat the Soviet Union</u></a>	<a href="#"><u>435</u></a>
<a href="#"><u>12.20 - Fortress Europa</u></a>	<a href="#"><u>438</u></a>
<a href="#"><u>12.21 - Barbarossa Alternative - Bleed The Brits</u></a>	<a href="#"><u>440</u></a>
<a href="#"><u>12.22 - Russian War Strategy - Survive the First 2 Years</u></a>	<a href="#"><u>449</u></a>
<a href="#"><u>12.23 - Breaking the Double Defensive Line</u></a>	<a href="#"><u>452</u></a>
<a href="#"><u>12.24 - Axis Submarine Warfare</u></a>	<a href="#"><u>456</u></a>
<a href="#"><u>12.25 - Allied Anti-Submarine Operations</u></a>	<a href="#"><u>460</u></a>
<a href="#"><u>12.26 - Allied Naval Strategy</u></a>	<a href="#"><u>462</u></a>
<a href="#"><u>Chapter 13 - Original CEaW Manual</u></a>	<a href="#"><u>470</u></a>

<a href="#"><u>Manual Cover</u></a>	<a href="#"><u>471</u></a>
<a href="#"><u>13.1 - Note</u></a> <a href="#"><u>471</u></a>	
<a href="#"><u>13.2 - Original Manual TOC</u></a>	<a href="#"><u>472</u></a>
<a href="#"><u>13.3 - Commander: Europe at War</u></a>	<a href="#"><u>476</u></a>
<a href="#"><u>13.4 - Introduction</u></a>	<a href="#"><u>477</u></a>
<a href="#"><u>13.5 - Conventions</u></a>	<a href="#"><u>477</u></a>
<a href="#"><u>13.6 - The Main Menu</u></a>	<a href="#"><u>477</u></a>
<a href="#"><u>13.7 - Game Setup</u></a>	<a href="#"><u>478</u></a>
<a href="#"><u>13.8 - Loading and Saving Games</u></a>	<a href="#"><u>480</u></a>
<a href="#"><u>13.9 - The War Map</u></a>	<a href="#"><u>480</u></a>
<a href="#"><u>13.10 - Control Panel</u></a>	<a href="#"><u>482</u></a>
<a href="#"><u>13.11 - Resources</u></a>	<a href="#"><u>485</u></a>
<a href="#"><u>13.12 - Politics and War</u></a>	<a href="#"><u>488</u></a>
<a href="#"><u>13.13 - Units</u></a> <a href="#"><u>489</u></a>	
<a href="#"><u>13.14 - Unit Actions</u></a>	<a href="#"><u>492</u></a>
<a href="#"><u>13.15 - Combat</u></a>	<a href="#"><u>496</u></a>
<a href="#"><u>13.16 - Supply</u></a>	<a href="#"><u>499</u></a>
<a href="#"><u>13.17 - Visibility and Fog oF War</u></a>	<a href="#"><u>500</u></a>
<a href="#"><u>13.18 - Purchasing Units</u></a>	<a href="#"><u>501</u></a>
<a href="#"><u>13.19 - Research</u></a>	<a href="#"><u>502</u></a>
<a href="#"><u>13.20 - Turn Summary</u></a>	<a href="#"><u>506</u></a>
<a href="#"><u>13.21 - Special Events</u></a>	<a href="#"><u>506</u></a>
<a href="#"><u>13.22 - Statistics</u></a>	<a href="#"><u>507</u></a>
<a href="#"><u>13.23 - In-game Options</u></a>	<a href="#"><u>507</u></a>

<a href="#"><u>13.24 - Modding Scripts</u></a>	<a href="#"><u>508</u></a>
<a href="#"><u>Chapter 14 - GS Developers Initial Notes</u></a>	<a href="#"><u>509</u></a>
<a href="#"><u>14.1 - Chapter TOC</u></a>	<a href="#"><u>510</u></a>
<a href="#"><u>14.2 - Usage Note</u></a>	<a href="#"><u>512</u></a>
<a href="#"><u>14.3 - Developers Highlights on GS v 1.07 Changes</u></a>	<a href="#"><u>512</u></a>
<a href="#"><u>14.4 - Overall</u></a>	<a href="#"><u>513</u></a>
<a href="#"><u>14.5 - Contested Amphibious Invasions</u></a>	<a href="#"><u>514</u></a>
<a href="#"><u>14.6 - Elite Units</u></a>	<a href="#"><u>515</u></a>
<a href="#"><u>14.7 - Airborne Units and Airdrops</u></a>	<a href="#"><u>515</u></a>
<a href="#"><u>14.8 - Experience Level</u></a>	<a href="#"><u>517</u></a>
<a href="#"><u>14.9 - Leadership</u></a>	<a href="#"><u>517</u></a>
<a href="#"><u>14.10 - Allied Aggression</u></a>	<a href="#"><u>518</u></a>
<a href="#"><u>14.11 - Tension in the Balkans</u></a>	<a href="#"><u>518</u></a>
<a href="#"><u>14.12 - Eastern Europe</u></a>	<a href="#"><u>519</u></a>
<a href="#"><u>14.13 - Softer Air Bases when Used in a Ground Defense Role</u></a>	<a href="#"><u>519</u></a>
<a href="#"><u>14.14 - Convoy Movement Updates</u></a>	<a href="#"><u>520</u></a>
<a href="#"><u>14.15 - Transport Fog of War</u></a>	<a href="#"><u>520</u></a>
<a href="#"><u>14.16 - Commonwealth Units and Leaders</u></a>	<a href="#"><u>520</u></a>
<a href="#"><u>14.17 - Out of supply units</u></a>	<a href="#"><u>521</u></a>
<a href="#"><u>14.18 - Ferry Crossing</u></a>	<a href="#"><u>521</u></a>
<a href="#"><u>14.19 - Map and Scenario Changes</u></a>	<a href="#"><u>521</u></a>
<a href="#"><u>14.20 - Poland and Belgium Setups</u></a>	<a href="#"><u>522</u></a>
<a href="#"><u>14.21 - Other Updates</u></a>	<a href="#"><u>523</u></a>
<a href="#"><u>14.22 - GS v1.10 Patch to v1.06</u></a>	<a href="#"><u>524</u></a>
<a href="#"><u>Chapter 15 - Change Logs</u></a>	<a href="#"><u>532</u></a>

<a href="#"><u>15.1 - Chapter TOC</u></a> .....	<a href="#"><u>533</u></a>
<a href="#"><u>15.2 - GS v1.07 Change Log</u></a> .....	<a href="#"><u>539</u></a>
<a href="#"><u>15.3 - GS 2.0 Change Log</u></a> .....	<a href="#"><u>547</u></a>
<a href="#"><u>15.4 - GS 2.1 Change Log</u></a> .....	<a href="#"><u>574</u></a>
<a href="#"><u>15.5 - GS 3.0 Change Log</u></a> .....	<a href="#"><u>643</u></a>



*The art of war is of vital importance to the State. It is a matter of life and death, a road either to safety or to ruin. Hence it is a subject of inquiry which can on no account be neglected.*

*Sun Tzu*

## **1.2 Manual Coverage**

This manual covers all version of the Grand Strategy expansion from 1.0 to 3.0. The latest additions for GS 3.0 are noted by the addition of "(GS 3.0)" in the header for that chapter, section or topic.

The Original CEaW (Commander Europe at War) manual is also included in this manual for a complete reference.



### 1.3 Editors Comment

I wish to thank all of those who have directly and indirectly contributed much of the content for this manual.

I have done the best I can with the manual. The manual is now published in three versions: (1) PDF, (2) Kindle book and (3) eBook/iBook reader. Therefore, please be patient if the formatting, spacing or rendering of charts and other items is a bit off. It has been difficult to create one format in the tool I use (Scrivener) and get uniform results in all 3 formats. By the way, Scrivener has been a wonderful tool for me and the manual would not be as good as I hope you find it.

Therefore, I ask you to overlook small formatting irregularities. After all this has been a totally volunteer effort. To paraphrase -- as they said in the early days on UNIX -- if you want a better manual -- then write one yourself :-)

*I hope you learn from the manual and enjoy the game!!*

### 1.4 Manual Changes

Please post a note on the GS Forum @ Slitherine for any corrections or recommendations!

### 1.5 Picture and Graphics Sources

All graphics used come from the CEaW and/or CEaW-GS game graphics.

All pictures used come from the **Wikipedia Commons**. The picture description also comes from Wikipedia and usually points to the Wikipedia reference webpage. Commons is a freely licensed media file repository.

## 1.6 Why Grand Strategy 1.0?

CEaW - Grand Strategy (CEaW-GS), formerly known as the BJR Mod, is a user developed mod to CEaW 1.12 gold. We shall refer to “CEaW 1.12 gold” as “standard version” hereafter. This mod is a separate game and can be installed to coexist with the standard version. User specific game files, which include saved games, are placed in the appropriate location. For the latest version v 2.1 it is:

```
*\My Documents\CEAW Grand Strategy <== for PC  
~/Documents/CEAW Grand Strategy 2.10 <== for MAC OS
```

This user manual is written from the perspective that the reader is familiar with CEaW 1.12 gold, its mechanics of play and its user’s manual.

CEaW-GS is optimized for human-to-human play; however, play against the AI would offer the player the same level of challenge as they would have in the vanilla game against the AI. No attempt was made to improve the AI. The goal for this mod was to transform the standard game into the most accurate simulation of WW-II in Europe and North Africa while maximizing play balance, enjoyment and replayability. We didn’t want to create a mod that forces players into a historical timeline of events; but to create a mod that allows players to explore alternate timelines and events that are historically reasonable. Of course, what’s historically reasonable is a matter of opinion and subject to debate but the developers and the beta testers did the best job possible given the constraints of the CEaW game engine and the fact that we do this as a hobby and not a job.

The changes discussed in this document significantly affect how CEaW plays. A number of strategies and tactics that worked in CEaW gold (standard gold version) will no longer work in CEaW-GS. So players will need to rethink these and; hopefully, CEaW-GS will offer a more “historical” gaming experience without sacrificing enjoyment, play balance or replayability. We feel that CEaW-GS, far from sacrificing any of these factors actually enhances them.

A warning to new players of our modification (CEaW-GS) is that rail limits, transport limits, invasion limits and Axis limits in North Africa are enforced through exponentially increasing punitive costs in PP’s. So we encourage all players to read these sections in detail in order to better understand the limits and costs incurred when exceeding capacity in each of these areas.

## 1.7 Developers Highlights on Grand Strategy version 2.0

Historical Realism - In our attempt to maximize historical realism we have proposed a set of changes to GS and are play testing. Our definition of historical realism is NOT that the historical chain of events are, or must be, followed every game but that the option to follow the historical chain of events is as least as appealing as following other non-historical, but possible, events. For example, it had become standard practice for the Allied player to invade Ireland and often Portugal to establish airbases to use for ASW. Also, it was becoming standard practice in some quarters for the Axis player not to invade Yugoslavia and Greece. While these are certainly valid and historically possible strategies these did not happen historically. We didn't want the game to evolve to where historical options would never be chosen but to a point where it's good strategy in some games to do so and in other games not to.

It was becoming common practice to use air units in ground defense roles. Because of the movement range of these units they were at times being deployed at speeds and distances that modern airmobile forces would envy. Also, they were often times holding up just as well or even better against ground attacks than normal ground units. While air units do have a significant number of ground troops that were historically used in infantry roles they had nowhere near the ability to hold as did regular infantry.

The biggest changes in v2.00 are contested amphibious invasions, elite units, airborne units and airdrops, updated experience level model, updated leadership model, allied aggression, tension in the Balkans and Eastern Europe, softer airbases, convoy movement updates, game updates including mechanic and a number of graphical (i.e., chrome) changes. To ensure maximum flexibility the implementation of these features are controlled through the general.txt file and may be configured as players desire.

Sometimes we can have different views of what's the goal of GS. We, the GS developers, share a common goal and that is to make GS a more historical WW2 in Europe simulation without scripting the players from 1939 to 1945. It means that the players should be able to feel they're playing with the same constraints as the real WW2 leaders had, but they should have a chance to make different choices. This means we need to anticipate the outcome of possible non-historical events that people would find credible. One is how USA would react to a German invasion of Canada. Another is how the Axis minor powers would react to still neutral Yugoslavia and Greece.

GS has no real diplomacy, but we have scripted the behavior of certain minor powers to simulate their response to certain events. Some players don't like this because they want the freedom to do whatever they wish. It's very hard to make a balanced game if players have full freedom to do anything they want. E. g. the Soviet armor blob strategy ruined game balance in CEAW. Some Axis players don't like the fact they can't easily reach Omsk. We would rather say that it should be virtually impossible for the Axis player to get all the way to Siberia. Hitler's grand strategy was to reach the Ural's and keep the Russians at bay there. He believed that Stalin would either be overthrown or the Russians would sue for peace before the Germans ever reach the Ural's.

Since GS is supposed to be more historical than CEAW it means that the Axis IS supposed to feel the problems of being expanded around 1942-1943 and then slowly crumble until the Allies are in Berlin. We think GS is working quite well having that goal.

One great thing about the GS victory conditions is that you won't know who will win or at what level until all the major Axis capitals have fallen. It means the Axis player has good reason to continue fighting till the very end. So both sides get a chance to excel both at the offense and defense. In CEAW many Axis players folded once their expansion was halted and the Allies started to move in the direction of Berlin. These players knew the game was lost because they had fewer capitals than the Allies. So they folded. That meant many Allied players never had a chance to have fun doing Overlord, destruction of Army Group Center etc. For that reason alone we felt that CEAW was rather flawed. In order to win in GS you need to be good at both attacking and defending. The game won't end prematurely until one side is sure

of an ultimate victory.

We are telling you this so that you know our ultimate goal we have with GS, i. e. to have a WW2 in Europe simulation game that's quite historical without steering players in a certain direction. So if we introduce new things, then we have to answer the question: is a given change compatible with the main goal of GS?

If yes, then we should consider it, if not then it should be scrapped.

## 1.8 GS 1.0 Feature & Change Index

- ◆ Updated unit graphics - hundreds of new/improved graphics!!
- ◆ Added [secondary capitals](#) to Germany and USA
- ◆ [Modified victory conditions](#) on historical surrender May 8, 1945
- ◆ [Historical Italian surrender](#) - Italy can surrender without Rome falling
- ◆ Significant [scenario changes](#) - dates, force levels, initiative & balance
- ◆ Created extensive [tactic](#) & [strategy](#) "How To" sections in this manual
- ◆ [Major map updates](#) to more closely reflect actual geography
- ◆ Added two new hex types: [desert hills](#) and [airfield resource](#)
- ◆ Added [production capacity to selected fortresses](#)
- ◆ Added ["airfield" hexes](#) in Atlantic - allows ferrying over the Atlantic
- ◆ Added surprise attack factor - ["Demoralize"](#) enemy forces on [DoW](#)
- ◆ Added unpredictable [weather](#) and [new mud/sea conditions](#)
- ◆ Added [amphibious operation limitations](#) to reflect reality
- ◆ Reworked [submarine](#) warfare model
- ◆ Added limits on [anti-submarine operations](#)
- ◆ Added [convoy behavior](#) changes
- ◆ Added more robust [partisan impact](#)
- ◆ Added more transportation loops
- ◆ Limits on [attacks on ships in port](#)
- ◆ Limits [air attack on enemy air units](#)
- ◆ Imposed realistic [limits on the use of air attacks](#) on ground units
- ◆ [Carriers \(CV\) can now intercept enemy air attacks](#)
- ◆ Limited [lab/research creation](#) to reflect reality
- ◆ Change so Axis player will always start every turn with some oil
- ◆ Added Lend Lease to Russia through Persia
- ◆ Added [logistics limits on Axis operations in North Africa](#)
- ◆ Added [Free French](#) forces to a new region - Agadir - in North Africa
- ◆ Added [Siberian Russian forces](#) - released when US enters war
- ◆ Imposed realistic restrictions on [rail movement, costs & operations](#)
- ◆ No More House Rules - all rules fully implemented in game software
- ◆ Expanded ["general.txt"](#) file to allow more player mods and security
- ◆ Manual with associated built-in inter-document and internet links

## 1.9 GS 2.0 Features & Change Index

- ◆ Allows players of PC and MAC platforms to play via PBEM
- ◆ Increased historical realism of units, events, geography and calendar
- ◆ [Airborne units](#) added for all major powers
- ◆ [Elite units](#) of Waffen-SS and Russian Guard units added
- ◆ Amphibious assault added
- ◆ [Contested invasions](#) are now allowed
- ◆ [Port damage](#) added
- ◆ [Scorched earth](#) impact for Russian cities
- ◆ Special [German volunteer units](#) added
- ◆ Transport [convoy Fog of War](#) added to hide unit type from enemy
- ◆ [Atlantic Wall fortresses](#) added for Germans
- ◆ Unit experience levels graphically displayed
- ◆ [Allied aggression](#) - penalize allied invasion of neutral/friendly countries
- ◆ Tension in the Balkans impact added
- ◆ Added selected [Commonwealth leaders](#)
- ◆ Added Commonwealth specific NATO counters
- ◆ Initial setups changed
- ◆ Additional [map and scenario changes](#)
- ◆ Added a [8.6.18 - French Armistice](#) option
- ◆ [Garrisons](#) movement increased by 1 when leader assigned
- ◆ Added special [ferry crossing](#) of unit in 1 turn
- ◆ [Partisan spawning](#) changed
- ◆ Created [softer air bases](#)
- ◆ Play 1 of 7 languages, while an opponent plays in a different language!
- ◆ Upgrade units in that are in enemy contact
- ◆ Unit swap option allowed for units - included those in enemy contact
- ◆ Automatic unit naming
- ◆ New Axis North Africa supply rules based upon UK units at Malta
- ◆ New unit efficiency color (Green 60-79%, with white at 80+)
- ◆ [Repair of naval units at sea added](#)

## 1.10 GS 2.1 Features & Change Index

### ◆ Historical/Political Changes

- New prerequisite for [Spain activating as Axis ally](#) - USA neutrality
- [Denmark & Norway historically](#) linked for DoW consequences
- [Belgium & Holland](#) countries historically linked for DoW consequences
- Persia activates if Axis unit moves into Iraq vs capture Iraqi resource
- [French, UK units in France & UK based air units suffer 20 efficiency loss](#) if Belgium surrenders in one turn
- Persia spawns GARs in all cities if Axis units occupy Iraqi city/resource
- Allied units restricted in Russia to reflect historical accuracy
- Britain requires [8 home guard force](#) units in Great Britain to avoid morale loss
- Owner changed to US for southern convoy when USA joins war

### Logistics Changes

- Game balance measures to control “blob” strategies
- Major change to [rail movement](#) - start must be on or adjacent to resource
- Major [Russian rail](#) (broad gauge) restrictions implemented
- Increased oil usage for Axis MECH when at tech level 2
- Maximum [SS & Russian Guards](#) reduced for play balance
- Increased cost of creating new type units when limits are exceeded
- Starting war efficiency adjusted for all countries
- Building 3rd lab in a technology requires 3 other areas have a lab
- German PP at game start increased from 20 to 35
- German eastern fortresses can spawn in 1942 if Allied units in Germany
- [Allied Atlantic naval presence](#) required at all times to maintain convoy size
- Finland, Hungary, Romania and Bulgaria war effort better aligned to Axis
- Partisan spawning divided by 3 in AI games - now matches regular game

### Environment Changes

- Updated hexes in Russia to reflect correct geography
- Added more rail heads to supplement rail movement rules
- Reduced average number of severe winter turns from 6 to 5
- Severe winters % effectiveness change & new general.txt variables
- Reconnaissance/land spotting reduce by half in winter & severe winter

### Unit Changes

- Germans are allowed to build a paratrooper unit in 1939
- Russia receives [8 garrison units as strategic reserve](#) - Aug 1, 1941
- Canadian units spawn at normal quality if UK manpower level is yellow

### Game Board Changes

- New French large counters & unit names historically correct
- Free French unit color on mini-map made unique
- Unit stats chart changed - MECH info now with ARM stats
- New [large NATO counter](#) option with detailed information
- Map board options now allow country, river & lake names
- Settings file name changed to “gs2\_settings.txt”

## Grand Strategy 3.0 Manual

- Air unit names changed to be more historically accurate
- Partisan naming reflects originating country name
- Fixed numerous bugs
- AI updated & made faster - fixed inherent bug in *decideWhereToMove*

### GS Manual Changes

- Incorporated all GS 2.1 changes
- Updated Game calendars
- Added a "[Automatic DoW and Side Change](#)" Summary
- Added iBook format for use on iPad (.epub)
- Added eBook/Kindle format (.mobi)
- Added detailed and linked Chapter Table of Contents for iBook & eBook
- Added original [CEaW Manual](#) as a chapter
- Added new sections to Strategies
- Added General.txt reference section



## 1.11 GS 3.0 Features & Change Index

### Historical/Political Changes

- ◆ Allies suffer morale loss if Belgium is falls in 2 turns; however, loss is less than when Belgium falls in 1 turn.
- ◆ Finland surrender now require 1 more city/rail head to be captured for Finland to fall.
- ◆ 1939/1940 Libya, Sardinia, Egypt, Holland & Belgium unit setup changed.
- ◆ Canadian forces activation modified to arrive turn 19 if Allies attack Belgium.
- ◆ AI play check added for French auto-surrender if Paris vacated after June 1940.
- ◆ If Vichy France DoW'ed before US Entry - Free French forces go in US force pool.
- ◆ Early Sealion - UK forces in Egypt & Iraq will fully activate. Italy also activates.
- ◆ UK forces in Egypt and Iraq will auto-activate if German forces land in Libya.
- ◆ Russia goes on a war footing when Turkey is invaded by Axis forces.
- ◆ Allies now suffer morale loss if Belgium is taken in 2 turns.
- ◆ Italian surrender - modified conditions so 2 rail head losses count as 1 city loss.
- ◆ 6 additional German GAR Volkstrum units gained when allies enter Germany.

### Logistics Changes

- ◆ Russian to Allied and vice versa rail conversion are not allowed unless Russia surrenders.
- UK southern lend lease route is stopped if London is Axis controlled.
- ◆ PP changes for Italy.
  - ◆ Naval and Air unit technology changes.
  - ◆ DD (Destroyer) build time reduced to 5 turns.
  - ◆ Sub PP cost increased to 55.
  - ◆ Expanded spawn area of Northern convoy and Max PP raised to 100.
  - ◆ Central convoy Max PP lowered to 100.
  - ◆ Rail depots, oilfields and mines now provide supply level 1 if not bombarded below 2 steps.
  - ◆ German MECH & INF swapped in 1939 scenario to make turn 2 blitz easier.

### Game Play Changes

- ◆ Air units will now always retreat.
- ◆ Naval units may now retreat during combat.
- ◆ Transports will no longer block surface vessels.
- ◆ Rail depots, mines and oilfields now provide supply level 1 if isolated from cities or capitals.
- ◆ Visible subs will now block surface vessels.
- ◆ Sub Sweep by surface vessels added.
- ◆ Sub Sentry mode "Z" added.
- ◆ New & modified Sub rules.
- ◆ Added simple player handicap system to modify PP rules.

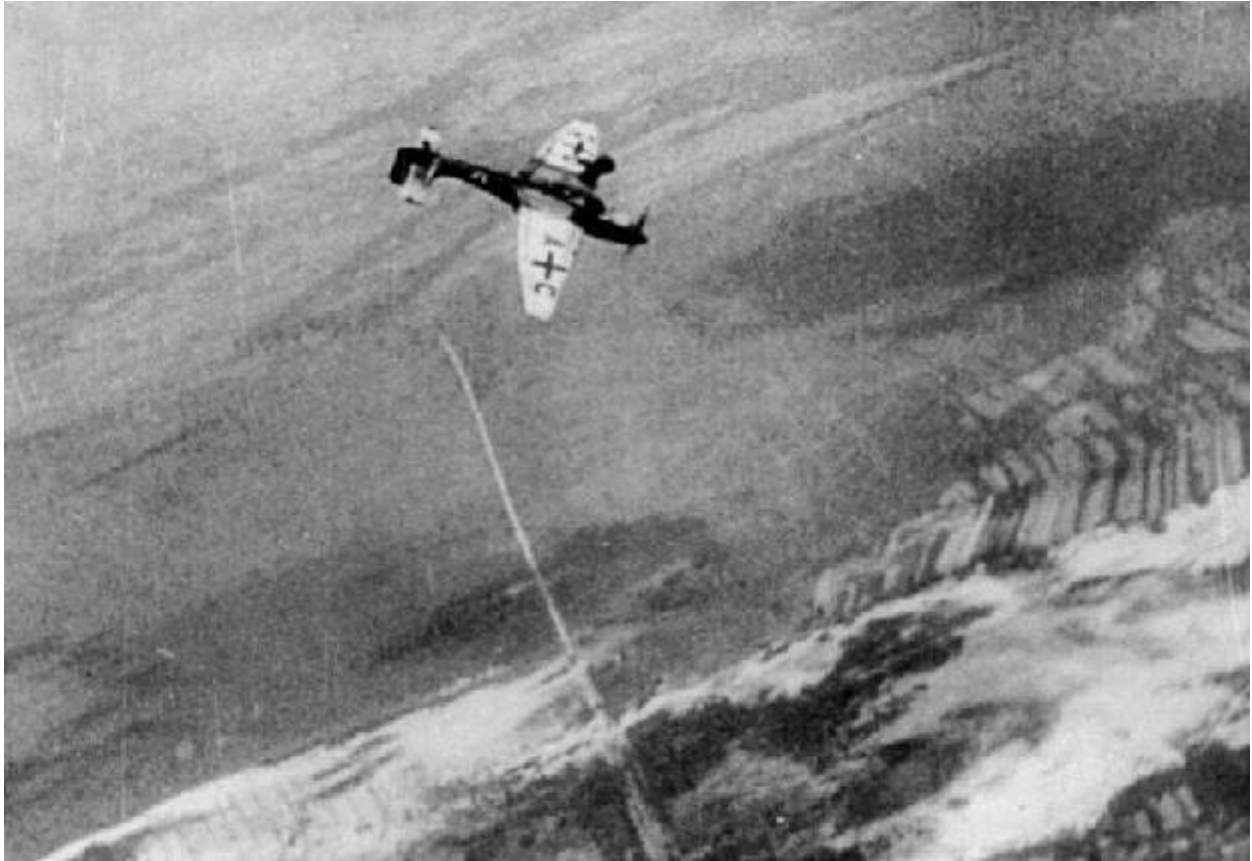
- ◆ Spotting range updated at turn start when there is a weather change.
- ◆ Enhanced messages of war events & partisan spawning.
- ◆ More keystroke commands.

### Unit Changes

- ◆ Added graphics images for the Slovak corps.
- ◆ Air units can be placed in Sentry mode ("Z" key) at end of a rail movement turn.
- ◆ All units can be placed in or out of sentry mode with right click if they have moved

### Game Board Changes

- ◆ Transport loop icon changed.
- ◆ Added rail depot in France called Calais.
- ◆ Changes in Belgium and Holland - Added Albert canal, moved Liege and Antwerp and re-routed Rhine, Meuse and Schelde rivers.
- ◆ Changed terrain around Tobruk and Mareth to allow better movement.
- ◆ Changed terrain in Iran, Iraq, and Turkey.
- ◆ Updated border lines between Persia, Iraq, Russia, and Turkey.
- ◆ Added river Karun in Persia.
- ◆ Yerevan was added as a Rail Depot in Russia on border with Turkey and Russia.
- ◆ Altered terrain in UK
- ◆ Added forest and clear hexes.
- ◆ Glasgow was moved 1 hex.
- ◆ Clydebank added as name for the Glasgow port.
- ◆ Devonport was added as name for the Plymouth port.
- ◆ Map was altered to handle congestion in the Red Sea and Persian Gulf.
- ◆ Suez now has a port on the Red Sea.
- ◆ Added Kuwait as a UK controlled country instead of being part of Iraq. Kuwait city with port added.



*The more you read and learn, the less your adversary will know.*

*Sun Tzu*

## 1.12 How To Play The Game

Well -- no one can really tell you exactly how to do that. After all -- you are now the Commander!! Having said that -- this manual contains a wealth of information to assist you in quickly ramping up to an experienced player level.

If you have never played CEaW before - you should likely read the original manual. The GS manual, although very comprehensive, does not cover all the basics.

Sections that are the “low hanging fruit” - using the 80/20 -- [Pareto Principle](#) are:

- ◆ Review the Game calendars later in this section (7-9 pages long)
- ◆ [Chapter 11 - Tactics](#) for Grand Strategy (about 27 pages long)
- ◆ [Chapter 12 - Strategies](#) for Grand Strategy games (about 66 pages long)

That may seem like a lot - but this manual is over 600 pages in length. Amazing how that Pareto

Principle works out !

Expert Level -- that is a bit harder to achieve. This will require:






- ◆ Read the full manual
- ◆ Reading some WW II history is important - the game is based in the historical environment
- ◆ Read the GS Forum @ Slitherine.com
- ◆ Use all the techniques in the manual - use them all the time and use them well
- ◆ Strategy, Strategy, STRATEGY!!!
- ◆ Lots of time to play games
- ◆ Sometimes -- lose a lot of games to better players as you build your skills
- ◆ Some natural talent
- ◆ Most important -- HAVE FUN!!

### 1.13 Slitherine CEaW Forum

Slitherine CEaW Forum is located at:

<http://www.slitherine.com/forum/viewforum.php?f=18>

Below shows the 4 major topic areas and 1 more for the Beta test group for GS Beta Testing.

	<b>Commander - Europe at War : Tech Support</b> Tech support for Commander Europe at War. Requires forum registration. Moderators firepowerjohan, Happycat, rkr1958, Firepower, Slitherine Core
	<b>Commander - Europe at War : Modders Corner</b> A secret place for modders to chat and ask questions. Requires forum registration. Moderators firepowerjohan, Happycat, rkr1958, Firepower, Slitherine Core
	<b>Commander Europe at War : AAR's</b> After action reports for Commander Europe at War. Moderators Happycat, rkr1958, Slitherine Core
	<b>Commander Europe at War : Opponent Finder</b> Moderators Happycat, rkr1958, Slitherine Core
	<b>Commander Europe at War : GS Beta Testing</b> Moderators rkr1958, Slitherine Core

## Chapter 2 Game Play Specifics



*There is only one decisive victory: the last.*

Karl von Clausewitz

## 2.1 Chapter TOC

<u>2.2 - Game Level Changes</u>	<u>27</u>
<u>2.2.1 - Scenario Start Dates</u>	<u>27</u>
<u>2.2.2 - Automatic DoW &amp; Side Change Summary (GS 3.0)</u>	<u>27</u>
<u>2.2.3 - Victory Conditions</u>	<u>29</u>
<u>2.2.4 - Italian Surrender (GS 3.0)</u>	<u>29</u>
<u>2.2.5 - Player Handicap System (GS 3.0)</u>	<u>30</u>
<u>2.2.6 - DOW Morale Loss (GS 3.0)</u>	<u>31</u>
<u>2.2.7 - Combat Results - Averaged Calculations</u>	<u>32</u>
<u>2.2.8 - Unlock Commonwealth Country Specific Graphics</u>	<u>32</u>
<u>2.2.9 - Unit Experience Graphics</u>	<u>33</u>
<u>2.2.10 - Land Spotting (GS 3.0)</u>	<u>33</u>
<u>2.3 - Game Board Changes</u>	<u>34</u>
<u>2.3.1 - Game Settings</u>	<u>34</u>
<u>2.3.2 - Options</u>	<u>35</u>
<u>2.3.3 - Options Menu Changes</u>	<u>35</u>
<u>2.3.4 - Options - Original Advantage Settings</u>	<u>36</u>
<u>2.3.5 - Options - Advantage Setting Changes (GS 3.0)</u>	<u>38</u>
<u>2.3.6 - Getting the Font Correct</u>	<u>39</u>
<u>2.3.7 - Keyboard and Mouse Commands (GS 3.0)</u>	<u>40</u>
<u>2.3.8 - Regular Unit Counters</u>	<u>42</u>
<u>2.3.9 - Understanding Large Unit Counters</u>	<u>45</u>
<u>2.3.10 - Mapboard Changes</u>	<u>47</u>
<u>2.3.11 - Unit Panel</u>	<u>47</u>
<u>2.3.12 - Mini-Map Changes</u>	<u>50</u>

<a href="#"><u>2.3.13 - Mini-Map Overview</u></a>	<a href="#"><u>50</u></a>
<a href="#"><u>2.3.14 - Color Changes To Mini-Map</u></a>	<a href="#"><u>51</u></a>
<a href="#"><u>2.3.15 - Mini-Map Weather Display Button Added</u></a>	<a href="#"><u>52</u></a>
<a href="#"><u>2.3.16 - Resources Panel Updates</u></a>	<a href="#"><u>52</u></a>
<a href="#"><u>2.3.17 - Casualty Panel Information</u></a>	<a href="#"><u>53</u></a>
<a href="#"><u>2.3.18 - Forces Panel - Intelligence Gathering</u></a>	<a href="#"><u>54</u></a>
<a href="#"><u>2.3.19 - Tool Bar Tip</u></a>	<a href="#"><u>56</u></a>
<a href="#"><u>2.3.20 - Technology Upgrade Status</u></a>	<a href="#"><u>56</u></a>
<a href="#"><u>2.3.21 - Combat System Unit Effectiveness</u></a>	<a href="#"><u>60</u></a>
<a href="#"><u>2.3.22 - Unit Upgrade Tool Tip More Accurate</u></a>	<a href="#"><u>61</u></a>
<a href="#"><u>2.3.23 - Unit Stats</u></a>	<a href="#"><u>61</u></a>
<a href="#"><u>2.3.24 - Rail Icons for Hexes</u></a>	<a href="#"><u>61</u></a>
<a href="#"><u>2.3.25 - Rail Status</u></a>	<a href="#"><u>62</u></a>
<a href="#"><u>2.3.26 - Enhanced Turn Start Messages (GS 3.0)</u></a>	<a href="#"><u>62</u></a>
<a href="#"><u>2.4 - Game Calendars</u></a>	<a href="#"><u>65</u></a>
<a href="#"><u>1939 Calendar</u></a>	<a href="#"><u>65</u></a>
<a href="#"><u>1940 Calendar</u></a>	<a href="#"><u>66</u></a>
<a href="#"><u>1941 Calendar</u></a>	<a href="#"><u>67</u></a>
<a href="#"><u>1942 Calendar</u></a>	<a href="#"><u>68</u></a>
<a href="#"><u>1943 Calendar</u></a>	<a href="#"><u>69</u></a>
<a href="#"><u>1944 Calendar</u></a>	<a href="#"><u>70</u></a>
<a href="#"><u>1945 Calendar</u></a>	<a href="#"><u>70</u></a>
<a href="#"><u>2.5 - Turn Checklist</u></a>	<a href="#"><u>71</u></a>
<a href="#"><u>2.5.1 - Short Turn Checklist</u></a>	<a href="#"><u>71</u></a>
<a href="#"><u>2.5.2 - Detailed Turn Checklist</u></a>	<a href="#"><u>71</u></a>

<u>2.6 - Text “.txt” Files</u>	<u>76</u>
<u>2.6.1 - General.txt Overview</u>	<u>76</u>
<u>2.6.2 - General.txt Security</u>	<u>76</u>
<u>2.6.3 - General.txt North Africa Supply Rules</u>	<u>77</u>
<u>2.6.4 - settings.txt File Name Change</u>	<u>77</u>



## 2.2 Game Level Changes

*Carpe diem (Seize the day)*

Horace

### 2.2.1 Scenario Start Dates

The scenario dates have been adjusted to reflect realistic entry points. The Major Powers starting the scenario in 1943 and 1944 has changed slightly. The Axis turn is done automatically and then the Allied player moves. This reflects the initiative or momentum having moved to the Allies.

Scenario	Start Date	Power That Starts
1939	September 1, 1939	Axis
1940	February 28, 1940	Axis
1941	February 22, 1941	Axis
1942	May 28, 1942	Axis
1943	June 12, 1943	Allies
1944	May 17, 1944	Allies

### 2.2.2 Automatic DoW & Side Change Summary (GS 3.0)

**French** government will now offer an armistice once Paris is captured or left empty after June 27th 1940. Note: not applicable in AI game (GS 2.2).

**Vichy France** will now activate both in Northern Africa (Morocco, Algeria and Tunisia) and in Southern France / Corsica if French Armistice is accepted.

**Free France** is a new Allied minor power. Free France will not activate at a certain date, but will activate on the same turn as Vichy France is activated.

**Spain** will join the **Axis**, if the axis reject the French armistice and control the following before US entry: Casablanca, Oran, Algiers, Tunis, Rome and Paris.

**Spain** will join the **Allies**, if the French armistice offer is rejected and Casablanca, Oran, Algiers, Tunis, Rome and Paris are all Allied controlled. It's not enough that a city is neutral.

**Sealion** will cause UK forces in Egypt, Iraq will fully activate. Italy will also activate. If Sealion occurs in 1939 or 1940, once Axis forces land anywhere in Britain, 2 GAR will form in the force-pool. If Sealion occurs in 1941 4 GARs will be available for defense of Britain.

**Lybia** - when German forces land in Libya, UK forces in Egypt and Iraq will activate.

**Gibraltar** will be annexed by Spain if Gibraltar fortress is evacuated before USA or Russia joins the Allies. A message is shown about this annexation.

**Russia** activates if Axis units are adjacent to any city in Persia.

**Russia** will automatically DoW on Germany on turn 50 (+/-1 turn), May 8, 1942, if Axis player has not DoW on Russia.

**Russia** will go on a war footing once an Axis unit enters Turkey, that is, after Turkey is invaded by Axis forces.

**Finland** will activate for the Germans on the turn Russia activates.

**Finland** joins the Axis if Russia is not active by June 22nd turn (+/-1 turn).

**Finland** will sign an armistice with Russia if 3+ cities in Finland / Estonia (Tallinn) are captured by the Allies **and** less than 6 Axis units are present in Finland. (GS 2.2)

**Turkey** will join the **Axis**, if the Axis control: Athens, Bucharest, Sofia, Moscow, Baku and Baghdad.

**Turkey** will join the **Allies**, if Athens, Bucharest, Sofia, Moscow, Baku and Baghdad are all Allies controlled. It's not enough that a city is neutral.

**Turkey** if invaded by Axis forces, Russia will go on a war footing once an Axis unit enters Turkey.

**Hungary, Romania and Bulgaria** will activate for the Axis in the Fall of 1940. Bulgaria joins later (February-March '41 IIRC) The earliest possible activation for Rumania, Hungary and Bulgaria is turn 20 (September 15, 1940) and will only happen this early if Yugoslavia (for Rumania and Hungary) or Greece (for Bulgaria) is invaded.

**Bulgaria** will immediately join the Axis if Greece is attacked AFTER the 2nd Vienna award has given them Southern Dobruja.

**Romania and Bulgaria** will join the Allies once Bucharest and Sofia, respectively, are captured by the Allies. A side effect of this is that the Germans might get a nasty surprise if they use Bulgarian or Romanian units to garrison cities. These will change side when these countries join the Allies. That's especially bad if the units were garrisoning a port hex.

UK will get **Iceland** on turn 14 or later if Denmark is conquered. So if Denmark is conquered late then Iceland will be "conquered" by UK later. USA will get Iceland regardless in 1941 because that was not an invasion, but an agreement with the Danish ambassador and with Greenland for the USA to take control.

**Iraq** revolts in April 1941.

**Persia** activates if Axis units is in Persian territory. Iraqi partisans don't count when activating Persia.

### 2.2.3 Victory Conditions

Victory conditions for all scenarios (1939, 1940, 1941, 1942, 1943 and 1944) are counted after the first turn of May 1945. Victory conditions are:

Axis Victory	Requirements
Ultimate Axis victory	Axis controls 4 or more capitals (London, Washington, Paris, Moscow, Rome, Berlin)
Strategic Axis victory	Axis controls 3 capitals
Major Axis victory	Axis controls 2 capitals
Minor Axis victory	Axis controls 1 capital
Draw	Axis lose their final capital in May 1945

Allied Victory	Requirements
Ultimate Allied victory	Axis lose final capital in 1943 or earlier
Strategic Allied victory	Axis lose final capital Jan-Jun 1944
Major Allied victory	Axis lose final capital July-Dec 1944
Minor Allied victory	Axis lose their final capital Jan-Apr 1945
Draw	Axis lose their final capital in May 1945

### 2.2.4 Italian Surrender (GS 3.0)

Italy always surrenders when Rome is captured, but Italy can also surrender if a certain number of other cities than the capital are captured. Currently, the number of cities is set at 5 in the *general.txt* file. See the line from *general.txt* below. Also, a list of the Italian cities is found in the *general.txt* file.

Changed the Italian surrender rules where 5 or more surrender cities are now required or the conquest of

Rome. The Italian surrender cities are now all Italian cities (including Cagliari, Reggio and Tirana), Tripoli (indicating loss of Libya) and Tunis (indicating Allied control of Tunisia). This is to discourage a premature Allied invasion of Italy to knock it out in 1939 and more realistically reflect history.

**GS 3.0 change** - Added rail depot value for Italian surrender cities. Current value is 2. That means 2 rail depots is equal to 1 city. Value of 1 is like it was before. Value of 4+ means rail depots won't count.

To be clear -- Italy has to defend Sardinia and Albania, as well as Libya and Tunisia, to keep control of all 5 cities. Sicily and the Italian mainland -- all cities count.

Tunis must be ALLIED controlled to count, neutral Vichy controlled is not enough. Tunis is only counted as an Italian surrender city after USA joins the Allies.

Added Foggia and Trieste to the list of Italian surrender cities. This way all cities and rail depots count against the surrender value. This seems more logical and it's not likely Trieste or Foggia will be captured as the first mainland Italian city. Adding these cities mean that the Axis player can rail units to the Yugoslavian border and also to the river line south east of Rome.

ITALIAN\_CITIES\_NEEDED 5 /\* Number of Italian cities needed to capture to enforce  
surrender \*/

### 2.2.5 Player Handicap System (GS 3.0)

Set up simple player handicap system.

- ◆ Active when playing: HotSeat, PBEM, or TCP/IP games.
- ◆ The advantage buttons on the main menu selection screen will allow one player to receive a handicap of !additional PP's per turn while the opponent plays at the 'Even' at game values.
- ◆ The PP's can be increased due to War Effort. Each side can receive extra PP's per turn depending upon the level selected.
- ◆ The amount is divided amongst the Major powers on the side given the handicap.
- ◆ The level of handicap can be checked in Statistics.

	HANDICAP - AVANTAGE SETTING HOTSEAT, PBEM, TCP/IP Games + PP's / TURN							v3.00
MAJOR COUNTRY	AXIS LARGE	AXIS MODERATE	AXIS MINOR	EVEN	ALLIED MINOR	ALLIED MODERATE	ALLIED LARGE	
Germany	12	6	3	0	0	0	0	
Italy	4	2	1	0	0	0	0	
UK	0	0	0	0	1	2	4	
France - USA	0	0	0	0	1	2	4	
USSR	0	0	0	0	2	4	8	

### 2.2.6 DOW Morale Loss (GS 3.0)

Part of the reality of war was the shock impact of the initial assault by one power against another. Even when expected, the actual attack and the shock that the attacking forces gain needed to be accounted for. Therefore, CEaW-GS has a “demoralization” impact on a countries forces at the onset of a DoW (Declaration of War). The following chart shows the impact of this efficiency loss on countries being attacked. Where not shown, the impact is zero (0).

There is a special 20 points DOW morale loss for all units in France and Air units in the UK, when Belgium is conquered (by either side) in 1 turn. There is a 10% drop if Belgium surrenders in 2 turns - see below. This morale loss represents the end to the "phony war" and the realization on the part of France and Britain that they really are in another shooting war with Germany.

Allies now suffer morale loss if Belgium is taken in 2 turns. If value is set to 0 then you don't get a bonus for a two turn conquest.

MORALE\_LOSS\_TWO\_TURN\_BELGIUM 10 /\* Morale loss to Allied units in France if Belgium falls on the turn after Belgium was attacked \*/

It should also be noted that Poland begins the 1939 scenario neutral. Germany must declare war on Poland before it can enter and / or attack any Polish units. Thus, all Polish units suffer a 10 point morale loss on the turn Germany invades Poland.

Finally, the Russian DoW loss will occur at the classic Barbarossa start date. After that point, the DoW loss will reduce until Russia enters the war via DoW by the Axis or an automatic DoW in the spring of 1942.

Reduced Russian surprise effectiveness loss from 30 to 27, i. e. 3 turns with reduced efficiency regain.

Note the chart below is incorrect for Russian DoW loss.

Country	DoW Efficiency Loss
France	20
USSR	30
Belgium	20
Holland	20
Sweden	10
Yugoslavia	10
Greece	20
Turkey	10
Persia	10
Spain	10
Portugal	10
Ireland	10
Poland	10
Vichy France	20

### 2.2.7 Combat Results - Averaged Calculations

- ◆ Added code so combat results for all battles except strategic bombardment can be based on 1 realization of the battle (i.e., 1 roll) or the average between 2 to 4 battles ( or rolls).
- ◆ This number of battles (or rolls) is controlled by the variable, NUMBER\_OF\_BATTLE\_ROLLS defined in the general.txt file. This means you will rarely get spectacular or terrible results.
- ◆ The default for now, subject to more play testing is 3.
- ◆ Additionally, modified the attacker's predicted losses so that it should be a more accurate predictor than before.

### 2.2.8 Unlock Commonwealth Country Specific Graphics

The following Commonwealth units that are named or renamed will have their own country specific unit graphics. This allows players all over the world to easily customize their British forces by just including

the following “key” in a unit’s name to “unlock” the country’s specific unit graphic.

- ◆ Canada or Canadian
- ◆ Australia or Australian
- ◆ India or Indian
- ◆ New Zealand
- ◆ South Africa or South African
- ◆ Poland or Polish

### 2.2.9 Unit Experience Graphics

NATO images for all countries at zoom level 3 show a number of dots equal to the unit experience level -- when unit images are selected for display.

Feature can be turned off in the new options menu.

### 2.2.10 Land Spotting (GS 3.0)

Changed general.txt so land spotting is now halved for all units during winter and severe winter.

**GS 3.0 change** - Spotting range is updated at beginning of the turn when weather impacts changes to the spotting range.



## 2.3 Game Board Changes

### 2.3.1 Game Settings

Several new game options have been added. These include:

- ◆ “Large” Counters
- ◆ Show entrenchment as dots on the unit counters
- ◆ Show river names

*NOTE: If you wish to get the full use of the Large icons - use must also have selected “Show entrenchment dots”.*





### 2.3.2 Options

Added 18 more options, for a total of 22, which the axis player may select on/off at the start of a game. Also, both players at any time can see which options are selected for the game from the stats menu.

Updated the Options screen to show which options favor which side.

- ◆ The grey/blue color shows those with Axis favor
- ◆ The olive green color shows those with Allied favor
- ◆ The white color shows those with no favor
- ◆ Light grey is used for unselected options



Replaced the game option for game ending in 1945 with halved partisan spawn rate if option not selected. Option is called Normal chance for new partisans. If checked (default) then no chance from now. If unchecked then spawn rate is halved.

### 2.3.3 Options Menu Changes

When you click on a unit the DOW and options buttons transform into paratrooper and elite buttons. One or both these buttons may be grayed if that unit is not eligible for one or both upgrades. If the unit is eligible, then the appropriate button(s) are enabled and can be used to upgrade that unit. For example, you can see that the option menu below indicates that the unit can be upgraded to Russian "Guards" unit -- because the "ELITE" graphic is the Allied green color.



### 2.3.4 Options - Original Advantage Settings

One significant parameter that can be set at the beginning of each game by the Axis player is the “Advantage” in PP, Manpower and general performance. The original CEaW and GS settings are shown below. These are correct though when playing against the AI only in GS 3.0

## At Start 1939 Scenario

### 1939 Axis -Even

Resources							
 Production Stored		35	0	34	15	2	5
 Manpower Trained		875	215	376	319	296	1219
 Oil Reserves		300	300	1011	1011	1011	100
 Railroad Capacity		8	8	9	9	9	0
 War Effort %		110	10	55	40	4	4

### 1939 Axis -Minor

Resources							
 Production Stored		35	0	33	12	2	5
 Manpower Trained		1050	236	357	271	266	1097
 Oil Reserves		300	300	1011	1011	1011	100
 Railroad Capacity		8	8	9	9	9	0
 War Effort %		132	11	52	34	4	3

### 1939 Axis -Moderate

Resources							
 Production Stored		35	0	32	10	2	4
 Manpower Trained		1268	258	339	223	237	975
 Oil Reserves		300	300	1010	1010	1010	100
 Railroad Capacity		8	8	9	9	9	0
 War Effort %		159	12	49	27	3	3

### 1939 Axis -Large

Resources							
 Production Stored		35	0	30	6	1	3
 Manpower Trained		1662	301	301	127	177	853
 Oil Reserves		300	300	1008	1008	1008	100
 Railroad Capacity		8	8	9	9	9	0
 War Effort %		209	13	44	16	2	3

### 2.3.5 Options - Advantage Setting Changes (GS 3.0)

These are correct though when playing against the AI only.

Set up simple player handicap system. These apply when playing HotSeat, PBEM, or TCP/IP games. It does not apply for games with the AI.

The advantage buttons on the main menu selection screen will allow one player to receive a handicap of additional PP's per turn while the opponent plays at the 'Even' at game values. The PP's can be increased due to War Effort. Each side can receive extra PP's per turn depending upon the level selected. Minor will receive 4 PP's, Moderate will receive 8 PP's, and Large will receive 16 PP's.

The amount is divided amongst the Major powers on the side given the handicap.

**Minor bonus** of 4, Germany bonus 3, Italy bonus 1. Allies given handicap, UK bonus 1, France / USA bonus 1, USSR bonus 2.

**Moderate bonus** of 8, Germany 6, Italy 2, Allies given handicap UK 2, France / USA 2, USSR 4.

**Large bonus of 16**, Germany 12, Italy 4, Allies given handicap UK 4, France / USA 4, USSR 8.

You can check this setting later in the game by selecting the "Stats" button:



It will then show the window below where you can see and confirm your current game settings, as noted below:



### 2.3.6 Getting the Font Correct

If you see that your text messages on popup and other windows seems to be clipped off or a bit too large - it is. It is likely your system does not have the correct font and has substituted another such as the font called Impact. This font is a bit wider than then intended font *Haettenschweiler*. *Haettenschweiler* was selected as the main font for CEaW (vanilla game) and it has not been altered.

Unfortunately, *Haettenschweiler* is no longer automatically installed in Windows and MAC. Instead the

font is installed if you have a Microsoft product like MS Office.

If you don't have MS Office, you can still get a nicer looking text if you install *Haettenschweiler*. E. g. you won't see the text in dialog boxes being clipped or long texts truncated.

You can download *Haettenschweiler* here:

[http://www.newfonts.net/index.php?pa=show\\_font&id=105](http://www.newfonts.net/index.php?pa=show_font&id=105)

If you need a font version with Cyrillic letter you can download it here:

[http://www.911fonts.com/font/download\\_H...ar\\_236.htm](http://www.911fonts.com/font/download_H...ar_236.htm)

### 2.3.7 Keyboard and Mouse Commands (GS 3.0)

- a** (for airborne): Will upgrade to a para unit if eligible
- b** (for buy): Will open the purchase units dialog box.
- d** (for deploy): Will open the force pool panel dialog box
- e** (for elite): Will show the elite and para limits for that side
- g** (for guards): Will upgrade to an elite unit if eligible
- i** (for info): Will open the statistics dialog box
- l** (for load): Will allow the unit to load or unload if eligible
- m** (not nemonic): Will allow a surface vessel to conduct ASW sub-sweep if the vessel has not yet moved
- o** (for operate): Will allow the unit to move by rail if eligible
- p** (for purchase): Will open the purchase units dialog box
- q** Will open Declare war dialog box.
- r** (for repair): Will enable the repair icon so you can click on units that can be repaired
- s** (for sentry): Will toggle the unit sentry mode on/off
- t** (for tech): Will open the research panel
- u** (for upgrade): Will enable the upgrade icon so you can click of units that can be upgraded
- w** (for weaher): Will toggle weather overlay on/off
- z** (for zzz): Will toggle the unit sentry mode on/off

**+** = Zoom In

**-** = Zoom Out

**<ESC>** = Pressing the ESC key will now open the options dialog box

**<Enter>** = Chat / Send Chat Message

**<Page Up/Down>** = Scroll through ready units - that is units that can move...

**<Right arrow>** = scroll right

**<Left arrow>** = scroll left

**<Up arrow>** = scroll up

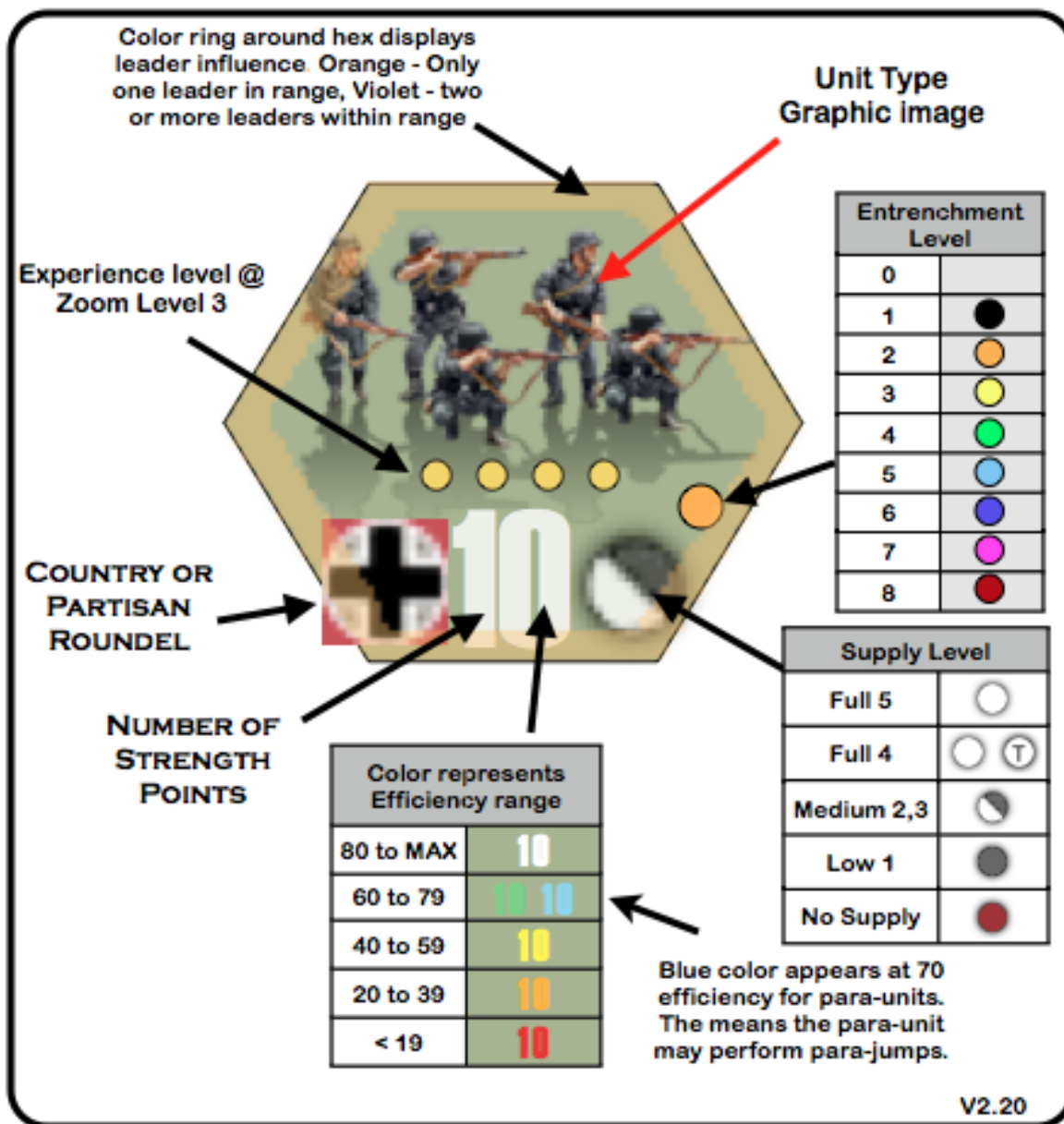
**<Down arrow>** = scroll down

**Mouse Wheel** = Zoom In/Out

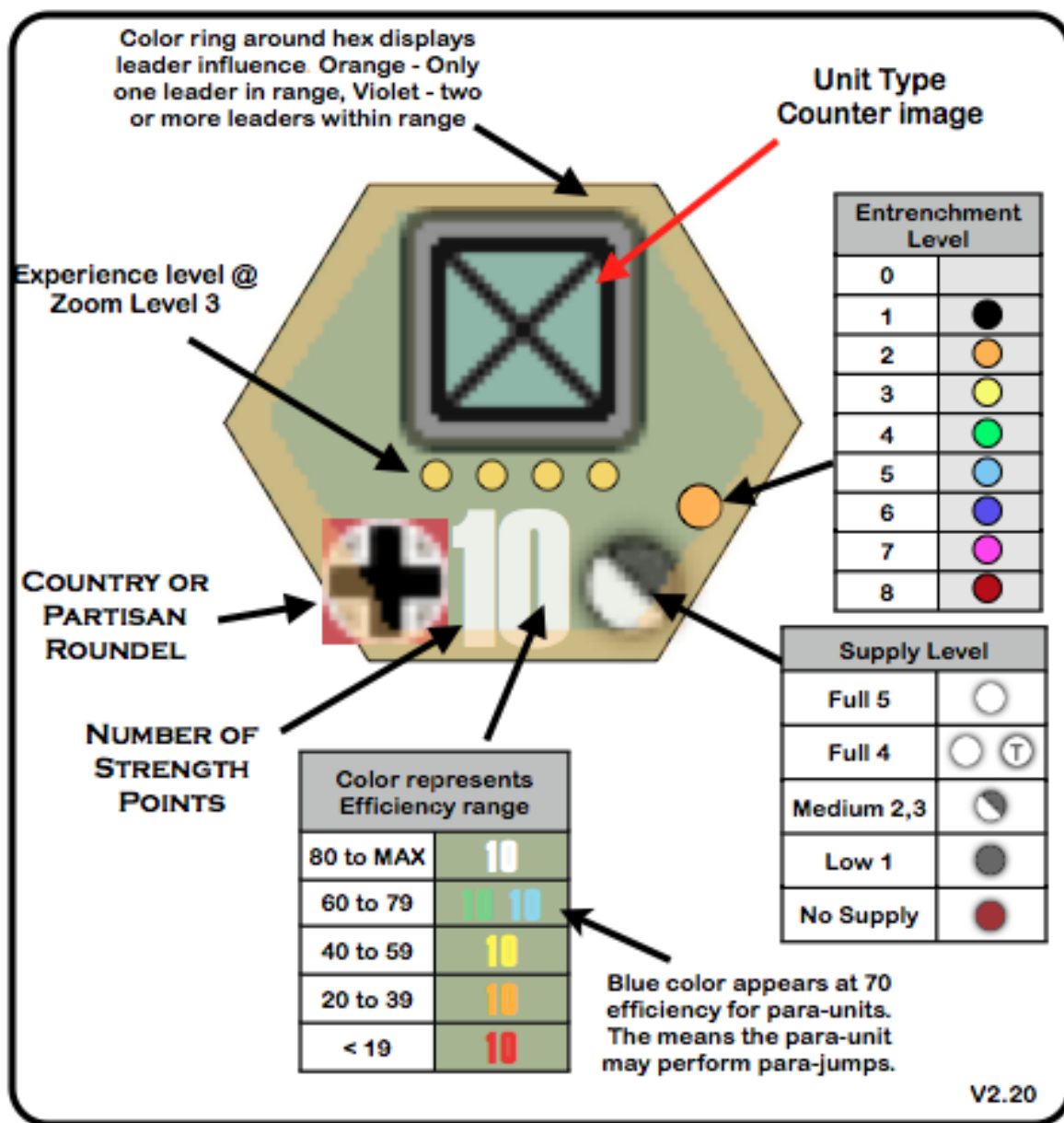
**<Right click>** = on sub will place it in sentry mode (GS 2.2)

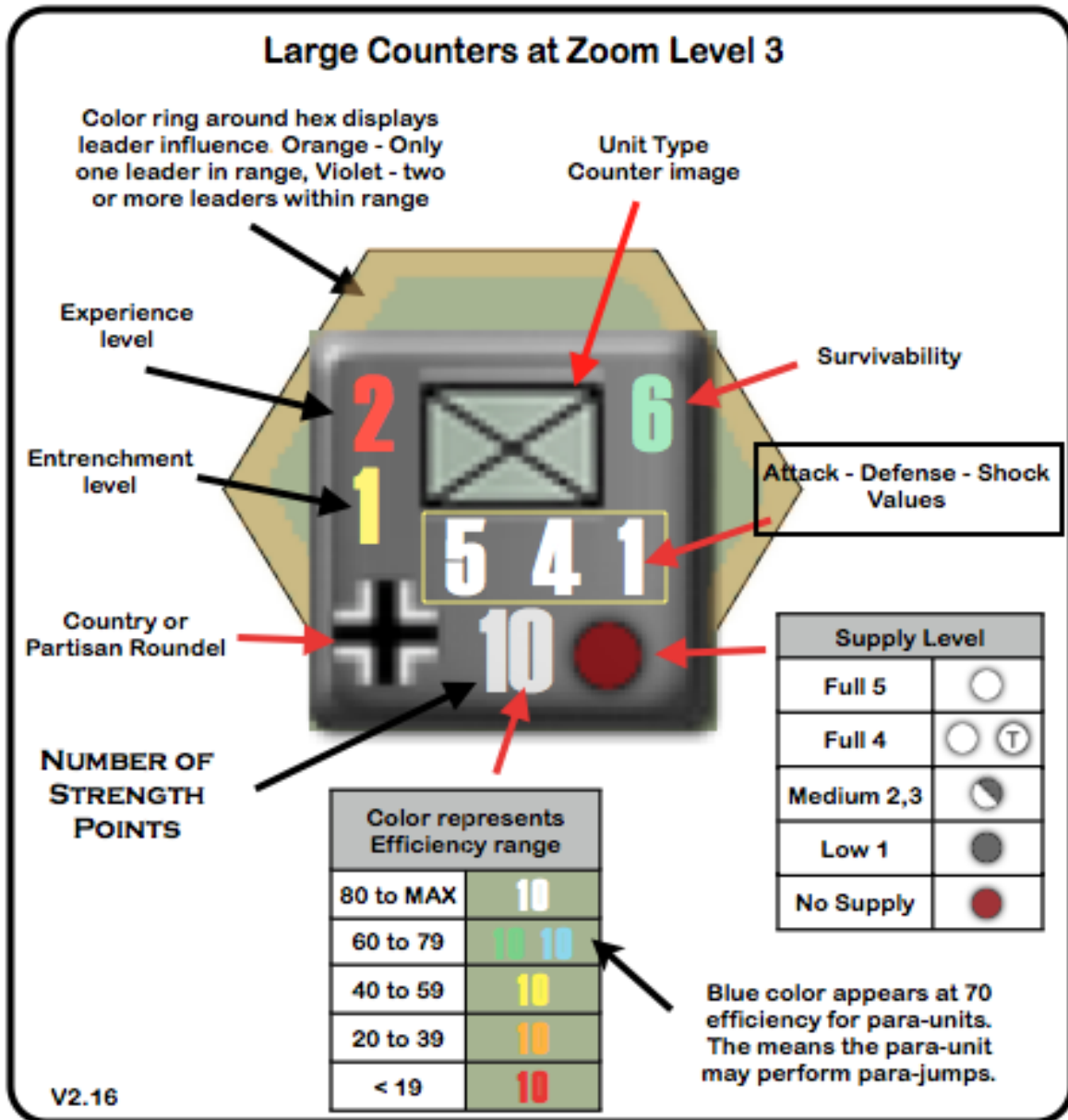


## 2.3.8 Regular Unit Counters









### 2.3.9 Understanding Large Unit Counters

Use the following codes to understand the the numbers on the new unit counters.



#### Land Units

- ◆ Upper left **red** number: **XP level**
- ◆ Left **yellow** number: **Entrenchment level**
- ◆ Upper right **light green** number: **Survivability**
- ◆ Left white number under unit symbol: Ground attack
- ◆ Center white number under unit symbol: Ground defense
- ◆ Right white number under unit symbol: Shock attack
- ◆ Bottom number: Unit strength





### Air Units

- ◆ Upper left **red** number: **XP level**
- ◆ Upper right **light green** number: **Survivability**
- ◆ Left white number under unit symbol: Air combat (fighter), Shock attack (tactical bomber), Strategic attack (strategic bomber)
- ◆ Right white number under unit symbol: Attack range
- ◆ Bottom number: Unit strength



### Battleships, Destroyers and Submarines

- ◆ Upper left **red** number: **XP level**
- ◆ Left white number under unit symbol: Naval combat
- ◆ Center white number under unit symbol: Sub combat
- ◆ Right **light green** number: **Survivability**
- ◆ Bottom number: Unit strength



### Aircraft Carriers

- ◆ Upper left **red** number: **XP level**

- ◆ Upper center white number left of air symbol: Air combat
- ◆ Upper right white number left of air symbol: Attack range
- ◆ Left white number under unit symbol: Naval combat
- ◆ Center white number under unit symbol: Sub combat
- ◆ Right **light green** number: **Survivability**
- ◆ Bottom number: Unit strength



### Amphs and Transports

- ◆ Upper left **red** number: **XP level**
- ◆ Upper right **light green** number: **Survivability**
- ◆ Left white number under unit symbol: Ground attack
- ◆ Center white number under unit symbol: Ground defense
- ◆ Right white number under unit symbol: Shock attack
- ◆ Bottom number: Unit strength

### 2.3.10 Mapboard Changes

Added support in the options so it's possible to show river names, country names and lake names on the map. These images are placed in a new folder called

```
..\Grand Strategy Mod\image\backgroundnames
```

### 2.3.11 Unit Panel

Added color to unit values in the unit panel to visually show when the unit is affected by bad weather. The colors are: Brown (Mud), Light Blue (Winter) and Grey (Severe winter).

Changed the attack range in the unit panel for para units so it shows the paradrop range instead of the fixed 1 for the attack range after landing. That should make it easier to see how far a para unit can

paradrop (including enemy para units).



Starting from left to right above. From the original manual:

**Ground Attack.** How good the unit is at offensive maneuvers.

**Ground Defense.** This is used when defending against a ground unit.

**Shock.** This relates to aerial bombardment, artillery, and speed of attack. It reduces the defender's Effectiveness prior to the Fire Phase.

**Anti-Tank Bonus.** This is used against Armored units. It reduces their Survivability. **Air Attack.** This is used against Air units.

**Naval Attack.** This is used against surface Naval units.

**Sub Attack.** This is used against Subs.

**Strategic Attack.** Used against Production and Resources

**Movement.** This is the number of Movement Points this unit receive each turn when fully supplied.

**Attack Range.** This is the number of hexes away the unit may strike an enemy unit. This applies to Air units only.

**Land Spotting.** How many hexes the unit can see on land to spot enemy units. **Naval Spotting.** How many hexes the unit can spot at sea.

**Quality.** This determines how much Effectiveness the unit loses due to combat, how quickly it regains it afterwards, and its maximum Effectiveness.

**Survivability.** The higher this value, the less casualties a unit takes from combat. **Production Cost.** The number of PP required to build the unit.

**Manpower Cost.** The amount of Manpower used up building the unit.

**Oil Consumption.** How many oil points are used for moving and attacking with this unit. Build Time. How many turns it takes to construct this unit.

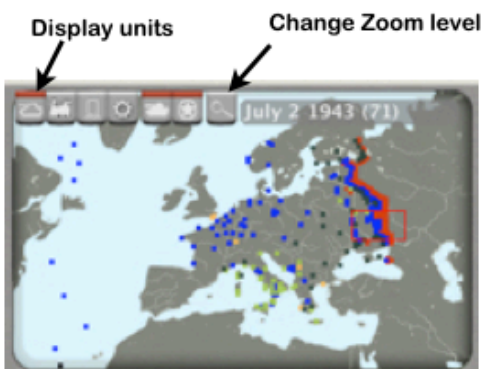
### 2.3.12 Mini-Map Changes

Added the game turn to the mini-map and changed it so each major power has the same color as their NATO symbol except for Germany, which is still blue because the grey/green color is too similar to the background. Made a common color for all axis minors and another common color for the allied minors.

### 2.3.13 Mini-Map Overview



## Mini-map features



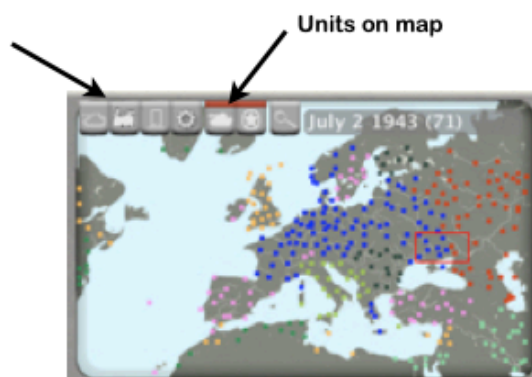
Units



Political Factions



Rail areas



Resources



Weather Zones

### 2.3.14 Color Changes To Mini-Map

Made graphic changes to the mini maps background colors to better bring out the Italian naval units.

Free French units are now shown with blue color in the mini map. Before they were shown with US (or UK) color.

### 2.3.15 Mini-Map Weather Display Button Added

Calm sea: Light blue

Rough sea: Dark blue

Fair weather: Green

Mud weather: Tan

Winter weather: White

Severe Winter weather: Grey



### 2.3.16 Resources Panel Updates

The resources panel has been updated to show that more labs are available to purchase. Lab purchase possibilities are indicated when the "War Effort %" number turns green.

The number behind the text will show the labs possible to build. The number is dependent upon current war effort and max labs per area in the current game year.

Add coloring to the oil value to indicate status:

- ◆ White: 400+
- ◆ Yellow: 250-399
- ◆ Orange: 100-249
- ◆ Red: < 100










Updated manpower so you get red manpower when you're at the worst troop level (below 25% manpower).

Added a tooltip for the *unitpanel* field Effectiveness. If you move the mouse over the number you will see the manpower % and absolute manpower for the country owning the unit. So now you can find out the manpower level of the minor powers.

### 2.3.17 Casualty Panel Information

Conversion Factor

- 5280 men per infantry step
- 52 tanks/AFVs for each armor/mech step
- 26 planes for each air step
- 5 ships for each naval step

Casualties				
				
	394(16)	212(3)	283(0)	105(0)
	109(1)	62(1)	55(1)	122(1)
	462(29)	77(3)	236(2)	226(7)
	201(17)	64(5)	14(1)	37(3)
	64(3)	99(5)	94(0)	87(6)
	499(33)	262(12)	251(0)	10(1)

### 2.3.18 Forces Panel - Intelligence Gathering









Implemented the show units in statistics panel and the tooltip shows the composition. For your “side” the data is accurate. For those of your enemy - they are estimates that can vary from the actual number your enemy has. This reflects the “Fog of War”.

The spread is determined by last digit of techs (different combination for each unit type and country so not a group increases or decreases); 0: -2; 1: -2; 2: -1; 3: -1; 4: 0; 5: 0; 6: 0; 7: +1; 8: +1 and 9: +2.

#### ADDED TO ENHANCE EXPLANATION OF THIS RULE:

The 2 screen captures below were taken from the start of a game (1939) during the German and Allied turns. The counts shown for the Germans and Italians are exact in the first capture, while the second is exact for Allies. The ones shown for opposing forces are estimates. Note the difference in Axis force estimates of French and UK INF - the Axis intelligence believes they the INF numbers are higher than reality. SPECIFICALLY, THE AXIS PANEL SHOWS UK INF AT 29, WHILE IN REALITY ON THE ALLIES PANEL THE REAL NUMBER IS 25.

Enemy estimates can vary +/-2 for truth, (2) they will never go below 0 and (3) (and this is very important), these estimates are fixed for a given turn; but do change randomly from turn to turn (but NOT within a turn). This means that you can track these numbers and get a pretty good estimate of the enemy forces. How you use this intel is up to you.

Forces				
				
	28	5	5	6
	17	2	2	6
	29	3	2	9
	23	2	1	4
	2	2	2	4
	79	10	4	3

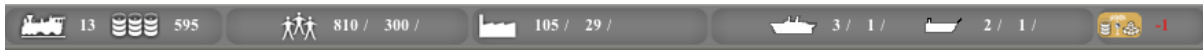
Forces				
				
	28	5	5	6
	17	2	2	6
	25	3	2	9
	19	2	1	4
	2	2	2	4
	79	10	4	3

The following screen cap is from a spreadsheet the developer built to take the raw estimates from each turn and average them out over time. Also, it might be possible using two back to back measurements

from two consecutive turns (remember measurements only change turn to turn) to exactly determine a specific count. For example, maybe you get an estimate of 8 u-boats and then 4 u-boats. Since you know that each estimate has to be within +/- 2 of the truth then you know for use that the German player has exactly 6 u-boats.

Turn	Date	Raw Data																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
------	------	----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

### 2.3.19 Tool Bar Tip



Tool tips relate to the ability to show helpful information within the game GUI.

- ◆ Graphic changes - Along with Rail Capacity, Oil Reserves, Manpower Trained, and Production Stored
- ◆ Transport capacity, Invasion capacity, Axis supply capacity in North Africa.
- ◆ Whenever you move your mouse pointer over the numbers you see helpful information. Oil reserves, Production, etc.
- ◆ Stored numbers will show how many points you received in the turn.
- ◆ This capability has been added to the various lower left panels, purchase, and research. So when purchasing units you can check immediately what you are earning each turn.
- ◆ Supply capacity has been added to the terrain panel.
- ◆ Changed tooltip for the forces and casualties so the armor column shows ARM / MECH Corps.
- ◆ Increased the length of the tooltip to 10-seconds for the forces screen and for the tooltips contained in the ribbon across the top.

### 2.3.20 Technology Upgrade Status

Added tooltip for the unit country owner so it shows the organization upgrade value from tech 0. The country name is colored if upgrades are available that will increase the organization. (1-4 = Bronze, 5-9 = Gold, 10+ = Yellow) . In addition all colored icons and text are hidden unless the unit you click on is on the same side as you. So no more spying upon enemy units for information about their upgrades.

## Unit Panel

**Unit Name** color represents Oil usage increase available

**Colors**

- White - No upgrade
- Bronze - Increase +1
- Gold - Increase +2
- Yellow - Increase +3

Double-click to rename unit

**Country Name** color represents Organization level increase available

**Colors**

- White - No upgrade
- Bronze - Increase = 1 to 4
- Gold - Increase = 5 to 9
- Yellow - Increase = 10+

Rail or Truck supply. One or the other symbol will appear where the unit is located.

**2nd Tactical Group**

**UK**

Strength 10  
Effectiveness 76  
Supply 4  
Movement/Attack Range 20 / 11  
Entrenchment 0

**Unit Attributes**

- White - No upgrade
- Bronze - Increase of +1
- Gold - Increase of +2
- Yellow - Increase of +3

**Movement/Attack Range**

Color represents upgrade increases to Movement and Attack range for Air and CV units. The largest increase from any of those categories will determine the color

Rail or Truck supply. One or the other symbol will appear where the unit is located.

**Weather Effects on Attributes**

**Color - Weather type**

- White - Fair
- Brown - Mud
- Lt. Blue - Winter
- Dk. Gray - Sev Winter

**VII Fliegerkorps**

**German**

Strength 10  
Effectiveness 71  
Supply 4  
Movement/Attack Range 20 / 11  
Entrenchment 0

Note: See Weather Effects on Units Capabilities Chart on explanation of changes to unit capabilities.

V2.12





Tooltip over Country Name will give the current Organization value. The color gives an indication of the upgrade increase.





Tooltip over Unit Name will give the current Oil consumption value. The upgrade will increase according to the color. (e.g. Is Bronze so that means an increase of 1.



Clicking on units ,or initiating Combat will not show potential enemy unit upgrades

### 2.3.21 Combat System Unit Effectiveness

All units have an effectiveness value which can drop due to battles or other actions and renew/increase every turn without activity. Maximum effectiveness is determined by supply, quality, organization technology and leadership from any nearby leader/commander. Effectiveness is how many of your men are battle ready and will fire, for example if it is 50% instead of 100% means you will inflict half damage to your enemy and also means a unit with efficiency 0 -- will not even fight and is harmless in the attack. If you have a high max effectiveness you will regain effectiveness faster.

Effectiveness is shown in a number when you click a unit but also directly on the map. The color of the strength number on the map will show roughly the effectiveness. This will show how a unit is doing and tell you it is about to break (and retreat):

- ◆ White (fresh)

- ◆ Light Green
- ◆ Yellow
- ◆ Orange
- ◆ Red (low morale!)

### 2.3.22 Unit Upgrade Tool Tip More Accurate

Changed the tooltip for unit repairs so you now can see the repair cost and manpower cost with 1 decimal instead of just integer. The game keeps track of these values at double precision (with decimals), but shows them as integers. This gave some strange effects like the game saying the repair cost is 2 PP's and 0 manpower and you see 3 PP's and 1 manpower deducted. Now you will see a repair cost like 2.6 PP's and 0.6 manpower. So now you will be aware that these values are with decimals.

### 2.3.23 Unit Stats

Moved data for number of units and casualties for MECH to the ARM column.

Added tooltip for unitpanel so the number showing the Effectiveness will show the manpower % and manpower for the country that owns the unit. That means you can check a minor power unit to get the manpower % and absolute manpower. That can be handy if you're getting close to 75% and don't want to drop below.

### 2.3.24 Rail Icons for Hexes



Allied (Western) Rail Head



Axis Rail Head



Russian (eastern Allies) Rail Head



Allied (Western) Rail - Standard Gauge



Axis Rail - Standard Gauge



Russian (Eastern Allies) Rail - Broad Gauge

### 2.3.25 Rail Status

Players can see both the rail and truck status for each hex in the hexinfo panel and also the unitpanel.

For each hex an image is drawn in the hexinfo showing the rail gauge for that hex. This way players can click on hexes on the map to find where the rail heads are. For applicable hexes, the corresponding hexinfo panel will show either a broad or standard gauge rail symbol.

The following example of the hexinfo panel shows Western Allies Standard Gauge Rail icon:



### 2.3.26 Enhanced Turn Start Messages (GS 3.0)

Updated message system at start of turn to provide historical images from the war and more space to explain the various events from Combat operations, Political events, and Surrender of nations.

## War event. Turn: 79



Severe winter in USSR. Axis Units lose 10 effectiveness. Allied units lose 0 effectiveness. Max effectiveness for non winterized units temporarily lowered by 15

Initiator

Affects





## War event. Turn: 1

### CASE YELLOW



Axis Declare War on Belgium. Belgium joins the Allies. Belgian forces suffer a surprise attack morale loss of 20

Initiator



Affects



## 2.4 Game Calendars

Turn	Date	Game Event	Historical Comments/Links
1	01-Sep-39	Scenario 1939 starts	Germany invades Poland (Case White).
2	21-Sep-39	Russia will occupy Eastern Poland.	Poland surrenders & Russia occupies Eastern Poland.
3	11-Oct-39		Finnish winter war begins.
4	31-Oct-39		
5	20-Nov-39		
6	10-Dec-39		USSR launches an offensive against Finland. The winter-war begins - November 30, 1939.
7	30-Dec-39		

Turn	Date	Game Event	Historical Comments/Links
8	19-Jan-40		
9	08-Feb-40		
10	28-Feb-40	Scenario 1940 starts	
11	19-Mar-40		Finnish winter-war ends and Karelia in Finland by Russia.
12	08-Apr-40		Germany invades Denmark and Norway (Weserübung). Denmark surrenders.
13	28-Apr-40		Germany invades Benelux countries and France (Case Yellow). Benelux countries surrender.
14	18-May-40	UK invades Iceland if Denmark is conquered.	
15	07-Jun-40	Expected Italian Entry.	Norway surrenders. Estonia, Latvia and Lithuania annexed by USSR.
16	27-Jun-40	Expected Egypt Entry. Baltic States annexed by Russia.	France surrenders. Vichy France created. Bessarabia in Romania annexed by Russia.
17	17-Jul-40		
18	06-Aug-40		Battle of Britain begins. Germans prepares for Sea Lion.
19	26-Aug-40	At the end of turn 19 - Romania cedes Transylvania to Hungary and Southern Dobruja to Bulgaria. Now possible for Romania and Hungary to join the Axis if Yugoslavia is attacked and for Bulgaria to join the Axis if Greece is attacked. Romania mobilizes an additional 2 corps and Hungary an additional 1 corps.	Italy invades Egypt. 2nd Vienna award signed which made Romania cede Transylvania to Hungary and Southern Dobruja to Bulgaria.
20	15-Sep-40		
21	05-Oct-40	Expected Hungarian Entry	
22	25-Oct-40		
23	14-Nov-40	Expected Romanian Entry	
24	04-Dec-40		British offensive towards Libya (Compass).
25	24-Dec-40		



Turn	Date	Game Event	Historical Comments/Links
26	13-Jan-41		
27	02-Feb-41		Tobruk falls to the British.
28	22-Feb-41	Expected Bulgarian Entry	DAK arrives in Lybia.
29	14-Mar-41	Expected Canadian entry.	US lend lease destroyer given to UK.
30	03-Apr-41		US Lend Lease begins.
31	23-Apr-41	USA signs agreement with Danish ambassador to use airbases in Greenland.	Germany invades Greece (Marita) and Yugoslavia (Directive n.25). Pro-Axis coup in Iraq. USA signs an agreement to use Greenland as airbases
32	13-May-41		Yugoslavia and Greece surrender. Tobruk surrounded by Axis forces.
33	02-Jun-41	Expected Iraqi Entry	Germany lands paratroopers on Crete (Merkur). Revolt in Iraq collapses. Allies invade Syria.
34	22-Jun-41		Germany invades USSR (Barbarossa).
35	12-Jul-41	USA takes over defense responsibility in Iceland.	Syria captured by Free French and British forces. Minsk and Riga captured. USA signs an agreement to take over defense duty in Iceland
36	01-Aug-41		
37	21-Aug-41		British and USSR forces occupy Persia.
38	10-Sep-41		Smolensk and Kiev captured. German troops reach Leningrad and siege begins.
39	30-Sep-41		Germans launch offensive against Moscow (Typhoon).
40	20-Oct-41		Kharkov and Odessa captured. Germans reach Sevastopol
41	09-Nov-41	Russia starts mobilization if not at war (Production increased, but not at war).	Britain launches Operation Crusader from Egypt and lifts siege of Tobruk.
42	29-Nov-41	Earliest USA entry date	Rostov captured by the Germans and liberated by the Soviets soon after.
43	19-Dec-41		Japan attacks Pearl Harbor (Z) and USA enters the war. USSR launches major counter-offensive near Moscow. Benghazi captured by the British.

Turn	Date	Game Event	Historical Comments/Links
44	08-Jan-42	Expected USA Entry	Soviet launches offensive (Jupiter) to eliminate the Rhzev salient west of Moscow.
45	28-Jan-42		Rommel launches an offensive from El Agheila and the DAK liberates Bengazi.
46	17-Feb-42		
47	09-Mar-42	Scenario 1942 starts	
48	29-Mar-42		
49	18-Apr-42		
50	08-May-42		
51	28-May-42	Russia DoWs if Axis has not	
52	17-Jun-42		German offensive towards the Caucasus begins (Case Blue). Tobruk liberated by Axis forces.
53	07-Jul-42		Sevastopol and Voronezh captured. Rommel reaches El Alamein
54	27-Jul-42		Rostov captured.
55	16-Aug-42		German troops reach Stalingrad. Krasnodar captured.
56	05-Sep-42		
57	25-Sep-42		
58	15-Oct-42		
59	04-Nov-42	Free French forces land in southern Morocco near Agadir if not already at war.	Allied troops land near Casablanca, Oran and Algiers (Torch). British offensive breaks through at El Alamein (Supercharge).
60	24-Nov-42		Soviet offensives begin. Uranus to encircle the German 6th Army in Stalingrad and Mars to eliminate the Rhzev salient near Moscow.
61	14-Dec-42		Soviet offensive begins (Saturn) to push the Germans out of Caucasus and liberate Krasnodar and Rostov.

Turn	Date	Game Event	Historical Comments/Links
62	03-Jan-43		
63	23-Jan-43		Soviet offensive (Star) to liberate Kharkov and Kursk. Tripoli captured.
64	12-Feb-43		German 6th Army surrenders near Stalingrad.
65	04-Mar-43		German commander Manstein launches an offensive to recapture Kharkov and destroy Soviet Armour spearheads.
66	24-Mar-43		British forces break through the Mareth line i Tunisia.
67	13-Apr-43		
68	03-May-43		Tunis captured.
69	23-May-43		
70	12-Jun-43		
71	02-Jul-43	Scenario 1943 starts	German offensive begins (Citadel) to close the Kursk salient. Allies invade Sicily (Husky).
72	22-Jul-43		Soviet offensive begins (Kutuzov) to liberate Orel. Palermo captured.
73	11-Aug-43	USA signs an agreement with the Portuguese dictator Salazar to use the Azores as an Allied airbase.	Messina captured. Portuguese dictator Salazar allows the Western Allies to use the airbases on Azores
74	31-Aug-43		Kharkov liberated again by Soviet forces.
75	20-Sep-43		Bryansk and Smolensk liberated. Italy surrenders when Taranto is captured. Allies land near Salerno (Avalanche).
76	10-Oct-43		Naples captured.
77	30-Oct-43		Dnepropetrovsk liberated.
78	19-Nov-43		Kiev liberated.
79	09-Dec-43		
80	29-Dec-43		

Turn	Date	Game Event	Historical Comments/Links
81	18-Jan-44		Allies land near Anzio in Italy (Shingle) trying to outflank the Gustav Line.
82	07-Feb-44		The siege of Leningrad finally broken.
83	27-Feb-44		
84	18-Mar-44		
85	07-Apr-44		Odessa liberated.
86	27-Apr-44		Allies finally captures the Gustav Line in Italy in operation Diadem.
87	17-May-44		Sevastopol liberated.
88	06-Jun-44	Scenario 1944 starts	Operation Overlord begins and the Allies land in force in Normandy, France. Rome captured.
89	26-Jun-44		Soviet major offensive (Bagration) against German Army Group Center. Cherbourg liberated.
90	16-Jul-44		Minsk and Vilna liberated. US units break out from Normandy in Operation Cobra.
91	05-Aug-44		Brest-Litovsk liberated. Allies land near Marseilles and Nice in southern France (Anvil).
92	25-Aug-44		Romania surrenders. German troops surrounded near Falaise in France. Antwerp, Brussels and Paris liberated.
93	14-Sep-44		Sofia captured by USSR and Bulgaria changes side to the Allies. Finland signs an armistice with USSR
94	04-Oct-44		Athens and Riga liberated
95	24-Oct-44		Hungary surrenders. Belgrade liberated.
96	13-Nov-44		Strasbourg liberated.
97	03-Dec-44		Germany launches an offensive in the Ardennes (Battle of the Bulge) trying to recapture Liege and Antwerp.
98	23-Dec-44		

Turn	Date	Game Event	Historical Comments/Links
99	12-Jan-45		Warsaw liberated.
100	01-Feb-45		
101	21-Feb-45		Budapest captured. Turkey joins the Allies.
102	13-Mar-45		Konigsberg captured. Allies cross the Rhine near Remagen.
103	02-Apr-45		Cologne, Danzig, Essen and Vienna captured.
104	22-Apr-45		Bremen, Milan, Munich and Venice captured. Soviet troops launch major offensive against Berlin. Allied and Soviet forces meet at Torgau on the Elbe, thus cutting Germany in two.
105	12-May-45		Germany surrenders May 8, 1945. Cologne, Danzig, Essen and Vienna captured.
106	01-Jun-45	Winner Determined	

## 2.5 Turn Checklist

The following checklist is an overview of the items every player should/must/ought to complete each turn, thus, ensuring that they do not miss something that will hurt them during a turn.

*AGAIN - this is just a conceptual framework!!*

We have provided 2 formats:

- ◆ A short/quick list
- ◆ A more detailed expansion

### 2.5.1 Short Turn Checklist

1. Pre-Turn
2. Review Mapboard
3. Analyze your logistics
4. Strategy & Tactics planning
5. Upgrade & reinforcement plan
6. Plan each air/ground battle
7. Plan each naval battle
8. Execute combats
9. Check research (adjust labs and focus if necessary)
10. Conduct upgrades, reinforce units and purchase new units
11. Strategically rail any units that could wait till turns end
12. Embark any units that need to do so.
13. Final checks

### 2.5.2 Detailed Turn Checklist

1. Pre-Turn

- 1.1. BEFORE you load the PBEM file...
- 1.2. Review your strategy - get your big picture in you mind.
- 1.3. Think about the timeline.
  - 1.3.1. Future weather plans.
  - 1.3.2. Possible country activation's.
  - 1.3.3. What has been your PP use plan - build units, tech upgrades, etc.
2. Review Mapboard
  - 2.1. Look at ALL regions! Before you make a single move that erases the trails & attacks!!
  - 2.2. Look for convoy and movement trails. Where the enemy was and went to is important.
  - 2.3. Analyze enemy attacks
    - 2.3.1. Look at what units were attacked
    - 2.3.2. What were the losses and what will need reinforcement?
    - 2.3.3. IMPORTANT can you determine the enemies strategy from their tactics?? Remember strategy is long term. Therefore, if you are coming up with a different enemy strategy each turn -- YOU are confused and the enemy commander is succeeding and will beat you - as Sun Tzu states.
3. Analyze your Logistics
  - 3.1. What is your PP status? Oil status? Manpower?
    - 3.1.1. Current levels?
    - 3.1.2. Resource trend - up, level or down?
  - 3.2. Are technology upgrades available?
  - 3.3. Are technology focus points available?
  - 3.4. Are new units available?
    - 3.4.1. If you have naval units in the queue - clear the port if needed so that next turn the port is free.
  - 3.5. What are your PP spending priorities?
    - 3.5.1. Are there any key units at risk and need reinforcement?

3.5.2. Needed upgrades?

3.5.3. Remember naval unit build times are now much longer!

3.6. Develop a spending plan.

3.7. Develop a unit movement plan. Remember, especially for Axis, to always use rail all movement capability to reduce oil usage.

4. Strategy & Tactics Planning

4.1. Remember that what you do in this turn will be at the tactical level.

4.2. More important -- remember to subordinate tactics to strategy!!

4.3. What is the current environment and JUST LIKE CHESS -- your planning horizon must be many moves ahead. Weather this turn is important, but, even more important -- what weather will be coming that will impact your actions now?

4.3.1. Consider the impact if you transport a unit for an amphibious attack in fair weather but by the time it is ready to land - poor weather has hit!

4.3.2. Consider, especially the Axis in the east, when to halt offensive operations so that you have good defensive positions for expected Russian attacks.

4.3.3. If you have a pending invasion in your future strategy that is a few turns out - are you saving PP for an over capacity transport and landing requirements?

4.4. Determine what are the priority activities/battles this turn?

4.5. Develop tactical battle plan, that is, the list of battles to fight.

4.5.1. Think about how the enemy commander can counter your moves.

4.5.2. Can they envelope and exposed flank?

4.5.3. Cut off or surround your forces?

5. Upgrade & Reinforcement Plan

5.1. What is the PP available?

5.2. How much do you need for critical reinforcements?

5.3. Examine your lab/tech information - will an unit upgrade be available soon? Should you save points for that vs. buying a new unit now.

6. Plan each air/ground battle!

6.1. Important -- closely examine each enemy unit to be attacked. Remember that experience

level, entrenchment and other factors will boost an enemy units ability to defend!

6.2. Note terrain, efficiency, weather.

6.3. Plan in your mind each battle

6.4. Each battle/unit attacked

6.4.1. What are the Air & Naval units available for support?

6.4.2. Is an enemy air suppression plan needed? For example, suppress enemy FTR prior to airborne landings.

6.4.3. Can the enemy unit retreat? Do you want to allow them the option to retreat?

6.4.4. Decide when an attacking unit should or should not advance if the enemy retreats.

6.4.5. General concept is to hit first with supporting units (air & naval) if available to reduce unit efficiency and then hit with ground units for destruction.

6.5. Select units for that will attack

6.5.1. Remember that terrain, location and weather impact units abilities differently.

6.5.2. INF units tend attack cities more effectively

6.5.3. INF are better to attack enemy units in mountains, rough terrain, swamps and woods

6.6. Determine order of attack.

6.6.1. Plan for un-intended battle results - good or bad.

6.6.2. Remember - lower efficiency then go for destruction

7. Plan each naval battle!

7.1. Things to remember

7.1.1. Any of your naval submarine units that made attacks on the previous turn are "visible" to opposing forces

7.1.2. Naval repair at sea is possible for submarines/u-boats, but limited to a 1 step increase. Put into port if you need a fast repair if severely damaged.

7.1.3. Remember technical upgrade is not available at sea

8. Execute

8.1. The following moves are not in any order.



- 8.2. Conduct combat operations.
- 8.3. Move forces.
- 8.4. Purchase technology, new units, reinforcements and technology upgrades.
- 9. Final Checks
  - 9.1. Make sure you have used all your rail capacity -- especially if you are the Axis.
  - 9.2. Remember to move naval units!
    - 9.2.1. Subs - remember if they had a battle the previous turn - they are still visible. So move to hide them!
  - 9.3. Make sure you have used all your lab focus points - if that is in your plan.
  - 9.4. Did you conduct all the selected battles?
  - 9.5. Did you spend your PP as planned?
  - 9.6. Did you get the labs and/or technology focus points allocated as needed?

## 2.6 Text “.txt” Files

### 2.6.1 General.txt Overview

The general.txt file in CEaW - GS has been greatly expanded to include many more game variables than the file for the standard game. This gives players who are so inclined a lot of flexibility to modify these variables and tweak game play more to their liking.

You can see the detailed breakout in a later section of this manual.

### 2.6.2 General.txt Security

However; with this flexibility comes the risk that two players in good faith are playing the game with different game variable values. CEaW - GS includes a security feature that will verify for saved games that the values in use when the game was saved match the values in the general.txt file when the game is loaded. This check is performed for all saved games (i.e., PBEM, Hotseat, vs AI, TCP/IP) and if it fails you'll one of the following.

You will be asked whether or not you wish to continue the game and reset game variables to those values in your general.txt file. If you click on the "X", the loading of the game will be aborted and you will be taken back to the choose game menu. If you then click on "✓" you will then see the following screen.

This security feature will also guard against an unscrupulous player who changes values in their version of the general.txt file in order to gain an advantage.

If you unexpectedly receive an alert when loading a game (i.e., no agreed upon changes were made to the general.txt file), it would be straightforward to resolve whether this is an innocent mistake, should you have any doubts.

Abort loading the game, notify your opponent of the check alert, request a copy of their general.txt file, rename your copy (e.g., 0.general.txt) and load the game with your opponent's version. If you still get the alert then this tells you that your opponent didn't send you the version that they played their last turn with. In that case, you'd need to keep iterating with your opponent until you do get the correct version that lets you load without alert or until they stop responding to you. If it does load without the alert, which tells you that was the version they used, then you would quit the game (NOT end your turn) and compare the two versions. Once you identify the differences, you and your opponent can decide either to restart your game or continue with one mutually agreed version.

### 2.6.3 General.txt North Africa Supply Rules

Removed hard coded North Africa supply rules ports and placed them in the general.txt file. No new ports were added but added slots to include additional ports. It's possible to have up to 5 Libyan ports & 12 African ports. Malta & Gibraltar impact on North Africa Supply added to the file.

Added values in general.txt where players can decide the state of each of the countries in Africa and the Middle East.

0 = country never affected by Axis Med supply,  
1 = country always affected by Axis Med supply &  
2 = country affected unless Ankara is Axis controlled

The following values were set for each country:

0: Turkey,  
1: Free France, Vichy France, Libya and Egypt and  
2: Syria, Iraq and Persia

So now units in Syria, Iraq and Persia won't be affected by Med supply if the Axis have control of Turkey. This simulates that the Axis can use the Turkish rail network to send supply to the nearest countries. Note that Egypt, Libya, Vichy France and Free France were NOT added because they're further away from Turkey.

### 2.6.4 settings.txt File Name Change

Changed the name of the settings file from settings.txt to gs2\_settings.txt. This new settings file contains an extra entry for whether or not river/country/lake names are shown.

## Chapter 3 Ground Warfare



*Never do an enemy a small injury*

*Niccolo Machiavelli*

## 3.1 Chapter TOC

<u>3.2 - General Units</u>	<u>81</u>
<u>3.2.1 - Unit Entrenchment</u>	<u>81</u>
<u>3.2.2 - Attack After Movements</u>	<u>81</u>
<u>3.2.3 - Garrisons as Headquarter Units</u>	<u>81</u>
<u>3.2.4 - Ground Unit Position Swap</u>	<u>81</u>
<u>3.2.5 - Unit Naming Conventions</u>	<u>81</u>
<u>3.2.6 - German Volunteers</u>	<u>82</u>
<u>3.2.7 - German Volunteer Country of Origin</u>	<u>82</u>
<u>3.2.8 - Finnish Unit Effectiveness</u>	<u>83</u>
<u>3.3 - Elite Units</u>	<u>84</u>
<u>3.3.1 - Elite Unit Overview</u>	<u>84</u>
<u>3.3.2 - Elite Unit Renaming - NOT!!</u>	<u>85</u>
<u>3.3.3 - German Elite Units</u>	<u>85</u>
<u>3.3.4 - Russian Elite Units</u>	<u>86</u>
<u>3.4 - Airborne Units and Airdrops</u>	<u>88</u>
<u>3.4.1 - Creating Airborne Units</u>	<u>89</u>
<u>3.4.2 - Initial German Airborne Unit</u>	<u>89</u>
<u>3.4.3 - Number of Airborne Units</u>	<u>89</u>
<u>3.4.4 - Commonwealth Paratroopers</u>	<u>90</u>
<u>3.4.5 - Conditions Required for Airborne Drop</u>	<u>90</u>
<u>3.4.6 - Airborne Drops and Movement</u>	<u>90</u>
<u>3.4.7 - Paradrop Range</u>	<u>91</u>
<u>3.4.8 - Where Can you Land?</u>	<u>91</u>
<u>3.4.9 - Airborne Units Interception</u>	<u>92</u>

<u>3.4.10 - Why Use Airborne Units?</u>	<u>92</u>
<u>3.5 - Partisans</u>	<u>94</u>
<u>3.5.1 - Partisan Overview</u>	<u>95</u>
<u>3.5.2 - Partisan Spawning</u>	<u>95</u>
<u>3.5.3 - Partisan Spawn Rate Updated</u>	<u>96</u>
<u>3.5.4 - Partisan Spawn Messaging</u>	<u>97</u>
<u>3.5.5 - Partisan Ownership of Hexes</u>	<u>98</u>

## 3.2 General Units

*Weapons are an important factor in war, but not the decisive one; it is man and not materials that counts.*

Chairman Mao Zedong (Tse-tung)

### 3.2.1 Unit Entrenchment

Entrenchment level will not drop lower than 1 if a unit is only attacked by airstrike or naval bombardment. This is dependent on the game settings chosen in the new options menu at the start of the game. Default is ON. This option is called Entrenchment never 0.

### 3.2.2 Attack After Movements

A ground unit can't attack if the unit ends movement adjacent to a unit unspotted before it commences its movement.' (you can have a situation where you can see the unit at the start, but it retreats into FOW at which point you can't move and attack it even though you had spotted it at the start of your turn).

### 3.2.3 Garrisons as Headquarter Units

A leader attached to a garrison increases the movement of that garrison by 1 as long as the leader is attached.

### 3.2.4 Ground Unit Position Swap

Added the functionality where units of the same type can swap positions. That is, all AIR and GROUND units can swap with each other while naval units can only swap with each other. This functionality, which is defaulted ON, is controlled through a flag in the general.txt file. When units swap positions you lose one entrenchment level, burn oil as normal movement and drop morale as normal movement.

Set a limit so unit swapping will not drop the entrenchment level below 1 (number can be altered).

Player will also get a confirmation that asks, "Swap positions of units?".

### 3.2.5 Unit Naming Conventions

Changed how US and UK corps units are automatically named so that they are now named I Corps, II Mech Corps, III Armoured Corps etc. instead of 1st Infantry, 2nd Mech, 3rd Armoured etc. UK minors will still use 1st Australian, 2nd Canadian etc. When you build new units you will get the new names.

Changed how US air units are called Wing instead of Group. Changed name for tac bombers so they're

called Tactical Wing / Tactical Group instead of same as for strategic bomber (Bomber Wing / Bomber Group). New units will get these names by default.

Changed all scenarios so these new names are used for UK and US units.

Fixed name inconsistencies for UK naval units. E. g. the 1st Battle Sqn name was moved from Glasgow to Alexandria since the fleet was in the Med. Renamed the 4th Battle Sqn to the Battle Cruiser Sqn and so on.

Renamed the destroyer unit spawning in Malta to the Royal Australian Navy. Australia sent most of its navy to the Med early in the war before Japan went towards Singapore. These ships were sent to Malta, but evacuated to Egypt in the Summer of 1940 after Italy joined the Axis. This is usually what happens to this unit anyway.

Garrisons now also get auto-naming of units.

Changed the names of a number for French units for generic names to historical ones.

Free French units spawned in cities were tried to be named as French. Removed the "e" in the number because it showed like 6th Garrison. Now it will show 6th Garrison.

Change the names of major power air units and the way that these names are automatically to reflect more historical names based on GS air unit sizes.

Newly built Russian mech and tank units are now named Mech Army and Tank Army instead of Mech Corps and Tank Corps. Updated some scenarios to reflect these changes.

### 3.2.6 German Volunteers

There was a history of units composed of foreign volunteers that fought for Germany during WW-II.

Germany will get 1 free garrison in 1940, 1941, 1942 and 1944 and a mechanized corps in 1943. The mechanized corps consists of the:

- ◆ [SS Wiking panzergrenadier](#) division
- ◆ [SS Nordland panzergrenadier](#) division, the Estonian infantry division
- ◆ Some support troops from the Nordic countries.

The corps was actually called [III Germanic panzer corps](#), but mechanized corps is a better unit since the divisions were mechanized and not pure armor.

Updated name of Wiking and Nordland to SS Wiking and Nordland (volunteer in 1943).

### 3.2.7 German Volunteer Country of Origin

Standarte NW = Holland



Spanish Blue = Spain

1st Croatian = Croatia

SS Wiking and Nordland = Norway

Charlemagne = France

### 3.2.8 Finnish Unit Effectiveness

Altered unit.class so Finnish ground units get a bonus from being in home territory. Thus, Finnish ground units will fight as well as regular German ground units, instead of as an Axis Minor Power. Note, Finnish air units do not get the bonus. Lastly, Finnish ground units revert to Axis Minor Power fighting ability when out of Finland.

### 3.3 Elite Units



The wreckage of the British transport column, and an anti-tank gun, that Wittmann engaged.

*Veni, vidi, vici*

*I came, I saw, I conquered*

*Julius Caesar*

#### 3.3.1 Elite Unit Overview

German SS units were “elite” because they were both composed by more fanatical troops than regular army units and because they got priority on equipment, manpower and training. It was often the later that contributed to their “eliteness”.

Russian “Guards” units were the elite units in the Russian army. They achieved their elite status through extraordinary performance on the battlefield.

### Elite Unit Specific Graphics

- ◆ German units with named "SS" trigger German SS NATO image.
- ◆ Soviet units with names including "Guards", "GDS" or "Gds" will trigger Soviet Guards NATO images.
- ◆ Soviet units are automatically made Guards when they get 35 or more of XP. This is ON by default.
- ◆ If you turn on Purchase Russian Guards in the game rules then Russia will not get automatic promotions.

### 3.3.2 Elite Unit Renaming - NOT!!

Updated GS so it's not possible to rename existing paratroopers, SS and Guards units and also added error messages to all the message files.

This will prevent a player of being able to demoting elite units in play and being able to immediately freeing up slots and being able to build new elite units of that type.

This was put in place to prevent the "gamey" tactic, for example, of an axis player dropping a paratrooper division in England, renaming it and then being able to build a new paratrooper division that it could drop in a turn or two. Not that any player would do that, but now once promoted to an elite unit that unit remains as such and the slot for the unit type remains filled until that unit is destroyed.

### 3.3.3 German Elite Units



German units can be "upgraded" to SS units by selecting the unit and then clicking on the "Elite" icon on the lower right of the gameboard.

Additional points for German SS units: renaming them to include SS, with a space either before or after, in their new name.

- ◆ Upgrade follows the rules of a technology upgrade; unit cannot be adjacent to an enemy unit and will not be able to move that turn.
- ◆ The selected unit will be put into new unit queue for 1 turn as they are converted to SS status.
- ◆ Upgrade cost is 25 PP for armor, mechanized and infantry corps and 20 PP garrisons and is quite a bit more than a technology upgrade.

- ◆ Upgrade results in +1 in attack, defense, shock, quality & survivability.
- ◆ Image or counter for the upgraded unit will change to a SS version.
- ◆ A German unit must be in supply level 4 (or higher) to be converted, or promoted, to an elite unit.
- ◆ The 1942, 1943 and 1944 scenarios were slightly updated by adding some, but not many, Guards and SS units.

There is a maximum limit on SS units in play at any one time:

SS Units	1939	1940	1941	1942	1943	1944	1945
Germany			1	2	5	8	10

### 3.3.4 Russian Elite Units



Russian units that achieve an experience level of 35, or higher, are promoted to a “Guards” unit. This is unless the game level option to purchase or promote Russian Guards units is turned on. By default -- it is off, therefore,

- ◆ Once promoted they will never lose that status unless destroyed.
- ◆ There is no cost for this promotion; however, Guards units do get an increase of 1 in attack, defense, shock, quality and survivability.
- ◆ There is a limit to the number of Guards units, as noted below in the chart. When reaching this limit no more units can be converted until the limit increases or a Guards unit is destroyed.

Using manual promotion -- similar to the way German SS units are created:

- ◆ The selected unit will be put into new unit queue for 1 turn as they are converted to Guards status
- ◆ Units (if possible to purchase) will go to the production pool for 1 turn being in training (value can be changed from 0 and above in general.txt).
- ◆ Also, the image or counter for the promoted unit will change to a Guards version of the image or counter.
- ◆ A Russian unit must be in supply level 4 (or higher) to be converted, or promoted, to an elite unit.

- ◆ There is a limit to the number of Guards units, as noted below in the chart. When reaching this limit no more units can be converted until the limit increases or a Guards unit is destroyed.

Limit on the maximum number of Guards units in play at any one time:

Guard Units	1939	1940	1941	1942	1943	1944	1945
Russia			2	4	7	10	15

The 1942, 1943 and 1944 scenarios were slightly updated by adding some, but not many, Guards and SS units.

### 3.4 Airborne Units and Airdrops



*ABOVE: 101st Airborne Division troops watch as C-47s drop supplies over Bastogne, 26 December 1944*

*Read "[Airborne Operations During WWII](#)"*

*The most famous quote of the battle [Battle of the Bulge] came from the 101st's acting commander, Brigadier General McAuliffe. When confronted with a written request from German General Luttwitz for surrender of Bastogne, he replied "NUTS!" (the commander of the 327th GTR interpreted it to the German truce party as "Go to hell!").*

### 3.4.1 Creating Airborne Units



Airborne units are a subset of the elite units but have an advantage that they can drop by air behind enemy lines or over water into empty hexes.

- ◆ Airborne units can only be “built” by converting garrisons into airborne divisions by default. This can be changed in the new options menu to allow for Airborne Corps (INF) size units. By default INF conversion is OFF.
- ◆ Airborne units must be in their “home” country to be converted to airborne.
- ◆ It costs 15 PP’s to convert a garrison into an airborne division.
- ◆ This conversion can only be done when the garrison is in supply level 5.
- ◆ The unit will disappear and return as a airborne 5 turns later.

### 3.4.2 Initial German Airborne Unit

The Germans are allowed to build a paratrooper in 1939 so they can have it ready for Case Yellow. Liege can’t be changed to a city from a fortress until 1940 because the paratrooper can’t be released out of the force pool until the fair weather in 1939 is over.

### 3.4.3 Number of Airborne Units

The maximum number of airborne divisions is a function of year and country. Only major powers can build airborne divisions. The maximum number of airborne units by major power for each year is shown below.

Major Power	1939	1940	1941	1942	1943	1944	1945
Germany	1	1	2	3	4	5	5
Italy				1	2	2	2
UK				1	2	3	3
USA				2	3	4	5
Russia			1	2	3	4	5

Major powers are allowed to replace some airborne unit losses. There is a build offset that is added to the maximum airborne unit limit. So USA and Russia have a build limit 1 higher than shown in the allowed para build for a particular year.

### 3.4.4 Commonwealth Paratroopers

Added paratrooper images for Commonwealth countries so that if you change an airborne division to Polish, for example, you get a Polish graphic.

### 3.4.5 Conditions Required for Airborne Drop

Paradrops of units who are:

- ◆ Adjacent to a city, rail head or friendly air unit (i.e. air base).
- ◆ IMPORTANT - the air unit **must be ACTIVE**, i.e. The air unit has not been repaired, upgraded, moved, attacked or provided air cover for a separate TAC/STR attack.
- ◆ 70+ efficiency
- ◆ Fair weather conditions
- ◆ NOT adjacent to an enemy unit

The cost of the drop is:

- ◆ 10 PP's
- ◆ 4 oil points
- ◆ Post-drop - the unit efficiency will be a max of 60 - likely lower. Thus, the airborne unit will not be immediately eligible for another drop.

### 3.4.6 Airborne Drops and Movement

Airborne divisions, in addition to moving like regular infantry, can also drop into unoccupied hexes. These drop hexes are indicated by a parachute symbols and this distinguishes them from the hexes that it can move to via normal movement. Paradrops cost 10 PP's each and consume 4 oil points. They are subject interception by enemy fighters (so you better either have suppressed those fighters or have fighter escort to the drop hex available), subject to loss from flak form the landing hex and subject to random loss (0 to 3-steps) from the drop. So a drop into an unoccupied city or resource hex would subject the airborne division to loss from flak and the random loss due to an airdrop.

Without fighter cover this would add loss from enemy fighter interception and would be a suicide drop for the division.

Airborne divisions cannot move but can attack and advance if successful on the turn they drop. However; these units while elite are divisions with lighter weapons than their infantry counterpart and cannot dislodge full strength enemy corps. Compared to garrisons, airborne divisions have



- ◆ +1 ground attack
- ◆ +2 ground defense
- ◆ -1 shock
- ◆ +2 quality
- ◆ +2 survivability
- ◆ -1 anti-tank
- ◆ -1 air defense and
- ◆ Movement of 3 (which is between 2 for a garrison and 4 for an infantry corps) and
- ◆ Minimum of supply level 1.

Corner Case: A commander can be placed on a Para-unit which just did a jump, i.e. after its movement.

### 3.4.7 Paradrop Range

Paras now have the same range as a fighter. When fighter range increases by technology upgrade, it also increases para range.

### 3.4.8 Where Can you Land?

When you click on an airborne unit that any hex that it cannot reach by normal movement is flagged as a dropped hex. Where can you drop:

- ◆ Para units can't paradrop into mountain, swamp or dune hexes.
- ◆ Air units can't base in these hex types either.

Please note that if you want to rail the unit to the destination hex than can also be para-dropped to then you need to click on the rail button to see the rail destination hexes.



### 3.4.9 Airborne Units Interception

Players need to carefully consider the conditions for each para drop. The Para can be severely weakened on landing. Consider that the Para will lose between 0 and 3 steps for the landing and could also lose steps from interception and flak. It is quite common for a Para drop that encounters all three to land with a surviving step strength of 2,3, or 4! Such a Para will not be difficult for enemy units to destroy as it will likely have a ground defense of 5 in 1944 (a para corps a defense of 6).

### 3.4.10 Why Use Airborne Units?

We have to ask ourselves WHY would players want to use para units? Four reasons for using them:

- ◆ First, Axis players can use paratroops to capture cities from the Russians behind the front line to speed up the invasion. This will result in faster rail gauge conversion and aid the Axis resupply in the east.
- ◆ Second, to quickly reach areas at another continent. E. g. you can paradrop units to Norway or Crete and bypass an Allied naval blockade. With air bombardment you can destroy the defender in Oslo or Heraklion and use the para to capture the city. So paras can be used to avoid dangerous naval operations, or support these naval operations.
- ◆ A third reason to use paratroopers is to use them like in Overlord. You can drop them behind the hexes you intend to land in to prevent enemy units from killing your units at the beachheads. You sacrifice your paras to have a chance to break out from the beach head next turn. This is probably the most important reason to use paras and I think it will add to game playability to actually plan your invasions with paratroops as well. You can e. g. use them in operations like Market Garden to capture rear empty cities or choke points hoping that your land offensive will

get to the area in time before the enemy can dislodge the para blocking the path for the enemy units.

- ◆ The fourth reason to buy them is to bump garrisons and to some extent corps units to have a good defensive ground unit. Germany had many para units, but most of them were grounded. It meant they had the training as elite units, but lacked the paradrop capability. Many of these units were used to hold important cities like Brest.

Late in the war the garrisons are virtually useless because they rarely get tech upgrades. So enemy corps or armor units can almost destroy a garrison with one attack. Garrisons upgraded to paras, however, can be a good defensive unit to have.



*German Airborne Recoilless Rifle*

### 3.5 Partisans



*Partisan supreme commander, Marshal Josip Broz Tito reviewing the 1st Proletarian Brigade.*

### 3.5.1 Partisan Overview

The partisan system has been completely revamped for Grand Strategy. They are no longer restricted to Russia; they can appear in any non-neutral country, even ones that have already been conquered. This means you will see partisans appearing in France, Yugoslavia, and Greece throughout the war. Partisans can also spawn directly in cities and resource hexes. This provides an incentive to garrison important cities in conquered areas. Partisans are far more likely, however, to spawn in non-clear terrain than either clear terrain or cities. This has been further modified - see "[Partisan Spawn rate Updated](#)" section.

All of this seems to hurt the Axis, but there are several changes that benefit them as well. Most of the time they will not appear as full-strength units. For major countries like France and Russia, partisan size can range from 3 steps to 10 steps. In large minor countries, the range is 1 to 10. Finally, in small minor countries, partisans can spawn at a maximum size of 5 steps. So although partisans can now spawn all across Europe, the tradeoff is that they are now much less effective in combat.

Several other units will spawn during the game when/if certain conditions are met. On the first turn of January each year, active minor powers will receive a reinforcement units at 3 steps near their capital. Initially garrisons, later INF and even MECH units are spawned. The UK fighter in Malta will spawn at 5 steps instead of 10. The Free French will get a BB at 5 steps when they join the war. Likewise, Vichy France will receive BBs at 4 and 7 steps upon entering the conflict.

Partisans can pop up in the most interesting places. Consider the case where a Greek partisan unit formed on one of the Greek Islands!!

Added code so partisans are now named with the country they were created in, like Yugoslavian Partisan instead of just Partisan.

Added code so partisan images check for the partisan country and will therefore keep the images when the partisan unit crosses the border. So a Yugoslavian partisan moving into e. g. Hungary will keep the Yugoslavian image.

### 3.5.2 Partisan Spawning

Here is the list of the partisan type of each country:

Major partisans (strength 4-10):

- ◆ GERMANY
- ◆ UK
- ◆ FRANCE
- ◆ USA
- ◆ RUSSIA

Standard partisans (strength 1-10):

- ◆ ITALY
- ◆ SWEDEN
- ◆ FINLAND
- ◆ HUNGARY



- ◆ ROMANIA
- ◆ BULGARIA
- ◆ YUGOSLAVIA
- ◆ GREECE
- ◆ TURKEY
- ◆ PERSIA
- ◆ SPAIN
- ◆ POLAND
- ◆ SWITZERLAND
- ◆ IRELAND
- ◆ PORTUGAL
- ◆ CANADA

Minor partisans (strength 1-5):

- ◆ HOLLAND
- ◆ BELGIUM
- ◆ DENMARK
- ◆ NORWAY
- ◆ IRAQ
- ◆ VICHY\_FRANCE
- ◆ EGYPT

These countries can even spawn partisans after surrender:

- ◆ GERMANY
- ◆ UK
- ◆ FRANCE
- ◆ USA
- ◆ RUSSIA
- ◆ SWEDEN
- ◆ YUGOSLAVIA
- ◆ TURKEY
- ◆ GREECE
- ◆ SPAIN
- ◆ PORTUGAL
- ◆ POLAND
- ◆ SWITZERLAND
- ◆ IRELAND

### 3.5.3 Partisan Spawn Rate Updated

Significantly increase the chance for partisans to spawn in empty capital, city, fortress, mine and oilfield hexes in conquered German, UK, US and Russian core hexes. The rate is set to a multiplier of 50. This means that in 1942 there is a 4% chance per turn that a partisan will spawn in such cities. In the 1942 scenario the Axis controls about 20 such resources and if all of them are empty then the spawn rate is about 1 partisan per turn. In 1941 the spawn rate is a bit less.

Rail depots do NOT have increased spawn rate for partisans in e. g. Russia. Therefore, more garrisons for the Axis are not required. There is no production in the rail depots and the main loss for the Axis losing a rail depot to partisans is that you can't rail there until you recapture the hex.

This simulates the partisans cutting rail lines to disrupt communications.

### 3.5.4 Partisan Spawn Messaging

Messages about new partisans are combined into one message showing the info like this:

New partisans in France: 2. Russia: 1. Yugoslavia: 2



*An American officer and a French partisan crouch behind an auto during a street fight in a French city, ca. 1944.*

### 3.5.5 Partisan Ownership of Hexes

Hexes captured by Allied Yugoslavian, Bulgarian, Hungarian, Romanian or Finnish units will now be controlled by Russia if outside the home country. Any hexes captured inside the home country will become controlled by the core owner of the hex unless the core owner is conquered. Then the controlling country will be Russia.

Allied Greece will now capture hexes for UK (if not conquered) unless within Greek home territory. Then all hexes captured will become Greek controlled.



## Chapter 4 Naval Warfare



*A ship in port is safe, but that's not what ships are built for.*

*Rear Admiral Grace Hopper*

## 4.1 Chapter TOC

<u>4.2 - Submarines</u>	<u>102</u>
<u>4.2.1 - Bit of History (GS 3.0)</u>	<u>102</u>
<u>4.2.2 - Submarine Movement</u>	<u>103</u>
<u>4.2.3 - Submarine Warfare (GS 3.0)</u>	<u>103</u>
<u>4.2.4 - Submarine Visibility</u>	<u>104</u>
<u>4.2.5 - Sub Repair While at Sea</u>	<u>105</u>
<u>4.2.6 - Submarine Effectiveness Against Convoys</u>	<u>105</u>
<u>4.2.7 - Subs "Sentry" Mode (GS 3.0)</u>	<u>105</u>
<u>4.2.8 - Sub Cost Change (GS 3.0)</u>	<u>106</u>
<u>4.3 - Naval Transport</u>	<u>107</u>
<u>4.3.1 - Ferry Crossing</u>	<u>107</u>
<u>4.3.2 - Transport Eligible</u>	<u>108</u>
<u>4.3.3 - Transport Costs</u>	<u>108</u>
<u>4.3.4 - Transport Off-Load Limits</u>	<u>109</u>
<u>4.3.5 - Transports Lost Capacity Used</u>	<u>109</u>
<u>4.3.6 - Transport and Invasions Limits Chart</u>	<u>109</u>
<u>4.3.7 - Transport Efficient, Cost &amp; Survivability</u>	<u>110</u>
<u>4.3.8 - Transport Fog of War</u>	<u>111</u>
<u>4.4 - Naval Invasion (Amphibious)</u>	<u>112</u>
<u>4.4.1 - Invasions</u>	<u>113</u>
<u>4.4.2 - Invasion Limits Updated</u>	<u>114</u>
<u>4.4.3 - Invasions Limits Chart</u>	<u>114</u>
<u>4.4.4 - Units Eligible for Amphibious Landings</u>	<u>115</u>
<u>4.4.5 - Landing Site Criteria</u>	<u>116</u>

<a href="#"><u>4.4.6 - Invasion Bonus</u></a>	<a href="#"><u>116</u></a>
<a href="#"><u>4.4.7 - Invasion Resupply</u></a>	<a href="#"><u>117</u></a>
<a href="#"><u>4.4.8 - Mulberry Resupply Rule</u></a>	<a href="#"><u>117</u></a>
<a href="#"><u>4.5 - Naval Action</u></a>	<a href="#"><u>119</u></a>
<a href="#"><u>4.5.1 - Port Damage</u></a>	<a href="#"><u>119</u></a>
<a href="#"><u>4.5.2 - Attacks on Ships in Ports</u></a>	<a href="#"><u>119</u></a>
<a href="#"><u>4.5.3 - Battleship (BB) Ground Attack Power Change</u></a>	<a href="#"><u>120</u></a>
<a href="#"><u>4.5.4 - DD Survivability Improved (GS 3.0)</u></a>	<a href="#"><u>120</u></a>
<a href="#"><u>4.5.5 - DD Build Time Changes (GS 3.0)</u></a>	<a href="#"><u>120</u></a>
<a href="#"><u>4.5.6 - Naval Bombardment</u></a>	<a href="#"><u>120</u></a>
<a href="#"><u>4.5.7 - Naval Movement (GS 3.0)</u></a>	<a href="#"><u>121</u></a>
<a href="#"><u>4.6 - ASW (GS 3.0)</u></a>	<a href="#"><u>123</u></a>
<a href="#"><u>4.6.1 - Conduct ASW (GS 3.0)</u></a>	<a href="#"><u>123</u></a>
<a href="#"><u>4.6.2 - ASW Search &amp; SUB Evade Chart (GS 3.0)</u></a>	<a href="#"><u>126</u></a>
<a href="#"><u>4.6.3 - Subs Found by ASW Sweep (GS 3.0)</u></a>	<a href="#"><u>126</u></a>
<a href="#"><u>4.6.4 - Sub Evasion Probability (GS 3.0)</u></a>	<a href="#"><u>126</u></a>
<a href="#"><u>4.6.5 - Sub Evasion Analysis (GS 3.0)</u></a>	<a href="#"><u>128</u></a>

## 4.2 Submarines



*U-848 under attack by Allied aircraft in the South Atlantic (10-09 S, 18-00 W) – the second pass of Lieutenant Charles A. Baldwin USNR, in PB4Y-1 107-B-12 of VB-107 5 November 1943*

### 4.2.1 Bit of History (GS 3.0)

For historical information about u-boats, check this site

<http://www.uboat.net/>

Interesting information on combat strength at sea. Note how many more u-boats there were at sea during late 1942 and early 1943.

[http://www.uboat.net/media/layout/images/graph\\_combat\\_strength.gif](http://www.uboat.net/media/layout/images/graph_combat_strength.gif) -

"Allied tonnage sunk by U-boats

YearTons sunk

1939	0,6 million
1940	2,3 million
1941	2,2 million
1942	5,8 million
1943	2,3 million
1944	0,6 million
1945	0,2 million"

Note how successful the u-boats were in 1942 and that by 1944 the Battle of Atlantic was virtually won.

<http://www.uboot.net/fates/losses/chart.htm>

u-boat losses by year. Note how few u-boats were sunk during the early years, despite the high rate of sunk tonnage (check data above). Also, when you check this -

<http://www.uboot.net/fates/losses/>

you will notice that before 1942 very, very few u-boats were sunk by aircraft.

#### 4.2.2 Submarine Movement

Submarines now move in a manner similar to air units, except where air units fly in the air over hexes submarines now move under the water under hexes. This means that a surrounded submarine can move under adjacent ships and escape. However, the submarine movements in this case would be reduced due to the presence of enemy ZOCs.

The submarine movement model also allows enemy subs to duck under naval escorts for transports and convoys if there's any gap between the escorts and the escorted. Thus, for example, it's no longer sufficient to create a screen for an invasion fleet using a combination of escorts and land hexes if there are any sea gaps left inside the screen. Of course, enemy subs that entered and exploited those sea gaps would do so at their own peril.

The new submarine movement model due to fog of war allows subs to initially choose destination hexes occupied by enemy naval units, transports or convoys. If this happens then the submarine is placed in the closest available unoccupied sea hex. So care must be taken when move subs into "unspotted" ocean areas.

#### 4.2.3 Submarine Warfare (GS 3.0)

Visible subs may only be attacked by surface naval units that begin their turn adjacent to the submarine. A following section discusses submarine visibility. Once made visible only surface ships adjacent to the revealed enemy submarine can attack it.

Subs that use the swap function will be invisible after the swap. (GS 3.0)

This includes air attacks from CVs, which can only attack a visible sub if the CV has NOT moved during the turn.

An interesting piece on the battle in the Atlantic:



[BBC - The Battle of the Atlantic by Dr Gary Sheffield](#)



[\*HMS Barham \(BB\) Explodes\*](#)

#### 4.2.4 Submarine Visibility

One artifact of the new submarine movement model is that subs no longer make hidden enemy subs visible when they TRY to move into a hex containing a hidden enemy sub. In this case the moving sub is "bounced" into an adjacent empty hex. If the "adjacent" empty hex also contains a hidden sub then the moving sub will be "bounced" again until it finds an empty hex free of a hidden sub. Important: Players need to pay close attention when moving their subs. If their sub winds up in a hex adjacent to the one they chose then this indicates the presence of a hidden enemy sub in the chosen destination hex. However; if the moving player clicked on the hex adjacent to the destination hex by mistake, instead of clicking on the destination hex, then this would give a false indication of a hidden sub.

**TEST YOUR KNOWLEDGE SCENARIO:** in these four situations, when will a surfaced (visible) sub will become submerged (invisible to enemy) again?

- A. Sub attacks during Axis turn
- B. Sub moves during Axis turn but does not attack
- C. Sub repairs at sea during Axis turn

D. Sub does nothing during Axis turn

ANSWER: B, C and D.

#### 4.2.5 Sub Repair While at Sea

**Subs can now repair 1 step per turn at sea.** The reason for that is that subs being attacked by bombers often get 3 steps per attack and that means the sub is so depleted it needs to get to port to be repaired. That means 3-4 turns to port and the same number back to the hunting area. So the submarine is out of action for a long time if heavily depleted. Most damaged subs were sunk and didn't have to be repaired in port. The wolfpacks were reinforced by NEW subs sailing to the hunting area. Subs mainly had to get to port to be refitted with better equipment. Submarines even received supplies elsewhere than in controlled ports. For example, submarines used Spanish ports or transport ships to get more diesel, torpedoes etc. Lastly, there were a set of German "[Milchkuh/Milchkühe \(pl.\)](#)" ([milk cows](#)) that conducted resupply at sea. With this change it means the subs will be inactive while repairing, but they're still in the area spotting for the full strength subs. So they get back into action faster. If the sub is almost destroyed you can sail it to port to repair 3 steps per turn. This change alone will make the Allies build more DD's so the subs can be hit harder if they attack an escorted convoy.

#### 4.2.6 Submarine Effectiveness Against Convoys

The efficiency of submarines against convoys depends on the submarine tech level.

#### 4.2.7 Subs "Sentry" Mode (GS 3.0)

Subs may be placed on Sentry ('Zzz') by pressing the letter 'z' or 's' or by Right-clicking the sub. Subs on Sentry ('Zzz') will allow any surface vessels to travel over the hex. Enemy ships will not be stopped or attacked.

Subs can be placed in the sentry mode at the end of movement with a right-click.



#### 4.2.8 Sub Cost Change (GS 3.0)

Sub units cost raised to 55 PP's.



## 4.3 Naval Transport



*A SB2U Vindicator scout bomber from USS Ranger (CV-4) flies anti-submarine patrol over Convoy WS-12, en route to Cape Town, November 27, 1941. The convoy was one of many escorted by the U.S. Navy on "Neutrality Patrol", before the U.S. officially entered the war.*

### 4.3.1 Ferry Crossing

A ferry crosses to another point across a body of water without having to pay the transport cost. This functionality now allows the axis player to reinforce its position in Turkey for free (assuming an axis invasion or defense of Turkey) instead of having to pay a transport cost of 8 PP's per units. Also, the functionality allows the axis player to reinforce, or evacuate, Sicily from mainland Italy. Similarly, the allied player once Sicily and the tip of Italy are under their control can ferry units across the straights of Messina for free.

The following nine ferry crossings were added to the game.

- ◆ Gibraltar
- ◆ Ajaccio
- ◆ Kiel
- ◆ Messina
- ◆ Copenhagen
- ◆ Canakkale
- ◆ Istanbul
- ◆ Kerch
- ◆ Scapa Flow

A unit can be ferried if it starts its turn adjacent to one of these ports to any other friendly controlled hex adjacent to the same port. This ferry is free and counts as the movement for the unit that turn. When you click on a unit eligible for ferry a ferry symbol will appear in all hexes to which that unit can be ferried.



### 4.3.2 Transport Eligible

All ground and air units, including garrisons, may be transported by sea. The only restrictions imposed by the game engine are the restrictions described in the next section.

### 4.3.3 Transport Costs

The transport cost equations with examples for naval transport and invasion limits are given below.

Germany, Italy, France, Britain, USA and Russia each have separate capacities and limits. The cost for exceeding these limits are made on a power by power basis and not on a faction basis. Axis minor transport or invasions are included in Germany's limits and cost. Allied minor countries are included in Britain's limits and costs except for Free France after the USA enters the war. Free France will then be included in the USA limits and costs.

Transport levels are determined at the beginning of a player's turn and only count transports at sea. Transports in port are NOT counted towards a country's limits.

If a player exceeds major power transport limits then the PP cost to that country during calm seas is 4 PPs each for the first transports to exceed the limit, 8 PPs each for the next, 12 PPs each for the next and so on.

The cost in rough seas is 8 PPs for the first, 16 PPs for the next, 24 PPs for the next and so on. For example, a major power greatly exceeds its transport limits by 7 units. If these transports are in calm seas then the cost to that country is:

**4 + 8 + 12 + 16, or a whopping 40 PPs for just 4 units in transport at sea**

General.txt parameter is set to reflect this value for calculating transport overuse and will now increase per overuse instead of every second or third overuse:

#### TRANSPORT\_OVER\_GROUP 1

If transport were in rough seas then the cost would be 176 PPs! Normally when a major power exceeds its limits it usually exceeds it by one or two transports, which in the latter would cost 8 PPs in calm seas and 16 PPs in rough seas.

PP's paid for the transport are returned if you disembark from a port. The PP's received = port strength / 10 \* transport cost (8). The return value is reduced if the disembarkation port, is damaged.

### 4.3.4 Transport Off-Load Limits

Weather affects the ability to unload transports or conduct invasions. During rough seas (i.e., mud, winter or severe winter) transports can only be unloaded from ports and only into cities, clear or forest hexes. They cannot unload into rough or mountain hexes. Similarly, units invading can only invade from friendly ports and into cities, clear or forest hexes.

### 4.3.5 Transports Lost Capacity Used

A transport lost at sea or in port reduces that country's transport capacity by one (1). A transport that disembarks its unit in any manner (e.g., friendly hex or invasion) does not. A unit that invades (i.e., lands in an enemy controlled hex) always consumes one invasion capacity point. Both invasion capacity and lost transport capacity regenerates at the rate in the table below.

Players who are careless about protecting transports or who use transported garrisons as cannon fodder to screen for higher value units may soon find that they have lost all their transport capacity.

### 4.3.6 Transport and Invasions Limits Chart

## Transport and Invasion limits

All countries	Constant (0)	Constant (1)	Constant (2)	Constant (3)
Transport	1	2	1	2
Invasion	1	2	1	3

### Formula -

Transport or Invasion limit = Constant (0) + {(Constant(1) \* Surface Tech) + (Constant(2) \* Industry Tech)} / Constant(3) ↓

### Example:

UK has tech 1 in surface ships and tech 0 in industry.

Transport =  $1 + (2*1 + 1*0) / 2 = 1 + 2/2 (\downarrow) = 2$








Invasion =  $1 + (2*1 + 1*0) / 3 = 1 + 2/3 (\downarrow) = 1$

### Example:

USA has tech 2 in surface ships and tech 3 in industry

Transport =  $1 + (2*2 + 1*3) / 2 = 1 + 7/2 (\downarrow) = 4$

Invasion =  $1 + (2*2 + 1*3) / 3 = 1 + 7/3 (\downarrow) = 3$

Country	Transport & Invasion Regeneration time in turns
USA 	1
UK 	2
GER 	3
IT 	
FR 	
USSR 	
FF 	1 *

\* Shares USA capacity

Ver. 2.10

### 4.3.7 Transport Efficient, Cost & Survivability

- ◆ Added efficiency loss at sea (not in friendly port) for transports and regain if unloading from friendly port

EFFICIENCY\_LOSS\_PER\_TURN\_AT\_SEA 5 /\* Efficiency loss per turn for unit aboard a transport while not in a friendly port \*/

```
EFFICIENCY_REGAINED_FROM_PORT 5 /* Efficiency regained if transport is disembarked  
from a friendly port */  
EFFICIENCY_AT_SEA_THRESHOLD 60 /* Efficiency while at sea can't drop below this value  
just from being at sea */
```

- ◆ Added code so you get back PP's paid for the transport if you disembark from a port. The PP's received = port strength / 10 \* transport cost (8). The return value is reduced if the debarkation port, end port, is damaged.
- ◆ Changed code so you don't lose 15 efficiency from disembarking from a port into a non-city hex.
- ◆ Reduced the transport survivability for garrison units by 2 unless the garrison is an elite or para unit. This value can be changed in general.txt

### 4.3.8 Transport Fog of War

You will no longer be able to know what unit is loaded on your opponent's transport and vice versa. This adds a more realistic element to the fog of war and makes transport protection and interdiction more realistic. Player's are no longer required to rename their transports to hide the unit type for their opponent.

## 4.4 Naval Invasion (Amphibious)



*There are two kinds of people who are staying on this beach: those who are dead and those who are going to die. Now let's get the hell out of here.*

Col. George A. Taylor - Omaha Beach, 6 Jun 1944



### 4.4.1 Invasions

Transports carrying infantry, mechanized or armor corps can now attack occupied coastal hexes (Note - see restrictions on what year units are available in the following section). These attacks consume one amphibious invasion point and if the attacked unit retreats the invasion transport can land its parent unit. The attack strength of the invasion transport is independent of its parent unit and is weaker than the attack strength of a normal infantry corps. This attack strength represents brigade size marines and airborne units that make up the first wave of a seaborne invasion. The parent unit represents the second, third and subsequent waves that come ashore over the remaining 19 days of the turn assuming that the initial wave was successful in securing the beach (i.e., destroying the enemy unit or forcing it to retreat). Note, however, if the transport takes damage during the invasion attack it is the parent unit that suffers this damage.

An invasion transport that successfully clears a hex advances into it the same way a ground unit would. It does NOT unload and if you click off the unit before advancing you cannot advance or unload that turn. Note that an invasion transport could clear a hex and choose not to advance leaving that hex open for another invasion transport to land and attack. This action would use two amphibious invasion points. One for the transport that attacked and the second for the second transport that landed in an enemy controlled hex.

For those into equations here they are for how technology impacts transports:

**attack strength** =  $\text{attackVal} + \max(0, \text{floor}((\text{techSurfaceShips} + 1) / 2))$

**shock** =  $\text{shockVal} + \max(0, \text{floor}((\text{techSurfaceShips} + 3) / 4))$

**quality** =  $\text{qualityVal} + \max(0, \text{floor}(\text{techSurfaceShips} / 4))$

**flak** =  $\text{flakVal} + \max(0, \text{techRadar} - 4)$

attackVal, shockVal, qualityVal and flakVal are the current values for these variables and are passed to the methods in which the above equations are added.

The coefficients of these functions are controlled through the general.txt file in order to be able to tweak these functions as necessary. The general form for equations (a-c) is:  $\text{val} + (A * \text{techSurfaceShips} + B) / C$  and for equation d is:  $\text{val} + (A * \text{techRadar} + B) / C$ . The coefficients A, B & C are set separately for each of the four areas in the general.txt file.



#### 4.4.2 Invasion Limits Updated

The equations with examples for naval transport and invasion limits are given in the table in the next section. Germany, Italy, France, Britain, USA and Russia each have separate capacities and limits. The cost for exceeding these limits are made on a country by country basis and not on a faction basis. Axis minor transport or invasions are included in Germany's limits and cost. Allied minor countries are included in Britain's limits and costs except for Free France when the USA is at war. In that case they're included in the USA limits and costs.

An invasion is the landing of a unit in an enemy controlled hex. This can only occur if the invasion transport is in calm seas regardless of the weather in the hex being invaded. The cost for exceeding invasion limits is much more punitive than that for exceeding transport limit. The cost for the first unit to exceed the invasion limit is 35 PPs, the second one cost 70 PPs, the third one 105 PPs, and so on. Before you land a dialog box pops up showing you how many invasions you have left and the cost, if any, if you choose to continue with this invasion. This dialog box allows you to abort the invasion if you so choose with no impact. Used invasion capability regenerates at a country dependent rate of 1 per turn for the USA, 1 every two turns for the UK and 1 every three turns for Germany, Italy, France and Russia.

Weather affects the ability to unload transports or conduct invasions. During rough seas (i.e., mud, winter or severe winter) transports can only be unloaded from ports and only into cities, clear or forest hexes. They cannot unload into rough or mountain hexes. Similarly, units invading can only invade from friendly ports and into cities, clear or forest hexes.

#### 4.4.3 Invasions Limits Chart










## Transport and Invasion limits

All countries	Constant (0)	Constant (1)	Constant (2)	Constant (3)
Transport	1	2	1	2
Invasion	1	2	1	3

**Formula -**  
 Transport or Invasion limit = Constant (0) + {(Constant(1) \* Surface Tech) + (Constant(2) \* Industry Tech)} / Constant(3) ↓

**Example:**  
 UK has tech 1 in surface ships and tech 0 in industry.  
 Transport =  $1 + (2*1 + 1*0) / 2 = 1 + 2/2 (\downarrow) = 2$   
 Invasion =  $1 + (2*1 + 1*0) / 3 = 1 + 2/3 (\downarrow) = 1$

**Example:**  
 USA has tech 2 in surface ships and tech 3 in industry  
 Transport =  $1 + (2*2 + 1*3) / 2 = 1 + 7/2 (\downarrow) = 4$   
 Invasion =  $1 + (2*2 + 1*3) / 3 = 1 + 7/3 (\downarrow) = 3$

Country	Transport & Invasion Regeneration time in turns
USA 	1
UK 	2
GER 	3
IT 	
FR 	
USSR 	
FF 	1 *

\* Shares USA capacity

Ver. 2.10

### 4.4.4 Units Eligible for Amphibious Landings

Modified the amphibious model so at the start of the game only corps units are amphibious capable.

- ◆ INF (Corps) units can conduct amphibious operations from 1939 on.

- ◆ Mechanized (MECH) units become amphibious capable from 1942. Therefore, they can land in Torch.
- ◆ Armor (ARM) units become amphibious capable from 1943.

### 4.4.5 Landing Site Criteria

The criteria for unloading and for invading/attacking a hex were inconsistent for a transport in calm seas and a target hex in non-fair weather. This has been fixed so the criteria for both unloading and invading are now:

- ◆ Transport hex must be in calm sea
- ◆ Destination hex can't be a mountain hex
- ◆ Exception is that you can unload into friendly hexes from a port regardless of weather
- ◆ Amphibious range is now equal to 6 + surface ships tech instead of a fixed range of 10.  
Amphibious range is for 'opposed' landings - i.e. attacking a land hex from a transport when the land hex is occupied

This should make it slightly easier to land and it won't matter if the weather in the destination hex is not fair.



### 4.4.6 Invasion Bonus

Added amphibious ground attack bonuses:

```
AMPH_GROUND_ATT_BONUS_CORPS 0
AMPH_GROUND_ATT_BONUS_MECH 1
```

AMPH\_GROUND\_ATT\_BONUS\_ARMOR 2

Added amphibious shock attack bonus:

AMPH\_SHOCK\_BONUS\_CORPS 0

AMPH\_SHOCK\_BONUS\_MECH 2

AMPH\_SHOCK\_BONUS\_ARMOR 3

#### 4.4.7 Invasion Resupply

A fleet will provide supply to an invasion force if it stays in a hex adjacent to the landing. The level of supply support to the invading forces varies based upon technology levels for Industry and Surface Naval units. In the example below -- you can see that the 2 German INF units are being resupplied by the German DD Immediately adjacent to the hexes that have been invaded. Also note that the German U-boat off the coast does NOT provide invasion resupply. Its mission is to protect the German DD.



#### 4.4.8 Mulberry Resupply Rule

From 1944 the Allies will get Mulberry capability so they get supply level 2 instead of 1 when supplying units from a BB, DD or CV. Mulberry capability only exists within 6-10 hexes of London. The distance is

dependent on the surface ship technology level.

Also Mulberry supply for the Allies will now only be provided from 1944 if London is still Allied controlled and the naval unit providing Mulberry supply is within the following hexes of London:

MULBERRY\_MAX\_DISTANCE\_FROM\_LONDON 10

/\* BB, DD or CV max distance from London to provide Mulberry supply \*/

## 4.5 Naval Action



*I wish to have no connection with any ship that does not sail fast, for I intend to go in harm's way.*

*John Paul Jones*

*(Adopted by the US Navy's Special Boat Units)*

### 4.5.1 Port Damage

Captured ports were often damaged and had to be repaired before returning to a usable state.

Captured ports are reduced to 0-strength, which means that they won't be able to repair or upgrade naval units with red damage (0-1 strength).

### 4.5.2 Attacks on Ships in Ports

Ships in port cannot be attacked by adjacent enemy surface ships or ground units. They may be attacked by 1 submarine and / or up to two air units.

A major change in version CEaW-GS v1.00 is that ships in a port when the adjacent city falls (and therefore the port comes under enemy control) will be immediately destroyed. This means you have to evacuate your naval units from friendly ports before they fall into enemy hands. Be careful--a clever enemy will use his naval units to blockade yours in port as his ground units close in. Take measures to avoid losing naval units this way.

As a result of this change, ground units may no longer attack naval units at all. So a BB in port can bombard adjacent ground units without fear of reprisal. The risk, of course, is that the port city will fall and the BB will be destroyed that way. Players will have to evaluate each situation and determine if using their ships in this manner is worth the gamble. Ports now offer protection from enemy naval units, but with a major catch that should make players think twice about stationing their ships in ports near the front line.

### 4.5.3 Battleship (BB) Ground Attack Power Change

Increased the ground attack for BB from 1 to 2 to compensate for ground and air units getting +4 survivability against shore bombardment. This means BB's will perform better than DD's when shore bombarding.

### 4.5.4 DD Survivability Improved (GS 3.0)

Added +2 to DD survivability if fighting submarines:

`DD_SURVIVABILITY_BONUS_VS_SUB 2 /* This number is added to the DD survivability when fighting submarines */`

Changed starting sub attack value for DD's from 4 to 5 and removed the +1 sub attack bonus for DD's at ASW tech 1. So this extra sub attack for DD's will only be usable until ASW tech 1.

### 4.5.5 DD Build Time Changes (GS 3.0)

Destroyer build time reduced to 5 turns.

### 4.5.6 Naval Bombardment

Gave cities and resources a minimum anti-naval capability so now naval units shore bombarding ground units located in these hexes can receive damage, on average, of 1-step every 2 to 3 turns. This anti-naval capability represents shore batteries and mined waters and is intended to discourage the use of harassing shore bombardment. Note that this capability does not apply to units in non-city or non-resource coastal hexes.

#### Bombardment Factors

Changed techs for Surface ships and Radar to implement shore bombardment as tech advance. Also moved around slightly the tech advances to make sure the shore bombardment was added at an appropriate tech level.

- ◆ +1 shore bombardment for BB is added at surface ships tech 3 (meaning more penetrating shells)
- ◆ +1 shore bombardment for BB, CV and DD is added at radar tech 3, better radar on the ships



meant they could locate the targets better

- ◆ This means that with max tech we have the following shore bombardment values:

CV: 6

BB: 4

DD: 2

Increased the survivability of ground units from shore bombardment by 4 instead of 2.

/\* Value added to ground defense if attacked by naval units \*/

SURVIVABILITY\_BONUS\_VS\_NAVAL 4

Added a value to increase the chance of shore bombardment. This is needed to get enough hits to actually drop the efficiency of bombarded ground units.

SHOCK\_FACTOR 170 /\*Proportional to chance of shock hit\*/

SHOCK\_FACTOR\_SHORE\_BOMBARDMENT 340 /\*Proportional to chance of shore bombardment

The first value is the original one used for air strikes, armor attacks etc. The latter in the new one for shore bombardments. Added a value to decrease the efficiency of naval units in shore bombardment.

EFFICIENCY\_LOSS\_FROM\_SHORE\_BOMBARDMENT 10 /\*EFFICIENCY points lost when performing shore bombardment\*/



### 4.5.7 Naval Movement (GS 3.0)

Made change to the highlight hexes when the current unit is a naval unit. Naval units can now move through enemy controlled transport loops; but they can't enter the loop hex. This is intended for ships entering the Red Sea from the Mediterranean. Now they can move from the hex north of the to the Mediterranean transport loop to the Persian Gulf or Atlantic transport loops. So naval units are no longer trapped inside a sea area because they're at the wrong side of a transport loop. The loop hex itself is not highlighted, but the hexes on the other side of the loop hex are.

### GS 3.0 Naval movement changes:

- ◆ Transports will not block movement by any surface unit.
- ◆ A sub that becomes visible by attacking a naval unit, run into by a naval unit (ambush), or revealed by ASW sweep will block movement like any other naval unit. Because it is a sub it may only be attacked by up to two (2) air units that have not moved or attacked a unit, and by any adjacent naval units that have not moved or attacked.
- ◆ Naval units can now retreat upon being attacked.
- ◆ Transports hidden by FoW will block movement of naval surface units. Transports that are spotted will not block naval movement.
- ◆ Transports will block retreats because of naval combat.
- ◆ Transports loaded will perform a spotting move prior to movement.



## 4.6 ASW (GS 3.0)

### 4.6.1 Conduct ASW (GS 3.0)

Surface vessels after movement may perform an ASW sweep to look for hidden subs. You will see an automatic sub-search pattern displayed at the finish of your movement. You must then execute the search by a left-click on the primary search hex. Note, all hexes will be searched but the one you click on gets a more intensive search ( 2 times more depending upon surface vessel conducting the search) and therefore more likely to discover a hidden sub. ASW sweeps that are successful will attack the first sub revealed and reveal any other hexes that were swept.

Base Probability - Convoys and subs is 0 (I.e. can not sweep), Transports 15, BB's 40, DD's 55, and CV's 50 . Sweep chance is raised by 8 (ASW) and 6 (Radar) for each level. Sweep chance is lowered by 10 by Rough Seas and by 8 for each enemy sub tech level.

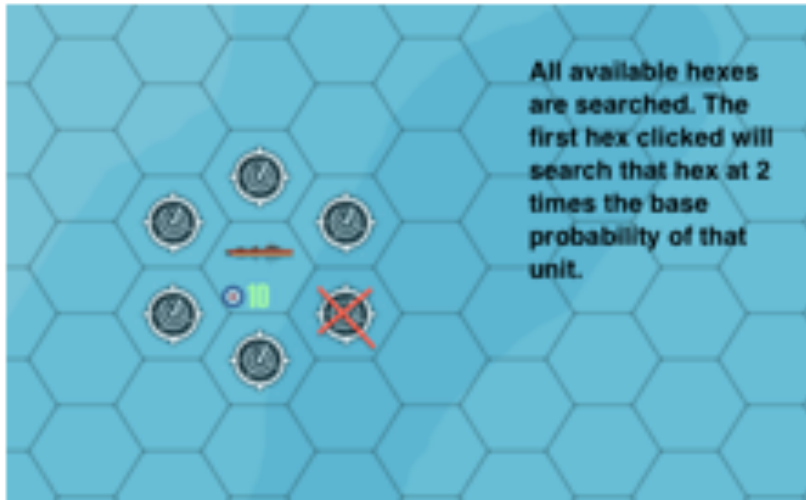
Player may press 'm' to have surface units that will remain in place in the hex and perform sweep instead of moving or attacking. Once 'm' is pressed you are committed to perform a sweep and cannot move later. You can not change your decision!!

If a surface unit stops movement on top of an enemy sub on Sentry ('Zzz') the enemy sub will be moved to the nearest empty hex. The surface unit may then perform an ASW sweep with a right-click.

#### SUB SEARCH PATTERN AT END OF MOVEMENT



## ASW Search










The hex clicked on has 2x base probability depending on unit performing the sweep.





#### 4.6.2 ASW Search & SUB Evade Chart (GS 3.0)

##### ASW Search and SUB Evade

	BB	DD	CV	TRPT	FTR	TAC	SAC
Unit							
Base ASW Search Chance	40	55	50	15	-	-	-
ASW Search Chance with Rough Seas	-10	-10	-10	-10	-	-	-
SUB Evade Chance	65	45	50	-	65	55	50
SUB Evade Chance with Rough Seas	+10	+10	+10	-	+10	+10	+10
SURV Bonus vs Subs	+1	+2	+1	-2 **	-	-	-
Search Chance increases by 8 for each Tech level of ASW achieved. Search Chance increases by 5 for each Tech level of RADAR achieved. Search Chance decreases by 8 for each Tech level of SUBMARINES achieved. SUB Evade chance increases by 8 for each Tech level of SUBMARINES achieved. SUB Evade chance decreases by 8 for each Tech level of ASW achieved. SUB Evade chance decreases by 5 for each Tech level of RADAR achieved. ** Transports suffer -2 SURV vs SUB attacks when transporting a Garrison size unit							

v3.00

#### 4.6.3 Subs Found by ASW Sweep (GS 3.0)

Subs that are revealed by ASW sweep / attack and or attacked may evade the attack with no losses. A sub that becomes visible by attacking a naval unit, run into by a naval unit (ambush), or revealed by ASW sweep will block movement like any other naval unit. Because it is a sub it may only be attacked by up to two (2) air units that have not moved or attacked a unit, and by any adjacent naval units that have not moved or attacked.

#### 4.6.4 Sub Evasion Probability (GS 3.0)

Set the evasion values to the following:

SUB_EVADE_CHANCE_BATTLESHIP	65 /* Base percent chance the sub can evade attacks from a battleship unit */
SUB_EVADE_CHANCE_CARRIER	50 /* Base percent chance the sub can evade attacks

from a carrier unit \*/  
 SUB\_EVADE\_CHANCE\_DESTROYER 45 /\* Base percent chance the sub can evade attacks  
 from a destroyer unit \*/  
 SUB\_EVADE\_CHANCE\_FIGHTER 65 /\* Base percent chance the sub can evade attacks  
 from a fighter unit \*/  
 SUB\_EVADE\_CHANCE\_TAC\_BOMBER 55 /\* Base percent chance the sub can evade  
 attacks from a tactical bomber unit \*/  
 SUB\_EVADE\_CHANCE\_STRAT\_BOMBER 50 /\* Base percent chance the sub can evade  
 attacks from a strategic bomber unit \*/

Set the evasion and sweep tech adjustments for radar to the following:

SUB\_EVADE\_CHANCE\_REDUCTION\_RADAR 5 /\* Reduced percent chance per Radar tech  
 level \*/  
 SWEEP\_CHANCE\_INCREASE\_RADAR 5 /\* Increased percent chance per Radar tech level  
 \*/

#### 4.6.5 Sub Evasion Analysis (GS 3.0)

The first three lines show the odds of a DD successfully sweeping and of a sub successfully evading making the totally unwarranted assumption that all players have the same tech levels for everything.

The bottom half makes the (slightly) more realistic assumption that radar tech level is at half the level of the ASW and Sub tech levels. (Yes, I know that you can't have half a tech level.) Looking at the last line, subs will have a 5% better chance of evading SACs.

Tech level	0	1	2	3	4	5	6
DD sweep %	50	56	62	68	74	80	86
DD evade %	45	39	33	27	21	15	9
Radar at ½	0	1	2	3	4	5	6
DD sweep %	50	53	56	59	62	65	68
DD evade %	45	42	39	36	33	30	27

## Chapter 5 Air Warfare



*P-38H of the AAF Tactical Center, Orlando Army Air Base, Florida, carrying two 1,000 lb bombs during capability tests in March 1944*

*My Luftwaffe is invincible...And so now we turn to England. How long will this one last - two, three weeks?*

Herman Goring - June 1940

## 5.1 Chapter TOC

<u>5.2 - Air Combat</u>	<u>131</u>
<u>5.2.1 - Air to Air Attacks</u>	<u>131</u>
<u>5.2.2 - Air Attacks</u>	<u>131</u>
<u>5.2.3 - CV (Carrier) Air Wing CAP</u>	<u>132</u>
<u>5.2.4 - "Sentry" - Fighter Combat Air Patrol (CAP) (GS 3.0)</u>	<u>132</u>
<u>5.2.5 - Air Bombardment of Cities/Fortresses</u>	<u>132</u>
<u>5.2.6 - Oil Usage by Aircraft</u>	<u>132</u>
<u>5.3 - Air Bases</u>	<u>134</u>
<u>5.3.1 - Normal Airbases</u>	<u>134</u>
<u>5.3.2 - Air Base Resource Hex</u>	<u>134</u>
<u>5.3.3 - Softer Air Bases</u>	<u>134</u>
<u>5.3.4 - British Air Base Control</u>	<u>135</u>
<u>5.3.5 - No Re-basing Behind Enemy Lines</u>	<u>135</u>
<u>5.3.6 - Stranded Air Units When Country Falls</u>	<u>135</u>



## 5.2 Air Combat



*Pilots of the 332nd Fighter Group, "Tuskegee Airmen," the elite, all-African American 332nd Fighter Group at Ramitelli, Italy., from left to right, Lt. Dempsey W. Morgran, Lt. Carroll S. Woods, Lt. Robert H. Nelron, Jr., Capt. Andrew D. Turner, and Lt. Clarence P. Lester. (U.S. Air Force photo)*

### 5.2.1 Air to Air Attacks

Fighter air-to-air combat is combat whose outcome is the most unpredictable, even with 3 dice roll averaging.

You don't know which fighter will intercept your fighter and the battle results are still quite variable. So it's a bit of a lottery although factors such as having a tech advantage and higher efficiency should lead to better combat result outcomes overall.

It's devastating for the British to be unlucky with fighter attacks early in the game as they don't have the economy to pay for the losses. This is a good reason to just keep British fighters as interceptors and not as a weapon to counter attack. That will be done later when the Axis are fighting inside France.

### 5.2.2 Air Attacks

Air attacks against hexes containing an air unit or a CV (i.e., carrier) at the beginning of the turn are limited to one air attack. Air attacks against all other hexes containing ground/naval are limited to two attacks per turn.

The air attack limit applies to hexes and not units. A ground unit could be attacked by two air units then forced to retreat to another hex in which case it could be attacked again by air (assuming the hex it retreated to hadn't been attacked by two air units yet). Also, a fighter that intercepts and then in turn is intercepted can be attacked once more at its air base.

Air units can fly over neutral countries to attack, but not to rebase.

### 5.2.3 CV (Carrier) Air Wing CAP

CVs will intercept enemy air attacks within range unless on sentry mode or their faction does not have enough oil for the unit to intercept.

### 5.2.4 "Sentry" - Fighter Combat Air Patrol (CAP) (GS 3.0)

Fighter units that are not in sentry mode are on CAP and will intercept enemy air units that attack any unit with the fighter defense range (which is the same as its attack range) provided there is sufficient oil left for the fighter to intercept. Note that a fighter unit on sentry will not fly CAP but will defend if attacked at its airbase.

**Fighters that move or are repaired can be put on sentry but only if the player hits the "s" key immediately after performing that action.** If they perform another action they will NOT be able to return to the fighter and put it on sentry that turn. Assuming oil is available, it will be on CAP during the opponent's turn. So, if you wish to move or repair a fighter AND place it on sentry you must be careful in your actions.

**GS 3.0 changes** - Air Units railed can be placed on sentry 'Zzz' by using Right-click at the end of their movement.

### 5.2.5 Air Bombardment of Cities/Fortresses

A capital, city or fortress bombarded down to strength 0 or 1 (red color of name) then supply from the capital/city/fortress is set to 0 unless it's adjacent to a port. Then supply from the capital, city or fortress is set to 1.

Supply increases to 3 once the strength of the capital/city/fortress is 2 or higher (orange, yellow or white name color).

Change will not affect supply coming from major power capitals or other cities. So the change will only affect isolated cities. A hex will use the best possible supply source.

### 5.2.6 Oil Usage by Aircraft

An aircraft attacking a target or relocating burns oil at its standard rate.

A fighter intercepting an attacking aircraft -- will burn oil at its standard rate.

An intercepted attacking aircraft will burn oil at double the standard rate, I.e. The “attacker”. That is, twice the rate if it attacked and was not intercepted. Thus, it pays oil for the intercept and also for the attack. This includes all aircraft: FTR, TAC and STR.

### **5.2.7 Air Units Always Retreat (GS 3.0)**

Air units will always retreat, if possible, when attacked by enemy forces.

## 5.3 Air Bases

### 5.3.1 Normal Airbases

Additional Reading: [US Air Power over the beaches of Normandy.](#)

There are two types of air bases, which are normal airbase hexes and airfield resource hexes. Airfield resource hexes are a new resource type added to the mod and are hexes that only air units can occupy. See the following section for details.

Normal airbase hexes are any hex that a ground unit can enter, except for: mountain, swamp or dune hexes. Air units may fly over these restrictions to rebase.

### 5.3.2 Air Base Resource Hex



There are two types of air base resource hexes, which are those that are adjacent to a fortress and those that are an island hex completely surrounded by water and/or unplayable hexes. It is not possible for ground units to enter these new resource hexes.

Airbase resource hexes adjacent to a fortress can only be occupied by air units whose side controls the fortress. An air unit can remain at such an air base after it fortress falls; however, once it leaves it can never return until the fortress is recaptured.

The other airbase resource hexes are completely surrounded by water or unplayable hexes. At the very start of a scenario, they are controlled by one power.

There is one exception to ground units not being allowed to enter airbase resource hexes. Paratroopers may paradrop into empty airbase resources. So if the Malta fighter is destroyed then Axis paratroopers may land on the airbase and attack the adjacent Malta fortress.

### 5.3.3 Softer Air Bases

It was becoming common practice to use air units in ground defense roles. Because of the movement range of these units they were at times being deployed at speeds and distances that modern airmobile forces would envy. Also, they were frequently holding up just as well or even better against ground attacks than normal ground units. While air units do have a significant number of ground troops that were historically used in infantry roles they never had the ability to hold as did regular infantry.

The survivability for air units attacked by ground units or invasion transports is halved (rounded up) and capped at 5 (i.e., cannot exceed 5).

$$\text{defenderSurv} = \min(\text{ceil}(A * \text{defenderSurv} / B), C)$$

A=1, B=2 & C=5 and are set in the general.txt file.

The survivability for air units attacked by destroyers or battleships is NOT halved but is capped at 5.

```
defenderSurv = min(defenderSurv,C)
```

C=5 and is set through the general.txt file (the same C as in 29).

### 5.3.4 British Air Base Control

British airfields are controlled by certain key cities:

- ◆ Aberdeen controls Lerwick
- ◆ Glasgow controls Stornoway and Benbecula
- ◆ Liverpool controls Isle of Man
- ◆ Scapa Flow controls Kirkwall

### 5.3.5 No Re-basing Behind Enemy Lines

Air units are no longer allowed to rebase to supply level 0 hexes unless the hex is an island.

### 5.3.6 Stranded Air Units When Country Falls

Changed functionality so air units holding resource or city hexes in a country that has conquered will lose control of the hex if rebasing out of the hex unless a friendly ground unit is adjacent or the supply in the hex is 4 or better. This should take care of situations in Norway / France where UK air units fly to port cities to keep control. Now they keep control only as long as the air unit remains there. The hex control is changed to the owner of the surrendered country's capital owner (Germany in the above cases). If a ground unit is adjacent to the air unit then you keep control when the air unit rebases. This simulates the ground unit taking over control of the hex. This code was added to avoid situations where you fly in air units to e. g. France in 1944 before the Allies have got a complete foothold there. Also added code that if the hex has supply level 4 or better then this won't happen. This is done to ensure that if the Allies land in France and Italy they won't risk having the ownership changed to the capital owner just because they rebased an air unit stationed in a resource hex.

Made the change so the change of hex owner when an air unit leaves a city or resource only applies prior to USA entering the war. That is simple and ensures we don't get any late game nasty surprises.

## Chapter 6 Combat Logistics



*Without supplies neither a general nor a soldier is good for anything*

Clearchus, 401 BC.

## 6.1 Chapter TOC

<u>6.2 - Country Research &amp; Laboratories</u>	<u>143</u>
<u>6.2.1 - Game Turn Spending Limits</u>	<u>144</u>
<u>6.2.2 - Random Research</u>	<u>144</u>
<u>6.2.3 - Air &amp; Sub Technology Slowed</u>	<u>145</u>
<u>6.2.4 - USA Tank Technology Change</u>	<u>145</u>
<u>6.2.5 - Naval Technology Changes (GS 3.0)</u>	<u>145</u>
<u>6.2.6 - Research Limits</u>	<u>150</u>
<u>6.2.7 - German Labs</u>	<u>151</u>
<u>6.2.8 - Italian Labs</u>	<u>152</u>
<u>6.2.9 - French Labs</u>	<u>153</u>
<u>6.2.10 - British Labs</u>	<u>154</u>
<u>6.2.11 - USA Labs</u>	<u>155</u>
<u>6.2.12 - Russian Labs</u>	<u>156</u>
<u>6.3 - Production Points - PP</u>	<u>156</u>
<u>6.3.1 - City &amp; Port Production Capacity</u>	<u>157</u>
<u>6.3.2 - Calculating PP</u>	<u>157</u>
<u>6.3.3 - Attacks on Cities &amp; Ports</u>	<u>157</u>
<u>6.3.4 - Additional Italian PP (GS 3.0)</u>	<u>157</u>
<u>6.4 - Technology Factors</u>	<u>158</u>
<u>6.4.1 - Supplement Considerations on Focus Areas</u>	<u>158</u>
<u>6.4.2 - GS Focus Points</u>	<u>158</u>
<u>6.4.3 - GS Focus Changes</u>	<u>158</u>
<u>6.4.4 - Highest Tech Levels?</u>	<u>159</u>
<u>6.4.5 - GS 3.0 Adjustments (GS 3.0)</u>	<u>159</u>



6.4.6 - Infantry.....	160
6.4.7 - Armour.....	162
6.4.8 - Air 164	
6.4.9 - Naval 166	
6.4.10 - General.....	168
6.5 - War Effort.....	170
6.5.1 - Axis Minor Powers.....	170
6.5.2 - Taking Yugoslavia.....	170
USA.....	170
6.6 - Manpower, Experience & Efficiency Level (GS 3.0).....	171
6.6.1 - Efficiency Formula.....	171
6.6.2 - Low Manpower Impact.....	172
6.6.3 - Experience Level Changes.....	173
6.6.4 - Ground units.....	173
6.6.5 - Air units.....	173
6.6.6 - Naval units (GS 3.0).....	174
6.6.7 - General XP Rules.....	174
6.7 - Naval Logistics.....	176
6.7.1 - Fall of London Impact.....	176
6.7.2 - Additional Naval Units - Alignment.....	176
6.7.3 - Naval Build Times Increased.....	177
6.7.4 - ASW Research Capabilities Changed.....	177
6.7.5 - Transport Loops (GS 3.0).....	177
6.7.6 - Transport Loop Icons (GS 3.0).....	178

<a href="#"><u>6.7.7 - Africa Loop Change</u></a>	<a href="#"><u>178</u></a>
<a href="#"><u>6.7.8 - Baltic Loop Change</u></a>	<a href="#"><u>178</u></a>
<a href="#"><u>6.8 - Convoy Logistics</u></a>	<a href="#"><u>179</u></a>
<a href="#"><u>6.8.1 - Convoys</u></a>	<a href="#"><u>179</u></a>
<a href="#"><u>6.8.2 - Convoy Movement</u></a>	<a href="#"><u>179</u></a>
<a href="#"><u>6.8.3 - Allied Atlantic Escort Requirement</u></a>	<a href="#"><u>180</u></a>
<a href="#"><u>6.8.4 - Convoy Max Values Changed</u></a>	<a href="#"><u>180</u></a>
<a href="#"><u>6.8.5 - Allied Convoy Ownership</u></a>	<a href="#"><u>180</u></a>
<a href="#"><u>6.8.6 - Southern Convoy Spawning Location</u></a>	<a href="#"><u>180</u></a>
<a href="#"><u>6.8.7 - Northern Convoy Changes (GS 3.0)</u></a>	<a href="#"><u>181</u></a>
<a href="#"><u>6.8.8 - Central Convoy Changes (GS 3.0)</u></a>	<a href="#"><u>181</u></a>
<a href="#"><u>6.8.9 - Murmansk Convoy</u></a>	<a href="#"><u>181</u></a>
<a href="#"><u>6.8.10 - Submarine Effectiveness Against Convoys</u></a>	<a href="#"><u>181</u></a>
<a href="#"><u>6.9 - Unit Logistics</u></a>	<a href="#"><u>182</u></a>
<a href="#"><u>6.9.1 - Type Unit Limit Per Year</u></a>	<a href="#"><u>182</u></a>
<a href="#"><u>6.9.2 - Build Limits Chart</u></a>	<a href="#"><u>182</u></a>
<a href="#"><u>6.9.3 - Unit Efficiency Formula</u></a>	<a href="#"><u>184</u></a>
<a href="#"><u>6.9.4 - Unit Repair Formula Changed</u></a>	<a href="#"><u>184</u></a>
<a href="#"><u>6.9.5 - Manpower Repair Formula Changed</u></a>	<a href="#"><u>184</u></a>
<a href="#"><u>6.9.6 - Unit Upgrade When Adjacent to Enemy Unit</u></a>	<a href="#"><u>185</u></a>
<a href="#"><u>6.9.7 - Unit out of Supply Rule</u></a>	<a href="#"><u>185</u></a>
<a href="#"><u>6.10 - Rail Logistics</u></a>	<a href="#"><u>187</u></a>
<a href="#"><u>6.10.1 - Railroad Cost</u></a>	<a href="#"><u>187</u></a>
<a href="#"><u>6.10.2 - Rail Capacity</u></a>	<a href="#"><u>187</u></a>
<a href="#"><u>6.10.3 - Rail Capacity By Power</u></a>	<a href="#"><u>189</u></a>

<a href="#"><u>6.10.4 - Rail Range</u></a>	<a href="#"><u>191</u></a>
<a href="#"><u>6.10.5 - Rail Capacity - Computations</u></a>	<a href="#"><u>193</u></a>
<a href="#"><u>6.10.6 - Degradation of Railroad Capacity</u></a>	<a href="#"><u>194</u></a>
<a href="#"><u>6.10.7 - Manpower Drop - Railcap Loss</u></a>	<a href="#"><u>194</u></a>
<a href="#"><u>6.10.8 - To/From Rail Restrictions</u></a>	<a href="#"><u>194</u></a>
<a href="#"><u>6.10.9 - Rail to Fortresses with PP</u></a>	<a href="#"><u>194</u></a>
<a href="#"><u>6.10.10 - Axis Use of Middle East Rail</u></a>	<a href="#"><u>195</u></a>
<a href="#"><u>6.10.11 - Allies Joint Rail Use</u></a>	<a href="#"><u>195</u></a>
<a href="#"><u>6.10.12 - Rail Gauge Conversion (GS 2.2)</u></a>	<a href="#"><u>195</u></a>
<a href="#"><u>6.10.13 - Local Country Rail Changes</u></a>	<a href="#"><u>195</u></a>
<a href="#"><u>6.10.14 - Rail Use on DoW</u></a>	<a href="#"><u>196</u></a>
<a href="#"><u>6.10.15 - North American Rail Cost</u></a>	<a href="#"><u>196</u></a>
<a href="#"><u>6.11 - Rail Depots</u></a>	<a href="#"><u>197</u></a>
<a href="#"><u>6.11.1 - Rail Depots</u></a>	<a href="#"><u>197</u></a>
<a href="#"><u>6.11.2 - Rail Depot Operation Impact</u></a>	<a href="#"><u>197</u></a>
<a href="#"><u>6.11.3 - Rail Depots List</u></a>	<a href="#"><u>198</u></a>
<a href="#"><u>6.11.4 - Cities Converted to Rail Depot</u></a>	<a href="#"><u>199</u></a>
<a href="#"><u>6.12 - Russian Rail Changes</u></a>	<a href="#"><u>201</u></a>
<a href="#"><u>6.12.1 - Rail Supply System</u></a>	<a href="#"><u>201</u></a>
<a href="#"><u>6.12.2 - Rail Gauge Conversion Rate</u></a>	<a href="#"><u>201</u></a>
<a href="#"><u>6.12.3 - Axis Checks</u></a>	<a href="#"><u>201</u></a>
<a href="#"><u>6.12.4 - Russian Limits</u></a>	<a href="#"><u>202</u></a>
<a href="#"><u>6.13 - Truck Resupply</u></a>	<a href="#"><u>203</u></a>
<a href="#"><u>6.13.1 - End of Line - Truck Support</u></a>	<a href="#"><u>203</u></a>
<a href="#"><u>6.13.2 - Truck Icons</u></a>	<a href="#"><u>203</u></a>

<a href="#"><u>6.13.3 - When Is Truck Resupply Used?</u></a>	<a href="#"><u>204</u></a>
<a href="#"><u>6.13.4 - Truck Resupply Range</u></a>	<a href="#"><u>204</u></a>
<a href="#"><u>6.14 - Supply Logistics</u></a>	<a href="#"><u>205</u></a>
<a href="#"><u>6.14.1 - Rail &amp; Resource Supply (GS 3.0)</u></a>	<a href="#"><u>205</u></a>
<a href="#"><u>6.14.2 - Russian Scorched Earth</u></a>	<a href="#"><u>205</u></a>
<a href="#"><u>6.14.3 - Axis Controls Moscow</u></a>	<a href="#"><u>206</u></a>
<a href="#"><u>6.14.4 - Increased Supply Penalty Distance</u></a>	<a href="#"><u>206</u></a>
<a href="#"><u>6.14.5 - Supply Effects Chart</u></a>	<a href="#"><u>207</u></a>
<a href="#"><u>6.14.6 - Sealion Success - UK Resupply</u></a>	<a href="#"><u>207</u></a>
<a href="#"><u>6.14.7 - North Africa Axis Supply</u></a>	<a href="#"><u>208</u></a>
<a href="#"><u>6.14.8 - Why Capture Malta?</u></a>	<a href="#"><u>209</u></a>
<a href="#"><u>6.14.9 - Gibraltar Supply</u></a>	<a href="#"><u>209</u></a>
<a href="#"><u>6.14.10 - Anti-Blob Modifications</u></a>	<a href="#"><u>209</u></a>
<a href="#"><u>6.14.11 - Damaged City Supply</u></a>	<a href="#"><u>210</u></a>
<a href="#"><u>6.14.12 - Stranded Air Units When Country Falls</u></a>	<a href="#"><u>210</u></a>
<a href="#"><u>6.15 - Oil &amp; Iron Resources</u></a>	<a href="#"><u>211</u></a>
<a href="#"><u>6.15.1 - Oil Production Formula</u></a>	<a href="#"><u>211</u></a>
<a href="#"><u>6.15.2 - Oil Consumption</u></a>	<a href="#"><u>211</u></a>
<a href="#"><u>6.15.3 - Oil and Tech Upgrades</u></a>	<a href="#"><u>212</u></a>
<a href="#"><u>6.15.4 - Baku Oil</u></a>	<a href="#"><u>212</u></a>
<a href="#"><u>6.15.5 - Russian - Oil Reserves &amp; Manganese Changes</u></a>	<a href="#"><u>212</u></a>
<a href="#"><u>6.15.6 - MOD'ding Oil Consumption</u></a>	<a href="#"><u>212</u></a>
<a href="#"><u>6.15.7 - German Synthetic Oil Production</u></a>	<a href="#"><u>212</u></a>
<a href="#"><u>6.15.8 - Axis Advantage - Taking Yugoslavia copy</u></a>	<a href="#"><u>213</u></a>
<a href="#"><u>6.15.9 - Swedish Iron Ore &amp; Interdiction</u></a>	<a href="#"><u>213</u></a>

<u>6.16 - Technical Order of Battle Charts (OOB)</u>	<u>215</u>
<u>6.16.1 - German OOB</u>	<u>216</u>
<u>6.16.2 - Italian OOB</u>	<u>217</u>
<u>6.16.3 - French OOB</u>	<u>218</u>
<u>6.16.4 - British OOB</u>	<u>219</u>
<u>6.16.5 - USA OOB</u>	<u>220</u>
<u>6.16.6 - Russian OOB</u>	<u>221</u>
<u>6.16.7 - Minor Country OOB</u>	<u>222</u>

## 6.2 Country Research & Laboratories



*German Landkreuzer P 1000 Ratte Concept*



### 6.2.1 Game Turn Spending Limits

Strategic planning and wise use of your Production Points (PP) and Oil resources is critical.

Game Turn Spending Limits			
	Only allowed if PP balance is 0 or higher and PP's sufficient to purchase	Only allowed if PP balance is 0 or higher <b>before</b> action *	Always allowed (even if PP balance is below 0 before action)
+ PP's	Build new units Buy Laboratories Elite & Para upgrades Paratrooper jumps	Major Power Repairs Major Power Upgrades	Axis Malta supply limit Minor Power repairs Minor Power upgrades Rail use over limit Load Transports Transport at sea over limits Invasion point over limit
- PP's			
* Action can cause PP's to go negative			V2.01

### 6.2.2 Random Research

Remember to look at the section on lab strategies in the Strategies Section.

The original research system had basic research progress was 1 per turn - 87% chance. There was a 10% chance for 8 and 3% chance for 15. Over time this means the progress will be about 2 per turn. The progress is multiplied by the number of labs and focus.

87%: 1

10%: 8

3%: 15



New random research system has the following probabilities:

40%:	1
20%:	1.5
20%:	2
10%:	3
5%:	5
5%:	10 (will be flagged as great progress)

This gives an average progress of 2.15 per turn.

The new system is better because you have to be very unlucky to get lots of 1's. It's only 40% per turn instead of 87%.

You won't often get a great result, but enough for random research to be exciting. Random research means you can't predict when you will get the new techs and that's a good thing. The new random research system will give enough uncertainty for the players to enjoy it.

### 6.2.3 Air & Sub Technology Slowed

Progress in air techs were slowed a bit. This ensures the techs cap out later than they did in older CEaW/GS versions. Research difficulty increased by 5 for air techs to:

DOG_FIGHT	30
CLOSE_AIR_SUPPORT	25
STRATEGIC_OPERATIONS	25

Research difficulty for subs increased from 15 to 20

Altered research progress for scenarios other than 1939 to indicate the increased research difficulty for air techs and sub tech.

### 6.2.4 USA Tank Technology Change

Altered the tech levels slightly so USA gets Sherman tanks instead of Grant tanks in the 1944 scenario.

### 6.2.5 Naval Technology Changes (GS 3.0)

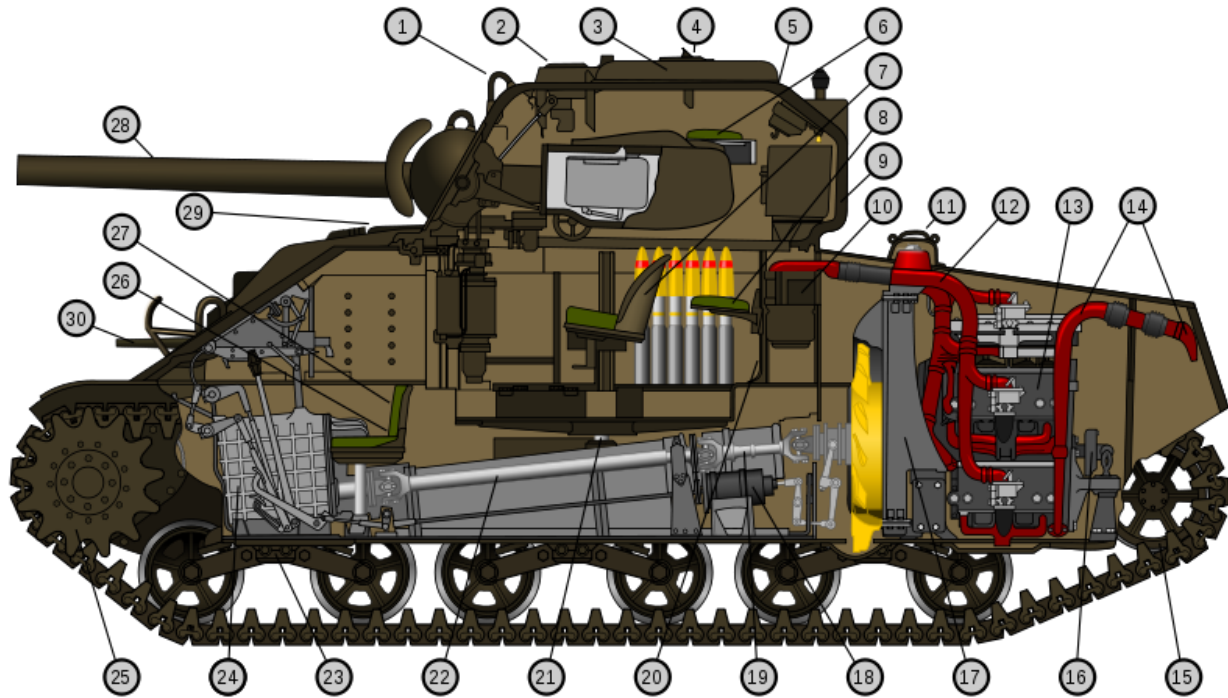
Added some changes to technology for naval units.

- ◆ Subs get +1 anti aircraft at submarine tech 2 and 6
- ◆ DD, BB + transport get +1 anti aircraft at surface ships tech 5.
- ◆ CV's and BB's receive +1 Survivability against sub attacks.



*Medium Tank M3, Fort Knox, June 1942*

## Sherman Tank - WWII



### Deutsch: Mittlerer Panzer M4A4 - Schnittansicht

1 - Kranöse, 2 - Lüftung, 3 - Turmluke, 4 - Periskop, 5 - Laufring, 6 - Turmsitz zur Bedienung eines auf dem Geschützturm angebrachten 12,7-mm-Maschinengewehrs, 7 - Sitz des Richtschützen, 8 - Kommandantensitz (neben Ladeschützensitz), 9 - Geschützturm, 10 - Luftfilter, 11 - Kühlerverschluss, 12 - Ansaugverteiler, 13 - Mehrfachreihenmotor (fünf 6-Zylinder-Motoren), 14 - Auspuff, 15 - Kettenausgleichsrad, 16 - Wasserpumpe, 17 - Kühler, 18 - Stromerzeuger, 19 - Hintere Antriebswelle, 20 - Turmkorb, 21 - Schleifring, 22 - Vordere Antriebswelle, 23 - Spiralfeder-Aufhängung, 24 - Getriebe, 25 - Kettenantriebsrad, 26 - Fahrersitz, 27 - Sitz des Bug-MG-Schützen (neben Fahrersitz), 28 - 75-mm-Kanone, 29 - Fahrerluke, 30 - 7,62-mm-Bug-Maschinengewehr

### English: Tank M4A4 cutway

1 - Lifting ring, 2 - Ventilator, 3 - Turret hatch, 4 - Periscope, 5 - Turret hatch race, 6 - Turret seat, 7 - Gunner's seat, 8 - Turret seat, 9 - Turret, 10 - Air cleaner, 11 - Radiator filler cover, 12 - Air cleaner manifold, 13 - Power unit, 14 - Exhaust pipe, 15 - Track idler, 16 - Single water pump, 17 - Radiator, 18 - Generator, 19 - Rear propeller shaft, 20 - Turret basket, 21 - slip ring, 22 - Front propeller shaft, 23 - Suspension bogie, 24 - Transmission, 25 - Main drive sprocket, 26 - Driver's seat, 27 - Machine gunner's seat, 28 - 75 mm gun, 29 - Drivers hatch, 30 - M 1919A4 machine gun

### **Español: Corte transversal de un tanque M4A4**

1 - Anilla para elevación, 2 - Ventilador, 3 - Escotilla de la torreta, 4 - Periscopio, 5 - Bisagra de la escotilla de la torreta, 6 - Asiento de la torreta. Permite manejar la ametralladora de 12,7 mm de la misma, 7 - Asiento del artillero, 8 - Asiento del comandante (junto al asiento del cargador), 9 - Torreta, 10 - Filtro de aire, 11 - Tapa de radiador, 12 - Repartidor del filtro de aire, 13 - Grupo motor, 14 - Tubo de escape, 15 - Guía de la cadena, 16 - Bomba de agua, 17 - Radiador, 18 - Generador eléctrico, 19 - Eje de transmisión trasero, 20 - Habitáculo de la torreta, 21 - Pivote de rotación, 22 - Eje de transmisión delantero, 23 - Bogie de suspensión, 24 - Caja de cambios, 25 - Piñón de tracción principal, 26 - Asiento del conductor, 27 - Asiento del servidor de la ametralladora, 28 - Cañón de 75 mm, 29 - Escotilla del conductor, 30 - Ametralladora M 1919A4

### **Français : Écorché d'un Tank Sherman M4A4**

1 - Anneau de levage, 2 - Ventilateur, 3 - Trappe de tourelle, 4 - Périscope, 5 - Charnière de la trappe de tourelle, 6 - Siège de tourelle, 7 - Siège du canonnier, 8 - Siège de commandement, 9 - Tourelle, 10 - Filtre à air, 11 - Protection du vase d'expansion du radiateur, 12 - Répartiteur du filtre à air, 13 - Moteur, 14 - pot d'échappement, 15 - guide de la chenille, 16 - Pompe à eau, 17 - Radiateur, 18 - Générateur électrique, 19 - Arbre moteur arrière, 20 - Habitacle de la tourelle, 21 - Pivot de rotation, 22 - Arbre moteur avant, 23 - Boggie de suspension, 24 - Transmission, 25 - Pignon d'entraînement principal, 26 - Siège du conducteur, 27 - Siège du servant de la mitrailleuse, 28 - Canon de 75 mm, 29 - Trappe des conducteurs, 30 - Mitrailleuse M 1919A4.

### **Polski: Czołg M4A4 cutway**

1 - Pierścień mocujący, 2 - Wentylator, 3 - Właz wieży, 4 - Peryskop, 5 - Turret hatch race, 6 - Stanowisko obsługi wieży, 7 - Stanowisko działonowego, 8 - Stanowisko obsługi wieży, 9 - Wieża, 10 - Filtr powietrza, 11 - Radiator filler cover, 12 - Rura prowadząca dopływ oczyszczonego powietrza do silnika, 13 - Silnik, 14 - Rura wydechowa, 15 - Koło prowadzące gaśnicę, 16 - Pojedyncza pompa wody, 17 - Radiator, 18 - Generator, 19 - Środkowy wał napędowy, 20 - Kosz wieży, 21 - Obrotnica, 22 - Przedni wał napędowy, 23 - Wózek zawieszenia, 24 - Skrzynia biegów, 25 - Koło napędzające, 26 - Stanowisko kierowcy, 27 - Stanowisko strzelca karabinu maszynowego, 28 - Działo kal. 75 mm, 29 - Właz kierowcy, 30 - karabin maszynowy M 1919A4

**Русский:** 1 - Подъемные кольца, 2 - вентилятор, 3 - башенный люк, 4 - Перископ, 5 - башни гонки люк, 6 - башенное сиденье, 7 - сиденье наводчика, 8 - башенное сиденье, 9 - башня, 10 - воздушный фильтр, 11 - радиаторы наполнителя покрытие, 12 - Воздухоочиститель многообразии, 13 - Блок питания, 14 - выхлопной трубы, 15 - ленивец, 16 - одноместные водяной насос, 17 - радиатор, 18 - генератор, 19 - задний карданный вал, 20 - башни корзине, 21 - фазным, 22 - передний карданный вал, 23 - Подвеска тележки, 24 - Коробка передач, 25 - Главный звездочки привода, 26 - сиденье водителя, 27 - сиденье машины

наводчика, 28 - 75 мм пушка, 29 - лючок водителя, 30 - М 1919А4 пулемета

### 6.2.6 Research Limits







The number of labs in any one category is restricted by year, as given below:

Calendar Period	Restriction
1939	Max 1 lab per category
1940	Max 2 labs per category
1941-1942	Max 3 labs per category
1943-1945	Max 4 labs per category







In order to build the first 3rd lab in a given research area you need to have at least 1 lab in 3 other research areas.

In order to build the second 3rd lab in a given research area you need to have at least 2 labs in 3 other research areas or 1 lab in 4 other research areas.

## 6.2.7 German Labs







		1939			1940			1941			1942			1943			1944		
	War Effort	110%			110%			120%			130%			140			145		
	Lab Price	20			79			99			92			78			67		
	Max Labs	11			11			12			13			14			14		
	Total Labs	0			8			12			13			13			13		
	Focus Pts	2			3			3			4			5			4		
Research Areas	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%
	Artillery	0	0	0	2	0	22	3	1	0	3	2	52	3	3	75	3	5	26
	Fixed Defenses		1	0		1	19		1	90		3	17		4	26		4	99
	Anti Tank Guns		0	0		0	19		0	91		2	17		4	30		5	0
	Blitzkrieg	0	1	0	2	1	16	3	2	0	3	3	53	3	4	77	3	5	53
	Armour		0	0		0	17		1	0		2	52		3	78		5	35
	Tank Destroyers		0	0		0	21		1	21		3	0		4	52		5	62
	Dog Fight	0	0	0	2	0	18	3	1	22	3	3	13	3	4	58	3	5	66
	Close Air Support		1	0		1	22		2	8		3	50		5	0		5	76
	Strategic Operations		0	0		0	22		1	8		2	50		5	14		4	84
	Surface Ships	0	1	0	1	1	12	1	1	48	2	1	94	2	2	35	2	2	68
	ASW		0	0		0	15		0	60		1	17		1	75		2	11
	SUB		0	0		0	30		1	20		2	34		3	25		4	6
	Industry	0	1	0	1	1	25	2	2	22	2	3	76	2	5	32	2	6	0
	Organization		3	0		3	9		3	44		3	99		4	57		5	14
	Radar		0	0		0	18		0	88		1	98		3	13		4	46

## 6.2.8 Italian Labs







		1939			1940			1941			1942			1943			1944			
	War Effort	10%			17%			85%			110%			120%						
	Lab Price	20			23			59			68			62						
	Max Labs	1			1			8			11			13						
	Total Labs	0			1			8			10			11						
	Focus Pts	2			3			3			4			5						
Research Areas	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	
	Artillery	0	0	0	0	0	0	2	0	44	3	1	60	3	3	0				
	Fixed Defenses		0	0		0	0		0	0		1	34		2	41				
	Anti Tank Guns		0	0		0	0		0	1		34	2		47					
	Blitzkrieg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	Armour		0	0		0	0		0	0		0	0		0					
	Tank Destroyers		0	0		0	0		0	0		0	0		0					
	Dog Fight	0	0	0	0	0	0	2	0	44	2	2	47	3	4	16				
	Close Air Support		0	0		0	0		0	0		1	85		3	0				
	Strategic Operations		0	0		0	0		0	1		85	2		0					
	Surface Ships	0	0	0	0	0	0	2	0	28	2	0	90	2	1	67				
	ASW		0	0		0	0		0	1		10	2		5					
	SUB		0	0		0	0		0	1		11	2		83					
	Industry	0	0	0	1	0	5	2	0	48	3	1	43	3	3	0				
	Organization		0	0		0	0		4	0		34	1		0	1				60
	Radar		0	0		0	0		8	0		69	2		0	3				18









## 6.2.9 French Labs

		1939			1940			1941			1942			1943			1944		
	War Effort	40%			47%														
	Lab Price	20			20														
	Max Labs	4			4														
	Total Labs	0			0														
	Focus Pts	2			3														
Research Areas	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%
	Infantry																		
	Artillery	0	0	0	0	0	0												
	Fixed Defenses		0	0		0	0												
Anti Tank Guns	0		0	0		0	0												
	Armour																		
	Blitzkrieg	0	1	0	0	0	0												
	Armour		1	0		1	0												
Tank Destroyers	0		0	0		0													
	Air																		
	Dog Fight	0	0	0	0	0	0												
	Close Air Support		0	0		0	0												
Strategic Operations	0		0	0		0													
	Navy																		
	Surface Ships	0	0	0	0	0	0												
	ASW		0	0		0	0												
SUB	0		0	0		0													
	General																		
	Industry	0	0	0	0	0	0												
	Organization		1	0		1	0												
Radar	0		0	0		0													







## 6.2.10 British Labs

		1939			1940			1941			1942			1943			1944		
	War Effort	35%			62%			99			120			130			136%		
	Lab Price	20			63			75			84			79			68		
	Max Labs	5			6			9			12			13			13		
	Total Labs	0			6			9			12			13			13		
	Focus Pts	2			3			3			4			4			4		
Research Areas	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%
	Artillery	0	0	0	1	0	7	2	0	52	3	1	83	3	3	0	3	4	17
	Fixed Defenses		0	0		0	5		0	43		1	53		2	62		3	66
	Anti Tank Guns		0	0		0	6		0	42		1	53		2	62		3	66
	Blitzkrieg	0	0	0	0	0	0	1	0	9	2	0	74	3	2	0	3	3	17
	Armour		1	0		1	0		1	7		1	74		2	33		3	57
	Tank Destroyers		0	0		0	0		0	10		0	93		2	0		3	42
	Dog Fight	0	0	0	2	0	13	2	1	7	3	3	13	3	4	23	3	5	50
	Close Air Support		0	0		0	17		1	0		2	33		3	58		5	5
	Strategic Operations		0	0		0	18		0	96		2	29		4	0		5	40
	Surface Ships	0	1	0	2	1	21	2	1	93	2	3	2	2	4	55	2	5	88
	ASW		0	0		0	46		2	23		4	10		5	0		5	85
	SUB		0	0		0	23		1	41		2	41		3	24		4	5
	Industry	0	0	0	1	0	22	2	1	8	2	2	17	2	3	22	2	4	25
	Organization		2	0		2	9		2	40		3	1		3	40		3	77
	Radar		1	0		1	17		1	80		2	55		3	28		4	0

## 6.2.11 USA Labs

		1939			1940			1941			1942			1943			1944		
	War Effort	4%			13%			46			130			130			136		
	Lab Price	20			23			35			84			79			68		
	Max Labs	0			1			4			12			13			13		
	Total Labs	0			1			4			12			13			13		
	Focus Pts	2			3			3			4			4			4		
Research Areas	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%
	Artillery	0	0	0	0	0	0	1	0	7	3	0	84	3	2	6	3	3	17
	Food Defenses		1	0		1	0		1	6		1	69		2	74		3	74
	Anti Tank Guns		1	0		1	0		1	6		1	68		2	74		3	74
	Blitzkrieg	0	0	0	0	0	0	0	0	10	3	1	17	3	1	10	3	3	17
	Armour		0	0		0	0		0	10		1	5		2	0		3	33
	Tank Destroyers		1	0		1	0		1	10		1	60		2	29		3	64
	Dog Fight	0	1	0	0	1	0	1	1	24	3	2	83	3	4	33	3	5	50
	Close Air Support		2	0		2	0		2	16		3	0		4	13		5	40
	Strategic Operations		2	0		2	0		2	15		3	0		4	13		5	40
	Surface Ships	0	1	0	0	1	0	1	1	33	2	2	39	2	3	88	2	5	16
	ASW		1	0		1	0		1	42		2	78		3	70		4	55
	SUB		2	0		2	0		2	41		3	66		4	60		5	0
	Industry	0	2	0	1	2	5	1	2	40	2	3	1	2	3	80	2	4	82
	Organisation		2	0		2	4		2	34		2	67		3	24		3	61
	Radar		1	0		1	12		1	59		2	55		3	8		3	82

## 6.2.12 Russian Labs

		1939			1940			1941			1942			1943			1944		
	War Effort	4%			12%			42%			120			130			130		
	Lab Price	20			23			27			84			79			68		
	Max Labs	0			1			4			12			13			13		
	Total Labs	0			1			3			12			13			13		
	Focus Pts	2			3			3			4			4			4		
Research Areas	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%
	Artillery	0	1	0	0	1	0	1	1	28	3	2	43	3	3	60	3	4	72
	Fixed Defenses		1	0		1	0		1	24		2	21		3	28		4	21
	Anti Tank Guns		1	0		1	0		1	23		2	19		3	28		4	21
	Blitzkrieg	0	0	0	0	0	0	0	0	22	3	1	41	3	3	26	4	4	69
	Armour		1	0		1	0		1	22		1	78		3	37		4	69
	Tank Destroyers		1	0		1	0		1	22		2	8		3	37		5	0
	Dog Fight	0	0	0	0	0	0	1	0	34	3	1	73	3	3	33	3	4	42
	Close Air Support		1	0		1	0		1	17		1	94		3	6		4	36
	Strategic Operations		1	0		1	0		1	15		1	98		3	6		4	36
	Surface Ships	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ASW		0	0		0	0		0	0		0	0		0	0		0	0
	SUB		0	0		0	0		0	0		0	0		0	0		0	0
	Industry	0	1	0	1	1	6	1	1	43	3	2	15	3	3	8	3	3	80
	Organisation		1	0		1	5		1	29		1	80		2	84		3	84
	Radar		0	0		0	10		0	56		1	64		2	72		3	72

## 6.3 Production Points - PP

### 6.3.1 City & Port Production Capacity

Every city and port has a full strength of 10-steps.

Each city has a production number (e.g., 2).

### 6.3.2 Calculating PP

The output for a city is

$$\text{round}((\text{current\_strength}/10)*\text{production})$$

Therefore, in an example where the city was at 7 steps, I.e. Had received some damage from bombing, the production would be

$$= \text{round}(2*7/10) = \text{round}(1.4) = 1$$

If this city is a core city then the production you receive from it is:

$$1 \times \%\_war\_effort/100$$

Thus, if you had 120% war effort you'd get 1.2 PP's. If this city is a captured city you get half of that value which would be 0.6 PP's. For cities with rail the same calculations apply using the rail points assigned to the city except that rail is NOT multiplied by war effort.

Now I'm not sure on this; but I think rail is also NOT halved if captured. But; I definitely could be wrong on that.

### 6.3.3 Attacks on Cities & Ports

When you bomb or attack a city and see a number flash you're seeing the number of steps damage. For example, if a city is at fully strength and you bomb it and see a 3 flash, you've reduced that city from 10 to 7 steps.

### 6.3.4 Additional Italian PP (GS 3.0)

Italy will receive extra production while neutral or Port Said is captured by Axis.

The extra production is set to 4 PP's and is modified by war effort. Italians will receive a +5 Max Morale boost if Athens is Axis controlled. Italy will receive a +5 Max morale boost if Port Said is Axis controlled.

## 6.4 Technology Factors

*European merchants supply the best weaponry, contributing to their own defeat.*

Saladin

### 6.4.1 Supplement Considerations on Focus Areas

- ◆ The efficiency of submarines against convoys depends on the submarine tech level.
- ◆ Amphibious invasions have a variable range depending on the surface ships tech level. Amphibious range is now equal to 6 + surface ships tech instead of a fixed range of 10.

### 6.4.2 GS Focus Points

**ADVANCED PLAYER TIP:** Put focus on one of the techs I really need. For example, put focus on submarine for the Germans from the start because high sub tech is needed and not surface ship / ASW tech. For air units keep balanced research until getting strategic operations tech 1 (+3 attack range). Then put focus on dogfight. For armor and infantry put focus in the tech lagging behind if it's important and it is needed sooner. Sometimes, you can put focus in an important advance like the one giving +1 ground attack to corps units. So when you have the +1 ground defense from fixed defenses -- put focus on artillery to get +1 ground attack. Then change to balanced or maybe focus on antitank. The same can be done with armor. I might initially put focus on blitzkrieg to get +1 ground attack. Later, put focus on armor to get better survivability, but if your opponent has strong tanks -- put focus on tank destroyers.

For general you can put focus on industry as the Germans to get to tech 3 (to get 13 labs). Then, put focus on organization to get to tech 5 and then radar to boost flak defense in cities.

Put focus on a specific area where you want the tech advantage sooner. Just know that this focus is at the expense of getting techs from the other 2 areas at a slower pace.

### 6.4.3 GS Focus Changes

- ◆ Changed research so a country that's not at war or mobilized cannot put focus on any tech within a research area.
- ◆ Changed research so you only spend a focus put by setting a focus. If you revert research back to balanced then you don't spend a focus point.
- ◆ USA and Russia will now accumulate focus points every July (not in January) when not at war. That should give them slightly more focus points when they enter the war.

Changed some unit techs

- ◆ Fighter will no longer get tactical operations tech 2 and lose +1 naval attack and +1 antitank
- ◆ Strategic bombers will now get tactical operations tech 3 and get +1 shock attack and +1 antitank
- ◆ Dogfight tech 2 (+1 air attack) now includes TAC in addition to STR and FTR
- ◆ Strategic operations tech 4 will get +2 strategic attack instead of +1 (will affect TAC, STR)
- ◆ Strategic operations tech 5 will get +1 strategic attack instead of +1 (will affect TAC, STR, FTR, CV)
- ◆ ASW tech 3 (+1 sub attack) will no longer affect FTR and TAC
- ◆ TAC will start with air attack 1 instead of 2
- ◆ STR will start with air attack 2 instead of 1

#### 6.4.4 Highest Tech Levels?

What is the highest accumulated tech value a unit type has in GS v2.1 and which unit types can reach that value?

1. **ARM** can get up to 24 tech level -- 6 blitzkreig, 6 armour, 6 tank destroyers and 6 organization.
2. **MECH** - 5 artillery, 4 fixed defenses, 6 anti-tank, 2 blitzkreig, 1 armour and 6 organization.
3. **CV** - 5 dog fight, 3 close air support, 2 strategic operations, 3 surface ships, 3 ASW, 6 organization and 2 radar.

#### 6.4.5 GS 3.0 Adjustments (GS 3.0)

- ◆ Raised research cost for ASW tech and Submarines tech to 25.
- ◆ Raised research cost for Dog Fight to 35.
- ◆ Close Air Support to 30.
- ◆ Dogfight Tech changed - Swapped level 2 and 3 so +1 SURV comes tech 2, +1 Air Combat tech 3.
- ◆ Moved 1 Air Combat from level 5 to level 6.
- ◆ Added Tactical Bombers to Close Air Support to level 6.

## 6.4.6 Infantry

**Laboratories**

Lab Price: 20  
Max labs: 11  
Total Labs: 0  
Focus Points: 2

Artillery    Fixed Defenses    Anti Tank Guns

Category	Level	Progress
Artillery	Lvl 1	0%
Artillery	Lvl 2	0%
Artillery	Lvl 3	0%
Artillery	Lvl 4	0%
Artillery	Lvl 5	0%
Artillery	Lvl 6	0%

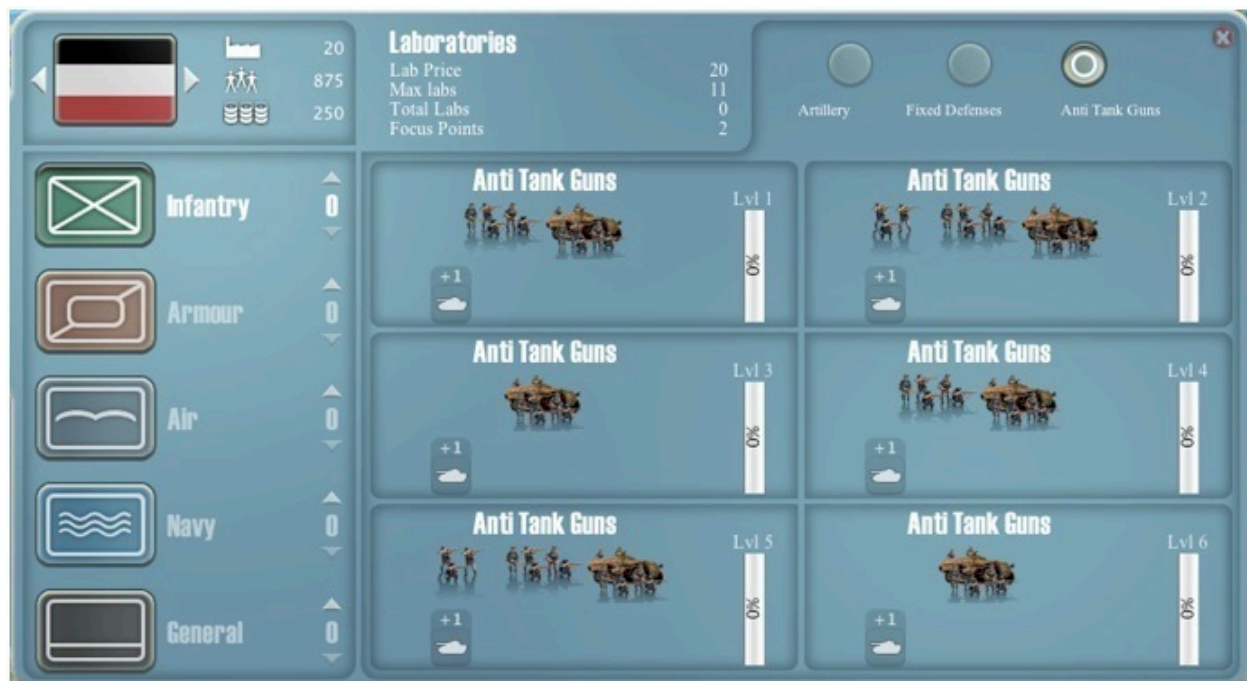
**Laboratories**

Lab Price: 20  
Max labs: 11  
Total Labs: 0  
Focus Points: 2

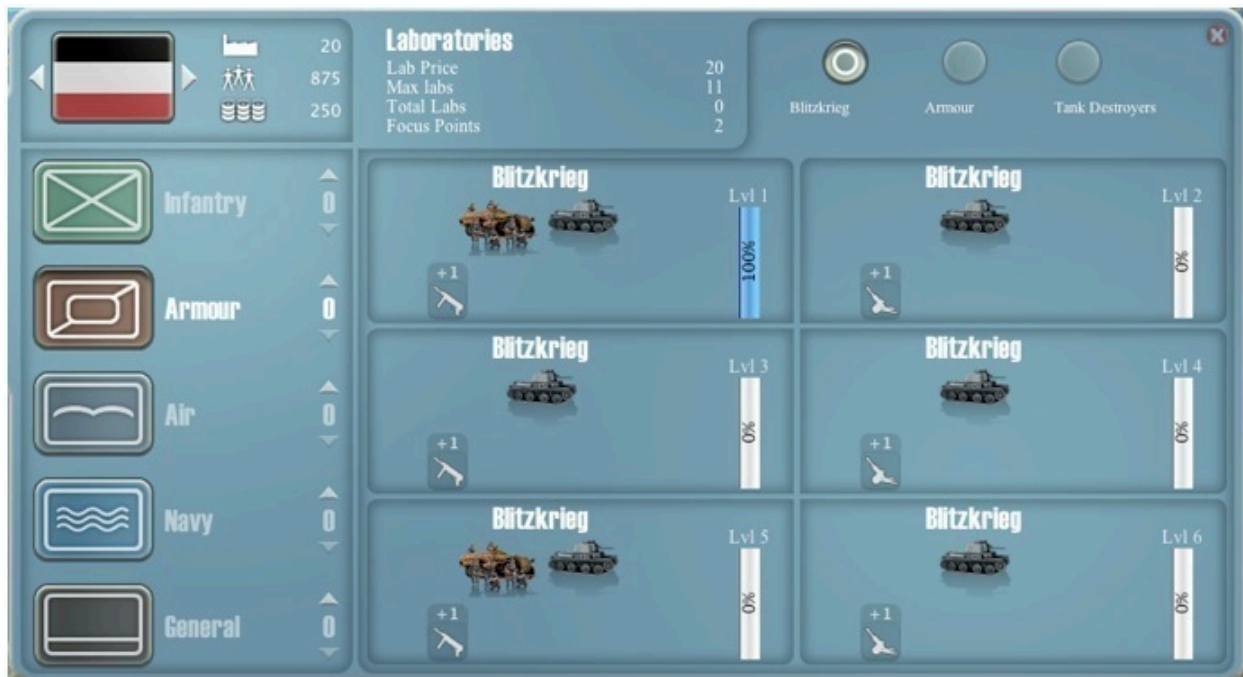
Artillery    Fixed Defenses    Anti Tank Guns

Category	Level	Progress
Fixed Defenses	Lvl 1	100%
Fixed Defenses	Lvl 2	0%
Fixed Defenses	Lvl 3	0%
Fixed Defenses	Lvl 4	0%
Fixed Defenses	Lvl 5	0%
Fixed Defenses	Lvl 6	0%





## 6.4.7 Armour





## 6.4.8 Air

**Laboratories**

Lab Price: 20  
Max labs: 11  
Total Labs: 0  
Focus Points: 2

20  
875  
250

Infantry 0  
Armour 0  
Air 0  
Navy 0  
General 0

**Dog Fight** Lvl 1 0%  
**Dog Fight** Lvl 2 0%  
**Dog Fight** Lvl 3 0%  
**Dog Fight** Lvl 4 0%  
**Dog Fight** Lvl 5 0%  
**Dog Fight** Lvl 6 0%

Close Air Support  
Strategic Operations

**Laboratories**

Lab Price: 20  
Max labs: 11  
Total Labs: 0  
Focus Points: 2

20  
875  
250

Infantry 0  
Armour 0  
Air 0  
Navy 0  
General 0

**Close Air Support** Lvl 1 100%  
**Close Air Support** Lvl 2 0%  
**Close Air Support** Lvl 3 0%  
**Close Air Support** Lvl 4 0%  
**Close Air Support** Lvl 5 0%  
**Close Air Support** Lvl 6 0%

Dog Fight  
Close Air Support  
Strategic Operations





## 6.4.9 Naval

**Laboratories**

Lab Price 20  
Max labs 11  
Total Labs 0  
Focus Points 2

Surface Ships ASW Submarines

**Surface Ships** Level 1 100%  
+1

**Surface Ships** Level 2 0%  
+1 +1

**Surface Ships** Level 3 0%  
+1 +1 +1

**Surface Ships** Level 4 0%  
+1 +1

**Surface Ships** Level 5 0%  
+1

**Surface Ships** Level 6 0%  
+1

Infantry 0  
Armour 0  
Air 0  
Navy 0  
General 0

**Laboratories**

Lab Price 20  
Max labs 11  
Total Labs 0  
Focus Points 2

Surface Ships ASW Submarines

**ASW** Level 1 0%  
+1

**ASW** Level 2 0%  
+1

**ASW** Level 3 0%  
+1

**ASW** Level 4 0%  
+1

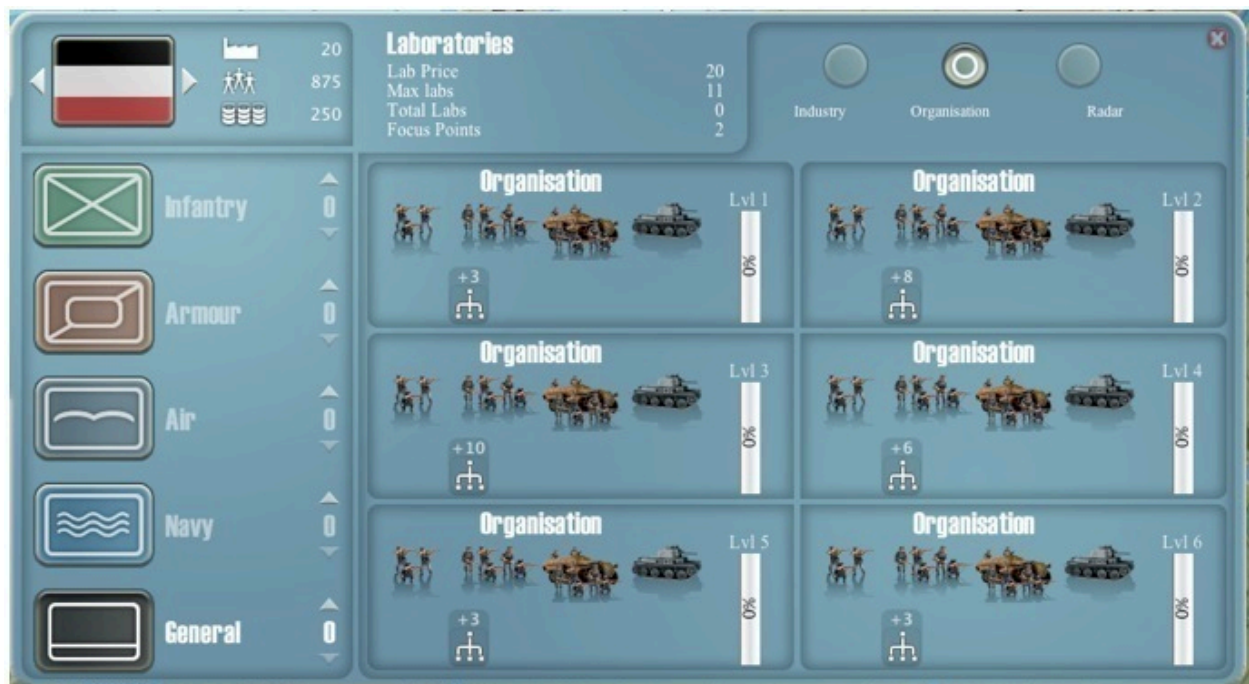
**ASW** Level 5 0%  
+1

**ASW** Level 6 0%  
+1

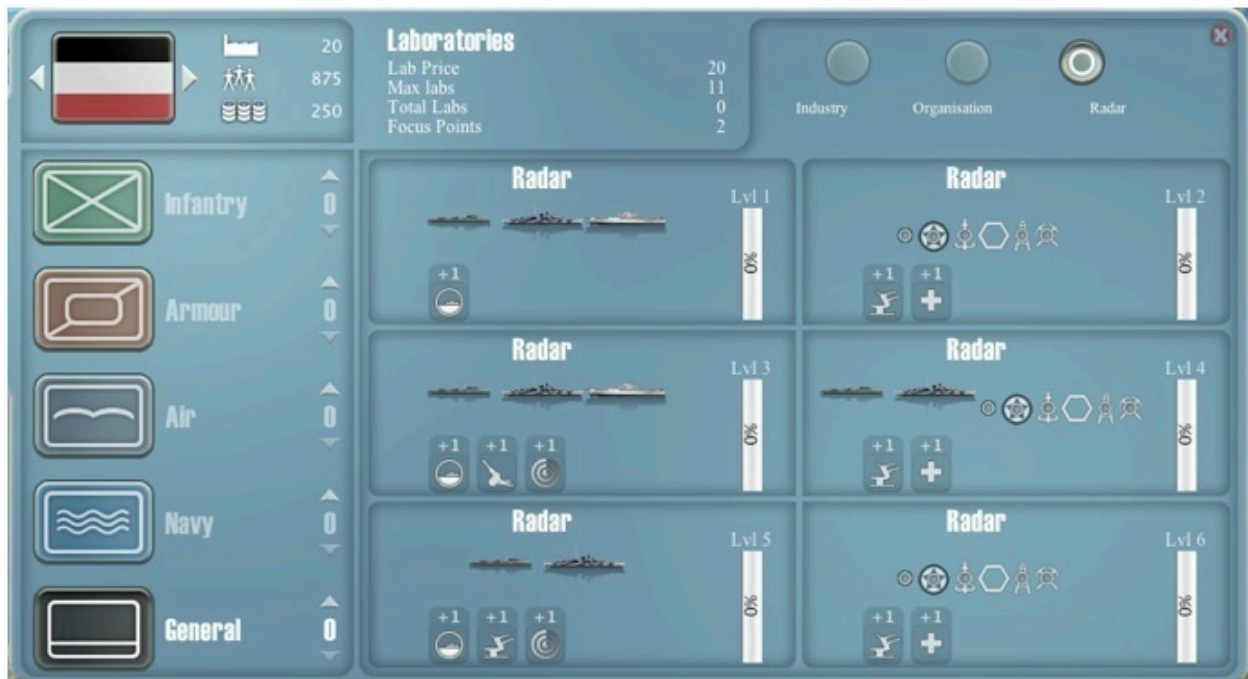
Infantry 0  
Armour 0  
Air 0  
Navy 0  
General 0



## 6.4.10 General







## 6.5 War Effort

### 6.5.1 Axis Minor Powers

Increased the war effort of Axis minor powers under the following conditions:

- ◆ Finland will use the German war effort.
- ◆ Bulgaria will use the German war effort instead of Bulgarian war effort **if Athens is Axis controlled**.
- ◆ Hungary and Romania will use the German war effort instead of the local war effort **if Belgrade is Axis controlled**. See the expanded notes in the next section.
- ◆ This means that the Axis minor powers will have slightly better production.
- ◆ The change is minor, but the player will notice a slightly higher oil production for the Germans.

### 6.5.2 Taking Yugoslavia

If you take Yugoslavia as the Axis you improve the German war effort for Hungarian and Romanian production, i. e. slightly more oil each turn. If you take Greece you get German war effort for Bulgarian production.

Longer term a player will benefit having increased production from Nagykanitsa and Ploesti because they use the German war effort instead of the minor power war effort. For example, German war effort will be 2 tech levels above the local war effort so it can add up to about 20% extra war effort.

Let's say Germany has industry tech 2 and thus 120% war effort. The Romania and Hungary can max have 100% war effort (tech 0 in industry).

Romanian oil per turn without Yugoslavia Axis:  $4 * 4 * 100\% = 16.0$   
 Hungarian oil per turn without Yugoslavia Axis:  $1 * 4 * 100\% = 4.0$   
 Total: 20.0

Romanian oil per turn with Yugoslavia Axis:  $4 * 4 * 120\% = 19.2$   
 Hungarian oil per turn with Yugoslavia Axis:  $1 * 4 * 120\% = 4.8$   
 Total: 24.0

So Germany gets 4 oil extra per turn. That is a quite significant reward for making an invasion of the Balkans, despite having to deal with a lot of partisans.

### 6.5.3 USA

US war effort drops by 6 for each country the Allies DoW prior to US entry into the war.

## 6.6 Manpower, Experience & Efficiency Level (GS 3.0)



German soldier in North Africa during World War II

### 6.6.1 Efficiency Formula

Here is the actual formula:

Max efficiency = LOWEST\_MAX\_EFFICIENCY + efficiency boost from technology + 2 \* unit quality value + 3 \* supply level in unit hex + 2 \* best leader in range quality value

Found in general.txt

LOWEST\_MAX\_EFFICIENCY 40 /\*Max EFFICIENCY for a unit with no commander, no supply, no tech, zero quality\*/

**What is the MAXIMUM efficiency?**

Here is the solution to the max possible efficiency.

```
Max Morale = base max morale + tech + 2*quality + 3 * supply + 2 * commander
Base max morale = 40
Tech = Tech 6 organization: 3 + 8 + 10 + 6 + 3 + 3 = 33
Quality: Mech units have best quality from tech: base 5 + 1 (fixed defense tech 1) + 1 (fixed
defense tech 6) = 7
In addition SS or Guards mech units have +1 quality
Units gain 1 quality per XP level and max XP level is 4 (100 experience)
Max quality = 7 + 1 + 4 = 12
Max supply = 5
Max commander quality = 8 (Zhukov and Manstein)
Max morale = 40 + 33 + 2*12 + 3*5 + 2*8 = 40 + 33 + 24 + 15 + 16 = 128
```

So the correct answer is 128 and the unit is a German SS or Soviet Guards mech unit with XP level 4 in a hex with supply level 5 and tech 6 in both organization and fixed defenses and within range of Manstein or Zhukov. The chance for this happening is very low, but it's not impossible.

## 6.6.2 Low Manpower Impact

The following describes the impact of low manpower on your units:

- ◆ Manpower  $\geq 75\%$  = no penalty (White)
- ◆  $50\% \leq \text{manpower} < 75\%$  = -1 quality (Yellow)
- ◆  $25\% \leq \text{manpower} < 50\%$  = -1 quality and -1 survivability (Orange)
- ◆  $0\% \leq \text{manpower} < 25\%$  = -2 quality and -1 survivability (Red)
- ◆ Manpower  $< 0\%$  = -2 quality and -2 survivability

The real quality and survivability is the average of the old values and new values. The internal values are double and not integer. So you could, for example, have 3.9 quality if you repaired 1 step of a unit with quality 4 and manpower is between 50 and 75. Therefore, the repair drops the quality by 0.1 and not a full 1. When the value is between 3.5 and 4.4 it will show as 4. When it drops to 3 it means it can be between 2.5 and 3.4.

When you repair a unit and manpower is back up above 75 then it will increase the value again if they had already dropped.

Enemy manpower drop in quality and survivability can be seen when you hover over a unit. For example, if you see that the enemy mech unit has tech 2 in fixed defenses it should have quality 6. If it only shows quality 5 then you understand it has dropped 1. If the survivability is lower than expected you know the manpower has dropped further. This is a bit complicated, though, because XP level will increase the quality and survivability. You can also have units built when the manpower was higher and haven't been repaired after the manpower dropped. Those will show full quality and survivability. So with some hovering you could discover a drop, but you might have to search awhile.

Are these values cumulative? That is, if a unit is built while in 'orange' MP (25% to 50% MP reserves) is it a total penalty of -1 quality and -1 survivability, or is it -1 quality for being below 75% plus another -1 for

a total of -2 quality at that level? No, they are not cumulative. Manpower level is shown in the tooltip of the manpower. The current manpower penalty is also shown in the tooltip.

### 6.6.3 Experience Level Changes

There have been extensive changes to how experience is lost and gained so that units don't lose experience as easily. Thus, units attacking secondary and, usually, easy targets (e.g., naval bombardment) don't gain experience at the same rate as if attacking primary targets (e.g., other ships).

### 6.6.4 Ground units

Ground units gain 6 XP points per attack on other ground units and 3 for attacks on air units.

Ground units gain 4 XP points when defending against other ground units, 4 XP when defending against air units and 2 XP when defending against naval units.

Units lose no experience when being repaired (reinforced) at 8-steps or 9-steps and lose a flat 5 XP points per step otherwise.

Reduced the XP gained from air attacks from 4 to 3.

For example, a ground unit is at 5-steps and repairs back to 10-steps. It would lose  $5 + 5 + 5 + 0 + 0 = 15$  XP points. The same unit at 3-steps, which repaired 5-steps back to 8, would lose  $5 + 5 + 5 + 5 + 5 = 25$  XP points.

GROUND_VS_GROUND_ATTACK_XP	4
GROUND_VS_GROUND_DEFENSE_XP	6
GROUND_VS_AIR_ATTACK_XP	2
GROUND_VS_AIR_DEFENSE_XP	4
GROUND_VS_NAVAL_DEFENSE_XP	2
GROUND_VS_PARTISAN_ATTACK_XP	3

XP discount is now only given if the repairing unit is in a hex where the core owner is from the same side. This can be turned on/off in general.txt.

```
DISCOUNT_ONLY_IN_CORE_FRIENDLY_HEX 1
/* 0..1. 1 = discount only if core hex owner is from same side. 0 = always */
```

Discount for air units added as well.

```
AIR_XP_LOSS_TO_STRENGTH_LEVEL 8 /* 0..10 Repairing above number won't lose XP */
```

Added code so Axis units (except Finnish units) in a hex with severe winter will recover half efficiency every turn the severe winter is still on in 1940 and 1941.

This can be turned on/off in general.txt.

```
AXIS_SEVERE_WINTER_HALF EFFICIENCY_GAIN 1 /* 1= Axis units except Finland gains
half efficiency if in severe winter zone in 1940-1941 */
```

### 6.6.5 Air units

Air units lose a flat 5 XP points per step repaired even at 8 or 9-steps.

FIGHTER_VS_AIR_ATTACK_XP	3
FIGHTER_VS_AIR_DEFENSE_XP	4

BOMBER_VS_AIR_ATTACK_XP	2
BOMBER_VS_AIR_DEFENSE_XP	2
FIGHTER_VS_NAVAL_ATTACK_XP	2
TAC_BOMBER_VS_NAVAL_ATTACK_XP	3
STRAT_BOMBER_VS_NAVAL_ATTACK_XP	3
AIR_VS_NAVAL_DEFENSE_XP	2
FIGHTER_VS_GROUND_ATTACK_XP	2
TAC_BOMBER_VS_GROUND_ATTACK_XP	3
STRAT_BOMBER_VS_GROUND_ATTACK_XP	2
AIR_VS_GROUND_DEFENSE_XP	2
FIGHTER_VS_RESOURCE_ATTACK_XP	2
TAC_BOMBER_VS_RESOURCE_ATTACK_XP	2
STRAT_BOMBER_VS_RESOURCE_ATTACK_XP	3

### 6.6.6 Naval units (GS 3.0)

Naval units lose a flat 5 XP points per step repaired even at 8- or 9-steps.

NAVAL_VS_NAVAL_ATTACK_XP	5
NAVAL_VS_NAVAL_DEFENSE_XP	5
NAVAL_VS_AIR_ATTACK_XP	0
NAVAL_VS_AIR_DEFENSE_XP	3
NAVAL_VS_GROUND_ATTACK_XP	0
SUB_VS_CONVOY_ATTACK_XP	3

NATO images for all countries at zoom level 3 will show a number of dots equal to the experience level for each unit.

Added unit XP when sub evades a battle:

NAVAL_VS_SUB_EVASION_ATTACK_XP	3
SUB_EVASION_VS_NAVAL_DEFENSE_XP	3
AIR_VS_SUB_EVASION_ATTACK_XP	2

### 6.6.7 General XP Rules

XP gain from being in enemy ZOC:

XP_FROM_BEING_IN_ENEMY_ZOC	1 /* XP gained per turn from being in enemy ZOC */
MAX_XP_FROM_BEING_IN_ENEMY_ZOC	50 /* Max XP level you can get from being in enemy ZOC */

Maximum XP loss from a single repair is:

MAX_XP_LOSS_FROM_REPAIRS	15
--------------------------	----

XP loss per step that can be shown in the different sections:

NAVAL_XP_LOSS_PER_STEP	5
NAVAL_XP_LOSS_TO_STRENGTH_LEVEL	10 /* 0..10. Repairing strengths above this number won't lose XP */
AIR_XP_LOSS_PER_STEP	5
AIR_XP_LOSS_TO_STRENGTH_LEVEL	8 /* 0..10. Repairing strengths above this number won't lose XP */
GROUND_XP_LOSS_PER_STEP	5

GROUND\_XP\_LOSS\_TO\_STRENGTH\_LEVEL 8 /\* 0..10. Repairing strengths above this number won't lose XP \*/

XP gains quality and survivability in this manner (from the vanilla game):

/\* XP needed for bonus to quality and survivability \*/  
EXPERIENCE\_PER\_QUALITY\_INCREASE 25 /\*How much experience needed to increase unit quality +1\*/  
EXPERIENCE\_PER\_SURVIVABILITY\_INCREASE 50 /\*How much experience needed to increase unit survivability +1\*/



## 6.7 Naval Logistics



*A Whale floating roadway leading to a Spud pier at Mulberry A off Omaha Beach*

### 6.7.1 Fall of London Impact

The northern convoy is sent to Halifax as a UK convoy instead of a Russian convoy if London and Liverpool are Axis controlled.

### 6.7.2 Additional Naval Units - Alignment

- ◆ Germany, Italy and UK will get an extra BB at turn 25 (December 24th, 1940). The variables are set in general.txt so it's possible to turn on/off each country. Can even set one for the USA, but the USA is currently set to "off". The turn of arrival of BB's is also variable.
- ◆ Added extra BB for Germany, Italy and UK for the 1941 scenario. They're not added for the



1942+ scenarios since these units were sunk during 1941. Italy lost some battleships in Taranto. Germany lost Bismarck and some other ships in 1941 and Britain lost Hood and several other BB's.

- ◆ Swapped the French BB and DD in the MED. Oran was the base for the battleships and Toulon for the destroyers.
- ◆ USA gets a free CV on turn 35.
- ◆ Added a new Italian sub to scenarios 1939-1943.
- ◆ Added 2 UK DD and removed a UK BB for all scenarios. One of these DDs start in Gibraltar since only DD's were stationed here early in the war.

### 6.7.3 Naval Build Times Increased

- ◆ Increased build time for subs from 4 to 6.
- ◆ Increased build time for BB's from 8 to 12.
- ◆ Increased build time for CV's from 8 to 15.

### 6.7.4 ASW Research Capabilities Changed

Altered ASW research and increased some ASW via Radar as well. The end result is that the Allies will gain ASW slightly slower and air units won't get high ASW so soon in the game. Tactical and strategic bombers start at ASW 1 instead of ASW 2.

### 6.7.5 Transport Loops (GS 3.0)

A number of new naval transport loops have been added that allows the player that controls that loop to move naval units from one sea area to another. CEaW-GS has a total of five naval transport loops, which are:









West Africa	TO	Red Sea
West Africa	TO	Persian Gulf
Red Sea	TO	Persian Gulf
Red Sea	TO	Mediterranean via <a href="#">Suez Canal</a>
Baltic	TO	North Sea via <a href="#">Kiel Canal</a>

Moved the transport loop in the Med so units coming out of the loop can't land in the Port Said port in order to minimize the chance that a unit exiting the loop will enter Port Said on the turn that the UK CV in Med is suppose to spawn; thereby preventing the CV from spawning.

GS 3.0 changes: The Sea transportation loops in the South Atlantic were moved North from the bottom edge of the map.

### 6.7.6 Transport Loop Icons (GS 3.0)

Transport loop icons have been changed to the following. Thus, a player can see the owner of the loop:

	Allies	Axis	Neutral	Closed
<b>Loop Icon</b>	 (0 units)			
<b>Dots display # of units Black = 1 Red = 2</b>	 5 units	 3 units	 6 units	 4 units

### 6.7.7 Africa Loop Change

The Africa loop turns increased from 1 to 2.

West Africa TO Red Sea

West Africa TO Persian Gulf

### 6.7.8 Baltic Loop Change

Moved the to Baltic Sea transport loop 1xSW so it covers the entrance to the Kiel canal. This change makes it harder to invade many hexes along the German North Sea coast.

## 6.8 Convoy Logistics



### 6.8.1 Convoys

The logic has been re-written to enable a convoy to re-route itself to the correct destination port in cases where the pathway is blockaded or the city / port has been captured.

The Primary City / Port for the UK power is Glasgow, followed by Liverpool, Cardiff, Belfast and finally Halifax if London and the other destinations are captured.

#### **Northern Convoy Spawning Exception**

Northern Convoy will now spawn near New York if London is Axis controlled and Russia not active.

#### **Convoy Tracking**

Made a change so convoy arrows will be shown at the start next Axis turn. Note that this is only at the start! Any action by the Axis - unit move, etc, will cause the arrows to disappear. Therefore, the wise German commander looks seaward first for the initial reconnaissance.

### 6.8.2 Convoy Movement

All convoys will normally go to the Glasgow port. Once Russia joins the Allies the northern convoy will go to the to Murmansk port on the map near Norway. Once USA joins the Allies the southern convoy will go to New York. If London is captured the convoys will instead go to Halifax in Canada.

The convoy will move from 1-5 hexes from it's current location in ANY direction and then 12 hexes in a direct line towards the destination port.

### 6.8.3 Allied Atlantic Escort Requirement

Added Allied escort requirement in the Atlantic. French and US fleet units at war will also be counted. CV and DD counts as 3 while a BB counts as 1. The requirement is set to 10. If the total capacity of the allies falls below this value then the value of convoys that spawn is multiplied by (escort\_value/10). Thus, convoy value is reduced by 10% for every escort point that the allies fall below 12.

```
ALLIED_ESCORTS_NEEDED_IN_ATLANTIC 12 /* This number of escorts needed for no  
negative impact on convoy size */
```

A message is sent to the Allied player at the beginning of each turn the requirement is not met, which means they can try to remedy the problem.

Allied naval unit presence in the Atlantic is now required at all times and not only when London is allied controlled as before. So the Allies can't afford to lose the RN in Sealion defense or later operations.

### 6.8.4 Convoy Max Values Changed

Changed the max values of each convoy to the following:

```
/* Max production worth of the 3 different convoys. Max value is modified by the averaged war  
effort of UK and USA */  
NORTH_ATLANTIC_CONVOY_SIZE 90 /* Convoys go to Russia after Russia joins the Allies.  
Before they go to UK */  
MID_ATLANTIC_CONVOY_SIZE 110 /* Convoys go always to UK */  
SOUTH_ATLANTIC_CONVOY_SIZE 90 /* Convoys go to USA after USA joins the Allies. Before  
they go to UK */
```

Old values were: North: 100, Mid: 140 and South: 50

These changes should give USA a considerable increased income at the expense of primarily UK, but to a lesser degree Russia. The southern convoy will use 3-4 turns to reach the destination port (New York)

### 6.8.5 Allied Convoy Ownership

Changed the owner of the southern convoy from UK to USA when USA joins the Allies.

### 6.8.6 Southern Convoy Spawning Location

Widened the column range for the southern convoy spawn point from 1-12 to 6-20. Row will always be at

the bottom of the map.

#### **6.8.7 Northern Convoy Changes (GS 3.0)**

Expanded Northern convoy spawn area. Northern convoy Max raised to 100.

#### **6.8.8 Central Convoy Changes (GS 3.0)**

Central convoy Max lowered to 100.

#### **6.8.9 Murmansk Convoy**

Murmansk convoy to Russia will not spawn if GB is conquered and Norway is in Axis hands. It will instead spawn and head to the UK ports.

#### **6.8.10 Submarine Effectiveness Against Convoys**

The efficiency of submarines against convoys depends on the submarine tech level.

## 6.9 Unit Logistics

### 6.9.1 Type Unit Limit Per Year

Limits on the number of certain types of units have been implemented. All unit types are affected except garrisons and corps. See the chart in the next section for specific limits.

Minor ally units do NOT count toward this limit. A major power that exceeds this unit limit suffers an additional supply burden cost in OIL and PPs.

Overall the limit is 3 for 1939, 5 for 1940, 7 for 1941, 9 for 1942, 12 for 1943, 15 for 1944 and 20 for 1945.

Supply Limit penalties:

- ◆ The PP cost for buying the next unit of type when the limit for that type has been met or exceed is:  

$$(\text{basic cost}) * 1.05 ^ {(\text{number of units above limit after purchase})}.$$
- ◆ The oil consumption for all units of that type is  

$$(\text{basic oil consumption}) * 1.05 ^ {(\text{number of units above limit})}$$

This means the penalty increases with the number of units above the limit. The penalty increase begins immediately when the first unit over the build limit is purchased. That is, the penalty starts even when the first unit is in the build queue for all the other units on the board - in active play. The penalty is in effect for all active units in play. Thus, units already on the board immediately are impacted by the increased OIL cost.

For example, prior to exceeding the limit you can move a unit (e.g., tac bomber) on the map with the usual oil cost. You can then build a number of new TACs (in this example) that put you over the limit and if you move a second TAC on the map (in the same turn) you'll have to pay the higher oil cost.

**Increasing costs example:** for armor the limit is 7 and you have 6 units and basic oil consumption is 4. The first purchase will be 80 PP's and oil consumption will be 4. The second purchase will be  $80 * 1.05 = 84$  PP's and oil consumption will now be  $4 * 1.05 = 4.2$  for ALL armor units. The third purchase will be  $80 * 1.05 * 1.05 = 88.2$  PP's and oil consumption for ALL armor units will now be  $4 * 1.05 * 1.05 = 4.41$ .

Just hover the mouse pointer over the bottom of a category on the build screen and it will show you how many you have and many units you can build without going over and paying extra in PP's and oil.

### 6.9.2 Build Limits Chart



CEAW-GS Unit Build Limits							
Unit type	1939	1940	1941	1942	1943	1944	1945
Mech, ARM, FTR, TAC, SAC SUB, BB, CV (see below) *	Penalties accrue when over limit. Increased unit cost and Oil consumption						
	(basic cost) * 1.05 ^ (number of units above limit after purchase) plus (basic oil consumption) * 1.05 ^ (number of units above limit)						
	3	5	7	9	12	15	20
GAR, INF, DD	No Limit						
SS ***	0	0	1	2	5	8	10
Guards ***	0	0	2	7	9	12	15
Paratroop Divisions	Number on Map / Can Build Cost = 15PP's						
GER	1 / 1	1 / 2	2 / 2	3 / 2	4 / 2	5 / 3	5 / 3
IT	0 / 1	0 / 2	0 / 2	1 / 2	2 / 2	2 / 3	2 / 3
UK	0 / 1	0 / 2	0 / 2	1 / 2	2 / 2	3 / 3	3 / 3
USA **	0 / 2	0 / 2	0 / 2	2 / 3	3 / 3	4 / 4	5 / 4
USSR **	0 / 2	0 / 2	1 / 3	2 / 3	3 / 3	4 / 4	5 / 4
<p>* Example;</p> <p>* In 1939 for Armor, the limit is 3 and you have 3 units and basic oil consumption is 3. The first purchase over the limit will be <math>85 * 1.05 = 89.2</math> PP's and oil consumption will be <math>3 * 1.05 = 3.1</math> for ALL Armor units. The second purchase over limit will be <math>85 * 1.05 * 1.05 = 93.7</math> PP's and oil consumption will now be <math>3 * 1.05 * 1.05 = 3.3</math> for ALL Armor units. The third purchase over the limit the cost will be <math>85 * 1.05 * 1.05 * 1.05 = 98.3</math> PP's and oil consumption for ALL armor units will now be <math>4 * 1.05 * 1.05 * 1.05 = 3.4</math>. If the limit increases the costs change to the new limit. So in 1940 if you have 6 Armor units the oil consumption will go down to 3.1 for ALL Armor units. If the player purchases another Armor ( number 7) the cost will be <math>85 * 1.05 * 1.05 = 93.7</math> PP's and oil consumption will increase to 3.3 (<math>3 * 1.05 * 1.05</math>) for ALL Armor units.</p> <p>** Builds Increased by one. Added Build shown in chart. Value set in general.txt .</p> <p>*** SS and Guards units. Mech and Armor units add 1 to Oil consumption. Additional costs to convert to Elite Units, GAR = 10 PP's, INF = 15 PP's, Mech = 20 PP's, Armor = 25 PP's .</p>							
V3.00							



### 6.9.3 Unit Efficiency Formula

Max efficiency = 40

+ unit quality \* 2  
 + unit supply level \* 3  
 + leader in range quality \* 2  
 + organization bonus

Example: Let's say you have a British airborne unit in Tunisia with quality 6, supply level 3, Monty nearby (7) and tech 2 in organization (3+8 = 11).

Then the max efficiency is  $= 40 + 2*6 + 3*3 + 2*7 + 11 = 86$

### 6.9.4 Unit Repair Formula Changed

Changed the code so repairs will only spend manpower multiplied with the repair index. The current values are 0.6D for ground/air and 0.8D for naval units. So it means you don't save as much when repairing naval units.

Moved the repair discounts from hardcoded into general.txt so we can alter the values later if we want. Current values are:

- ◆ **Naval units** - Repairs cost 80% of purchase costs.
- ◆ **Air units** - Repairs cost 60% of purchase cost.
- ◆ **Ground units** - Repairs cost 60% of purchase cost.

Manpower discount is set in general .txt file:

```
MANPOWER_REPAIR_DISCOUNT_GROUND 20 /*0..100. % less manpower cost when
repairing */
MANPOWER_REPAIR_DISCOUNT_AIR 15 /*0..100. % less manpower cost when repairing */
MANPOWER_REPAIR_DISCOUNT_NAVAL 10 /*0..100. % less manpower cost when repairing
*/
```

### 6.9.5 Manpower Repair Formula Changed

- ◆ Changed manpower consumption for repairs so that it uses the same discount as for PP repairs. Land & air units use 60% and naval units 80%.
- ◆ The example for infantry repairing from 7 to 10 steps should look like:  
 $7 * (100\% - 20\%) = 7 * 0.8 = 5.6$  manpower
- ◆ So keeping the cadres alive will be even more important.
- ◆ This change alone should delay the German manpower collapse from maybe late 1942 / early 1943 by maybe one year.

- ◆ That means that late-game battles won't be such walk over as they had been.

MANPOWER\_REPAIR\_DISCOUNT\_GROUND 20 /\*0..100. % less manpower cost when repairing \*/

MANPOWER\_REPAIR\_DISCOUNT\_AIR 15 /\*0..100. % less manpower cost when repairing \*/

MANPOWER\_REPAIR\_DISCOUNT\_NAVAL 10 /\*0..100. % less manpower cost when repairing \*/

### 6.9.6 Unit Upgrade When Adjacent to Enemy Unit

Units adjacent to enemy units can now be upgraded at an additional cost of 2 PP's. Both this functionality and the extra cost are controlled through the general.txt file.

### 6.9.7 Unit out of Supply Rule

Out of supply units lose 1 step per turn (except partisans and paratroopers).

**Corner Case:** The situation is that the Germans have just captured Warsaw, so Poland will surrender at the end of the turn. A German infantry corps at 8-steps (see screen cap) was cut off from supply during the allied turn and supply was not been reestablished during the next axis turn. Will that corps lose a step (i.e., it's un-supplied at the end of the turn) or will supply be reestablished by the Polish surrender before this check is made?

**ANSWER:** The corps will NOT lose a step; supply will be reestablished before any step loss since Poland surrenders in that turn.



## 6.10 Rail Logistics

### 6.10.1 Railroad Cost

A major power (Allies/Axis/Russian) capacity now represents a number of points that a they may use to rail units without additional costs.

Rail costs are:

Unit	Points
<b>Garrison</b>	<b>2</b>
<b>Infantry Corps</b>	<b>3</b>
<b>Mechanized Corps</b>	<b>4</b>
<b>Air Unit</b>	<b>4</b>
<b>Armour</b>	<b>5</b>

A side may exceed its rail capacity but at a geometrically increasing cost. The 1st point that exceeds the limit costs 1 PP, 2nd costs 2, 3rd cost 3 and so on. For example, if a faction has 2 rail points remaining and rails an Armour unit that requires 5 rail points then the cost is:

$$0 + 0 + 1 + 2 + 3 = 6 \text{ PP's}$$

If they then chose to rail a mechanized unit, which requires 4 rail points, this would cost is:

$$4 + 5 + 6 + 7 = 22 \text{ PP's}$$


### 6.10.2 Rail Capacity


### Rail Capacity


Country	Rail Cap Start	# of Industry Tech needed to increase Rail	Rail Cap increased / frequency	Rail Cap Maximum
Germany	8	2	1	11
Italy	3	3	1	5
UK	6	2	2	12
USA	2	2	1	5
France	3	2	1	6
Russia	14	2	3	23


ver 2.01

## 6.10.3 Rail Capacity By Power


	1939	1940	1941	1942	1943	1944
Rail Capacity	8	8	10	10	11	13
Oil Reserves *	300	419	614	595	460	289
Manpower Trained	875 - 82%	945 - 89%	1038 - 98%	810 - 76%	588 - 55%	278 - 26%
	-	-	-	-	Q(-1)	Q(-1) S(-1)
Production Stored	20	18	50	105	301	385
Transport Capacity	2	2	1 **	3	5	6
Invasion Capacity	1	2	2	2	4	4
War Effort	110%	110%	120%	130%	140%	145%
* German + Italian oil points. Germany and Italy share the same oil stockpile. ** Starts scenario with 2 transports loaded. Q = Quality S = Survivability						
						Ver. 2.05


	1939 *	1940 *	1941	1942	1943	1944
Rail Capacity	3	3	3	3	4	
Oil Reserves **	300	419	614	595	460	
Manpower Trained	215 - 60%	247 - 68%	304 - 84%	300 - 83%	217 - 60%	
	Q (-1)	Q (-1)	-	-	Q(-1)	
Production Stored	0	16	9	29	87	
Transport Capacity	1	1	1	1	3	
Invasion Capacity	1	1	1	1	2	
War Effort	10%	16%	70%	110%	130%	
* - Starts scenario Neutral. ** German + Italian oil points. Germany and Italy share the same oil stockpile. Q = Quality						
						Ver. 2.05

	1939	1940	1941	1942	1943	1944
Rail Capacity *	6	6	6	7	7	9
Oil Reserves *	1000	900	869	1650	2691	2498
Manpower Trained	371 - 65%	422 - 74%	509 - 89%	554 - 97%	612 - 107%	609 - 106%
	Q (-1)	Q (-1)	-	-	-	-
Production Stored	15	1	10	99	85	69
Transport Capacity	2	2	2	5	6	8
Invasion Capacity	2	1	2	3	4	5
War Effort	55%	61%	93%	120%	130%	136%
* Britain + France (if unconquered) + USA (if at war). These countries share the same oil stockpile. Q = Quality						
Ver. 2.05						

	1939	1940	1941	1942	1943	1944
Rail Capacity *	3	3	Surrendered			
Oil Reserves *	1000	900				
Manpower Trained	315 - 76%	322 - 76%				
	-	-				
Production Stored	0	5				
Transport Capacity	1	1				
Invasion Capacity	1	1				
War Effort	40%	46%				
* Britain + France (if unconquered) + USA (if at war). These countries share the same oil stockpile.						
Ver. 2.05						



	1939 *	1940 *	1941 *	1942	1943	1944
Rail Capacity **	3	3	3	4	4	5
Oil Reserves **	1000	900	869	1650	2691	2498
Manpower Trained	290 - 44%	348 - 53%	470 - 72%	578 - 89%	640 - 99%	658 - 101%
	Q(-1) S(-1)	Q(-1)	Q(-1)	-	-	-
Production Stored	0	20	260	83	80	82
Transport Capacity	3	3	3	4	5	8
Invasion Capacity	2	2	2	3	4	5
War Effort	4%	12%	40%	122%	130%	136%
* - Starts scenario Neutral. ** Britain + France (if unconquered) + USA (if at war). These countries share the same oil stockpile. Q = Quality S = Survivability						
Ver. 2.05						

	1939 *	1940 *	1941 *	1942	1943	1944
Rail Capacity	14	14	14	15	15	17
Oil Reserves	50	50	50	1160	2811	3640
Manpower Trained	1200 - 61%	1374 - 70%	1679 - 86%	1660 - 85%	1594 - 82%	1594 - 82%
	Q(-1)	Q(-1)	-	-		-
Production Stored	0	70	115	150	187	182
Transport Capacity	1	1	1	2	2	2
Invasion Capacity	1	1	1	1	2	2
War Effort	4%	11%	37%	112%	130%	130%
* - Starts scenario Neutral. Q = Quality						
Ver. 2.05						

#### 6.10.4 Rail Range

Extend the rail range to 50 hexes so now all hexes at supply level 3 can use rail either way except for

around Omsk (53 hexes), unless Moscow is captured. This change was made so that all hexes that can be railed to can be railed from.

### 6.10.5 Rail Capacity - Computations

A faction's rail capacity is the sum of the capacity of all countries in that faction that are at war and have not surrendered. The three factions are the Axis (Germany & Italy), Western Allies (UK, France and USA) and Russia.

A country's rail capacity is the sum of its intrinsic capacity plus the capacity added from key cities.

Intrinsic capacity increase as its industrial tech level increases and is given by the formula:

$$(\text{Industrial\_Tech\_Level} / \text{Frequency}) / \text{Increase}$$

(Where Frequency & Increase are given in the table below)

*NOTE: In the chart below "Frequency" should be "Frequency".*

Axis Faction		Western Allied Faction		Russian Faction	
German Rail		UK Rail		Russain Rail	
Fequency	2	Fequency	2	Fequency	2
Increase	1	Increase	2	Increase	3
City	Capacity	City	Capacity	City	Capacity
Berlin	3	London	2	Moscow	4
Hamburg	2	Ottawa	2	Omsk	2
Essen	1	Liverpool	1	Stalingrad	2
Munich	1	Glasgow	1	Gorki	1
Leipzig	1	French Rail		Kuibychev	1
Italian Rail		Fequency	2	Kiev	1
Fequency	3	Increase	1	Kharkov	1
Increase	1	City	Capacity	Astrakhan	1
City	Capacity	Paris	2	Sverdlovsk	1
Rome	2	Marseilles	1		
Milan	1	USA Rail			
		Fequency	2		
		Increase	1		
		City	Capacity		
		Washington	1		
		New York	1		

### 6.10.6 Degradation of Railroad Capacity

A major powers railroad capacity can be degraded (i.e., reduced) through strategic bombing and/or capture of key rail cities. Rail capacity degrades as a rail city is reduced from its maximum strength. The capacity provided by a city is given by the formula:

$$\text{round}(\text{Rail\_Capacity} * (\text{Current\_Strength} / \text{Max\_Strength}))$$

The loss of a city results in the total loss of its rail capacity and with the exceptions of Paris and Rome does not add to the capacity of the faction that captured the city. Both Paris and Rome give 1/2 of their rail capacity, which is 1 rail point each, to which ever side controls that city after French or Italian surrender. For example, Germany captures Paris knocking France out of the war. The Axis would get an additional rail point for controlling Paris. If the US/UK were to recapture Paris then the Axis would lose that 1 point and the Western Allied faction would then get it added to their capacity. Italy can surrender without losing Rome, thus. German on the surrender of Italy under this condition would lose all rail points contributed by Italy but would get 1 point back for controlling Rome.

### 6.10.7 Manpower Drop - Railcap Loss

Added Manpower loss per point of railcap captured by enemy:

```
/* Manpower % loss per railcap point captured by enemy. 0 = No loss */
MANPOWER_LOSS_PER_POINT_GERMANY 10
MANPOWER_LOSS_PER_POINT_ITALY 30
MANPOWER_LOSS_PER_POINT_UK 10
MANPOWER_LOSS_PER_POINT_FRANCE 30
MANPOWER_LOSS_PER_POINT_USA 10
MANPOWER_LOSS_PER_POINT_Russia 5
```

You don't lose absolute manpower by losing railcap cities. Instead you lose manpower generation. So the percentage will be the same. For example, Russia generates about 18 manpower units per turn. When Moscow falls they will only generate 14 per turn. So you lose about  $4 \times 18 = 76$  manpower per year for not having Moscow. That means almost 8 corps units. The manpower pool is manpower already collected and you don't lose that. We could do it, but then it would be disastrous to lose e. g. Moscow. Then with 1600 manpower you lose 20% from losing Moscow and drop to 1280. That means losing 320 immediately and 76 each year. It will drop the percentage from above 75 to almost 50.

### 6.10.8 To/From Rail Restrictions

Units can now only rail to and from hexes in or adjacent to resources (i.e., cities, ports, rail depots, fortresses (w/ PP), mines and oil fields).

### 6.10.9 Rail to Fortresses with PP

Fortresses with Production Points (PP) behave like cities for rail transportation purposes. You are allowed to place reinforcements or rail units in or in adjacent hexes to the fortress. Fortresses without PP exhibit the old behavior, i.e. they cannot be railed to or have new reinforcements placed in hexes adjacent to them.

### 6.10.10 Axis Use of Middle East Rail

You can turn on/off minor power rail network. So with rule “on” the Axis can use Damascus and Baghdad as rail sources.

### 6.10.11 Allies Joint Rail Use

Allied and Russian units can now rail to each other’s controlled territory with the following exceptions:

- ◆ No non-Russian units are allowed to be railed to core Russian hexes
- ◆ No units can rail to/from Russia from/to Egypt, Persia, Syria or Iraq. The reason is that there were no rail lines going through Persia to Russia. The high mountains between Russia and Persia prevents that. You have to sail units from Russia to Persia or move them by foot to be able to rail on the other side.

Since rail movement is now allowed between Russian and Allied controlled territory with the exceptions mentioned above, it means that now Russian units can rail when inside allied controlled Romania or Bulgaria. So Russian units won’t be stranded anymore inside Romania or Bulgaria when they liberate the capitals of these countries.

### 6.10.12 Rail Gauge Conversion (GS 2.2)

Bug Fix: Rail gauge conversion could happen between friendly countries like Persian standard gauge rail being converted into Russia. This is now fixed so Allied controlled standard gauge rail heads can’t convert rail into Russian controlled broad gauge hexes and vice versa unless Russia is conquered.

### 6.10.13 Local Country Rail Changes

You can use local rail networks if you capture the country’s capital. For example, Norway, Finland, Spain and other countries had a rail network so it did not make sense that you could not rail units in these countries. So we've changed the game code to the following:

- ◆ Units in supply level 4 and 5 receive supply from a major power capital and can rail move as before if not in enemy ZOC
- ◆ Units in supply level 3 can rail move if within 30 land hexes of a friendly capital and not in enemy ZOC.
- ◆ Capitals can only provide rail supply on the turn AFTER they enter the war if surprised (units lose efficiency from surprise).
- ◆ This means that you can only use rail supply on turn 2 of the invasion of the country. Local rail supply means you can rail move Spanish units on turn 2 of Operation Isabella. The Allies can get rail movement when landing in Spain or Portugal after they capture Madrid or Lisbon.
- ◆ Even more interesting is that the Germans get rail supply in England after they capture London. It didn't make sense that you couldn't rail any units in Britain even after taking all hexes there. You also get rail movement inside Finland / Norway. Germany can use rail movement in the

Middle East after taking Damascus / Baghdad or Basra.

- ◆ German units can rail move out of eastern Russia once they have taken Moscow and the unit that should be railed is within 30 hexes of Moscow and in supply level 3 or better (no rail movement from mountains or swamp).

#### 6.10.14 Rail Use on DoW

The rule is that on the DoW turn the country invaded cannot use it's rail movement. The exception is when you're attacked during a turn when the DoW'ed country's capital is in mud or winter weather then the country will NOT suffer any surprise loss.

That means that rail movement is not hampered. So if you attack a country during bad weather that country gets rail movement immediately on the first turn of the invasion. This is an even bigger reason not to DoW during winter.

The only countries really affected by this are Yugoslavia, Norway and Sweden. They need to be attacked during good weather so you can land the transports. Greece and Spain have their capitals in the Med weather zone and thus, do not experience bad weather.

#### 6.10.15 North American Rail Cost

Set North American rail cost to a fixed 1 per unit regardless of type.

## 6.11 Rail Depots

### 6.11.1 Rail Depots

Added a new resource type called rail depot, which replaces a number of “0” production cities for rail purposes. Also, added a number of rail depots across the map.

Rail depots do not provide the enhancement capability of a city, therefore, you need to plan accordingly. The rail depot use the underlying hex terrain type for entrenchment capability.

Axis Rail Icon



Allied Rail Icon



Russian Rail Icon



### 6.11.2 Rail Depot Operation Impact

Some of the Rail Depots were added for specific operation considerations, noted below.

- ◆ Added Nottingham in England to cover a hole near the English eastern coast line. Inverness was added in Scotland because it was an important rail terminus during WW2. It won't be used much unless Sealion is launched.
- ◆ Tartu was added in Estonia to function as a rail depot for the Axis advance northwards. It's the second largest city in Estonia. Also added Iasi in Romania, Plovdiv in Bulgaria and Banja Luka in Yugoslavia to function as staging points in case there is an action in the area. Iasi in Romania is particularly important before Barbarossa.
- ◆ Added rail depots in French North Africa. This way the Allies can e. g. land units from USA in



Casablanca or Agadir and rail them to Tunis once the path is cleared and Algiers is Allied controlled.

### 6.11.3 Rail Depots List

Canada:

- ◆ Moncton
- ◆ Edmundston

Morocco:

- ◆ Marrakech
- ◆ Fez
- ◆ Oujda

Algeria:

- ◆ Bone
- ◆ Constantine

Tunisia:

- ◆ Kasserine
- ◆ Sfax

Italy:

- ◆ Foggia
- ◆ Trieste
- ◆ Reggio

Britain:

- ◆ Nottingham
- ◆ Inverness

France:

- ◆ Limoges
- ◆ Calais

Belgium: Gent

Germany:

- ◆ Rostock
- ◆ Erfurt

Austria:

- ◆ Graz
- ◆ Linz
- ◆ Innsbruck

Czechoslovakia:

- ◆ Brno
- ◆ Kosice

Poland: Lublin

Greece: Larissa

Yugoslavia: Banja Luka

Bulgaria: Plovdiv

Romania:

- ◆ Cernauti
- ◆ Iasi

Syria:

- ◆ Aleppo
- ◆ Homs

Iraq:

- ◆ Kut
- ◆ Fallujah
- ◆ Najaf
- ◆ Nasiriyah
- Persia:
  - ◆ Kermanshah
  - ◆ Qom
- Trans-Jordan:
  - ◆ Amman
  - ◆ Ma'an
- Egypt:
  - ◆ Mersa Matruh
  - ◆ Suez
- Turkey:
  - ◆ Adapazari
  - ◆ Sivas
- Denmark: Esbjerg
- Norway: Lillehammer
- Sweden:
  - ◆ Karlstad
  - ◆ Borlange
  - ◆ Norrkoping
  - ◆ Gavle
- Finland: Oulu
- Estonia: Tartu
- Russia:
  - ◆ Rzhev
  - ◆ Velikiye Luki
  - ◆ Cherepovets
  - ◆ Kaluga
  - ◆ Zhitomir
  - ◆ Chernigov
  - ◆ Cherkasy
  - ◆ Sumy
  - ◆ Mogilev
  - ◆ Yerevan

#### 6.11.4 Cities Converted to Rail Depot

- Russia:
  - ◆ Sterlitamak
  - ◆ Saransk
  - ◆ Lipetsk
  - ◆ Vladimir
  - ◆ Kotlas
  - ◆ Syktyvkar
  - ◆ Nizhniy Tagil
  - ◆ Uralsk
  - ◆ Makhachskala
- France:
  - ◆ Dijon

	◆	Orleans
Sweden:		
	◆	Karlskrona
	◆	Ostersund
Norway:		
	◆	Kristiansand
	◆	Stavanger
Denmark:		Aalborg
Finland:		
	◆	Vaasa
	◆	Kuopio
	◆	Joensuu
Netherlands:		Groningen
Turkey:		
	◆	Canakkale
	◆	Erzurum
Persia:		Rasht

## 6.12 Russian Rail Changes

**Major changes** have been implemented to reflect the historical & logistics impact of the different rail gauge (gap between the rails) The Axis and Western Allies used standard gauge while the Russians used a broad gauge based rail system.

### 6.12.1 Rail Supply System

Implemented a supply model for 2 sets of rail gauge (rail width) based on the Russian broad gauge and German standard gauge. After Russia enters the war, the standard gauge will move eastwards 2 hexes per turn in fair weather and 1 hex per turn in mud/winter. In no case will it move further than the eastern most Axis controlled core Russian city/resource. The limit will be the hex column of the city plus 1. The broad gauge will move westwards 2 hexes per turn in fair weather and one hex per turn in mud/winter, but not further than the westernmost city/resource that's Russia controlled. The limit will be the column of the city minus 1.

#### German & Allied (Standard Gauge)



#### Russian (Broad Gauge)



This model of the rail heads based on the two different rail gauges are a approximation based on a vertical front line and no 2 rail heads, one that benefit each side the most. Usually the front line will straighten itself because it's easier to defend, but some times you get a breakthrough in one section like 1942 Case Blue. With this system we don't need rules for Russia paying to send units to the west. Now they need instead convert their captured / liberated cities to broad gauge.

Russian captured cities are checked everywhere and not in core Russian territory. The reason is that everywhere except Russia had standard gauge so the Russians needed to convert the rail lines there. Germany didn't need to change the rail lines in captured hexes outside Russia.

### 6.12.2 Rail Gauge Conversion Rate

Rail gauge conversion:

- ◆ Fair weather in target area: 2 hexes per turn
- ◆ Mud/winter/severe winter in target area: 1 hex per turn

### 6.12.3 Axis Checks

For Germany only core Russian hexes are checked because those were the ones with broad gauge. It's

very unlikely that Russia will manage to push the Germans into Poland / Germany and then the Germans push the Russians back into Russia. This is so unlikely as to not be worth the complexity of code and risks of bugs needed to handle this special case. Therefore, all German and Polish cities will be available for the Germans the turn after conquest for this very rare case.

### 6.12.4 Russian Limits

Russian units can only rail within broad gauge and Axis units only within standard gauge. Allied units can use both because some Allied minors can move in Russian territory (like liberated Romania and Bulgaria).

Units can only rail to / from a hex with the same rail gauge as the side. Axis = standard, Russian = broad, remaining Allies = standard. Note that not every hex shown with a rail symbol can be railed to; only those hexes in or adjacent to a resource can be. The rail hex symbol in this case is used to show which hexes will have “normal” supply and which will have to be supplied by truck.

Rail gauge conversion could happen between friendly countries like Persian standard gauge rail being converted into Russia. This is now fixed so Allied controlled standard gauge rail heads can't convert rail into Russian controlled broad gauge hexes and vice versa unless Russia is conquered. (V2.13)

## 6.13 Truck Resupply

### 6.13.1 End of Line - Truck Support

Another rule implemented is to flag hexes with a truck image in the hexinfo panel for hexes that are not within the same rail gauge as the current side and show a supply image for those hexes that are close to a rail head. See the next section for sample icons. Units within this range can have supply level 4 or 5. Units outside the range can max have supply level 3. This would simulate trucks supplying units between rail heads and the front line. The truck range can be 10 (set in general.txt). When you get above 40 hexes from a major capital the supply would drop to 3 anyway because of the long distance to send supplies. So the rule would simulate that e. g. the Axis army would rely upon trucks to get supply until the rail heads get nearby. The same for the Russians when they advance westwards. Truck supply would only be used where you are in a hex with a different rail gauge than what your side can use. Once you're within the same side rail gauge you get rail supply instead.

### 6.13.2 Truck Icons



Axis Truck Line



Axis Truck Head



Russian Truck Line



Russian Truck Head



Allied Truck Icon



Allied Truck Head

### 6.13.3 When Is Truck Resupply Used?

Truck supply is used when units are in a hex with rail gauge of the other side and you're within the truck range number of hexes to a rail head of your own rail gauge.

When you're within rail or truck supply you can have an effective supply level up to 5 (dependent on distance to your nearest major power capital). If you're not within rail or truck supply you can only have a max effective supply level of 3.

### 6.13.4 Truck Resupply Range

Truck range is:

Fair weather: 6  
Mud: 2  
Winter: 4  
Severe winter (Axis): 2  
Severe winter (Russia): 4

In Russia, truck supply will usually give the Axis supply level 4 instead of 3. That helps them keep full movement in most cases.



## 6.14 Supply Logistics



*An Allied tanker after being torpedoed during the Second Battle of the Atlantic, 1942*

*A common expression that has become popular “Amateurs study tactics; professionals study logistics”*

*[Un-attributed - Possibly Omar Bradley]*

### 6.14.1 Rail & Resource Supply (GS 3.0)

Rail depots, oilfields and mines now provide supply level 1 if not bombarded below 2 steps. These hexes usually had quite a bit of supplies due to their value. Now it also makes some sense bombarding them because you can deprive them of supply capability by dropping the damage down to red level.

### 6.14.2 Russian Scorched Earth

The fighting in the east was brutal and without mercy. Both the Germans and Russians in retreat destroyed as much usable materials as they could never leaving them behind for the enemy to use.

Any Russian core city captured, or recaptured, will lose an additional 5-steps if above 5-steps or be reduced to 0-steps if at 5-steps or less. Damaged cities and ports regenerate at the rate of 1-step per turn.

### 6.14.3 Axis Controls Moscow

Added a functionality so the supply level 4 for the Axis is extended 10 hexes in Russia if Moscow is Axis controlled. That should make Moscow even more important and definitely worth defending. Moscow was a major rail hub and would make it easier for the Axis to send supply if captured.







### 6.14.4 Increased Supply Penalty Distance

Added the supply penalty distance to general.txt per game year:

```
SUPPLY_PENALTY_DISTANCE_1939 15 /* 0-15 = supply lvl 5. 16-30 = supply lvl 4. 31+ =  
supply lvl 3 */  
SUPPLY_PENALTY_DISTANCE_1940 15 /* 0-15 = supply lvl 5. 16-30 = supply lvl 4. 31+ =  
supply lvl 3 */  
SUPPLY_PENALTY_DISTANCE_1941 15 /* 0-15 = supply lvl 5. 16-30 = supply lvl 4. 31+ =  
supply lvl 3 */  
SUPPLY_PENALTY_DISTANCE_1944 20 /* 0-20 = supply lvl 5. 21-40 = supply lvl 4. 41+ =  
supply lvl 3 */  
SUPPLY_PENALTY_DISTANCE_1945 20 /* 0-20 = supply lvl 5. 21-40 = supply lvl 4. 41+ =  
supply lvl 3 */
```

## 6.14.5 Supply Effects Chart

Supply Impact Chart

Supply level	Full $\Delta\Delta$ 5	Full $\Delta\Delta$ 4	Medium 3	Medium 2	Low 1	No Supply 0
Supply Source $\dagger\dagger$	Major Capital	Major Capital	Capital, City, Fortress	Capital, City, Fortress, Mulberries	Surface Naval	None $\dagger$
Distance (hexes) $\Delta\Delta$	1 - 20	21 - 40 $\Delta\Delta\Delta$	41 - 100 0 - 100	0 - 100	0 - 100	0 - 100
Terrain Type	Clear $\Delta$	Clear, Forest, Rough $\Delta$ Swamp $\dagger\dagger$	Mountain, Clear, Forest, Rough $\dagger$	Swamp $\dagger\dagger$ , Desert, Desert hills	Dune, or any land hex	Any land hex
Supply symbol						
Movement Range effect	0	0	MR = (MR - 1)	MR = (MR+1)/2 $\downarrow$	MR = (MR/4)+1 $\downarrow$	MR = 1
Repair Effects	up to 5	up to 4	up to 3	up to 2	1	0 $\Delta\Delta$
Rail $\Delta\Delta$ capability	Yes Source	Yes / No $\Delta\Delta\Delta$	Yes $\Delta\Delta\Delta$	No	No	No
<p> <math>\dagger</math> - Air units operate at medium supply (2) if there is no supply source  <math>\bullet</math> - Fortress with a PP value can supply units outside.  <math>\Delta</math> - Includes city, fortress, mine, and oil resource hexes  <math>\Delta\Delta</math> - Rail net range = 50 hexes, can rail up to 40 hexes per turn.  <math>\Delta\Delta\Delta</math> - Contiguous land hexes within supply range  <math>\dagger</math> - Mine, oil resource hexes  <math>\Delta\Delta</math> - Units with no supply drop effectiveness and 1 strength point each turn. Partisan and Paratroop units are not affected.  <math>\Delta\Delta\Delta</math> - Yes - Can rail into or adjacent to resource hex types. Cannot rail out of.  <math>\dagger\dagger</math> - Major Capital as supply source 1-20 hexes = Supply level (5), 21-40 hexes = Supply level (4), &gt; 40 hexes = Medium supply level (3)  <math>\dagger\dagger</math> - Swamp hexes have a supply level of 2 during Fair and Mud Weather, supply level 4 during Winter and Severe Winter Weather.  <math>\Delta\Delta\Delta</math> - Truck supply range in Fair weather is 6, Mud is 2, Winter is 4. Severe Winter is 4 for Russians, 0 for Axis.  <math>\Delta\Delta\Delta</math> - Units that are using Truck supply can not use rail. </p> <p>Naval Units repair maximum is 3 strength factors.</p> <p style="text-align: right;">V 2.14</p>						





























## 6.14.6 Sealion Success - UK Resupply

Made a change that if London falls to the Axis but the UK still controls Liverpool, then the British can still place new UK unit builds in England. Allied supply level will still drop to 3 when London falls but the ability to place new builds means the British will now have a chance to prolong the battle a bit if Sealion is launched.

### 6.14.7 North Africa Axis Supply

A good read: [Eisenhower's Report on Operation Torch](#)

CEaW already imposes reduced supply for units in North Africa and the Middle East. The Grand Strategy model places additional restrictions on the Axis power. Axis air and ground units located in North Africa and the Middle East consume supply units every turn. These rates are defined in the table below. Libyan and other African ports provide supply points every turn at the rates given in the table. Also, the capture of Gibraltar or Malta by the Axis provides an additional 10 supply points each per turn. If the Allied naval presence in the Med drops below the minimum defined in the table the Axis also get an additional 10 supply points per turn.

Supply point cost	Unit type	Unit symbol	Nationality
4	ARM, TAC, SAC	  	 
3	ARM, TAC, SAC	  	 
2	MCH, FTR	 	 
1	INF MCH, FTR	  	   
0	GAR INF, GAR	  	   

Malta Supply sources	Value	Over Supply Point Cost
Libya ports	5	2 times the Sum(series over limit) = PP's
Other African ports	2	example: 3 points over limit $2 \times (1+2+3) = 12$ PP's or $(1+3) \times 3 = 12$ PP's
Malta, Gibraltar	10	example: 5 points over limit $2 \times (1+2+3+4+5) = 30$ PP's or $(1+5) \times 5 = 30$ PP's
Mediterranean Garrison ‡	10	

‡ Requirement: 3 capital ships, 1 must be a CV.

Ver. 2.01

The Axis supply status at any point in time is provided in the tooltip menu as shown below. The Axis player may exceed the North African supply capacity but at a cost, which is calculated at the beginning of the Axis turn. The cost in PPs for exceeding the North African supply capacity by N supply points (which would show as red in the tooltip menu) is:

$$2 + 4 + \dots + 2 \times N$$

 13	 595	 810 / 300 /	 105 / 29 /	 3 / 1 /	 2 / 1 /	 -1
----------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------

Thus, if the Axis player who was at maximum capacity but not over it at the end of his turn were to lose a Libyan port, which provides 5 supply points, then during his opponent's turn the player (i.e., the

Germans) would pay:

2 + 4 + 6 + 8 + 10, or 30 PPs!

So, the Axis player may be forced to remove units from North Africa if he's at maximum capacity, is about to lose a Libyan port and does not want to lose excessive PP in penalties.

#### 6.14.8 Why Capture Malta?

1. Gives the Axis a +10 boost to its supply limit for operations in North Africa/Middle East.
2. Denies Allies use of important air bases for attacking Italy.
3. Malta's port, being closer to the Italian coast, extends Allied ability to make contested amphibious landings (i.e. if you're too far away from a friendly port, you can only do amphibious landings on uncontested hexes).
4. Deny Malta's production to UK (1) & gain same for Axis.

#### 6.14.9 Gibraltar Supply

Added 1 production to Gibraltar to prevent the fortress from being out of supply. Only fortresses with production provide supply.

#### 6.14.10 Anti-Blob Modifications

The following deterrents have been added to GS to mitigate "blob" strategies:

- ◆ Added +1 oil consumption for mechanized corps at artillery tech 2
- ◆ Placed supply limits by year on each type of unit, except garrisons and corps, on the number of units of that type that can be supported normally. Minor ally units do NOT count toward this limit. A country that exceeds this unit limit is charged a supply burden cost in OIL and PP's. The supply limit is:
  - 3 for 1939,
  - 5 for 1940,
  - 7 for 1941,
  - 9 for 1942,
  - 12 for 1943,
  - 15 for 1944 and

- 20 for 1945.
- ◆ The PP cost for buying the next unit of a given type when the limit for that type has been met or exceed is:  

$$(\text{basic cost}) * 1.05 ^ { (\text{number of units above limit after purchase})}$$
- ◆ The oil consumption for all units of that type is:  

$$(\text{basic oil consumption}) * 1.05 ^ { (\text{number of units above limit})}$$
- ◆ This means the penalty increases with the number of units above the limit:
  - For example; for armor the limit is 7 and you have 6 units and basic oil consumption is 4.
  - The first purchase will be 80 PP's and oil consumption will be 4.
  - The second purchase will be  $80 * 1.05 = 84$  PP's and oil consumption will now be  $4 * 1.05 = 4.2$  for ALL armor units.
  - The third purchase will be  $80 * 1.05 * 1.05 = 88.2$  PP's and oil consumption for ALL armor units will now be  $4 * 1.05 * 1.05 = 4.41$ .

#### 6.14.11 Damaged City Supply

Damaged cities will only provide supply if supply can't be traced from other cities. This way you need to isolate the damaged city to lower the supply in the hex.

#### 6.14.12 Stranded Air Units When Country Falls

Changed functionality so air units holding resource or city hexes in a country that has conquered will lose control of the hex if rebasing out of the hex unless a friendly ground unit is adjacent or the supply in the hex is 4 or better. This should take care of situations in Norway / France where UK air units fly to port cities to keep control. Now they keep control only as long as the air unit remains there. The hex control is changed to the owner of the surrendered country's capital owner (Germany in the above cases). If a ground unit is adjacent to the air unit then you keep control when the air unit rebases. This simulates the ground unit taking over control of the hex. This code was added to avoid situations where you fly in air units to e. g. France in 1944 before the Allies have got a complete foothold there. Also added code that if the hex has supply level 4 or better then this won't happen. This is done to ensure that if the Allies land in France and Italy they won't risk having the ownership changed to the capital owner just because they rebased an air unit stationed in a resource hex.

Made the change so a hex owner change when an air unit leaves a city or resource only applies prior to USA entering the war. That is simple and ensures we don't get any late game nasty surprises.



## 6.15 Oil & Iron Resources

### 6.15.1 Oil Production Formula

- ◆ A feature that's been in place since the initial release of the standard game is that oil consuming units at partial strength use the same amount of oil to move or attack as units at full strength. It just doesn't make sense that moving a 1-step armor corps should consume the same amount of oil as moving a 10-step armor corps. This has now been fixed and the partial oil usage has been put in place.
- ◆ **FORMULA** - oil points/units a major power receives per turn for each oil well they own:  

$$4 \times (\text{Oil Production}) \times (\text{Country's War effort}) \times (\text{Strength}/10)$$
- ◆ The "Strength" can be reduced through strategic bombing and attack. The "Oil Production" for a well is the value listed on the map. NOTE: If this resource is a captured oil well -- then the new owner only gets a maximum of half the oil points .

### 6.15.2 Oil Consumption

- ◆ Oil consuming units now use oil based on their strength according to the formula:  

$$\text{oil\_used} = \text{round}(\text{oil\_used\_by\_unit} \times \text{initial\_unit\_strength} / 10).$$
  - Note that the strength of the unit at the start of the action is used.
  - First example: a 9-step air unit attacks a target and that unit is intercepted losing 3-steps. It then follows through with the attack losing another 3-steps knocking the air unit down to 3-steps. That air unit would consume oil at 90% for the intercept and 90% for the ground attack.
  - Second example: a 10-step armor corps makes a desperate attack and is completely lost. Oil consumption for this attack would be at the full rate.
  - Armor and mechanized ground units on defense do not use oil.
- ◆ Oil consumption will not be lower than half the max consumption (rounded up). So very depleted units will still use at least 50% of max oil consumption.
- ◆ Added +1 oil consumption for mechanized corps at artillery tech 2
- ◆ SS and Guards MECH/ ARM units have oil consumption increased by 1. This can be set in general.txt.  

$$\begin{aligned} &\text{GUARDS\_MECH\_EXTRA\_OIL\_CONSUMPTION} \quad 1 \text{ /* Extra oil used by Russian Guards mech units */} \\ &\text{GUARDS\_ARMOR\_EXTRA\_OIL\_CONSUMPTION} \quad 1 \text{ /* Extra oil used by Russian Guards armor units */} \\ &\text{SS\_MECH\_EXTRA\_OIL\_CONSUMPTION} \quad 1 \text{ /* Extra oil used by German SS mech units */} \\ &\text{SS\_ARMOR\_EXTRA\_OIL\_CONSUMPTION} \quad 1 \text{ /* Extra oil used by German SS armor units */} \end{aligned}$$

### 6.15.3 Oil and Tech Upgrades

Being careful with TECH is important for your oil management strategy -- especially as the Axis powers. For example, ARM level 1 gives you +1 survivability, but also increases oil consumption by 1. So maybe you choose to "skip" this upgrade for Barbarossa, and do it during the winter instead. Is it worth the oil spent to gain +1 extra survivability against weak, low-effectiveness Russian troops? Not making this upgrade can save quite a bit of oil in a game, and may not cost many tank steps at all.

### 6.15.4 Baku Oil

One of the oil hexes near Baku is German-controlled at the start of the game. This represents the oil agreement the Soviets and Germans had until mid-1941. The agreement will automatically terminate when a state of war exists between the two nations, and the hex will revert to Soviet control. Until that point, Germany will receive 12 oil points per turn from the Baku hex.

### 6.15.5 Russian - Oil Reserves & Manganese Changes

Russia's starting oil has been set at 200 units.

Split the 2 PP manganese near Stalino into 1 PP manganese south of Dnepropetrovsk and 1 PP Donbass near Stalino.

### 6.15.6 MOD'ding Oil Consumption

There are two data files where oil consumption is controlled. These files are *unit.txt* and *technology.txt* and are both located in the installed GS data folder. The last record in *unit.txt* is "Oil Consumption" and defines the base oil usage for all units. In the *technology.txt* file the column "OilConsumption" controls the increase in oil consumption for technology advancements. Note that changing either or both of these files will result in a checksum message when playing someone who hasn't modified these files. As per standard advice -- always backup your original files before changing them.

Additionally, you could MOD the scenario files, I.e. "1939.scn" to change the starting oil for either side at game start.

### 6.15.7 German Synthetic Oil Production

Changed the German synth oil plant productions to the following:

- ◆ Industry tech 0: 0 production
- ◆ Industry tech 1-3: 1 production
- ◆ Industry tech 4-5: 2 production
- ◆ Industry tech 6: 3 production



### 6.15.8 Axis Advantage - Taking Yugoslavia copy

If you take Yugoslavia as the Axis you get German war effort for Hungarian and Romanian production, i. e. slightly more oil each turn. If you take Greece you get German war effort for Bulgarian production.

So long term you benefit having Nagykanitsa and Ploesti production using German war effort instead of the minor power war effort. E. g. German war effort will be 2 tech levels above the local war effort so it can add up to about 20% extra war effort.

Let's say Germany has industry tech 2 and thus war effort 120%. The Romania and Hungary can max have war effort 100% (tech 0 in industry).

Romanian oil per turn without Yugoslavia Axis:  $4 * 4 * 100\% = 16.0$   
 Hungarian oil per turn without Yugoslavia Axis:  $1 * 4 * 100\% = 4.0$   
 Total: 20.0

Romanian oil per turn with Yugoslavia Axis:  $4 * 4 * 120\% = 19.2$   
 Hungarian oil per turn with Yugoslavia Axis:  $1 * 4 * 120\% = 4.8$   
 Total: 24.0

So Germany gets 4 oil extra per turn. That is quite significant reward for making an invasion of the Balkans, despite having to deal with a lot of partisans.

Additionally, if you DoW Yugoslavia before the 2nd Vienna award you won't activate Hungary and Romania before their regular join date (fall 1940), but you will get the extra corps for Hungary and 2 extra corps for Romania because these spawn when Yugoslavia is DoW'ed.

### 6.15.9 Swedish Iron Ore & Interdiction

Increased the Swedish iron ore to 6.

Hex (65,52) is an iron ore resource hex. Like Baku Oil, the hex is German controlled but is Swedish nationality. It represents the continuous shipments of iron ore from Sweden to Germany during the war. There are only 3 ways for the Allies to stop shipments: (1) strategically bomb the resource hex, (2) declare war on Sweden and occupy it by force or (3) interdict iron ore shipments.

Swedish iron ore interdiction:

- ◆ Prerequisite is that Sweden is neutral. If Sweden activates then the resources will go to the country in control of Sweden.
- ◆ Added the conditions that the ore can only be interdicted if the weather in the iron ore hex is not fair and can only begin in March 1940. That is, Mud or Winter weather is in effect.
- ◆ The game checks if one or more surface naval unit is adjacent to any of the 5 Norwegian cities / ports.
- ◆ For each city/port a side has a surface naval unit adjacent that side gets +1 to the interdict / protect sum. This means it won't help having more than 1 naval unit interdicting at a given city / port. The max possible number of interdiction points is 5 (i.e., equal to total number of coastal

cities in Norway). City/Ports are: of Trondheim, Bergen, Stavanger, Kristiansand and Oslo.

- ◆ Note: Add 1 point if you interdict the Bergen city or port. If you interdict the city and the port of Bergen you still only get 1 point.
- ◆ Germany can place surface naval ships in one or more of the 3 ports to gain a protect point for the city / port. That's a safe way to prevent being attacked by Allied ships. That is, each Axis naval unit in Norwegian ports counts against the total allied sum. So if Allies send 1 naval unit to interdict e. g. Bergen and Germany has a BB in Trondheim then the total will become 0 and Allies won't have succeeded with the interdiction.
- ◆ If  $\text{interdict} - \text{protect} \geq 2$  then iron ore value is set to 0.
- ◆ If  $\text{interdict} - \text{protect} = 1$  then iron ore value is halved (to 3).
- ◆ If  $\text{interdict} - \text{protect} < 1$  then the iron ore value is at full value (6).
- ◆ This simple rule is used regardless of Norway being neutral or Axis controlled. By having Norway Axis controlled it's safer to prevent interdiction and it's easier to punish Allied interdictors.
- ◆ Allied control of any of the Norwegian cities and rail depots count as one naval unit per city / rail depot controlled. So the Allies can invade Norway (before or after German occupation) and occupy / liberate the Norwegian cities. That means the Allies can interdict the Swedish iron ore route during winter/mud turns without having the Royal Navy blocking.
- ◆ It should be possible to interdict the iron ore even when Germany controls Norway because the route was vulnerable at all time. But the Allies won't risk doing it until they can challenge the German presence in Norway. If the Allies take a port city it means that the Germans can't use a safe way by having a surface ship in the port to reduce the differential.
- ◆ Added texts for both conditions above if the Allies have interdictors adjacent to Norwegian cities / ports.

## 6.16 Technical Order of Battle Charts (OOB)

[Military Organizations - terms, sizes, etc. from Wikipedia.com](#)

[World wide WW II OOB](#)

[See OOB for British, Germany & US WWII organizations](#)





























<a href="#">Unit</a>	<b>Soldiers</b>	<a href="#">Commander</a>
<a href="#">Fireteam</a>	4	<a href="#">NCO</a>
<a href="#">Squad/Section</a>	8-13	<a href="#">Squad leader</a>
<a href="#">Platoon</a>	26-55	<a href="#">Platoon leader</a>
<a href="#">Company</a>	80-225	<a href="#">Captain/Major</a>
<a href="#">Battalion</a>	300-1,300	<a href="#">(Lieutenant) Colonel</a>
<a href="#">Regiment/Brigade</a>	3,000-5,000	<a href="#">(Lieutenant) Colonel/Brigadier (General)</a>
<a href="#">Division</a>	10,000-15,000	<a href="#">Major General</a>
<a href="#">Corps</a>	20,000-45,000	<a href="#">Lieutenant General</a>
<a href="#">Field army</a>	80,000-200,000	<a href="#">General</a>
<a href="#">Army group</a>	400,000-1,000,000	<a href="#">Field Marshal</a>
<a href="#">Army Region</a>	1,000,000-3,000,000	<a href="#">Field Marshal</a>
<a href="#">Army theater</a>	3,000,000-10,000,000	<a href="#">Field Marshal</a>

[NOTE: From Wikipedia: Command Hierarchy]




























## 6.16.1 German OOB

Image Level	FTR	TAC	SAC	ARM	MECH	Naval
1						
2						
3						
4						
5						
6						
7						Ver 2.10

## 6.16.2 Italian OOB

Image Level	FTR	TAC	SAC	ARM	MECH	Naval
1						
2						
3						
4						
5						
6						
7						Ver 2.10

## 6.16.3 French OOB

Image Level	FTR	TAC	SAC	ARM	MECH	Naval
1						
2						
3						
4						
5						
6						
7						Ver 2.10

## 6.16.4 British OOB

Image Level	FTR	TAC	SAC	ARM	MECH	Naval
1						
2						
3						
4						
5						
6						
7						Ver 2.10

## 6.16.5 USA OOB

Image Level	FTR	TAC	SAC	ARM	MECH	Naval
1						
2						
3						
4						
5						
6						
7						Ver 2.10



## 6.16.6 Russian OOB

Image Level	FTR	TAC	SAC	ARM	MECH	Naval
1						
2						
3						
4						
5						
6						
7						Ver 2.10

## 6.16.7 Minor Country OOB













Image Level	Free French ARM	Free French MECH	Free French Naval			
1						
2						
3						
4						
5						
6						

Image Level	Poland FTR	Spain FTR	Spain TAC		Turkey FTR	Sweden FTR
1						
2						
3						
Image Level	Spain MECH	Sweden MECH				
1						
2						Ver 2.15

Image Level	Finland FTR		Romania FTR	Romania TAC		Hungary FTR
1						
2						
3						
Image Level			Romania Mech			Hungary Mech
1						
2					Ver 2.15	

## Chapter 7 Combat Environment



*I will either find a way, or make one.*

*Latin proverb, most commonly attributed to Hannibal in response to his generals who had declared it impossible to cross the Alps with elephants.*

## 7.1 Chapter TOC

<u>7.2 - Terrain and Movement Factors</u>	<u>228</u>
<u>7.2.1 - River Attack</u>	<u>228</u>
<u>7.2.2 - Terrain Movement Chart</u>	<u>229</u>
<u>7.2.3 - Combat Modifiers by Terrain Type</u>	<u>230</u>
<u>7.2.4 - Alternative View - Movement Cost per Hex</u>	<u>231</u>
<u>7.2.5 - Terrain Impact Exceptions</u>	<u>232</u>
<u>7.3 - The Weather</u>	<u>234</u>
<u>7.3.1 - GS 2.0 Weather</u>	<u>234</u>
<u>7.3.2 - Weather Seasons</u>	<u>235</u>
<u>7.3.3 - Weather Regions</u>	<u>235</u>
<u>7.3.4 - Weather Information (GS 2.2)</u>	<u>236</u>
<u>7.3.5 - Weather Prediction Charts</u>	<u>237</u>
<u>7.3.6 - Weather - Effects on Unit Operations</u>	<u>238</u>
<u>7.3.7 - Winter Effects</u>	<u>239</u>
<u>7.3.8 - Severe Winter in Russia</u>	<u>239</u>
<u>7.3.9 - Weather Changes in the MED</u>	<u>240</u>
<u>7.3.10 - Land Spotting During Winter &amp; Severe Winter</u>	<u>240</u>
<u>7.4 - The Mapboard</u>	<u>241</u>
<u>7.4.1 - Game/Hex Scale</u>	<u>241</u>
<u>7.4.2 - Map Features</u>	<u>241</u>
<u>7.4.3 - Terrain Hex Chart</u>	<u>242</u>
<u>7.4.4 - Map Changes</u>	<u>244</u>
<u>7.4.5 - Desert Hills Terrain</u>	<u>244</u>
<u>7.4.6 - Airfield Resource Hex</u>	<u>244</u>









<a href="#"><u>7.4.7 - Fortress Resource Hexes</u></a>	<a href="#"><u>244</u></a>
<a href="#"><u>7.4.8 - Russian Tundra Hex</u></a>	<a href="#"><u>245</u></a>
<a href="#"><u>7.4.9 - Lake hexes</u></a>	<a href="#"><u>245</u></a>
<a href="#"><u>7.4.10 - Special Hexsides</u></a>	<a href="#"><u>245</u></a>
<a href="#"><u>7.4.11 - Out of Bound Areas</u></a>	<a href="#"><u>246</u></a>
<a href="#"><u>7.5 - Map Changes - 2.0</u></a>	<a href="#"><u>247</u></a>
<a href="#"><u>7.5.1 - Russia</u></a>	<a href="#"><u>247</u></a>
<a href="#"><u>7.5.2 - Germany</u></a>	<a href="#"><u>247</u></a>
<a href="#"><u>7.5.3 - Italy</u></a>	<a href="#"><u>247</u></a>
<a href="#"><u>7.5.4 - Turkey</u></a>	<a href="#"><u>247</u></a>
<a href="#"><u>7.5.5 - Denmark</u></a>	<a href="#"><u>247</u></a>
<a href="#"><u>7.5.6 - The Netherlands</u></a>	<a href="#"><u>248</u></a>
<a href="#"><u>7.5.7 - Poland</u></a>	<a href="#"><u>248</u></a>
<a href="#"><u>7.5.8 - Belgium</u></a>	<a href="#"><u>248</u></a>
<a href="#"><u>7.5.9 - Ruthenia</u></a>	<a href="#"><u>248</u></a>
<a href="#"><u>7.5.10 - Canada</u></a>	<a href="#"><u>248</u></a>
<a href="#"><u>7.5.11 - Norway</u></a>	<a href="#"><u>248</u></a>
<a href="#"><u>7.5.12 - Finland</u></a>	<a href="#"><u>248</u></a>
<a href="#"><u>7.5.13 - Iberian Peninsula</u></a>	<a href="#"><u>249</u></a>
<a href="#"><u>7.6 - Map Changes - 2.1</u></a>	<a href="#"><u>250</u></a>
<a href="#"><u>7.6.1 - Overview</u></a>	<a href="#"><u>250</u></a>
<a href="#"><u>7.6.2 - Holland and Western Germany</u></a>	<a href="#"><u>251</u></a>
<a href="#"><u>7.6.3 - Spain, Portugal and southern France</u></a>	<a href="#"><u>252</u></a>
<a href="#"><u>7.6.4 - Poland and Eastern Germany</u></a>	<a href="#"><u>252</u></a>
<a href="#"><u>7.6.5 - Baltic States</u></a>	<a href="#"><u>253</u></a>

<a href="#"><u>7.6.6 - Southern Russia</u></a>	<a href="#"><u>253</u></a>
<a href="#"><u>7.6.7 - Russian Tundra Hex</u></a>	<a href="#"><u>253</u></a>
<a href="#"><u>7.6.8 - Vichy - Syria - Suez - US Coast - Kiel - Persia</u></a>	<a href="#"><u>255</u></a>
<a href="#"><u>7.7 - Map Changes - 3.0</u></a>	<a href="#"><u>256</u></a>
<a href="#"><u>7.8 - Infrastructure</u></a>	<a href="#"><u>257</u></a>
<a href="#"><u>7.8.1 - Secondary Capitals</u></a>	<a href="#"><u>257</u></a>
<a href="#"><u>7.8.2 - Rail Cap Cities</u></a>	<a href="#"><u>257</u></a>
<a href="#"><u>7.8.3 - Rail Depots</u></a>	<a href="#"><u>257</u></a>
<a href="#"><u>7.8.4 - Entrenchment Value</u></a>	<a href="#"><u>258</u></a>
<a href="#"><u>7.8.5 - The Atlantic Wall</u></a>	<a href="#"><u>258</u></a>
<a href="#"><u>7.8.6 - Fortresses</u></a>	<a href="#"><u>258</u></a>
<a href="#"><u>7.8.7 - Gustav Line Fortresses</u></a>	<a href="#"><u>258</u></a>
<a href="#"><u>7.8.8 - Calais Fortress (GS 3.0)</u></a>	<a href="#"><u>258</u></a>
<a href="#"><u>7.9 - Leaders (The General's List)</u></a>	<a href="#"><u>259</u></a>
<a href="#"><u>Quote - Golda Mier</u></a>	<a href="#"><u>259</u></a>
<a href="#"><u>7.9.1 - Leader Placement</u></a>	<a href="#"><u>259</u></a>
<a href="#"><u>7.9.2 - Leader Overlap/Contention</u></a>	<a href="#"><u>260</u></a>
<a href="#"><u>7.9.3 - Reassign a Commander</u></a>	<a href="#"><u>260</u></a>
<a href="#"><u>7.9.4 - German Commanders</u></a>	<a href="#"><u>262</u></a>
<a href="#"><u>7.9.5 - Italian Commanders</u></a>	<a href="#"><u>264</u></a>
<a href="#"><u>7.9.6 - British Commanders</u></a>	<a href="#"><u>265</u></a>
<a href="#"><u>7.9.7 - French Commanders</u></a>	<a href="#"><u>267</u></a>
<a href="#"><u>7.9.8 - US Commanders</u></a>	<a href="#"><u>268</u></a>
<a href="#"><u>7.9.9 - Russian Commanders</u></a>	<a href="#"><u>269</u></a>
<a href="#"><u>7.9.10 - Commonwealth Units and Commanders</u></a>	<a href="#"><u>271</u></a>

## 7.2 Terrain and Movement Factors

### 7.2.1 River Attack

The following chart shows the penalty any attacking unit suffers when attacking an opponent across a riverhex side. You can see that weather conditions also change the impact.

Weather	Fair	Mud	Winter	Severe Winter
Icon				
Attack Penalty River and Special Hexside	 -50%	 -65%	 -50%	 -30%
Ver 2.10				



## 7.2.2 Terrain Movement Chart

Terrain Movement Point Chart

	Weather	Clear		Mud		Winter		Severe Winter		
	Icon									Move in enemy ZOC††
Supply Level	Terrain type		Penalty		Penalty		Penalty		Penalty	Add MP
3 - 5	Clear	1	0	2	1	2	0	2	1	+2
3 - 4	Forest	1	1	2	2	2	1	2	2	+2
3 - 4	Rough	2	1	3	2	3	1	3	2	+2
3	Mountain *	2	2	3	3	3	2	3	3	+2
2	Swamp **	2	1	3	2	3	1	3	2	+2
2	Tundra	2	0	2	2	2	1	2	2	+2
2	Desert	1	0	2	1	2	0	2	1	+2
1	Dune	4	0	-	-	-	-	-	-	+2
2	Desert hills	2	1	-	-	-	-	-	-	+2
3 - 5 †	Capital	1	0	2	1	2	0	2	1	+2
3 - 5 †	City	1	0	2	1	2	0	2	1	+2
3 - 5 †	Mine	1	0	2	1	2	0	2	1	+2
3 - 5 †	Oilfield	1	0	2	1	2	0	2	1	+2
3 - 5 †	Fortress	1	0	2	1	2	0	2	1	+2
2	Airfield	1	0	1	0	1	0	1	0	+2
3 - 5 †	Rail Depot	1	0	2	1	2	0	2	1	+2

† < 20 hexes from major capital, units have supply level = 5, < 21 to 40 hexes from major capital, units have supply level = 4, > 41 hexes units have supply level = 3.

\* Mountain hexes in the Mediterranean Weather zone has the same weather as Central Europe

\*\* Swamp hexes in Winter weather freeze and have supply level 4 for movement purposes.

# Mech units - DO NOT suffer vehicle penalty in Severe Winter Zone. The units have the same movement as ARM.







†† A hex has ZOC if the hex is in the ZOC of two enemy ground units or if you are moving from one enemy ZOC into another enemy ZOC.

Movement Range can be reduced further due to supply level. See Supply Impact chart.

Units starting their move NOT adjacent to an enemy unit can move one hex regardless of the unit's movement range, terrain movement point cost, supply, and/or enemy ZOC's.

## 7.2.3 Combat Modifiers by Terrain Type

## Combat Modifiers by Terrain / Resource Type

	Attack Penalty	Armor Penalty	Air Defense	Naval Defense	Survivability	Entrenchment Level Max
Terrain						
Clear	0	0	0	-	0	1 (-20%)
Forest	-10%	-20%	0	-	0	2 (-20%)
Rough	-15%	-30%	0	-	0	2 (-20%)
Mountain	-50%	-50%	0	-	0	3 (-20%)
Swamp	-20%	-45%	0	-	0	2 (-20%)
Desert	0	0	0	-	0	1 (-20%)
Desert Hills	-15%	-30%	0	-	0	2 (-20%)
Dune	0	0	0	-	0	1 (-20%)
Resource Type						
City	-20%	-35%	1 - 4 *	1	2 - 5 *	5 (-20%)
Capital	-35%	-35%	2 - 5 *	2	2 - 5 *	8 (-20%)
Fortress	-50%	-40%	1 - 3 *	2	2 - 4 *	4 (-20%)
Oil Field	-10%	0%	2 - 5 *	1	2 - 5 *	1 (-20%)
Mine	-10%	0%	1 - 4 *	1	2 - 5 *	2 (-20%)
Airfield	-10%	0	2 - 5 *	1	2 - 5 *	1 (-20%)
Port	-50%	0%	1 - 4 *	1	2 - 5 *	0
* - increases with Radar Tech upgrades						V2.00

### 7.2.4 Alternative View - Movement Cost per Hex

The following is an alternative methodology to compute movement costs. It was contributed by one of the beta testers.

To get the movement cost for MECs during mud or Severe Winter using the current chart you should sum up the FOOT movement cost in the mud/SW and the vehicle penalty in fair/winter.

For example, a MEC that has been modded to have 6 movement points and can move 3 muddy clear hexes. The movement cost is 2 for clear and cities.

## Movement Point Cost to Enter a Hex

Rule #1: Unit starting its move NOT adjacent to an enemy unit can move one hex regardless of unit's movement points available, terrain movement point cost or movement point cost due to enemy ZOCs.

	Weather	Fair		Mud			Winter		Severe Winter		
Supply Level	Terrain Type	FOOT	MEC ARM	FOOT	MEC	ARM	FOOT	MEC ARM	FOOT	MEC	ARM
3 – 5	Clear	1	1	2	2	3	2	2	2	2	3
3 – 4	Forest	1	2	2	3	4	2	3	2	3	4
3 – 4	Rough	2	3	3	4	5	3	4	3	4	5
2 or 4	Swamp *	2	3	3	4	5	3	4	3	4	5
3	Mountain **	2	4	3	5	6	3	5	3	5	6
2	Desert	1	1	1	1	1	2	2	2	2	3
2	Desert Hills	2	3	-	-	-	-	-	-	-	-
1	Dune	4	4	-	-	-	-	-	-	-	-
3 – 5	Capital	1	1	2	2	3	2	2	2	2	3
3 – 5	City	1	1	2	2	3	2	2	2	2	3
3 – 5	Mine	1	1	2	2	3	2	2	2	2	3
3 – 5	Oilfield	1	1	2	2	3	2	2	2	2	3
3 – 5	Fortress	1	1	2	2	3	2	2	2	2	3
2	Airfield	1		1			1		1		

\* Swamp hexes have supply level 2 in Fair and Mud weather, and has supply level 4 in Winter and Severe Winter weather.

\*\* Mountain hexes in the Mediterranean Weather zone has the same weather as Central Europe

## Zone of Control

+2 to Movement Point cost to enter a hex if one or more of the following is true.



## 7.2.5 Terrain Impact Exceptions

Any resource (city, mine, fortress, rail hub) negates all underlying's terrain factors. On such hex only resource's factors are counted.

Unit that is not entrenched does not use any defensive bonuses provided by hex (from terrain/resource).

## 7.3 The Weather

### 7.3.1 GS 2.0 Weather

Weather impact on supply, operations and combat has become significantly more nuanced.

- ◆ There are more specifically defined seasons or weather impact states.
- ◆ The game-board has been divided into 4 separate regions to associate more realistic weather states to them. They are noted in the chart that follows.
- ◆ Weather impact has different season length within each different region.
- ◆ Probabilities have been assigned for each region and each weather state.
- ◆ Canadian weather - Changed the code so Canada (including UK controlled part of Canada) plus Greenland and Iceland are now part of the North Europe weather zone. (v 1.02)
- ◆ Eastern Europe, Canada and Scandinavia have North Europe weather.

The following charts and graphics show the impact. Enjoy the realism!!!

### 7.3.2 Weather Seasons

Weather Icon	Forecast	Terrain Type
	Fair	Land Hexes
	Mud	
	Winter	
	Severe Winter	
	Calm Sea	Sea Hexes
	Rough Sea	

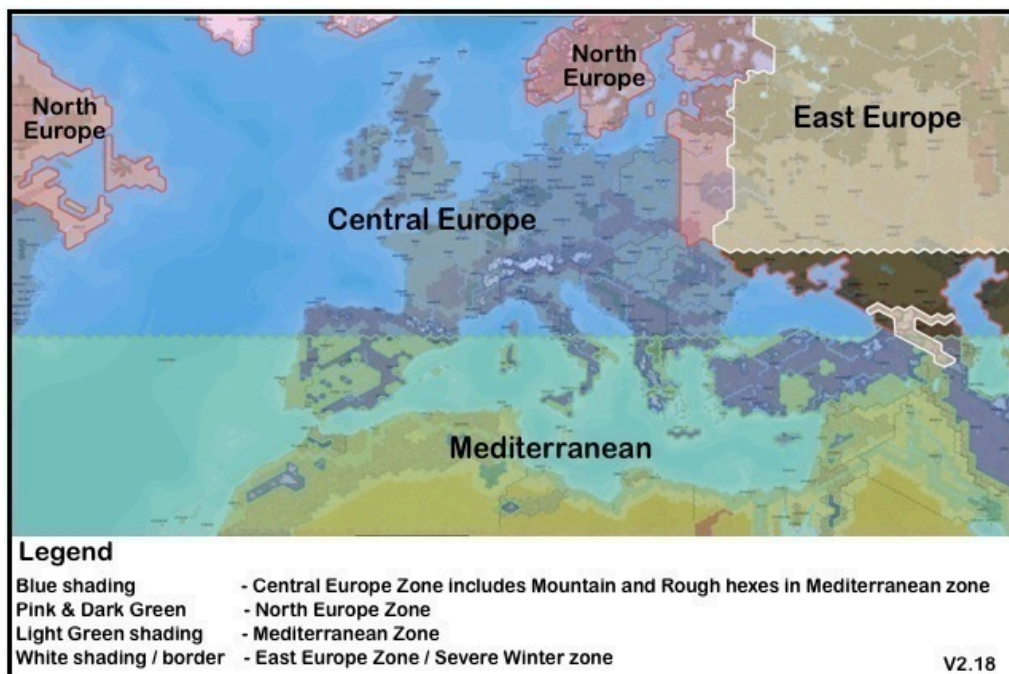
Ver. 2.0

### 7.3.3 Weather Regions

One of the major changes made to CEaW: Grand Strategy is the weather model. The map is now broken up into four [weather regions](#) and weather now includes fair, mud, winter and severe winter. Weather can change turn by turn based on the probabilities given in the table in except for severe winter. The impact of the different type of weather is provided in the table in section on effects on unit operations. The reader is encouraged to review all these tables in detail in order to understand all the details and intricacies of this new weather model.

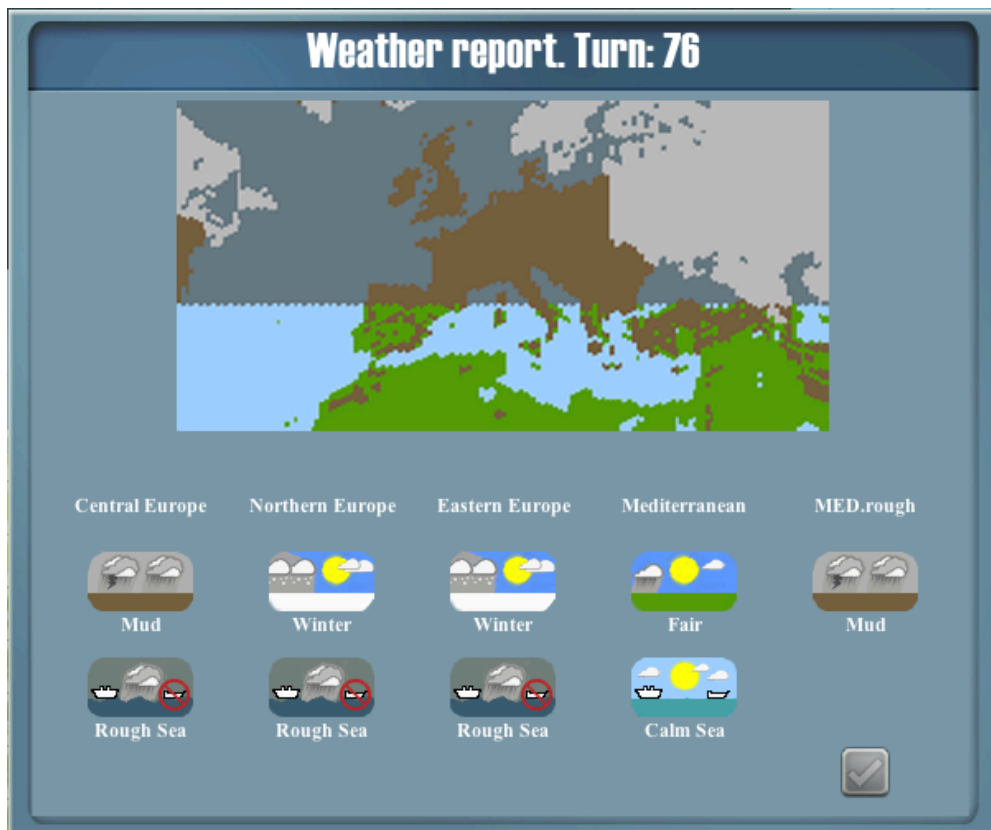
Please see section on weather prediction chart - the map at the bottom of the chart shows the separate regions.





### 7.3.4 Weather Information (GS 2.2)

Updated the beginning turn weather information dialog box to show the weather zones and how they affect land and Sea areas.




































## 7.3.5 Weather Prediction Charts

Zones	North / East Europe				Central Europe			Mediterranean
Sea Hex Weather								
Land Hex Weather								
Month	Percentage %							
January	-	-	100	100 *	-	25	75	100
February	-	-	100	-	25	50	25	100
March	-	25	75	-	75	25	-	100
April	5	50	45	-	100	-	-	100
May	100	-	-	-	100	-	-	100
June	100	-	-	-	100	-	-	100
July	100	-	-	-	100	-	-	100
August	100	-	-	-	100	-	-	100
September	100	-	-	-	100	-	-	100
October	50	25	25	-	75	25	-	100
November	10	40	50	10 *	25	50	25	100
December	-	-	100	75 *	-	25	75	100
<p>* Chance Severe Winter begins in North / East Central weather zone if not already begun. Once Severe Winter starts, the chance it will last 4 turns is 20%, 5 turns 60%, and 6 turns 20%.</p> <p>• Mountain hexes in Mediterranean Zone use the same weather as the Central Europe Zone. Rough Hexes in Mediterranean zone will have MUD when the Central Weather Zone has MUD or WINTER.</p> <p>• Dark Green area (below of hexrow 33 and above hexrow 50) of North Europe Weather Zone will experience 50% effects of Severe Winter when Severe Winter occurs in East Weather zone.</p> <p>• You may only invade hexes only when the Sea hex weather is Calm.</p> <p>• Area with white border or shading can have Severe Winter.</p>								
Ver. 2.23								

## 7.3.6 Weather - Effects on Unit Operations

## Weather Effects on Country Unit Capabilities

			Western Allies and Allied Minors			Axis Allies and Allied Minors			Russia, Norway, Sweden, Finland			
												
Weather Type												
Unit Capabilities		Unit Type										
Ground Attack		Armor only	Normal	-2	-2	Normal	-2	-2	Normal	-2	Normal	
		All others	Normal	-1	-1	Normal	-1	-1	Normal	-1	Normal	
Ground Defense		All	Normal			Normal			Normal			
Air		All										
Shock			Normal	50% ↑	60% ↑	Normal	50% ↑	60% ↑	Normal	50% ↑	Normal	
Strategic												
Naval Sub	 	All	Normal			Normal			Normal			
ASW Search		ALL ***	Normal	- 10%		Normal	- 10%		Normal	- 10%		
Land & Sea Spotting	 	All	Normal	Range / 2 ↑		Normal	Range / 2 ↑		Normal	Range / 2 ↑		
<p>* Mountain hexes in Mediterranean Zone use the same weather as the Central Europe Zone. Rough Hexes in Mediterranean zone will have MUD when the Central Weather Zone has MUD or WINTER</p> <p>* Area south of <u>hexrow 50</u> of North weather zone will experience 50% of effects from Severe Winter.</p> <p>*** BB, DD, CV, TRPT can perform ASW searches.</p> <p style="text-align: right;">Ver. 3.00</p>												

### 7.3.7 Winter Effects

Bumped up the winter (not severe winter) percentage strength for air attack, strategic attack and shock attack from 50 to 60.

Added new weather or changed other variables in general.txt

```

AXIS_WINTER_SUFFER 35 /* Severe winter penalty in 1939. Max efficiency will this value lower
*/
LESS_WINTER_SUFFER_PER_YEAR 5 /* Winter suffer drops by this value per year */
WINTER_SUFFER_OFFSET 5 /* Severe winter efficiency drop to all units will be
Axis_winter_suffer minus this value */
ALLIES_WINTER_SUFFER 0
MAX_WINTER_SUFFER 25 /* Max possible efficiency loss from severe winter */

```

### 7.3.8 Severe Winter in Russia

Severe Winter occurs only in East Europe weather region. This is effectively the original borders of Russia (not including the Baltic states) north of hex row 45 (north of the Crimea which experiences more "central european" type weather), and commences at Axis turn start.

Severe weather in East Europe zone (Russia) once started will last for 4 to 6 turns before any other weather may occur in that region. This is the winter everyone is familiar with from standard CEAW and earlier versions of the mod. Axis forces will suffer a substantial effectiveness drop, and both sides will have greater movement restrictions.

```

WINTER_DURATION 5 /*how many turns severe winter in Russia last. Start time random from
October till January */

```

Russian severe winter duration chances to:

- ◆ 4 turns - 20% chance of duration
- ◆ 5 turns - 60% change of duration
- ◆ 6 turns - 20% chance of duration

Severe winter in Russia will always end after the Axis turn, thus, the Soviets get the first move with non-severe winter weather. Southern Russia has North Europe weather.

Axis **winter\_suffer** dropped from 55 to 35. This "35" value starts in 1939 so by 1941 it is at 25 and 20 in 1942.

**Winter\_suffer\_offset** is a new variable that will be deducted from the max efficiency drop when finding the one time per severe winter efficiency drop.

Axis will now lose a lower efficiency on all units present in the East Europe severe winter zone. Additionally, max efficiency will drop so units staying in the East Europe zone can't regain efficiency back to the former max. Message about severe winter is updated so it also shows the temporary max efficiency loss.

Bumped the efficiency loss percentage from southern Russian hexes from 50 to 75 since the max value is

now lower. This is done to let the Axis feel that there is a winter in southern Russia too.

### 7.3.9 Weather Changes in the MED

Changed the weather model in the Mediterranean (MED) zone.

- ◆ Changed rough hex Mediterranean weather behavior to get mud when there is mud or winter weather in the Central Europe weather zone.
- ◆ Mountain hexes in the Med weather zone get the same weather as the Central Europe weather zone. This means that fighting in rough hexes on Sicily, Italy, Greece and Spain during the bad weather is not a good idea.

### 7.3.10 Land Spotting During Winter & Severe Winter

Changed *general.txt* so land spotting is now halved for all units during winter and severe winter.

## 7.4 The Mapboard

### 7.4.1 Game/Hex Scale

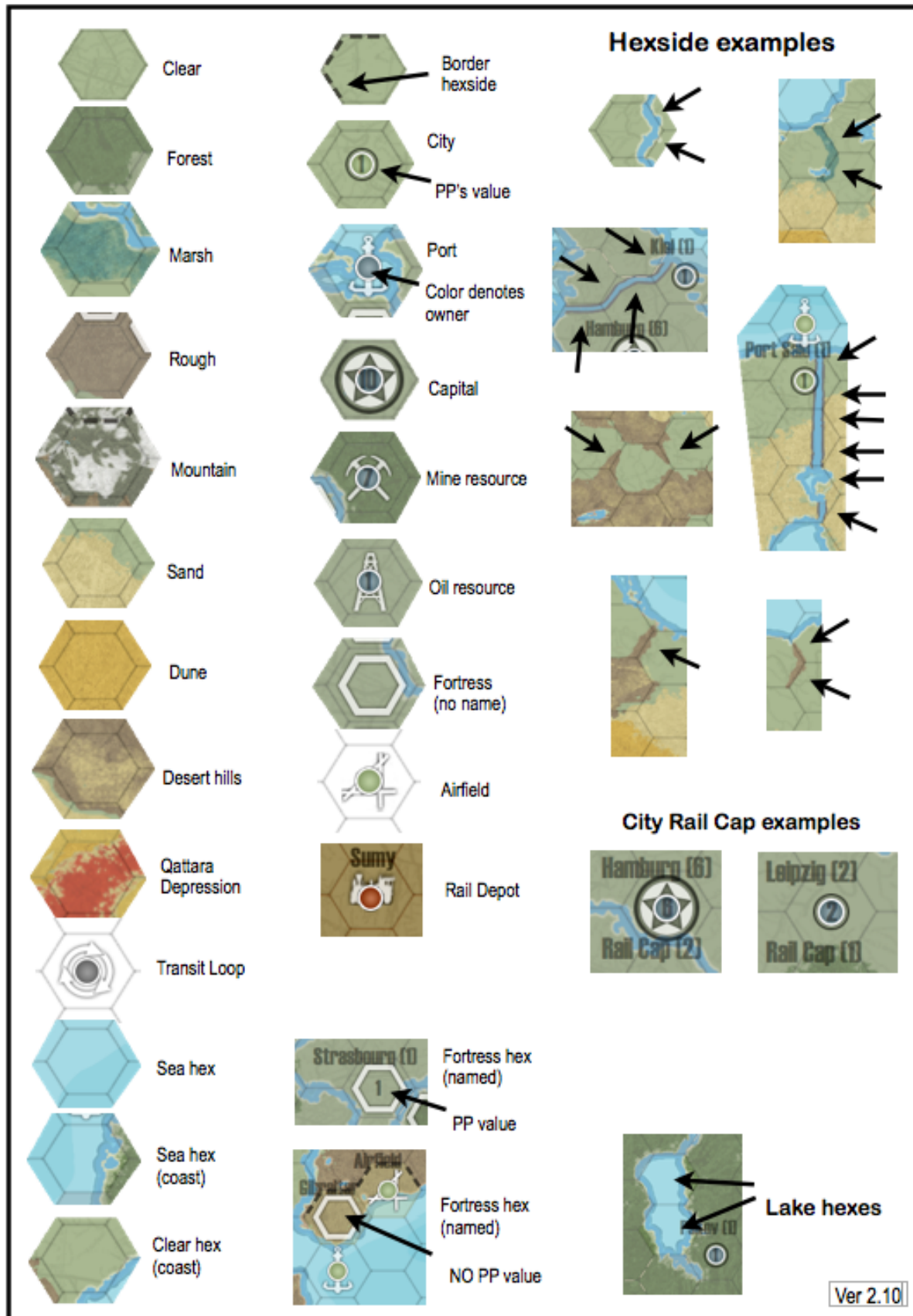
Each hex is approximately 28mi ~ 50km across.

Each 2 part game turn is 20 days.

### 7.4.2 Map Features

The game map has been significantly updated to reflect as best as possible the major terrain in each hex. The developers believe they have produced a rich and pleasing map that accurately reflects the terrain covered by the map given the scale, time period and hex structure of the game. Since Movement costs have increased for MECH and ARM type units in Forest, Rough, Desert Hills and Mountain, the developers have changed certain terrain to either clear or forest to represent roads and or valleys that troops used to move during the war. Hexes along the coast have less than 50% land area, they are usually the Sea terrain type.

### 7.4.3 Terrain Hex Chart



### 7.4.4 Map Changes

The map terrain was changed. New areas were added, Greenland, Agadir, The Persian Gulf and a land connection between Sweden and Finland. The US East Coast was enlarged to better represent the USA. We have moved the sand and dune terrain closer to the coast of North Africa to simulate the difficulty in moving in desert areas.

New cities and ports were added. Map clutter was reduced by removing PP's (Production Points) from ports and added the PP's to cities. With the addition of the Persian Gulf, Kiel Canal & Suez Canals we have added new transit loops for movement of naval forces across land boundaries and off-map movement. The Kiel canal is controlled by the city of Kiel in Germany. The Suez Canal is controlled by the city of Port Said in Egypt. The off-map transit loops from the Atlantic to the Red Sea and Persian Gulf and the loop between the Red Sea and Persian Gulf can only be used by the Allied forces.

### 7.4.5 Desert Hills Terrain

New terrain type added to be used only in North Africa and Middle East. The terrain has movement and defensive attributes like Rough hexes, but has reduced supply capacity similar to Sand hexes. See supply effects.



### 7.4.6 Airfield Resource Hex

New resource type added to restrict unit type placement, ownership and add capabilities to specific areas of the map. These hexes may only be occupied by air type units. These hexes are controlled by the owning Major power in each scenario. If the resource occupies a single hex (i.e. Island) they may be attacked by air & naval units. The hexes can not be invaded, though, even if no air unit is present. Airfields adjacent to fortress hexes may be attacked by land units if the fortress is occupied by the opposing forces. If the adjacent fortress hex is occupied the owner may use the airfield resource hex. Airborne units can drop on airfield hexes adjacent to fortresses, for example Malta.



### 7.4.7 Fortress Resource Hexes

Fortress hexes represent fortifications that were long-term construction projects. This type of resource can



not be added the map. Fortress hexes that are named represent a city-fort that can act as reinforcement and rail destination hexes -- see additional comments below. The named fortress hex is not destroyed when captured by opposing forces the hex can be used by the owner. Fortress hexes that are not named are destroyed when occupied by opposing units.

We have added new fortress hexes to represent the Siegfried Line and the fortifications in Eastern Germany, the fortress of Mareth. Named fortresses may or may not have a PP value.

How do you tell if a fortress has PP? In the center of the hex will be a value, such as a "1", indicating the PP each turn.

Fortresses with production also behave like cities for rail transportation. You are allowed to place reinforcements or rail units in or in hexes adjacent to the fortress. Fortresses without PP exhibit the old behavior, i.e. cannot rail to or have new reinforcements placed in hexes adjacent to them.

### 7.4.8 Russian Tundra Hex

Added a new terrain type called Tundra and changed all forest hexes north and east of Archangel to Tundra. Tundra is the same as forest except the supply is 2 instead of 4.



### 7.4.9 Lake hexes

Lake hexes may represent lakes that encompass the entire hex. This hex type is impassable to ground units.

### 7.4.10 Special Hexsides

Special hexsides have been added to the map. The locations include the Kiel & Suez Canals, El Aghelia,

the ridges near El Alamein and Kasserine pass in Tunisia. In some cases, a small lake may be present at a hexside. This terrain will act as a river hexside, which reduce the attacker's strength when attacking across it. (See 12.1.0 Terrain Chart- hexside examples)

### 7.4.11 Out of Bound Areas

There are 6 out of bound areas. Newfoundland near Canada, Greenland, Iceland, Chott el-Jerid in Tunisia, the Qattara Depression in Egypt, and the area known as Saudi Arabia. These areas are impassible to all units. The exception to this rule are airfield resource hexes located on Greenland and Iceland which represent US airbases that were used during the war.

## 7.5 Map Changes - 2.0

### 7.5.1 Russia

Added the Desna River located north of Kiev and runs east-west from the Dnepr. It wasn't previously shown but was regarded as a significant crossing during both the German advance and retreat. This inclusion would only affect games under limited circumstance but would be nice chrome.

Something that should have a greater game impact is a major swamp-forest mix midway between Gomel and Orel (surrounds the town of Bryansk) which is now included. It should add some variety to the region south of Moscow. It should be a bit of a mixed blessing for the Russians in that it would be tempting to defend but with no supply source adjacent it could become a large pocket if its flanks are breached and units don't withdraw in time.

The coastal hexes along the Black Sea and along the Prut-Danube delta, which were shown as clear terrain; but were in reality swamp hexes, have been changed to swamp hexes. This change will make it harder for the Russians to blitz along the coast late in the game as it was historically.

Added Kherson as a city.

### 7.5.2 Germany

Changed the hex Wilhelmshaven was in into a sea hex and added a port there. Wilhelmshaven is now a port

Added a city 1x south of Wilhelmshaven with the name Bremen. Moved the production of 1 from Wilhelmshaven to Bremen

Bremen is a big German city and now it is on the map. Wilhelmshaven was a town only and its main purpose was a port where warships were constructed.

### 7.5.3 Italy

Added the city of Reggio at the southern tip of Italy, which will NOT take control of the Messina port just as for Malmo.

Now you can only use the port if the city controlling the port is friendly.

### 7.5.4 Turkey

Added new cities, which all got new garrisons, and reinforced the country slightly east of Istanbul. The city of Canakkale was added which has a port that will close the Sea of Marmara (Dardanelles).

### 7.5.5 Denmark

Added Aalborg, Denmark. For existing games, this city will appear at the end of the first saved turn after loading the game.

Added the Danish garrison in Aalborg as 2nd Jutland Division at 4 steps. Renamed the garrison in Copenhagen to 1st Zealand Division.

### 7.5.6 The Netherlands

Changed one sea hex north of Hague into land, thus, closing off the IJsselmeer. In addition added a Dutch garrison called Stelling Den Helder north of Hague. This will hold off the Germans a little while if they decide to move there.

Added the Dutch city of Groningen.

Changed the border between Germany and Holland so the hex Groningen was placed in became Dutch.

### 7.5.7 Poland

Add Lodz as a city in Poland with a new garrison and moved Army Prusy 1 hex southeast

### 7.5.8 Belgium

Liege in Belgium is changed to a fortress in 1939 to represent the fortress at Eben Emael. It reverts back to a city on the first fair weather turn in 1940 as a result of Germany becoming paradrop capable. This represents the ability of the Germans to neutralize Eben Emael with battalion size airborne units, which cannot be represented at the scale of this game, when they invade Belgium.

### 7.5.9 Ruthenia

The province of [Ruthenia](#) is added to Hungary. It belonged to Czechoslovakia, but the Germans gave the province to Hungary when Czechoslovakia was occupied in 1938 in the 1st Vienna Award agreement.

### 7.5.10 Canada

Fredericton in Canada has been renamed to Saint John.

All units starting in Canada have Canadian in their name. Therefore; they will “unlock” the Canadian specific unit graphics.

### 7.5.11 Norway

Added Stavanger and Kristiansand in Norway.

### 7.5.12 Finland

Added Joensuu and Kuopio in Finland.

### 7.5.13 Iberian Peninsula

Split the Spanish lead mine in 2 and dropped the value from 5 to 3. A new tungsten mine with value 2 is placed close to the Portuguese border.

The Portuguese mine is moved a bit further south and increased from 1 to 3. Name is changed from just mine to tungsten. The reason is that the Portuguese tungsten mine was one of the most important mines in the war for Germany. It provided invaluable tungsten (more than the Spanish mine) in exchange for coal. Later in the war Allied pressure caused Portugal to embargo the tungsten to Germany. So it's probably right to not open the trade agreement between Portugal and Germany. The reason is that Germany had to give as much as they received (coal to get tungsten).

## 7.6 Map Changes - 2.1

### 7.6.1 Overview

These are the map changes we expect to release with GS v2.1 that will arrive before Christmas. These changes are intended to increase the map accuracy, even though we know the map is still not perfect. Some are done to help the Germans late game like the forest hexes in eastern Germany and Poland. Another important change is to add the Dutch city of Groningen to allow the Germans to rail coastal defenders there late game. We saw too many games where the Allies bypassed France and landed in Holland / Germany instead. Now this will be harder.

- ◆ Holland (added Groningen)
- ◆ Western Germany (renamed Wilhelmshaven to Bremen and named the port Wilhelmshaven). Moved the transport loop 1 hex
- ◆ Spain / Portugal / southern France (changed some rough / clear hexes to forest)
- ◆ Jerusalem moved one hex and some desert hills hexes added
- ◆ Beirut moved further south
- ◆ Eastern Germany (added some forest hexes like the Seelow heights, replaced rough with forest near Breslau, added some forest in western and Eastern PRussia)
- ◆ Poland (added some forest hexes and changed some swamp into forest in the Pripyat marshes)
- ◆ Estonia, Latvia, Lithuania (changed the map so it's not just forest there. Some forests are now clear, some are swamp and some clear are forest like Courland)
- ◆ Western Russia (some changes near Gomel and Kiev. Less clear and swamp and more forest).
- ◆ Southern Russia (Krasnodar moved 1x SW and the Kuban river will now flow to the Sea of Azov. Removed some swamp hexes there)
- ◆ Caucasus (added some forest hexes instead of clear and rough)
- ◆ Southeastern Russia (made the swamp area near Astrakhan less swampy. Now there will only be swamp hexes along the Volga and Ural rivers plus the delta area at the Caspian Sea. The Kalmyk steppe is added as desert in this area).
- ◆ Kazakhstan (east of Astrakhan and east of the Caspian Sea now have quite a bit of desert hexes to indicate the dry steppe that is there).

So the major change is that more forest and desert are added to the map. The desert won't affect combat, but the supply level drops from 3/5 to 2. So it's not a territory you can advance very fast. The forest area won't affect infantry very much, but will be stumbling blocks for armor and mech.

### 7.6.2 Holland and Western Germany

The Frisian Islands hexes in Holland are converted into swamp to make it harder to move towards Hague from the north.



Additional changes have been made to Holland and Germany -- see below.

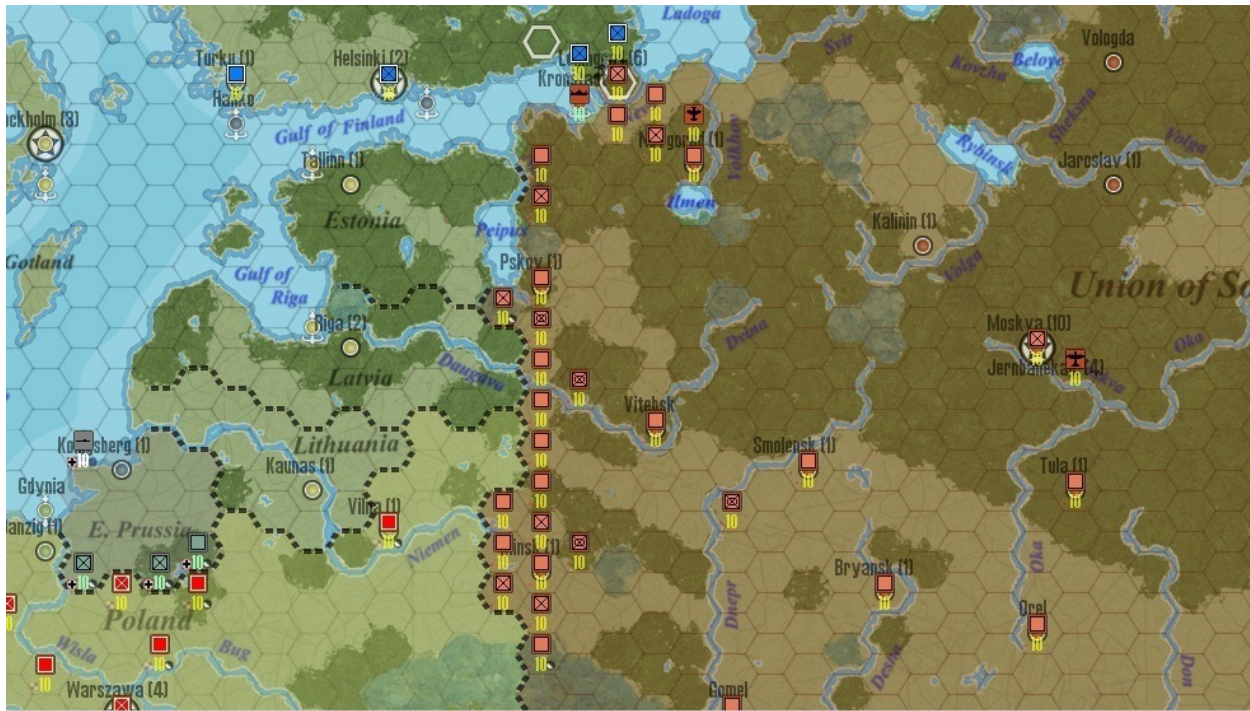








## 7.6.5 Baltic States



## 7.6.6 Southern Russia



## 7.6.7 Russian Tundra Hex

Added a new terrain type called Tundra and changed all forest hexes north and east of Archangel to Tundra. Tundra is the same as forest except the supply is 2 instead of 4.





## 7.6.8 Vichy - Syria - Suez - US Coast - Kiel - Persia



### Kiel Canal



### US. Eastcoast



### Suez Canal



### Persian Gulf



## 7.7 Map Changes - 3.0

Changed terrain around **Tobruk** and **Mareth** to allow better movement around those hexes.

Changed terrain in **Iran, Iraq, and Turkey**. Moved border lines between Persia, Iraq, Russia, and Turkey to correct some deficiencies. Added river Karun in Persia. Yerevan was added as a Rail Depot in Russia on border with Turkey and Persia.

Added rail depot in **France** called Calais. This will later become a fortress as one of the Atlantic wall fortresses.

UK terrain altered.

- ◆ Added forest and clear hexes.
- ◆ Glasgow was moved 1 hex.
- ◆ Clydebank was added as name for the Glasgow port.
- ◆ Devonport was added as name for the Plymouth port. These were 2 of the main naval bases in UK during WW2.

Map was altered concerning the congested nature of the **Red Sea and Persian Gulf**.

- ◆ Northern coastline of Egypt was altered to better reflect the terrain of the Nile Delta. The two branches of the Nile were added.
- ◆ Cairo and Alexandria moved 1 hex North.
- ◆ Suez Canal moved 1 hex North and 1 hex East.
- ◆ Port of Suez was added to improve movement through The Red Sea.
- ◆ Loops in the Red Sea area were moved to reduce blocking of movement.
- ◆ Basra was moved 1 hex North to simulate the location along the Euphrates river.
- ◆ The protectorate of Kuwait was added, this includes Kuwait City with port.
- ◆ Kuwait will activate when Egypt and Trans-Jordan activate.
- ◆ The loops in the Gulf were moved to allow units coming through the loops could appear in the port.
- ◆ Persian Gulf was widened to add Sea hexes for playability.

### **Belgium, Holland and Germany**

- ◆ Terrain changed adding Forest hexes.
- ◆ Changed some hexes to clear.
- ◆ Moved Antwerp and port inland
- ◆ Added the Albert Canal
- ◆ Moved the Maas river to the East of Liege.
- ◆ Shortened the Schelde river to West side of Brussels.

Island of **Sardinia**'s shape was altered with added with Rough and Forest hexes. The port was moved South of the city of Cagliari.

## 7.8 Infrastructure

### 7.8.1 Secondary Capitals

Large Major powers with the exception of France and Italy, have secondary capitals. These hexes activate when the primary capital is captured during play.

Country	Germany	Italy	UK	France	USA	Russia
Primary	Berlin	Rome	London	Paris	Wash,D.C.	Moscow
Secondary	Hamburg	-	Ottawa	-	New York	Omsk

### 7.8.2 Rail Cap Cities

Cities that contribute to the Rail capacity of a country are labeled on the map. The capacity can be reduced through strategic bombardment or by capture.

### 7.8.3 Rail Depots

Added a new resource type called rail depot, which replaces a number of “0” production cities for rail purposes. Also, added a number of rail depots across the map.

Axis Rail Icon



Allied Rail Icon



Russian Rail Icon



#### 7.8.4 Entrenchment Value

Changed maximum entrenchment so capitals, cities and fortresses have a max entrenchment = max production +3 (but max possible value = 8 ). The formula is:

```
Math.min( 8, pResource.getMaxProduction() + 3)
```

#### 7.8.5 The Atlantic Wall

Strasbourg on the Maginot is changed to city when France falls. This represents that material from the dismantling of this fort being used in the construction of The Atlantic Wall. Brest and Nantes will be changed to fortresses in July 1941. Rouen, Calais (clear hex on the map) and Antwerp will be changed in July 1942. Cherbourg and Bordeaux will change in July 1944.

#### 7.8.6 Fortresses

Changed code so only fortresses with production (city fortresses) provide supply. That means it's possible to cut off supply to the Maginot line once Strasbourg falls.

Added code so the German eastern front fortresses can spawn as early as 1942 if Allied units within core German hexes. Similar to the Gustav line fortress line being spawned if Allied units in Italy.

#### 7.8.7 Gustav Line Fortresses

Removed the Gustav Line fortresses in Italy from all scenarios except the 1944.scenario. Added code that will remove the fortresses in ongoing games that haven't reached July 1943 or had Allied units in Italy. The Gustav Line fortresses will spawn if:

- ◆ Year is 1942 or later and an Allied unit has landed in a core Italian hex
- ◆ Turn is July 1943 or later
- ◆ A message about the spawn will be shown
- ◆ The Gustav Line fortresses can be set in general.txt

#### 7.8.8 Calais Fortress (GS 3.0)

Calais will convert to a fortress in 1943 as part of the Atlantic Wall. The fortress captured by Allied forces will revert back to a rail depot.



## 7.9 Leaders (The General's List)



*An Israeli M60 Patton tank destroyed in the Sinai*

*A leader who doesn't hesitate before he sends his nation into battle is not fit to be a leader.*

*Golda Meir*

### 7.9.1 Leader Placement

Leaders must normally be placed on a unit before it has moved, repaired or upgraded, except for the corner case noted below.

Corner Case: A commander can be placed on a Para-unit which just did a jump, i.e. after its movement.

## 7.9.2 Leader Overlap/Contention

In v2.00 leader ranges have been reduced according to the following formula:

$$\text{Range} = \text{Leader Value} - 2$$

As a result, the leader overlap/contention has been modified so that the highest rated commander exerts the leadership influence (as opposed to the averaging that occurred in v1.03). Hence, players do not have to pay attention to leader overlaps/contention any more.

Some questions answered:

**1. In the game option screen there is an option for reduced commander ranges. I believe this refers to the v2 change listed in the manual as "Range = Leader Value - 2". If you uncheck the option for reduced commander ranges does that mean "Range = Leader Value"?**

No. If you uncheck the "reduced commander range" option then the game reverts to the vanilla CEAW settings for commander range (see question 2), which is set in the general.txt file as a default range of '8' for all commanders, regardless of quality/leader value.

**2. In the general.txt file there is also a "COMMANDER\_RANGE" setting that defaults to "8". Is this value used in the game, and if so, does it supersede the above leader options of "Range = Leader Value - 2" or "Range = Leader Value"?**

Answered for #1 - GS2.1 still uses this general.txt value if you uncheck the "reduced commander range" option when you begin a game. Note that the leader prices are a little bit cheaper when you use the "reduced commander range" option.

**3. Clarification Question - I know the manual says that "players do not have to pay attention to leader overlaps/contention any more", but does that also apply to the actual unit with the weaker leader assigned? Example: Two units side by side. One with a '8' quality leader, the other with a '4'. Does the unit with the '4' quality leader get it's leadership efficiency benefits from the '8' quality leader even though it has another leader assigned directly to it?**

GS 2.1 applies the higher quality leadership benefits to all units within it's range, even if the unit has a lower quality leader attached to it. In those cases the only benefit the lower quality leader applies to it's unit is the attack/defense modifiers.

**4. If you check the 'reduced commander range' option when you start a game, will a '1' or '0' quality leader actually reduce the natural efficiency rating for the unit it is assigned to due to the "Range = Leader Value - 2" GS modifier?**

No. The GS leader changes only impact the leader range, while the quality impact of an assigned leader is the same as in vanilla CEAW. That means a '0' quality leader has no positive or negative efficiency impact on the unit it is assigned to, and in that example just the attack/defense modifiers would be used by the game.

## 7.9.3 Reassign a Commander

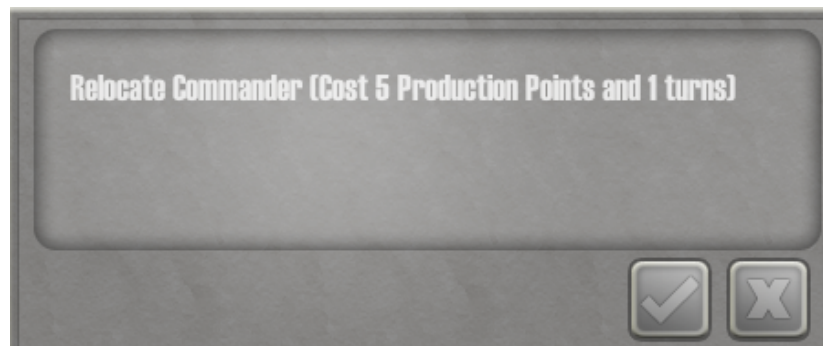
If you wish to transfer a leader:



- ◆ Select counter/unit icon that the leader is currently assigned to (“Click” on them”)
- ◆ Look at the Unit display information in the lower left corner of the Game Board
- ◆ Left click on the small red “X” next to the leader picture



- ◆ You will be asked to confirm the transfer, noting that it will cost 5 PP and take one turn or more depending on distance from their capital city
- ◆ If you accept, the leader will be placed in the New Unit queue and available for assignment the next turn



## 7.9.4 German Commanders


































Image	Name	Range	Leader Rating	Attack Bonus	Defense Bonus	Cost PP's
	<u>Manstein</u> 1941	6	8	1	1	90
	Guderian 1941	5	7	1	0	70
	Rommel 1942	5	7	1	0	70
	<u>Kesselring</u>	5	7	0	1	65
	Model	5	7	0	1	65
	<u>Heinrici</u>	4	6	0	1	55
	<u>Rundstedt</u> 1939	4	6	0	0	45
	<u>Reichenau</u>	4	6	0	0	45
	<u>Hausser</u>	4	6	0	0	45
	<u>Hoth</u>	3	5	1	0	50
	Kleist	3	5	1	0	50










Image	Name	Range	Leader Rating	Attack Bonus	Defense Bonus	Cost PP's
	<b>Leeb</b> .....	3	5	0	1	45
	<b>Bock</b>	3	5	0	0	35
	<b>Kluge</b>	3	5	0	0	35
	<b>List</b>	3	5	0	0	35
	<b>Dietrich</b>	2	4	1	0	40
	<b>Schorner</b> .....	2	4	0	1	35
	<b>Blaskowitz</b> .....	2	4	0	1	35
	<b>Paulus</b>	2	4	0	0	25
	<b>Arnim</b>	2	4	0	0	25
	<b>Kuchler</b> .....	2	4	0	0	25

## 7.9.5 Italian Commanders








Image	Name	Range	Leader Rating	Attack Bonus	Defense Bonus	Cost PP's
	Messe 1941	4	6	0	0	45
	Aosta	3	5	0	0	35
	Ambrosio	2	4	1	0	40
	Balbo	2	4	0	1	35
	Graziani 1939	2	4	0	0	25
	Gariboldi	2	4	0	0	25
	Roatta	1	3	1	0	30
	Badoglio	1	3	0	1	25
	Bastico	1	3	0	0	15
	Cavallero	1	3	0	0	15
	Gambara	1	3	0	0	15
	Nasi	1	3	0	0	15

## 7.9.6 British Commanders

Image	Name	Range	Leader Rating	Attack Bonus	Defense Bonus	Cost PP's
	Montgomery 1941	5	7	0	1	65
	O'Connor 1943	4	6	1	0	60
	<u>Simonds</u>	3	5	1	0	50
	Alexander	3	5	0	1	45
	<u>Auchinleck</u> 1939	3	5	0	0	35
	<u>Leese</u>	3	5	0	0	35
	<u>Freyberg</u>	2	4	1	0	40
	<u>Blamey</u>	2	4	1	0	40
	Wilson	2	4	0	1	35
	Ironsides	2	4	0	1	35

Image	Name	Range	Leader Rating	Attack Bonus	Defense Bonus	Cost PP's
	<u>Wavell</u>	2	4	0	0	25
	Ritchie	2	4	0	0	25
	<u>Crerar</u>	2	4	0	0	25
	Smuts	2	4	0	0	25
	<u>Duch</u>	2	4	0	0	25
	<u>Gort</u>	1	3	0	1	25
	Cunningham	1	3	0	1	25
	<u>McNaughton</u>	0	2	1	0	20
	<u>Cariappa</u>	0	2	0	1	15

## 7.9.7 French Commanders

Image	Name	Range	Leader Rating	Attack Bonus	Defense Bonus	Cost PP's
	<u>Giraud</u>	3	5	0	0	35
	<u>Gamelin</u> 1939	2	4	0	0	25
	<u>Weygand</u>	2	4	0	0	25
	Georges	2	4	0	0	25
	<u>Pretelat</u>	1	3	1	0	30
	<u>Huntziger</u>	1	3	0	1	25
	<u>Billotte</u>	1	3	0	0	15



### 7.9.8 US Commanders

Note: Leclerc is a Free French leader in 1943. DeGaulle is also a free general in 1943. They spawn when Vichy France is DoW'ed and that usually happens in 1942. But for the 1943-1944 scenarios they are free generals.

Image	Name	Range	Leader Rating	Attack Bonus	Defense Bonus	Cost PP's
	Eisenhower 1943	6	8	0	0	65
	Patton 1942	5	7	1	0	70
	Bradley 1944	4	6	0	1	55
	DeGaulle 1942	3	5	1	0	50
	Devers 1939	3	5	0	0	35
	Patch	3	5	0	0	35
	Truscott	3	5	0	0	35
	Hodges	2	4	1	0	40
	LeClerc 1942	2	4	0	1	35
	Simpson	2	4	0	0	25
	Clark	2	4	0	0	25
	Lucas	1	3	0	0	15

## 7.9.9 Russian Commanders











Image	Name	Range	Leader Rating	Attack Bonus	Defense Bonus	Cost PP's
	Zhukov 1942	6	8	1	1	90
	Konev 1942	5	7	0	0	55
	Rokossovsky 1942	4	6	1	0	60
	Vatutin	4	6	1	0	60
	Tolbukhin	4	6	0	1	55
	Chernyakhovsky 1943	4	6	0	0	45
	Chuikov	3	5	1	1	60
	Bagramian	3	5	1	0	50
	Malinovsky	3	5	1	0	50
	Govorov	3	5	0	1	45

Image	Name	Range	Leader Rating	Attack Bonus	Defense Bonus	Cost PP's
	Popov	3	5	0	1	45
	Meretskov* 1941	3	5	0	0	35
	Eremenko	2	4	1	0	40
	Kirponos	2	4	0	1	35
	Timoshenko 1939	2	4	0	0	25
	Cherevichenko	2	4	0	0	25
	Tiulenev	1	3	0	1	25
	Voroshilov	1	3	0	0	15
	Kuznetsov	1	3	0	0	15
	Pavlov	0	2	0	0	5
	Budenny	0	2	0	0	5

\* Meretskov is the starting leader for the Siberian Reserves.

### 7.9.10 Commonwealth Units and Commanders

The following British, or Commonwealth, units that are name or renamed will have their own country specific unit graphics. This allows players all over the world to easily customize their British forces by just including the following “key” in a unit’s name to “unlock” the country’s specific unit graphic for that country.

- ◆ Canada or Canadian
- ◆ Australia or Australian
- ◆ India or Indian
- ◆ New Zealand
- ◆ South Africa or South African
- ◆ Poland or Polish

Now players can also command UK/CW forces with a leader from their favorite CW country. Added the following CW leaders to the UK faction.

- ◆ Bernard Freyberg, 1st Baron Freyberg (New Zealand) (1889 - 1963).
- ◆ Guy Granville Simonds (Canadian) (1903 - 1974).
- ◆ Sir Thomas Blamey (Australian) (1884 - 1951)
- ◆ Harry D.G. Crerar (Canadian) (1888 - 1965)
- ◆ Field-Marshal, Jan Christian Smuts (South African) (1870-1950)
- ◆ Captain Kodandera "Kipper" Madappa Cariappa (Indian) (1899 - 1993)
- ◆ Boleslaw Bronislaw Duch (Polish) (1885-1980)

Both CW units/ leaders are “chrome” and are functionally UK units/leaders. However; players can now customize the look and feel of the UK/CW forces to add a bit more flair, historical realism and / or national pride to their GS gaming experience.

## Chapter 8 Historical Alignment



*Those who cannot remember the past are condemned to repeat it.*

George Santayana

## 8.1 Chapter TOC

<u>8.2 - Military/History Background</u>	<u>277</u>
<u>8.2.1 - Wikipedia.com WW II Lists</u>	<u>277</u>
<u>8.2.2 - List of World War II Military Operations</u>	<u>277</u>
<u>8.2.3 - List of German Military Operations</u>	<u>277</u>
<u>8.2.4 - List of Axis Named Operations in the European Theatre</u>	<u>277</u>
<u>8.2.5 - List of World War II Military Equipment</u>	<u>277</u>
<u>8.2.6 - Military Dictionary</u>	<u>277</u>
<u>8.2.7 - Military Abbreviations</u>	<u>277</u>
<u>8.3 - Game Calendars</u>	<u>279</u>
<u>1939 Calendar</u>	<u>279</u>
<u>1940 Calendar</u>	<u>280</u>
<u>1941 Calendar</u>	<u>281</u>
<u>1942 Calendar</u>	<u>282</u>
<u>1943 Calendar</u>	<u>283</u>
<u>1944 Calendar</u>	<u>284</u>
<u>1945 Calendar</u>	<u>284</u>
<u>8.4 - DoW</u>	<u>285</u>
<u>8.4.1 - Automatic DoW &amp; Side Change Summary</u>	<u>285</u>
<u>8.4.2 - DoW Surprise Recovery Factor</u>	<u>286</u>
<u>8.4.3 - Russian DoW Surprise Recovery Factor</u>	<u>286</u>
<u>8.5 - Axis Powers</u>	<u>287</u>
<u>8.5.1 - Axis War Effort Modification (GS 3.0)</u>	<u>287</u>
<u>8.5.2 - German Fortresses</u>	<u>287</u>
<u>8.5.3 - Italian War Entry</u>	<u>287</u>

<a href="#"><u>8.5.4 - Italian Early Invasion Prevention</u></a>	<a href="#"><u>288</u></a>
<a href="#"><u>8.5.5 - Italy and North Africa</u></a>	<a href="#"><u>288</u></a>
<a href="#"><u>8.5.6 - Axis Attack on North America</u></a>	<a href="#"><u>288</u></a>
<a href="#"><u>8.5.7 - Germany-Soviet Non-Aggression Pact</u></a>	<a href="#"><u>288</u></a>
<a href="#"><u>8.5.8 - Minor Country Fighters</u></a>	<a href="#"><u>289</u></a>
<a href="#"><u>8.6 - Allied Powers</u></a>	<a href="#"><u>290</u></a>
<a href="#"><u>8.6.1 - Restrict - Western Allies in Russia</u></a>	<a href="#"><u>290</u></a>
<a href="#"><u>8.6.2 - French/UK Morale Loss (3.0)</u></a>	<a href="#"><u>290</u></a>
<a href="#"><u>8.6.3 - French Unit Names</u></a>	<a href="#"><u>290</u></a>
<a href="#"><u>8.6.4 - British Empire</u></a>	<a href="#"><u>290</u></a>
<a href="#"><u>8.6.5 - British Home Guard Requirement</u></a>	<a href="#"><u>291</u></a>
<a href="#"><u>8.6.6 - UK Conquered - Morale Loss</u></a>	<a href="#"><u>291</u></a>
<a href="#"><u>London Falls - UK Southern Convy Halted</u></a>	<a href="#"><u>291</u></a>
<a href="#"><u>8.6.8 - Gibraltar Abandoned</u></a>	<a href="#"><u>291</u></a>
<a href="#"><u>8.6.9 - London Falls</u></a>	<a href="#"><u>292</u></a>
<a href="#"><u>8.6.10 - Belgium Falls - Canada Activation</u></a>	<a href="#"><u>292</u></a>
<a href="#"><u>8.6.11 - St John Garrison</u></a>	<a href="#"><u>292</u></a>
<a href="#"><u>8.6.12 - Russian Automatic DoW</u></a>	<a href="#"><u>292</u></a>
<a href="#"><u>8.6.13 - Russian Naval Changes</u></a>	<a href="#"><u>293</u></a>
<a href="#"><u>8.6.14 - Russian Strategic Reserve Build-Out</u></a>	<a href="#"><u>293</u></a>
<a href="#"><u>8.6.15 - Russian Siberian Reserves</u></a>	<a href="#"><u>293</u></a>
<a href="#"><u>8.6.16 - Russian Scorched Earth</u></a>	<a href="#"><u>293</u></a>
<a href="#"><u>8.6.17 - Russia - Additional Cities</u></a>	<a href="#"><u>294</u></a>
<a href="#"><u>8.6.18 - French Armistice</u></a>	<a href="#"><u>294</u></a>
<a href="#"><u>8.6.18.1 - Armistice Accepted</u></a>	<a href="#"><u>294</u></a>



<u>8.6.18.2 - Armistice Rejected</u>	<u>294</u>
<u>8.6.18.3 - Consequences</u>	<u>295</u>
<u>8.6.18.4 - Action When Paris Falls &amp; France Surrenders</u>	<u>295</u>
<u>8.6.19 - Vichy France</u>	<u>296</u>
<u>8.6.20 - Free France</u>	<u>297</u>
<u>8.7 - Scandinavian</u>	<u>298</u>
<u>8.7.1 - Finland Activation</u>	<u>298</u>
<u>Finland Armistice/Surrender</u>	<u>298</u>
<u>8.7.3 - Denmark, Norway &amp; Sweden Linkage</u>	<u>299</u>
<u>8.8 - Neutral Countries</u>	<u>300</u>
<u>8.8.1 - Spanish Neutrality</u>	<u>300</u>
<u>8.8.2 - Belgium &amp; Holland Linked</u>	<u>300</u>
<u>8.8.3 - US Neutrality Adverse Impact</u>	<u>300</u>
<u>8.8.4 - Allied Attacks on Neutral Countries</u>	<u>300</u>
<u>8.8.5 - Portugal</u>	<u>301</u>
<u>8.8.6 - Renamed Netherlands Units</u>	<u>301</u>
<u>8.8.7 - Iceland</u>	<u>301</u>
<u>8.9 - Tension in the Balkans</u>	<u>302</u>
<u>8.9.1 - Hungarian Surrender</u>	<u>302</u>
<u>8.9.2 - Hungary</u>	<u>302</u>
<u>8.9.3 - Romania</u>	<u>302</u>
<u>8.9.4 - Bulgaria</u>	<u>303</u>
<u>8.9.5 - Axis Advantage - Taking Yugoslavia</u>	<u>304</u>
<u>8.10 - Greece and Turkey</u>	<u>305</u>
<u>8.10.1 - Greek DD Added</u>	<u>305</u>

<u>8.10.2 - Axis Invasion for Greece</u>	<u>305</u>
<u>8.10.3 - Turkish Neutrality</u>	<u>305</u>
<u>8.11 - Middle East</u>	<u>306</u>
<u>8.11.1 - Persian Neutrality</u>	<u>306</u>
<u>8.11.2 - Iraq Rebellion</u>	<u>306</u>
<u>8.12 - Additional Naval Units - Alignment</u>	<u>308</u>
<u>8.13 - Fall of France - Statistics (GS 1.0 &amp; 2.0)</u>	<u>309</u>
<u>8.13.1 - Summary - Table</u>	<u>309</u>
<u>Summary - Chart</u>	<u>309</u>
<u>Axis Losses</u>	<u>310</u>
<u>UK Losses</u>	<u>311</u>
<u>PP Losses</u>	<u>312</u>
<u>Manpower Losses</u>	<u>313</u>

## 8.2 Military/History Background

### 8.2.1 Wikipedia.com WW II Lists

See [Wikipedia.com](http://en.wikipedia.org/wiki/Lists_of_World_War_II_topics) WW II webpage of separate lists on WWII topics at:

[http://en.wikipedia.org/wiki/Lists\\_of\\_World\\_War\\_II\\_topics](http://en.wikipedia.org/wiki/Lists_of_World_War_II_topics)

### 8.2.2 List of World War II Military Operations

See [Wikipedia.com](http://en.wikipedia.org/wiki/List_of_World_War_II_military_operations) at:

[http://en.wikipedia.org/wiki/List\\_of\\_World\\_War\\_II\\_military\\_operations](http://en.wikipedia.org/wiki/List_of_World_War_II_military_operations)

### 8.2.3 List of German Military Operations

See [Wikipedia.com](http://en.wikipedia.org/wiki/Glossary_of_German_military_terms#List_of_military_operations) at:

[http://en.wikipedia.org/wiki/Glossary\\_of\\_German\\_military\\_terms#List\\_of\\_military\\_operations](http://en.wikipedia.org/wiki/Glossary_of_German_military_terms#List_of_military_operations)

### 8.2.4 List of Axis Named Operations in the European Theatre

See [Wikipedia.com](http://en.wikipedia.org/wiki/List_of_Axis_named_operations_in_the_European_Theatre) at:

[http://en.wikipedia.org/wiki/List\\_of\\_Axis\\_named\\_operations\\_in\\_the\\_European\\_Theatre](http://en.wikipedia.org/wiki/List_of_Axis_named_operations_in_the_European_Theatre)

### 8.2.5 List of World War II Military Equipment

See list in [Wikipedia.com](http://en.wikipedia.org/wiki/List_of_equipment_used_in_World_War_II) at:

[http://en.wikipedia.org/wiki/List\\_of\\_equipment\\_used\\_in\\_World\\_War\\_II](http://en.wikipedia.org/wiki/List_of_equipment_used_in_World_War_II)

### 8.2.6 Military Dictionary

See Military Dictionary at:

<http://www.military-dictionary.org/>

### 8.2.7 Military Abbreviations

See [Wikipedia.com](http://en.wikipedia.org/wiki/Military_Abbreviations) webpage at:

[http://en.wikipedia.org/wiki/Glossary\\_of\\_military\\_abbreviations](http://en.wikipedia.org/wiki/Glossary_of_military_abbreviations)

## 8.3 Game Calendars

Turn	Date	Game Event	Historical Comments/Links
1	01-Sep-39	Scenario 1939 starts	Germany invades Poland (Case White).
2	21-Sep-39	Russia will occupy Eastern Poland.	Poland surrenders & Russia occupies Eastern Poland.
3	11-Oct-39		Finnish winter war begins.
4	31-Oct-39		
5	20-Nov-39		
6	10-Dec-39		USSR launches an offensive against Finland. The winter-war begins - November 30, 1939.
7	30-Dec-39		

Turn	Date	Game Event	Historical Comments/Links
8	19-Jan-40		
9	08-Feb-40		
10	28-Feb-40	Scenario 1940 starts	
11	19-Mar-40		Finnish winter-war ends and Karelia in Finland by Russia.
12	08-Apr-40		Germany invades Denmark and Norway (Weserübung). Denmark surrenders.
13	28-Apr-40		Germany invades Benelux countries and France (Case Yellow). Benelux countries surrender.
14	18-May-40	UK invades Iceland if Denmark is conquered.	
15	07-Jun-40	Expected Italian Entry.	Norway surrenders. Estonia, Latvia and Lithuania annexed by USSR.
16	27-Jun-40	Expected Egypt Entry. Baltic States annexed by Russia.	France surrenders. Vichy France created. Bessarabia in Romania annexed by Russia.
17	17-Jul-40		
18	06-Aug-40		Battle of Britain begins. Germans prepares for Sea Lion.
19	26-Aug-40	At the end of turn 19 - Romania cedes Transylvania to Hungary and Southern Dobruja to Bulgaria. Now possible for Romania and Hungary to join the Axis if Yugoslavia is attacked and for Bulgaria to join the Axis if Greece is attacked. Romania mobilizes an additional 2 corps and Hungary an additional 1 corps.	Italy invades Egypt. 2nd Vienna award signed which made Romania cede Transylvania to Hungary and Southern Dobruja to Bulgaria.
20	15-Sep-40		
21	05-Oct-40	Expected Hungarian Entry	
22	25-Oct-40		
23	14-Nov-40	Expected Romanian Entry	
24	04-Dec-40		British offensive towards Libya (Compass).
25	24-Dec-40		

Turn	Date	Game Event	Historical Comments/Links
26	13-Jan-41		
27	02-Feb-41		Tobruk falls to the British.
28	22-Feb-41	Expected Bulgarian Entry	DAK arrives in Lybia.
29	14-Mar-41	Expected Canadian entry.	US lend lease destroyer given to UK.
30	03-Apr-41		US Lend Lease begins.
31	23-Apr-41	USA signs agreement with Danish ambassador to use airbases in Greenland.	Germany invades Greece (Marita) and Yugoslavia (Directive n.25). Pro-Axis coup in Iraq. USA signs an agreement to use Greenland as airbases
32	13-May-41		Yugoslavia and Greece surrender. Tobruk surrounded by Axis forces.
33	02-Jun-41	Expected Iraqi Entry	Germany lands paratroopers on Crete (Merkur). Revolt in Iraq collapses. Allies invade Syria.
34	22-Jun-41		Germany invades USSR (Barbarossa).
35	12-Jul-41	USA takes over defense responsibility in Iceland.	Syria captured by Free French and British forces. Minsk and Riga captured. USA signs an agreement to take over defense duty in Iceland
36	01-Aug-41		
37	21-Aug-41		British and USSR forces occupy Persia.
38	10-Sep-41		Smolensk and Kiev captured. German troops reach Leningrad and siege begins.
39	30-Sep-41		Germans launch offensive against Moscow (Typhoon).
40	20-Oct-41		Kharkov and Odessa captured. Germans reach Sevastopol
41	09-Nov-41	Russia starts mobilization if not at war (Production increased, but not at war).	Britain launches Operation Crusader from Egypt and lifts siege of Tobruk.
42	29-Nov-41	Earliest USA entry date	Rostov captured by the Germans and liberated by the Soviets soon after.
43	19-Dec-41		Japan attacks Pearl Harbor (Z) and USA enters the war. USSR launches major counter-offensive near Moscow. Benghazi captured by the British.



Turn	Date	Game Event	Historical Comments/Links
44	08-Jan-42	Expected USA Entry	Soviet launches offensive (Jupiter) to eliminate the Rhzev salient west of Moscow.
45	28-Jan-42		Rommel launches an offensive from El Agheila and the DAK liberates Bengazi.
46	17-Feb-42		
47	09-Mar-42	Scenario 1942 starts	
48	29-Mar-42		
49	18-Apr-42		
50	08-May-42		
51	28-May-42	Russia DoWs if Axis has not	
52	17-Jun-42		German offensive towards the Caucasus begins (Case Blue). Tobruk liberated by Axis forces.
53	07-Jul-42		Sevastopol and Voronezh captured. Rommel reaches El Alamein
54	27-Jul-42		Rostov captured.
55	16-Aug-42		German troops reach Stalingrad. Krasnodar captured.
56	05-Sep-42		
57	25-Sep-42		
58	15-Oct-42		
59	04-Nov-42	Free French forces land in southern Morocco near Agadir if not already at war.	Allied troops land near Casablanca, Oran and Algiers (Torch). British offensive breaks through at El Alamein (Supercharge).
60	24-Nov-42		Soviet offensives begin. Uranus to encircle the German 6th Army in Stalingrad and Mars to eliminate the Rhzev salient near Moscow.
61	14-Dec-42		Soviet offensive begins (Saturn) to push the Germans out of Caucasus and liberate Krasnodar and Rostov.

Turn	Date	Game Event	Historical Comments/Links
62	03-Jan-43		
63	23-Jan-43		Soviet offensive (Star) to liberate Kharkov and Kursk. Tripoli captured.
64	12-Feb-43		German 6th Army surrenders near Stalingrad.
65	04-Mar-43		German commander Manstein launches an offensive to recapture Kharkov and destroy Soviet Armour spearheads.
66	24-Mar-43		British forces break through the Mareth line i Tunisia.
67	13-Apr-43		
68	03-May-43		Tunis captured.
69	23-May-43		
70	12-Jun-43		
71	02-Jul-43	Scenario 1943 starts	German offensive begins (Citadel) to close the Kursk salient. Allies invade Sicily (Husky).
72	22-Jul-43		Soviet offensive begins (Kutuzov) to liberate Orel. Palermo captured.
73	11-Aug-43	USA signs an agreement with the Portuguese dictator Salazar to use the Azores as an Allied airbase.	Messina captured. Portuguese dictator Salazar allows the Western Allies to use the airbases on Azores
74	31-Aug-43		Kharkov liberated again by Soviet forces.
75	20-Sep-43		Bryansk and Smolensk liberated. Italy surrenders when Taranto is captured. Allies land near Salerno (Avalanche).
76	10-Oct-43		Naples captured.
77	30-Oct-43		Dnepropetrovsk liberated.
78	19-Nov-43		Kiev liberated.
79	09-Dec-43		
80	29-Dec-43		

Turn	Date	Game Event	Historical Comments/Links
81	18-Jan-44		Allies land near Anzio in Italy (Shingle) trying to outflank the Gustav Line.
82	07-Feb-44		The siege of Leningrad finally broken.
83	27-Feb-44		
84	18-Mar-44		
85	07-Apr-44		Odessa liberated.
86	27-Apr-44		Allies finally captures the Gustav Line in Italy in operation Diadem.
87	17-May-44		Sevastopol liberated.
88	06-Jun-44	Scenario 1944 starts	Operation Overlord begins and the Allies land in force in Normandy, France. Rome captured.
89	26-Jun-44		Soviet major offensive (Bagration) against German Army Group Center. Cherbourg liberated.
90	16-Jul-44		Minsk and Vilna liberated. US units break out from Normandy in Operation Cobra.
91	05-Aug-44		Brest-Litovsk liberated. Allies land near Marseilles and Nice in southern France (Anvil).
92	25-Aug-44		Romania surrenders. German troops surrounded near Falaise in France. Antwerp, Brussels and Paris liberated.
93	14-Sep-44		Sofia captured by USSR and Bulgaria changes side to the Allies. Finland signs an armistice with USSR
94	04-Oct-44		Athens and Riga liberated
95	24-Oct-44		Hungary surrenders. Belgrade liberated.
96	13-Nov-44		Strasbourg liberated.
97	03-Dec-44		Germany launches an offensive in the Ardennes (Battle of the Bulge) trying to recapture Liege and Antwerp.
98	23-Dec-44		

Turn	Date	Game Event	Historical Comments/Links
99	12-Jan-45		Warsaw liberated.
100	01-Feb-45		
101	21-Feb-45		Budapest captured. Turkey joins the Allies.
102	13-Mar-45		Konigsberg captured. Allies cross the Rhine near Remagen.
103	02-Apr-45		Cologne, Danzig, Essen and Vienna captured.
104	22-Apr-45		Bremen, Milan, Munich and Venice captured. Soviet troops launch major offensive against Berlin. Allied and Soviet forces meet at Torgau on the Elbe, thus cutting Germany in two.
105	12-May-45		Germany surrenders May 8, 1945. Cologne, Danzig, Essen and Vienna captured.
106	01-Jun-45	Winner Determined	

## 8.4 DoW

### 8.4.1 Automatic DoW & Side Change Summary

**French** government will now offer an armistice once Paris is captured or left empty after June 27th 1940. Note: not applicable in AI game (GS 2.2).

**Vichy France** will now activate both in Northern Africa (Morocco, Algeria and Tunisia) and in Southern France / Corsica if French Armistice is accepted.

**Free France** is a new Allied minor power. Free France will not activate at a certain date, but will activate on the same turn as Vichy France is activated.

**Spain** will join the **Axis**, if the axis reject the French armistice and control the following before US entry: Casablanca, Oran, Algiers, Tunis, Rome and Paris.

**Spain** will join the **Allies**, if the French armistice offer is rejected and Casablanca, Oran, Algiers, Tunis, Rome and Paris are all Allied controlled. It's not enough that a city is neutral.

**Sealion** will cause UK forces in Egypt, Iraq will fully activate. Italy will also activate. If Sealion occurs in 1939 or 1940, once Axis forces land anywhere in Britain, 2 GAR will form in the force-pool. If Sealion occurs in 1941 4 GARs will be available for defense of Britain.

**Lybia** - when German forces land in Libya, UK forces in Egypt and Iraq will activate.

**Gibraltar** will be annexed by Spain if Gibraltar fortress is evacuated before USA or Russia joins the Allies. A message is shown about this annexation.

**Russia** activates if Axis units are adjacent to any city in Persia.

**Russia** will automatically DoW on Germany on turn 50 (+/-1 turn), May 8, 1942, if Axis player has not DoW on Russia.

**Finland** will activate for the Germans on the turn Russia activates.

**Finland** joins the Axis if Russia is not active by June 22nd turn (+/-1 turn).

**Finland** will sign an armistice with Russia if 3+ cities in Finland / Estonia (Tallinn) are captured by the Allies **and** less than 6 Axis units are present in Finland. (GS 2.2)

**Turkey** will join the **Axis**, if the Axis control: Athens, Bucharest, Sofia, Moscow, Baku and Baghdad.

**Turkey** will join the **Allies**, if Athens, Bucharest, Sofia, Moscow, Baku and Baghdad are all Allies controlled. It's not enough that a city is neutral.

**Turkey** will join the **Allies**, if Athens, Bucharest, Sofia, Moscow, Baku and Baghdad are all Allies controlled. It's not enough that a city is neutral.

**Hungary, Romania** and **Bulgaria** will activate for the Axis in the Fall of 1940. Bulgaria joins later (February-March '41 IIRC) The earliest possible activation for Rumania, Hungary and Bulgaria is turn 20 (September 15, 1940) and will only happen this early if Yugoslavia (for Rumania and Hungary) or Greece

(for Bulgaria) is invaded.

**Bulgaria** will immediately join the Axis if Greece is attacked AFTER the 2nd Vienna award has given them Southern Dobruja.

**Romania** and **Bulgaria** will join the Allies once Bucharest and Sofia, respectively, are captured by the Allies. A side effect of this is that the Germans might get a nasty surprise if they use Bulgarian or Romanian units to garrison cities. These will change side when these countries join the Allies. That's especially bad if the units were garrisoning a port hex.

UK will get **Iceland** on turn 14 or later if Denmark is conquered. So if Denmark is conquered late then Iceland will be "conquered" by UK later. USA will get Iceland regardless in 1941 because that was not an invasion, but an agreement with the Danish ambassador and with Greenland for the USA to take control.

**Iraq** revolts in April 1941.

**Persia** activates if Axis units is in Persian territory. Iraqi partisans don't count when activating Persia.

## 8.4.2 DoW Surprise Recovery Factor

`SURPRISE_REDUCTION_PER_TURN 5 /* Surprise regain per turn after DoW */`

This means that as long as the surprise reduction per turn is  $> 0$  the country will only regain efficiency at half rate. So it will take some turns until a country can regain full efficiency. This is particularly important in Russia where the Russian units can't regain full efficiency until 6 turns after Barbarossa begun. So instead of regaining 10-14 efficiency per turn they only regain 5-7 efficiency per turn.

## 8.4.3 Russian DoW Surprise Recovery Factor

The Russia surprise recovery was increased from 5 to 9 per turn. Reduced Russian surprise effectiveness loss from 30 to 27, i. e. 3 turns with reduced efficiency regain and no change for France).

## 8.5 Axis Powers

### 8.5.1 Axis War Effort Modification (GS 3.0)

After some play testing it was found that the +20 war effort when joining the war actually affects countries already at war as well. This means that Germany, UK and France would start with 10 more war effort than they used to. This meant since Germany is at 110 due to tech level, but would have been at 120 as they started the war.

In order to compensate for that the “at start” war effort for Germany was decreased from 100 to 90 so they will start with 110, France was decreased from 30 to 20 so they will start at 40 as before, UK was decreased from 45 to 35 so they start at 55 as before.

The countries now benefiting from +20 war effort when they join the war will be Italy, USA and Russia as intended.

Since Germany will most likely not take Holland and Denmark in 1939, Germany start PP's in the 1939 scenario was increased from 20 to 35. This means they can afford 1 lab and also upgrade a garrison to para on the very first turn. The 15 extra PP's is about the same they would gain from having Hague, Arnhem and Copenhagen for some turns in 1939 and some in 1940 before Case Yellow starts.

**GS 3.0 changes** - Starting in 1943 and beyond, the first time Allied forces enter a Germany core hex, 6 German Volkstrum GAR's will be placed in the forcepool.

### 8.5.2 German Fortresses

Added code so the German eastern front fortresses can spawn as early as 1942 if Allied units are within core German hexes. Similar to the Gustav line fortress line being spawned if Allied units are in Italy.

### 8.5.3 Italian War Entry

Added in a chance for Italy to join the Axis if there are not sufficient Allied naval units present in the Med after Belgium has been conquered (i.e., after initiation of Case Yellow).

This message is shown at the start of an Allied turn if there are too few Allied naval units. It's also shown at the end of the Allied turn when the die roll is made. This way the Allied player would know the reason why Italy joined the Axis.

INDEX-897 | "Too few Allied naval units are patrolling the Mediterranean. Italy has a %s1 % chance to join the Axis at the end of this turn"

The following message will be shown when Italy joins the Axis early.

INDEX-898 | "Mussolini seizes the opportunity to exploit the insufficient Allied naval presence in the Mediterranean. Italy declares war on the Allies."

The following values control this behavior:

/\* Early Italian activation possible if the MED not patrolled by CV, BB, DD or sub \*/  
/\* Activation is 100% - a percentage value for each Allied naval unit present in MED \*/  
EARLY\_ITALIAN\_ACTIVATION 1 /\* 1 = Early activation possible. 0 = not possible \*/



BB_MED_PATROL_VALUE	50	/* Each BB reduces the percentage chance by this value */
CV_MED_PATROL_VALUE	50	/* Each CV reduces the percentage chance by this value */
DD_MED_PATROL_VALUE	30	/* Each DD reduces the percentage chance by this value */
SUB_MED_PATROL_VALUE	20	/* Each sub reduces the percentage chance by this value */

#### 8.5.4 Italian Early Invasion Prevention

Updated the 1939 and 1940 scenarios to cover every Italian coastal city so an invasion can't take a city to enforce Italian surrender by taking Sicily. The following changes were made:

- ◆ Moved a corps from Venice to Reggio
- ◆ Moved a garrison from Florence to Ancona
- ◆ Moved an armor from Milan to Venice

#### 8.5.5 Italy and North Africa

Tunis, after US entry, is added to the list of Italian surrender cities. Tunis must be ALLIED controlled to count as one of the three Italian cities needed for surrender. It being neutral Vichy controlled is not enough.

#### 8.5.6 Axis Attack on North America

Made a change so that USA will get 100% war effort plus a tech bonus as long as the Axis player controls a hex in Canada or USA. This simulates the emergency situation USA would be in if the Axis would have landed at the US doorstep. It simulates that production intended for the west is sent to defeat the invasion forces. This change should make it even less likely that the Axis will land in Canada or USA.

#### 8.5.7 Germany-Soviet Non-Aggression Pact

It is now possible to DoW on Estonia, Latvia and Lithuania. A DoW on any one of these countries activates the other two and Russia. Russia will get a surprise penalty since they weren't prepared for war.

Linked the events in the east to Russian neutrality. So early DoW upon Russia will terminate the Ribbentrop / Molotov pact. That means Russia might not get Eastern Poland, Baltic states, Bessarabia or Karelia dependent upon how early you DoW Russia. This means there may be a possible strategy for the Germans to DoW Russia in 1940 and storm eastwards from better positions. Germany will then have to DoW the Baltic States to be able to move into the area. The hexes are empty so the Germans can advance rapidly.

Russia will immediately join the Allies if an Axis unit is adjacent to a Persian city or resource. This simulates that Persia is annexed by Russia so an Axis entry into Persia will be seen as an aggression against Russia. I coded it that you have to be adjacent to a Persian city or resource to prevent Axis movement inside Iraq to accidentally convert hexes in Persia to Axis control. If an Axis unit moves to a city or resource then it's a deliberate move into Persia and Russia will join the Allies.



### 8.5.8 Minor Country Fighters

Added the Hungarian fighter to the game. This includes unit image files too.

Changed the code so that the strength of the Hungarian, Finnish and Romanian fighters are defined in the *general.txt*. All of these three fighters are set to 5 now, but this can be changed. If players want the more traditional setup -- then they can set the Finnish and Romanian fighters at 10 and the Hungarian at 0 (means no spawn). All fighters spawn adjacent to the primary capital similar to Axis minor power reinforcements.

## 8.6 Allied Powers

### 8.6.1 Restrict - Western Allies in Russia

Allied units can't enter, unload, advance or retreat into core Russian hexes unless Russia has surrendered.

### 8.6.2 French/UK Morale Loss (3.0)

French and UK units in France and Belgium will now suffer the 20 point morale loss when Belgium falls in 1 turn and NOT when it's invaded. This represents the impact of refugees fleeing towards Paris and hampering allied operations.

Air units in UK will also be affected by the morale loss.

The French and UK forces in France (and air units in UK) will only suffer a 20 efficiency loss if Belgium surrenders in one turn.

Allied forces will also suffer a reduced morale loss if Belgium falls on turn 2. (GS 3.0)

### 8.6.3 French Unit Names

- ◆ Changed the names of a number for French units from generic names to historical ones.
- ◆ Free French units are now shown with blue color in the mini map. Before they were shown with US (or UK) color.
- ◆ Free French units spawned in cities were attempted to be named in French, however, that created a "the" notation. Therefore, removed the "e" in the number because it showed like 6the Garrison. Now it will show 6th Garrison.

### 8.6.4 British Empire

- ◆ A new UK fighter called Polish Air Unit will spawn near Liverpool on August 6th 1940. Strength = 1 + number of minor owner countries conquered by the Axis. A message about this will be shown.
- ◆ British reinforcements in the Med that normally spawn when Italy joins the Axis will not spawn if the hex they are to spawn in is already occupied.
- ◆ The British reinforcements in Malta (FTR), Cyprus (DD) and Egypt (CV & BB) will not spawn if the garrison in the respective adjacent city has been moved.
- ◆ Gibraltar will be annexed by Spain if the Gibraltar fortress is evacuated before USA or Russia joins the Allies.
- ◆ The UK fighter in Egypt is removed from the "at start forces" and will spawn when Italy activates at 5 steps.

### 8.6.5 British Home Guard Requirement

Britain is required to have a home guard force in Great Britain/Canada before Russia or USA joins the Allies. Failing to do so will create a loss in max morale of all British units. The parameters below control how this is done but will only count units in Britain and not in Canada:

UK\_HOME\_GUARD\_UNITS\_REQUIRED 8 /\* # land units needed in core UK territory \*/  
 UK\_MORALE\_PENALTY\_PER\_MISSING\_HG 5 /\* Max morale of all UK units lowered by this #  
 for each missing HG unit in UK \*/

There are 13 UK land units in Great Britain/Canada at the start of the game so it's possible to have a BEF of 3 units without experiencing any morale loss. That is, you can send 3 British units to France without experiencing the morale loss. Note that British units in Scapa Flow and Belfast count towards meeting the requirement of units in the UK (United Kingdom).

Once the Allies fall below 8 units in the UK - the allied player will lose 5 max morale per British unit failing to make the 8 unit limit. This is the message that will be shown every turn the Allied player fails to keep the HG requirement:

INDEX-978 | "Too few British Home Guard land units causes fear in Britain. All UK units suffer a max morale loss of".

Please note that if an Axis unit has entered Great Britain or Canada then the US max morale loss will not apply. The UK morale will return to normal if the Germans actually land in England. This way it's not possible to invade Britain and force the morale to get to 0 by killing British units.

### 8.6.6 UK Conquered - Morale Loss

If the UK is fully captured, the remaining UK forces of the gameboard will suffer an on-going effectiveness loss while the UK is occupied. The initial drop can be as high as 40% for every British/UK unit. Various historical or game event factors will change this effectiveness loss. Some specifics are:

- ◆ USA enters the war - effectiveness loss is reduced by 10%, for example from 40% to 30%.
- ◆ Russia enters the war - effectiveness loss is reduced by 10%, for example from 30% to 20%.

For example, the general.txt file settings are set as noted below:

UK\_LESS\_MORALE\_PENALTY\_USA\_ALLIED 20 /\* Reduces max morale penalty of all UK  
 units by this number if USA is activated \*/

### 8.6.7 London Falls - UK Southern Convoy Halted

The UK southern lend lease route be stopped if London is Axis controlled. Then the 15 PP's will be kept by the UK and not sent to Russia. UK would not be in a position to support other major powers with lend lease if they have barely enough PP's to stay above 0 (without convoys).

### 8.6.8 Gibraltar Abandoned

Gibraltar will be annexed by Spain if Gibraltar fortress is evacuated before USA or Russia joins the Allies. A message is shown about this annexation

### 8.6.9 London Falls

- ◆ Canada activates if London is Axis controlled.
- ◆ All convoys are rerouted to Halifax if London is Axis controlled.
- ◆ Northern convoy will spawn near New York as well -- until Russia is joins the war.
- ◆ Let the UK southern lend lease route be stopped if London is Axis controlled. Then the 15 PP's will be kept by the UK and not sent to UK. UK would not be in a position to support other major powers with lend lease if have barely enough PP's to stay above 0 (without convoys). (V2.13)

### 8.6.10 Belgium Falls - Canada Activation

Canadian units will now spawn at normal quality and not the reduced quality if the UK manpower level is yellow.

Canadian fighter will spawn in Halifax at 10 steps.

Canadian reinforcements used to spawn when Belgium was conquered. This was intended for the Axis attack on Belgium, but forgot the situation where the Allies attack Belgium in September 1939. Then the Canadian reinforcements would arrive early and not when the Allies are on the run in Belgium. This is now fixed so the Canadian reinforcements will only arrive at the end of the Axis March 19, 1940 turn if the Allies attacked Belgium first. If the Axis attack Belgium first the Canadian reinforcements will arrive when Belgium surrenders as before. (V2.13)

### 8.6.11 St John Garrison

Added the St. John garrison to all scenarios. This was to prevent the Germans from executing a DoW on Canada and then landing directly into St. John and getting supply without the Allied player being able to stop it. The allies can't move units to St. John after England falls because the territory is neutral. So by adding a garrison here it means the Germans must fight for a supply source.

### 8.6.12 Russian Automatic DoW

Russia will immediately join the Allies if an Axis unit is adjacent to a Persian city or resource. This is a better simulation of Persia being annexed by Russia.

Russia will automatically DoW on Germany on turn 50 (+/-1 turn), May 8, 1942, if Axis player has not DoW on Russia by that time.

Russia may also automatically DOW based on Axis actions elsewhere, including Iraq, as described in ["The 8.4.1 - Automatic DoW & Side Change Summary"](#).

### 8.6.13 Russian Naval Changes

Updated the 1941 scenario to move the Russian sub starting position next to BB in the Leningrad port (Kronstadt), which is where it starts in the 1939 & 1940 scenarios. The sub will move to Tallinn port once Estonia is annexed.

### 8.6.14 Russian Strategic Reserve Build-Out

Russia will receive 8 garrison units as their strategic reserve on August 1st 1941.

Russian strategic reserve units will now get unique names when placed.

### 8.6.15 Russian Siberian Reserves

Siberian Reserves come into the game on turn 40, September 29, 1941. They impacted the [German Operation Typhoon](#) (Battle of Moscow). The reserves include: 1 FTR; 1 TAC; 4 MECH; and 2 ARM.

Note that the 4 MECH ground units will be Guard units. The remainder of these forces will have 17 points of experience.

- ◆ This means the Allied player can move the Siberian Reserves on November 9th 1941. They can then be in the target area by the end of November. It takes 2 turns to rail all units without paying for rail overuse.
- ◆ Changed all Siberian Reserve ground units to: Guard units; set their initial XP to 35; and set their initial efficiency to 80 (which will drop to the max as determined by tech and any leaders).
- ◆ Added Meretskov 1st Siberian Gds Tank Army leader  
`SIBERIAN_RESERVE_LEADER 559 /* Meretskov */`
- ◆ Increased the max Guards per year so it's allowed to get 2 guards units in 1941. New max values are now (0, 0, 6, 7, 9, 12, 15). Since most are Siberian guards it means the number of new guards that can be accumulated isn't so high until you lose some Siberian units or get to 1943+.
- ◆ Moved the spawn area for the Russian Siberian reserves to Nizhniy Tagil (air and armor units) and Syktyvkar (shock units). This was done to ensure they spawn around rail depots so they can railed to the west.
- ◆ Added to general.txt the spawn turn for the Russian Siberian reserves.  
`SIBERIAN_RESERVE_SPAWN_TURN 41 /* November 9th 1941 */`

### 8.6.16 Russian Scorched Earth

The fighting in the east was brutal and without mercy. Both the Germans and Russians in retreat destroyed as much usable materials as they could over leaving them behind for the enemy to use.

Any Russian core city captured, or recaptured, will lose an additional 5-steps if above 5-steps or be reduced to 0-steps if at 5-steps or less. Damaged cities and ports regenerate at the rate of 1-step per turn.

Modified scorched earth in Russia so that it only applies on the second turn and later of Barbarossa. That is, it does not apply on the first turn.

### 8.6.17 Russia - Additional Cities

Added the following cities to Russia: Vladimir, Ryazan, Lipetsk, Izhevsk, Syktyvkar, Nizhniy Tagil, Saransk, Uralsk, Sterlitamak and Makhachkala with a port. None of the cities have any production and are added to give the allied player more locations east of Moscow for troop deployments and rail disembarkations.

Note - most of these cities were later converted to Rail Depots:

- ◆ Vladimir
- ◆ Lipetsk
- ◆ Syktyvkar
- ◆ Nizhniy Tagil
- ◆ Saransk
- ◆ Uralsk
- ◆ Sterlitamak
- ◆ Makhachkala

### 8.6.18 French Armistice

The French government will now offer an armistice once Paris is captured or left empty after June 27th 1940.

#### 8.6.18.1 Armistice Accepted

If the Germans accept, then Vichy France is created as normal and British land units in France are either evacuated to the British force pool or surrender. British units on the coast and in French core hexes will be sent to the force pool and 8 PP's per unit will be deducted from the UK PP total. This deduction is NOT optional and will occur even if the UK PP total is already negative. British ground units not on the coast and in French core hexes will surrender and will be eliminated. Evacuated and eliminated British units in France will keep hex control so Germany will have to move through the hexes to gain control.

#### 8.6.18.2 Armistice Rejected

If the Germans reject the armistice then North Africa and Syria will become Free French territory and all

French controlled hexes in mainland France/Corsica will turn to UK control. All French units will change to UK and get flagged as Free French. The allied player can evacuate units to Britain and the Axis must destroy them and capture all hexes in France to gain control. Also, if the French armistice is rejected by the axis then only the hexes under French control at the time of surrender will change side. Therefore, Axis controlled hexes will remain Axis. This means that if the axis have captured any cities or hexes in French North Africa before the fall of France, the axis retain control of those cities or hexes.

### 8.6.18.3 Consequences

With no Vichy France the Germans can get half production from cities in southern France once they capture them and get a broad front line against Spain making Operation Isabella more likely.

Rejecting the armistice offer will become much more attractive to the Germans if the French lose too many units before Paris falls. So if the allied player makes suicide attacks with French units from the Maginot line, wastes the French navy or uses a badly depleted French fighter to block German ground units then they risk Germany controlling all of France from 1940. In effect, the threat of the axis player rejecting the French armistice is a strong incentive for the allied player to employ all French units, including naval and air, in a more historical manner prior to Paris falling.

### 8.6.18.4 Action When Paris Falls & France Surrenders

- ◆ Changed code so British land units in France will be evacuated if Vichy France is created. Coastal units will be sent to the force pool and 8 PP's per unit is paid. Non-coastal units will surrender and be removed. A message about evacuation will be shown if any units evacuated. A message about surrender will be shown if any units surrendered. The evacuated and eliminated British units in France will keep hex control so Germany will have to move through the hexes to gain control.
- ◆ Occupied France: British forces in the part of France that does not become Vichy France will be surrounded by Axis-controlled territory, out of supply except for British air units.
- ◆ An exception is if a British unit is occupying a French city. Upon France's surrender, a British-occupied city becomes British controlled and it will supply British units that can trace a supply line to it.
- ◆ British transports and naval units in a French port when France surrenders will be destroyed, unless: A British unit is occupying the port city at the time of France's surrender.
- ◆ The French Government now offers armistice once Paris is captured or left empty (after June 27th 1940). If the Germans accept then Vichy France is created as normal.
- ◆ If the Germans reject then North Africa and Syria will become Free French territory and all French controlled hexes in mainland France / Corsica will turn to UK control. All French units will change to UK and get flagged as Free French. So you can evacuate units to Britain and the Germans must destroy them and capture all hexes in France to get control.
- ◆ But with no Vichy France the Germans can get production from southern France immediately and get a broad front line vs Spain making Operation Isabella more likely. The Germans will probably consider rejecting the armistice offer if the French lose too many units before Paris falls.



So making suicide attacks from the Maginot line, wasting the French navy etc. only means you might risk Germany controlling all of France from 1940. So we hope to see less ahistorical French attacks prior to Paris falling.

- ◆ If the French armistice is rejected by the axis then only the hexes under French control at the time of surrender will change side. So Axis controlled hexes will remain Axis. This means that if the axis have captured any cities or hexes in French North Africa before they fall of the axis retain control of those cities or hexes.

Free French garrisons in French North Africa will have a variable strength according to the number of French ground unit steps in supply.

```
/* Used if French armistice offer is rejected */  
FREE_FRENCH_GARRISON_STRENGTH 5 /* 0..10 0 = no spawn. Strength of the Free French  
garrisons in French North Africa after the fall of France */  
/* Free French garrison strength = # French land unit steps in French controlled hexes /  
free_french_strength_step_ratio. */  
FREE_FRENCH_STRENGTH_STEP_RATIO 10 /* 0 = disabled and  
free_french_garrison_strength is used. */  
CORPS_STEPS_COUNTED_AS 3 /* 1..3. Each corps or mech step is counted as this number of  
garrison steps */
```

### 8.6.19 Vichy France

Vichy France will now activate both in Northern Africa (Morocco, Algeria and Tunisia) and in Southern France/Corsica if French Armistice is accepted. Vichy France will be a neutral power that both the Allies and the Axis can declare war upon. If this group of territories is attacked, Vichy France will ally with the opposing faction with one exception. This exception is if the Allies declare war on Syria. In this case, only Syria will ally with the Axis and the rest of Vichy France will remain neutral. However, the opposite is not true. If the Axis declare war on Syria then all of Vichy France will ally with the Allies.

Vichy France in southern France and Corsica will turn to France core owner if the Allies DoW Vichy France so it's possible to get partisans there and the Axis only get half production from these hexes.

Vichy garrisons in Toulouse and Lyons are removed if the Allies DoW Vichy. Coastal garrisons kept so it's not possible to just grab Marseilles, Nice and Ajaccio.

- ◆ Ajaccio (on Corsica)
- ◆ Lyons (Southern France)
- ◆ Marseilles (Southern France)
- ◆ Vichy (Southern France)
- ◆ Algiers (North Africa)
- ◆ Oran (North Africa)
- ◆ Tunis (North Africa)

Usually the Allies will declare war upon Vichy France to capture Northern Africa and activate Free France, but it's also possible that the Axis will declare war upon Vichy France to get a wider front to attack Spain or prevent the Allies from taking the Vichy French ports too easily.

The minor countries Vichy France and Syria are created when if the French Armistice is accepted. Vichy France consists of Southern France, Island of Corsica, and Western North Africa. This group of territories if attacked, the consequence is that Vichy France will ally with the opposing faction. Declaration of War will result in the activation of Free France in Agadir.

Vichy French garrisons in Syria and French North Africa will now have 5 steps instead of 10 steps.

Free France always allies with the USA. Free France forces are under the control and repair of the USA.

Syria is a separate minor country that had French troops. DoW on Syria will not activate Vichy France or Free France.

### 8.6.20 Free France

Free France is a new Allied minor power. Free France will not activate at a certain date, but will activate on the same turn as Vichy France is activated. The Free French units can then move the following turn. 4 Free French units are available in the Agadir area on the turn after Free France activates as an Allied minor power.

Free French garrisons in French North Africa will have a variable strength according to the number of French ground unit steps in supply.

Free France will be controlled by the USA (if they're at war) and USA will pay for step losses, etc. Free France will get tech increases from USA (2 levels below the US tech levels unless already starting with higher techs). Free French transports will use US amphibious landing capacity if they're used in amphibious invasions. General de Gaulle & Leclerc are also gained as allied generals.

Made a change so that allied and axis units in the hexes that the Free French spawn in will end up in the force pool for immediate placement the following turn.

Make sure that Free French forces won't be placed on the map as units that can't move if Vichy France is DoW'ed when USA is still neutral (controlling power of the Free French). Instead these Free French units go to the US force pool so they can be safely placed once USA join the war. (GS 2.2)

## 8.7 Scandinavian

### 8.7.1 Finland Activation

Finland will activate for the Germans on the turn Russia activates. The Finnish units can't move on the first turn, though. Finland can still activate by themselves in spring 1941 and be ready for Barbarossa. This change is intended to prevent Finland from being wiped out early in case of an early German attack upon Russia. Then Russia can DoW Finland after having lots of units in the north and crush Finland before the Germans can get to Leningrad.

Germany will get a free corps unit in Northern Finland if Norway or Sweden are German controlled (conquered or allied).

Finnish units inside core Finnish hexes will have their strengths modified to:

```
/* Bonus to Finnish units inside core Finnish hexes */
FINNISH_INCREASE_GROUND_ATTACK 0
FINNISH_INCREASE_GROUND_DEFENSE 1
FINNISH_INCREASE_SHOCK_ATTACK 0
FINNISH_INCREASE_QUALITY 1
FINNISH_INCREASE_SURVIVABILITY 1
```

### 8.7.2 Finland Armistice/Surrender (GS 3.0)

Finland will sign an armistice with Russia if 3+ cities in Finland / Estonia and less than 6 Axis units are present in Finland.

- ◆ When the armistice is signed then Finland becomes neutral and all Finnish units are removed.
- ◆ All Axis and Soviet units in Finland are moved to their respective force pool.
- ◆ Finland will surrender normally if Helsinki is captured. Therefore, Russia should avoid taking too many cities or kill too many units if they intend to take Helsinki so they can use the Finnish ports.
- ◆ The armistice basically removes Finland from the active playing area. Finland is neutral with no units and can't be DoW'ed. That is a good way for Russia to disengage from Finland and relocate their units to the main front.
- ◆ Increased the number of rail depots / cities needed in Finland / Estonia from 2 to 3 so Finland would never ask for armistice unless Russian troops have captured at least one city / rail depot in core Finland. (V2.13)

Bug Fix (GS 3.0) : Increased the number of rail depots / cities needed in Finland / Estonia from 2 to 3 so Finland would never ask for armistice unless Russian troops have captured at least one city / rail depot in core Finland. Change is done because rail depot of Tartu in Estonia was added before and number of cities was not increased because of the addition. This is now fixed.

### 8.7.3 Denmark, Norway & Sweden Linkage

Norway is linked to Denmark and Sweden.

Denmark is linked to Norway and Sweden.

This means that if a country DoW's one of the 3 countries on a prior turn then the other 2 will not be surprised. It also means the units spawning will be at full strength (10 steps). If Norway or Denmark are surprised then each of their units will be spawned at 2 strength. So it's now very lucrative for the Axis to DoW both these countries on the same turn.

## 8.8 Neutral Countries

### 8.8.1 Spanish Neutrality

- ◆ Spain will join the Axis if the French armistice offer is rejected and Casablanca, Oran, Algiers, Tunis, Rome and Paris are all Axis controlled. It is not enough that a city is neutral.
- ◆ Spain will make a trade agreement with Germany for the tungsten mine (2 PP's) if the French armistice offer is rejected and Italy is not conquered. Spain is still neutral. Spain will cancel the trade agreement with Germany if Italy is conquered. Spain is still neutral.
- ◆ Added a prerequisite for Spain activating as an Axis ally that USA has to be neutral.

### 8.8.2 Belgium & Holland Linked

Belgium and Holland are now linked. If Holland is DoW'ed on a prior turn then Belgium won't be surprised. If Belgium is DoW'ed on a prior turn then Holland won't be surprised. The only way to achieve surprise on both countries is to DoW on both on the same turn.

If Belgium is not surprised then all units will spawn at full strength. Otherwise the unit in Liege will spawn at 10 strength, the corps at 7 strength and the garrisons at 5 strength. The location of the garrison adjacent to Belgium is dependent on which side will DoW Belgium.

If Holland is not surprised then all units will spawn at full strength. Otherwise, the garrisons will spawn at 5 strength and the corps at 7 strength. The garrison north of Hague has been removed.

### 8.8.3 US Neutrality Adverse Impact

Because of the isolationist attitude in the USA before entry in the war certain acts of UK or French aggression will have an adverse impact on USA mobilization prior to their entry in the war -- if the Allies take them.

An allied attack on Portugal at any time has an adverse impact on their neighbor Spain. Basically, an attack on Portugal would signal danger to Spain and move them close to Germany for their own protection.

An Allied DoW upon Holland or Belgium prior to US entry will anger the US public with the following effects:

- ◆ The US Lend-Lease destroyer will not spawn if not already spawned
- ◆ Convoys are 25% smaller until USA joins the Allies
- ◆ A message about this will be shown when you make the DoW

### 8.8.4 Allied Attacks on Neutral Countries

Every declaration of war by Britain or France on a minor neutral country (e.g., Ireland, Portugal) prior to USA entry reduces the USA war effort by 5. Since, the USA is at industry level 2 the impact of this reduction is 6 (i.e.,  $1.2 \times 5$ ). After US entry, Allied DoW's on neutrals won't have any effect on the US war effort. The US will mobilize because they are at war. The US will regain any lost war effort immediately when they join the Allies. The reason is that they mobilize and the US public would forget about reluctance to enter the war since they're already at war.

### 8.8.5 Portugal

An allied declaration of war against Portugal results in the transfer of 5 PPs per turn from Spain to Germany. These are from the Spanish lead mine traded to Germany for military equipment and training. This training and equipment is represented by Spanish units immediately getting the same as German tech level -2 or keeping their current tech if it's higher. Please notice that if the Germans get more tech later then the Spanish will NOT get that until the Allies DoW Spain as well and then only if the Germans pay for an upgrade of the Spanish units. So the tech received from Germany upon an allied declaration war against Portugal is a one time FREE upgrade to the German tech -2.

### 8.8.6 Renamed Netherlands Units

Renamed the Dutch I Legerkorps (corps unit) into I and IV Legerkorps because the Dutch had 4 Legerkorps. The III Legerkorps was south of Hague near Belgium and the II Legerkorps was east of Amsterdam near Utrecht and Arnhem. The I Legerkorps was near Hague and the IV Legerkorps was near Amsterdam. So each Legerkorps is of garrison strength. So it's natural to call the corps unit on the map I and IV Legerkorps because it's meant to be the sum of 2 garrison sized units. This way all 4 Dutch Legerkorps units are on the map.

### 8.8.7 Iceland

Changed code so UK will get Iceland on turn 14 or later if Denmark is conquered. So if Denmark is conquered late then Iceland will be "conquered" by UK later. USA will get Iceland regardless in 1941 because that was not an invasion, but an agreement with the Danish ambassador = with Greenland.

## 8.9 Tension in the Balkans

Because of the tension in Balkans between German axis minors and Yugoslavia or Greece these axis minors will defend their borders against these countries unless they are pacified (i.e., invaded) by Germany or Italy. Also, axis minors will activate earlier than expected if the axis invades the Balkans prior to their normal activation times.

### 8.9.1 Hungarian Surrender

Hungary surrenders normally and all non-core hexes will be transferred to the faction leader (normally Germany).

### 8.9.2 Hungary

Hungary starts with a fighter (FTR) at step level 5.

Hungary will immediately join the Axis if Yugoslavia is attacked AFTER the 2nd Vienna award has given them Transylvania. If you attack Yugoslavia prior to this events then Hungary will join at their usual join date (October / November 1940).

This means an axis player might declare war on Yugoslavia from Austria and Italy and rail reinforcements to Hungary on that turn (e. g. in August 1940).

Remember that the first turn Hungary joins the war - it's units will NOT be able to move on the turn they join. So the player will probably need two turns to take out Belgrade. It also becomes more attractive to take out Greece from the north since a player can take out Yugoslavia in August / September and move adjacent to Greece to march to Athens in maybe September / October. Weather is always nice down there. In earlier CeAW and GS versions -- a seaborne invasion of Greece was the only way to secure Greece early enough because a player never got through Yugoslavia in time.

One Hungarian infantry corps is removed from the initial Hungarian setup. It will be spawned on when the axis player declares war on Yugoslavia. Changed text when this event happens so that it only mentions that reserves are released and not that they're intended to be used against Russia.

It's important to note that this unit will spawn anyway at a specific turn number set in *general.txt*. Currently this turn is July 1942. So if you decide to not DoW on Yugoslavia or Greece you get the extra unit anyway from that turn. The reason was that so late in the war the threat from the Russia is so great that the Axis minor powers would prefer to defend against Russia than Yugoslavia or Greece.

### 8.9.3 Romania

The 5-step FTR was increased to 6-steps. The 10-step DD was reduced to 5-steps. A 4-step tactical bomber was added.

Romania will immediately join the Axis if Yugoslavia is attacked AFTER Russia has seized Bessarabia. If you attack Yugoslavia prior to this events then Romania will join at their usual join date (October / November 1940).



It's possible to speed up the activation of Romania by an earlier DoW. This means an axis player might declare war on Yugoslavia from Austria and Italy and rail reinforcements to Romania on that turn (e. g. in August 1940).

Remember that the countries joining the war will NOT move on the turn they join. So the player will probably need two turns to take out Belgrade. It also becomes more attractive to take out Greece from the north since a player can take out Yugoslavia in August / September and move adjacent to Greece to march to Athens in maybe September / October. Weather is always nice down there. In earlier CeAW and GS versions -- a seaborne invasion of Greece was the only way to secure Greece early enough because a player never got through Yugoslavia in time.

Two Romania infantry corps are removed from their initial countries setup. They will be spawned on when the axis player declares war on Yugoslavia. If this never happens, these two infantry corps are assumed to be assigned to home defense until released in July 1942. Changed text when these events happen so they only mention that reserves are released and not that they're intended to be used against Russia. This means text can be used even if Bulgaria and Romania change side early.

It's important to note that these units will spawn anyway at a specific turn number set in *general.txt*. Therefore, if you decide to not DoW on Yugoslavia or Greece you get the extra units but just much later. The reason was that so late in the war the threat from the Russia is so great that the Axis minor powers would prefer to defend against Russia than Yugoslavia or Greece.

Romania will join the Allies once Bucharest is captured by the Allies. A side effect of this is that the Germans might get a nasty surprise if they use Romanian units to garrison cities. These will change side when Romania join the Allies. That's especially bad if the units were garrisoning a port hex.

### 8.9.4 Bulgaria

Bulgaria will immediately join the Axis if Greece is attacked AFTER the 2nd Vienna award has given them Southern Dobruja.

Bulgarian reserves are released in July 1942 instead of June 1943, if Greece is still neutral.

Changed text when these events happen so they only mention that reserves are released and not that they're intended to be used against Russia. This means text can be used

Two Bulgarian infantry corps are removed from Bulgaria's initial setup. They will be spawned on the turn that the axis player declares war on Greece. If this never happens then these two infantry corps are assumed to be assigned to home defense until release in July 1942.

Changed text when this event happens so they only mention that reserves are released and not that they're intended to be used against Russia. This means text can be used

Remember that the Bulgarian units will spawn -- if the ALLIES DoW Yugoslavia and Greece.

Added logic so that Bulgarian reinforcements won't spawn if Bulgaria is allied and the allies DoW Greece.

Bulgaria will join the Allies once Sofia is captured by the Allies. A side effect of this is that the Germans might get a nasty surprise if they use Romanian units to garrison cities. These will change side when

Bulgaria join the Allies. That's especially bad if the units were garrisoning a port hex.

### 8.9.5 Axis Advantage - Taking Yugoslavia

If you take Yugoslavia as the Axis you get German war effort for Hungarian and Romanian production, i. e. slightly more oil each turn. If you take Greece you get German war effort for Bulgarian production.

So long term you benefit having Nagykanitsa and Ploesti production using German war effort instead of the minor power war effort. E. g. German war effort will be 2 tech levels above the local war effort so it can add up to about 20% extra war effort.

Let's say Germany has industry tech 2 and thus war effort 120%. The Romania and Hungary can max have war effort 100% (tech 0 in industry).

Romanian oil per turn without Yugoslavia Axis:  $4 * 4 * 100\% = 16.0$   
Hungarian oil per turn without Yugoslavia Axis:  $1 * 4 * 100\% = 4.0$   
Total: 20.0

Romanian oil per turn with Yugoslavia Axis:  $4 * 4 * 120\% = 19.2$   
Hungarian oil per turn with Yugoslavia Axis:  $1 * 4 * 120\% = 4.8$   
Total: 24.0

So Germany gets 4 oil extra per turn. That is quite significant reward for making an invasion of the Balkans, despite having to deal with a lot of partisans.

Additionally, if you DoW Yugoslavia before the 2nd Vienna award you won't activate Hungary and Romania before their regular join date (fall 1940), but you will get the extra corps for Hungary and 2 extra corps for Romania because these spawn when Yugoslavia is DoW'ed.

## 8.10 Greece and Turkey

### 8.10.1 Greek DD Added

A 4-step DD is added.

### 8.10.2 Axis Invasion for Greece

Attacking Greece from the sea is harder than before and Greece even has a DD in Pireus. So a land based assault on Greece is probably a smarter way of taking out Greece. That means you might lose Crete, but with the addition of airborne unit(s) you might be able to repeat the real war airborne invasion of Crete. It would be interesting if any of you could share your experiences with attacking Greece and Crete using the GS v2.0 rules.

### 8.10.3 Turkish Neutrality

Turkey will join the Axis if Athens, Bucharest, Sofia, Moscow, Baku and Baghdad are all Axis controlled. It's not enough that a city is neutral.

## 8.11 Middle East

### 8.11.1 Persian Neutrality

Persia will activate and the southern lend lease route to Russia will open when an Axis unit has moved into Iraq instead of when an Axis unit captures an Iraqi resource.

The Baku oil resource will be reverted back to Russia because the trade agreement with Germany is cancelled. The rule is slightly different because Russia can't control minor powers. All minor powers go to UK or USA.

Persia will spawn garrisons in all cities if Axis units occupy a city/resource in Iraq.

### 8.11.2 Iraq Rebellion

Addressing the issue of too little incentive for the Axis to engage in the Middle East, an Iraq revolt in May 1941 has been added.

One Axis garrison would spawn in or adjacent to every resource and city in Iraq. The units can be flagged as partisans so they won't become out of supply. They become German owned and named Iraqi Partisan.

The size of the rebel partisans will be dependent upon the number of Axis controlled cities in Egypt, Palestine, Syria and Iraq who are Axis at the time of the rebellion. The size is:

$$1 + (\text{number of Axis controlled cities in these territories}) * 2$$

So if the Allies hold all cities then the spawned rebel units will have 1 strength only. The rebellion should then be easy to crush.

If the Axis manage to destroy the UK units in Egypt, then Britain can't easily send reinforcements to Iraq to squash the rebellion. The British garrisons there can be destroyed by the Axis moving units from Egypt to Iraq.

In normal circumstances the rebellion will be just a nuisance, but if the British are heavily engaged in battles in Egypt then they might actually lose control. At least the Germans could get control of oilfields and get extra precious oil. So this means the British would need to keep a healthy garrison in Iraq until the rebellion is squashed.

Iraq rebellion mods:

```
/* Iraq rebellion */
IRAQ_REBELLION_TURN 30 /* April 3rd 1941. 0 = no rebellion */
IRAQ_AXIS_PARTISAN_SPAWN_CHANCE 5 /* Percentage chance in each empty Iraqi hex */
IRAQ_AXIS_PARTISAN_CITY_MULTIPLIER 10 /* Spawn chance multiplied by this number in empty cities or resources */
IRAQ_AXIS_PARTISAN_MAX_BASE_SIZE 4 /* Max partisan size = number + 2*Axis controlled cities in Egypt, Syria and Iraq */
```

Iraqi rebel units will be German, but look like Iraqi.

The 3 starting units in Iraq are now changed to UK ownership instead of Iraqi. This means these units

will remain as UK controlled when the rebellion starts.

[http://en.wikipedia.org/wiki/Anglo-Iraqi\\_War](http://en.wikipedia.org/wiki/Anglo-Iraqi_War)

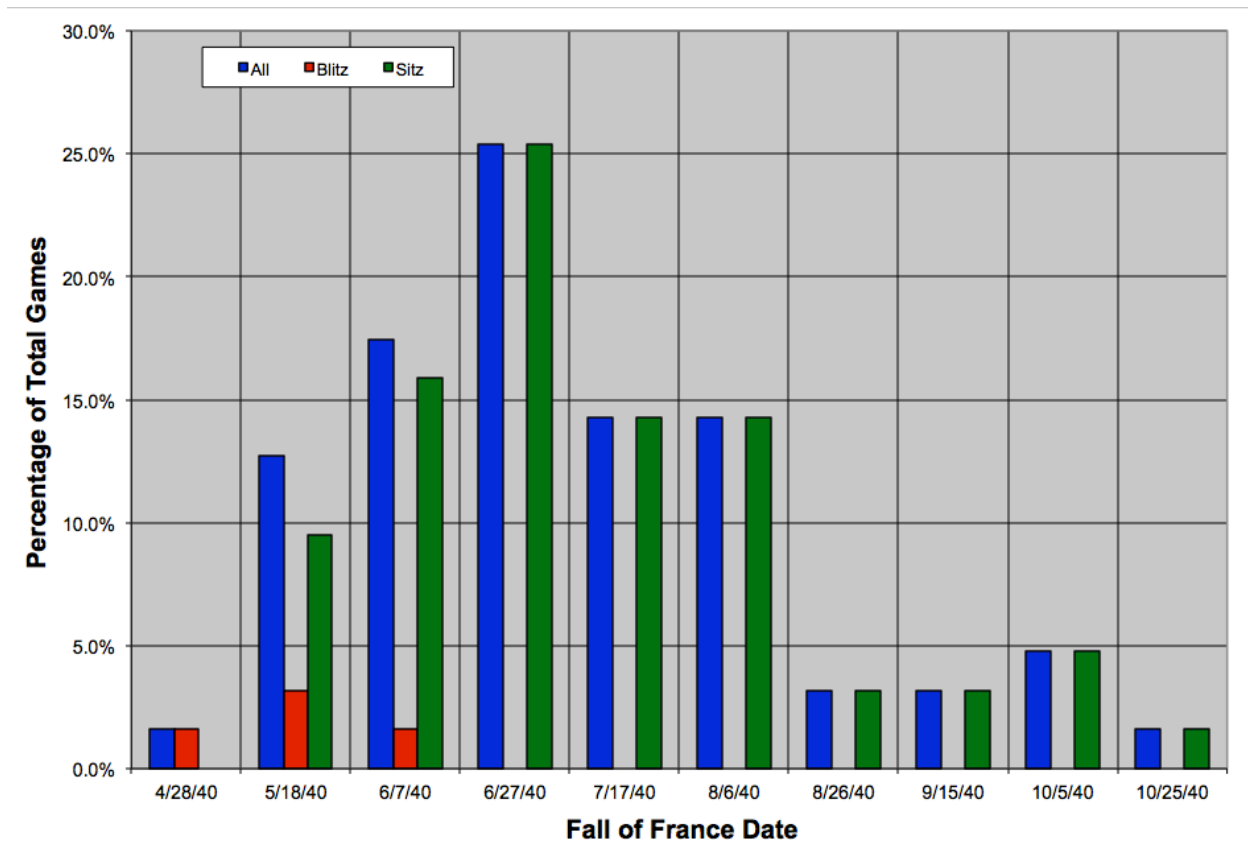
## 8.12 Additional Naval Units - Alignment

- ◆ Germany, Italy and UK will get an extra BB at turn 25 (December 24th, 1940). The variables are set in general.txt so it's possible to turn on/off each country. Can even set for USA, but currently set to off. Turn number the BB's arrive is variable too.
- ◆ Swapped the French BB and DD in the Med. Oran was the base for the battleships and Toulon for the destroyers.
- ◆ Added a new Italian sub to scenarios 1939-1943.
- ◆ Added 2 UK Destroyers and removed a UK BB for all scenarios. One of these destroyers start in Gibraltar since only DD's were stationed here early in the war.
- ◆ Added extra BB for Germany, Italy and UK for the 1941 scenario. They're not added for the 1942+ scenarios since these units were sunk during 1941. Italy lost some battleships in Taranto. Germany lost Bismarck and some other ships in 1941 and Britain lost Hood and several other BB's.
- ◆ USA will get an extra CV on turn 35 (July 1941) to represent the CV's Ranger and Wasp.

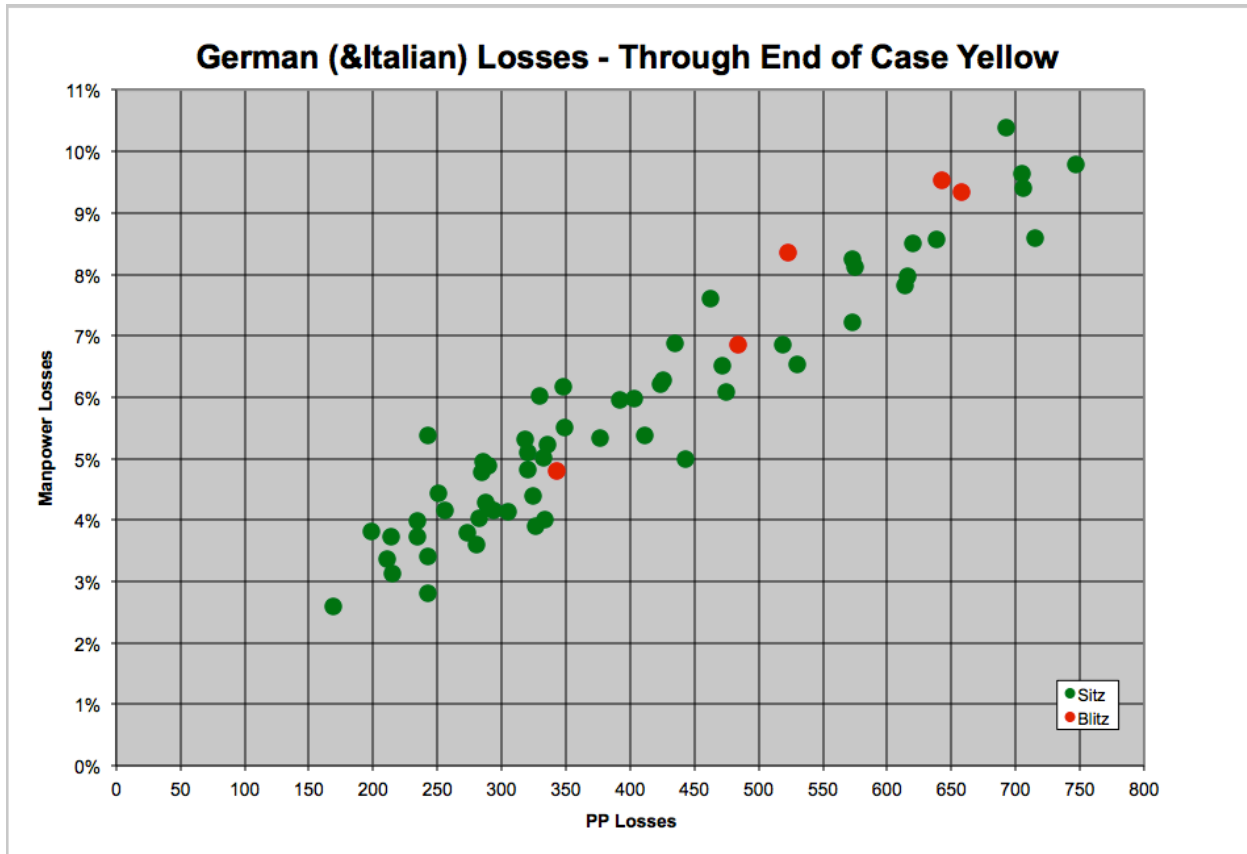
## 8.13 Fall of France - Statistics (GS 1.0 & 2.0)

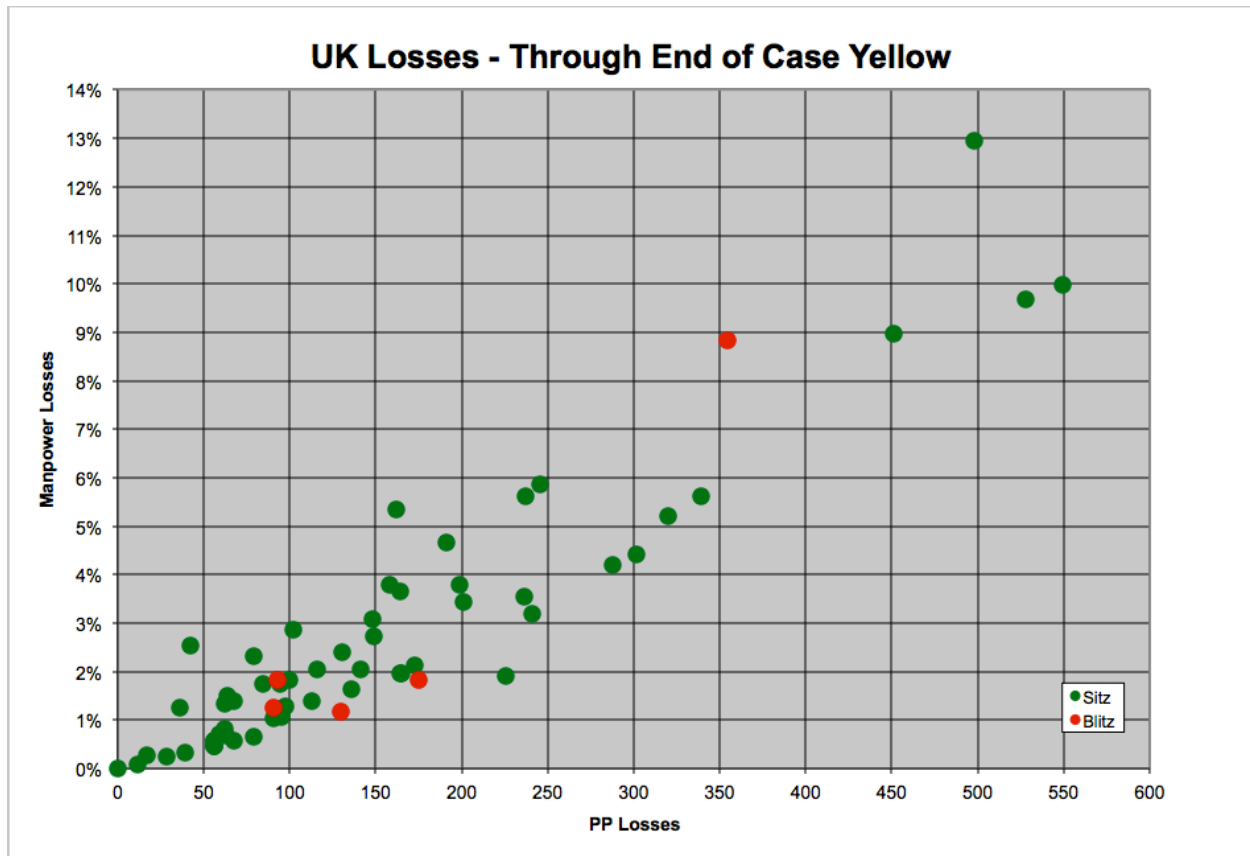
### 8.13.1 Summary - Table

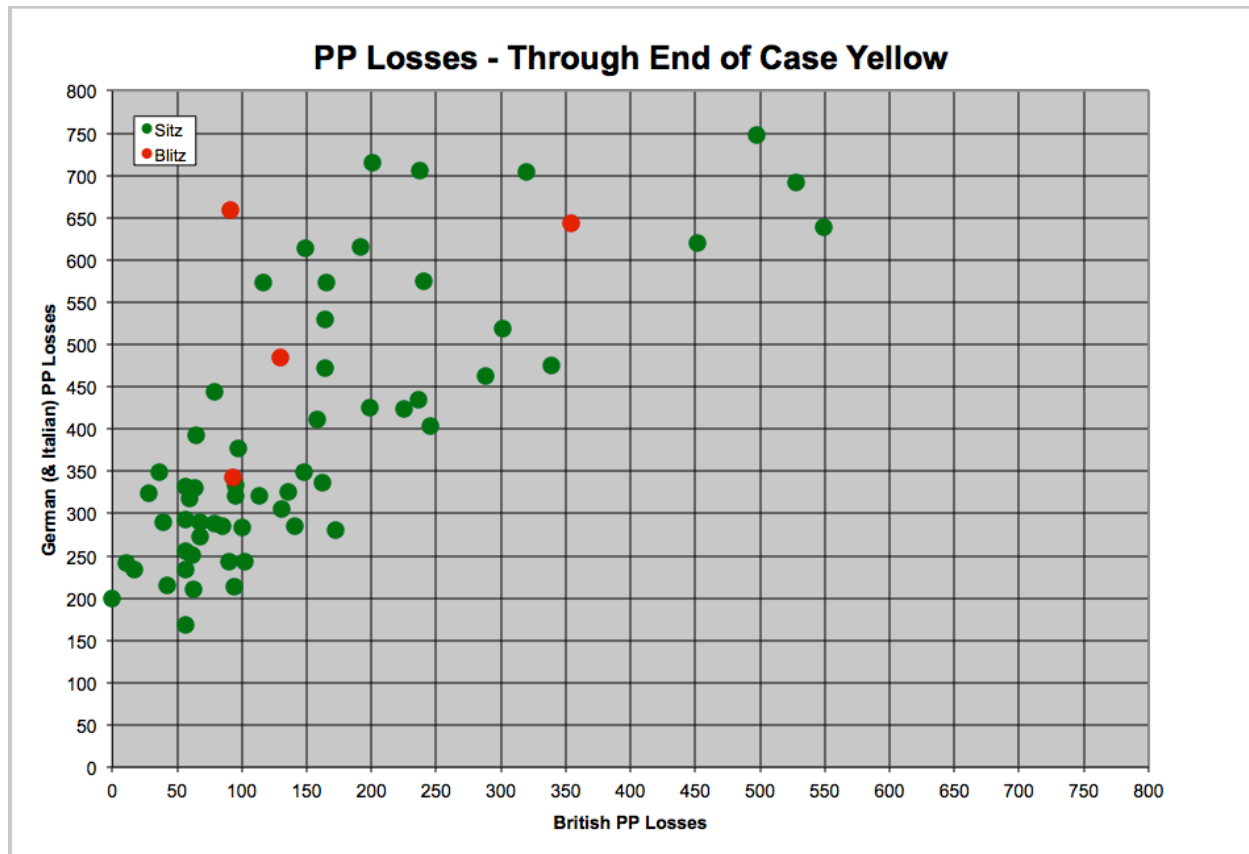
Historical Fall Date	6/22/40		
Averages	Strategy		
	All	Blitzkrieg	Sitzkrieg
# Samples	63	5	58
% of Total	100%	8%	92%
Fall of France Date	7/5/40	5/10/40	7/10/40
GS - Historical (days)	14	-43	19
Axis PPs Lost	403	530	392
Axis Manpower Lost	5.8%	7.8%	5.6%
UK PPs Lost	153	169	152
UK Manpower Lost	2.7%	3.0%	2.7%

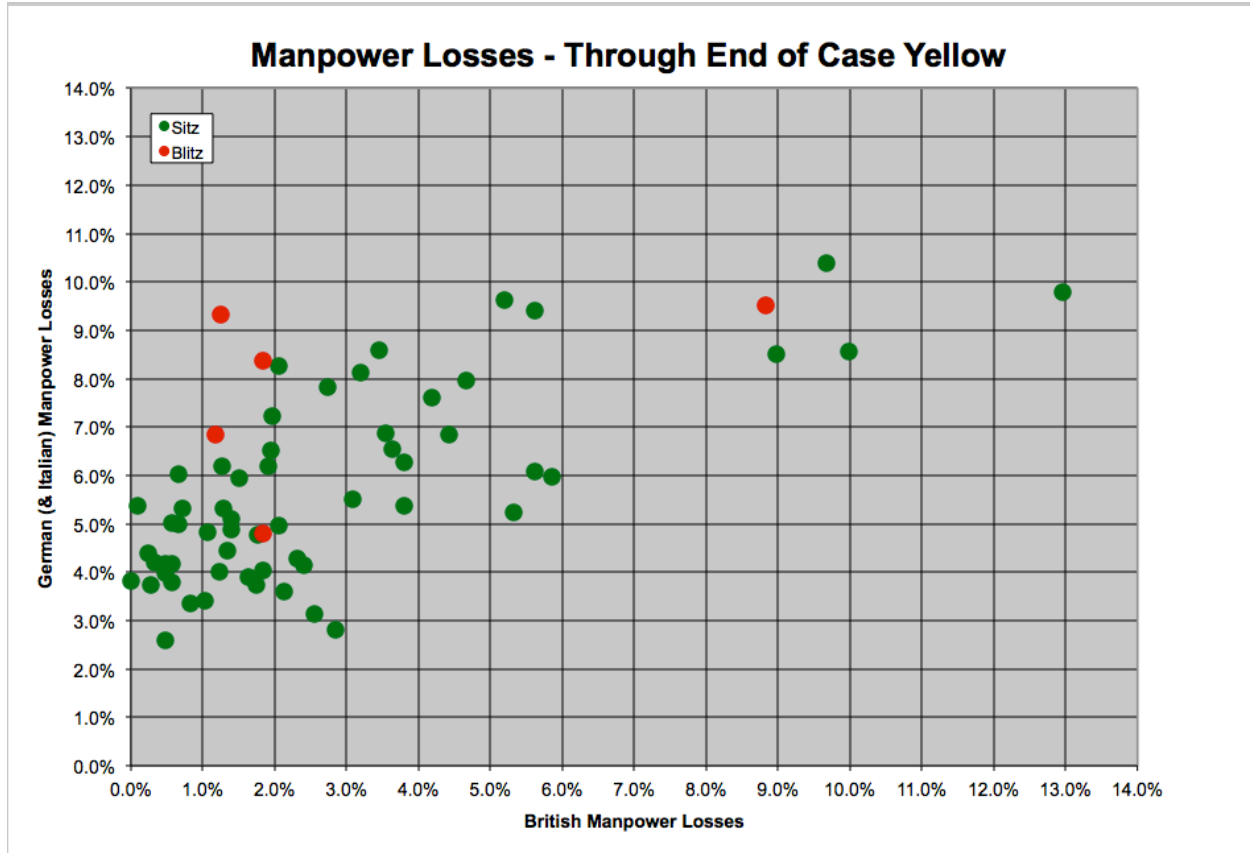












## Chapter 9 AI Changes

### 9.1 Changes

- ◆ Made the following changes to the Axis AI:

- ◆ Axis supply points in North Africa increased by 10

EXTRA\_AXIS\_SUPPLY\_IN\_AFRICA 10 /\* AI Axis units increase the supply points in Africa by this value \*/

- ◆ Extra Axis units in Libya

ADD\_DAK\_IN\_LIBYA 1 /\* 0 = no spawn. 1 = German armor spawned in Libya near Benghazi \*/  
 ADD\_FIGHTER\_IN\_LIBYA 1 /\* 0 = no spawn. 1 = German fighter spawned in Libya near Benghazi \*/  
 ADD\_TAC\_BOMBER\_IN\_LIBYA 1 /\* 0 = no spawn. 1 = German tactical bomber spawned in Libya near Benghazi \*/  
 EXTRA\_GERMAN\_CORPS\_IN\_LIBYA 2 /\* 0 = no spawn. Number of units spawn in Libya near Benghazi \*/  
 UNITS\_IN\_LIBYA\_SPAWN\_TURN 28 /\* February 22nd 1941 \*/

- ◆ Extra German units in East PRussia from turn 1

ADD\_GERMAN\_FIGHTER\_EAST\_PRussia 1 /\* 0 = no spawn. 1 = one extra fighter will spawn on turn 1 in East PRussia \*/  
 ADD\_GERMAN\_TAC\_BOMBER\_EAST\_PRussia 1 /\* 0 = no spawn. 1 = one extra tac bomber will spawn on turn 1 in East PRussia \*/

- ◆ Extra German unit near Wilhelmshaven

ADD\_GERMAN\_ARMOUR\_WILHELMSHAVEN 1 /\* 0 = no spawn. 1 = one extra tac bomber will spawn on turn 1 near Wilhelmshaven \*/  
 ARMOUR\_WILHELMSHAVEN\_SPAWN\_TURN 10 /\* February 28th 1940 \*/

- ◆ Extra German units for Barbarossa

EXTRA\_GERMAN\_MECH\_BARBAROSSA 2 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/  
 EXTRA\_GERMAN\_CORPS\_BARBAROSSA 4 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/  
 EXTRA\_GERMAN\_ARMOUR\_BARBAROSSA 1 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/  
 EXTRA\_GERMAN\_TAC\_BOMBER\_BARBAROSSA 1 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/  
 EXTRA\_GERMAN\_FIGHTER\_BARBAROSSA 1 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/  
 BARBAROSSA\_UNITS\_SPAWN\_TURN 31 /\* April 23rd 1941 \*/

- ◆ Automatic DoW upon Norway and Denmark with German garrisons in all cities

AXIS\_AUTOMATIC\_DOW\_NORWAY\_DENMARK 1 /\* 0 = no automatic DoW. 1 = Germany will get garrisons in each Norwegian and Danish city in April 1940 \*/  
 DOW\_NORWAY\_DENMARK\_TURN 12 /\* April 8th 1940 \*/

- ◆ Reduced on-map strength for some countries. This will make it easier for the Axis AI to get anywhere with the DoW

```

REDUCED_STRENGTH_DUTCH_FORCES 2 /* Reduced strength of on-map Dutch forces if
Axis AI */
REDUCED_STRENGTH_BELGIAN_FORCES 2 /* Reduced strength of on-map Belgian forces if
Axis AI */
REDUCED_STRENGTH_POLISH_FORCES 5 /* Reduced strength of on-map Polish forces if
Axis AI */
REDUCED_STRENGTH_GREEK_FORCES 4 /* Reduced strength of on-map Greek land forces if
Axis AI */
REDUCED_STRENGTH_YUGOSLAVIAN_FORCES 4 /* Reduced strength of on-map
Yugoslavian forces if Axis AI */
REDUCED_STRENGTH_RussiaN_GARRISONS 5 /* Reduced strength of on-map Russian
garrisons if Axis AI */
REDUCED_STRENGTH_RussiaN_CORPS 3 /* Reduced strength of on-map Russian garrisons if
Axis AI */
REDUCED_STRENGTH_RussiaN_MECH 2 /* Reduced strength of on-map Russian garrisons if
Axis AI */
REDUCED_STRENGTH_FRENCH_GARRISONS 5 /* Reduced strength of on-map Russian
garrisons if Axis AI */
REDUCED_STRENGTH_FRENCH_CORPS 3 /* Reduced strength of on-map Russian garrisons
if Axis AI */
REDUCED_STRENGTH_FRENCH_MECH 2 /* Reduced strength of on-map Russian garrisons if
Axis AI */

```

- ◆ Fixed an AI bug where it would not DoW Russia early enough. The reason is that we've moved the automatic join time by 7 months to May 1942. The AI will increase the chance for DoW the closer the Axis is to the automatic join date. So 7 months was subtracted from the calculations for Russia.
- ◆ Added code so the AI will not DoW a country if the country has non-fair weather. That prevents the AI from fighting in mud
- ◆ Added code to make it impossible for the AI to DoW Denmark and Norway if they get these countries automatically in April 1940.

## Chapter 10 Scenarios

*A beginning is the time for taking the most delicate care that the balances are correct.*

Frank Herbert, the book *Dune*



*Pilots of the 332nd Fighter Group, "Tuskegee Airmen" at Ramitelli Airfield, Italy; from left to right, Lt. Dempsey W. Morgan, Lt. Carroll S. Woods, Lt. Robert H. Nelron, Jr., Captain Andrew D. Turner, and Lt. Clarence P. Lester*



## 10.1 Chapter TOC

<u>10.2 - Initial Setups</u>	<u>319</u>
<u>10.2.1 - Scenario Start Date</u>	<u>319</u>
<u>10.2.2 - Technology Changes</u>	<u>319</u>
<u>10.2.3 - German Unit Names 1939-1940</u>	<u>319</u>
<u>10.2.4 - German Unit Change '39 (GS 3.0)</u>	<u>320</u>
<u>10.2.5 - Gustav Line Fortresses</u>	<u>320</u>
<u>10.2.6 - Axis ARM Spawn Location Change</u>	<u>320</u>
<u>10.2.7 - Spain</u>	<u>320</u>
<u>10.2.8 - Canada</u>	<u>320</u>
<u>10.2.9 - USA</u>	<u>320</u>
<u>10.2.10 - Denmark, Belgium &amp; Holland (GS 3.0)</u>	<u>321</u>
<u>10.2.11 - France</u>	<u>321</u>
<u>10.2.12 - Russia &amp; Finland</u>	<u>321</u>
<u>10.2.13 - Southern France</u>	<u>322</u>
<u>10.2.14 - Severe Winter in 1940 &amp; 1941 Added</u>	<u>322</u>
<u>10.2.15 - Bagration Event Trigger (GS 3.0)</u>	<u>322</u>
<u>10.3 - Scenario Start Capabilities</u>	<u>323</u>
<u>10.3.1 - Major Power Free General(s) at Scenario Start</u>	<u>323</u>
<u>10.3.2 - German Scenario Start Capabilities</u>	<u>324</u>
<u>10.3.3 - German Start Laboratory/Research Capabilities</u>	<u>325</u>
<u>10.3.4 - Italian Scenario Start Capabilities</u>	<u>326</u>
<u>10.3.5 - Italian Start Laboratory/Research Capabilities</u>	<u>327</u>
<u>10.3.6 - British Scenario Start Capabilities</u>	<u>328</u>
<u>10.3.7 - British Start Laboratory/Research Capabilities</u>	<u>329</u>

<u>10.3.8 - French Scenario Start Capabilities</u>	<u>330</u>
<u>10.3.9 - French Start Laboratory/Research Capabilities</u>	<u>331</u>
<u>10.3.10 - USA Scenario Start Capabilities</u>	<u>332</u>
<u>10.3.11 - USA Start Laboratory/Research Capabilities</u>	<u>333</u>
<u>10.3.12 - Russian Scenario Start Capabilities</u>	<u>334</u>
<u>10.3.13 - Russian Start Laboratory/Research Capabilities</u>	<u>335</u>

## 10.2 Initial Setups

### 10.2.1 Scenario Start Date

CEaW Grand Strategy has made major changes to the scenario. Specific changes to force levels, dispositions, leadership and technical levels have been made. Additionally, the developers and beta testers have done extensive testing to insure that these factors insure realistic and historically accurate starting points for each scenario.

Scenario	Start Date	Power That Starts
1939	September 1, 1939	Axis
1940	February 28, 1940	Axis
1941	February 22, 1941	Axis
1942	May 28, 1942	Axis
1943	June 12, 1943	Allies
1944	May 17, 1944	Allies

### 10.2.2 Technology Changes

Altered the values slightly in Labs\_bought.txt for some countries. E. g. Germany would get 2 naval labs + 2 general labs instead of 1 naval lab and 3 general labs in the latest scenarios. This was done because we earlier increased the research cost for subs.

Altered values slightly in Research\_progress.txt so the 1944 progress level was more consistent with what it was in 1943. This was for the 3 air research areas.

### 10.2.3 German Unit Names 1939-1940

Changed the 1939 and 1940 scenarios so the numbers of the German units match the OOB for Case White and Case Yellow

- ◆ Changed German Korps to Armeekorps

- ◆ Changed German Panzer Korps to Panzerkorps
- ◆ Changed German Panzergrenadier to Panzergrenadierkorps
- ◆ Changed German Fallschirmjager Korps to Fallschirmjagerkorps
- ◆ Changed German Fallschirmjager Div. to Fallschirmjagerdivision

#### 10.2.4 German Unit Change '39 (GS 3.0)

German III Panzergrenadierkorps and Grenzschutz Kommando 2 swapped in the 1939 scenario. This makes it possible to rail a MECH to the west on turn 1, thus making a turn 2 blitz easier to accomplish.

#### 10.2.5 Gustav Line Fortresses

Removed the Gustav Line fortresses in Italy from all scenarios except the 1944.scenario. The Gustav Line fortresses will spawn if:

- ◆ Year is 1942 or later and an Allied unit has landed in a core Italian hex
- ◆ Turn is July 1943 or later
- ◆ A message about the spawn will be shown
- ◆ The Gustav Line fortresses can be set in general.txt

#### 10.2.6 Axis ARM Spawn Location Change

Updated the spawn location of the extra armor for Axis AI from Wilhelmshaven hex to Bremen hex.

#### 10.2.7 Spain

Changed the 10-step Spanish fighter to 6-steps. Added a 4-step tactical bomber. Reduced the two 10-step DDs to 5-steps. One is deployed in the Atlantic and the other is in the Med.

#### 10.2.8 Canada

Canadian units will now spawn at normal quality and not the reduced quality if the UK manpower level is yellow.

#### 10.2.9 USA

Added the leader Devers.

### 10.2.10 Denmark, Belgium & Holland (GS 3.0)

The 1939 scenario is updated so the one Dutch garrison is removed and one Belgian garrison is removed so it can spawn dependent upon which side will attack Belgium. It will defend against France if the Allies DoW Belgium and against Germany if the Axis DoW.

The 1940 scenario is changed so Denmark and Holland are set to neutral. The German forces are moved out and placed outside these countries.

Belgium unit setups changes in GS 3.0 - see below.



### 10.2.11 France

Included the ability to add a tactical bomber to France's initial setup. However; this is NOT currently implemented in the GS v2.0 changes.

### 10.2.12 Russia & Finland

Added a Finnish corps and a Russian corps in the Karelia area for both sides in all scenarios except 1944.

### **10.2.13 Southern France**

Updated the scenarios so control is changed to Germany in southern France in the 1943-1944 scenarios. Core owner is set to France in the code.

### **10.2.14 Severe Winter in 1940 & 1941 Added**

Updated the code so it now generates initial severe winter for the 1940 and 1941 scenarios.
























### **10.2.15 Bagration Event Trigger (GS 3.0)**

1944 scenario was updated so that the Combat Operations event named Bagration is now controlled through hex locations instead of automatically trigger at the start of 1944 scenario.

## 10.3 Scenario Start Capabilities


### 10.3.1 Major Power Free General(s) at Scenario Start

When starting a scenario, you will receive all the Free Generals up until the scenario date. Thus, if you start a scenario 1942 -- you would get all the Generals from 1939, 1940, 1941 and 1942.

Country	1939	1940	1941	1942	1943	1944
Germany	 Rundstedt		 Guderian  Manstein	 Rommel	 Kesselring	
Italy	 Graziani		 Messe			
UK	 Auchinleck		 Montgomery		 O'Connor	
USA Free French	 Devers			 Patton  DeGaulle  Le Clerc	 Eisenhower	 Bradley
France	 Gamelin					
Russia	 Timoshenko		 Chuikov *	 Koniev  Rokossovsky  Zhukov	 Chernyakovski	
<p>Scenarios show the starting leaders for each Major Power. Scenarios after 1939 include the previous scenario Leaders.</p> <p>Reassignment time (turns) = 1+ Distance (in hexes) from home Major Capital divided by 25 (↓).</p> <p>Leader Injury time (turns) = 1 to 9 turns (random).</p> <p>* Siberian Reserves Leader. Will not be free for 42', 43', 44' scenarios.</p> <p>ver 2.17</p>						










## 10.3.2 German Scenario Start Capabilities


	1939	1940	1941	1942	1943	1944
Rail Capacity	8	8	10	10	11	13
Oil Reserves *	300	419	614	595	474	289
Manpower Trained	875 - 82%	945 - 89%	1038 - 98%	810 - 76%	588 - 55%	278 - 26%
	-	-	-	-	Q(-1)	Q(-1) S(-1)
Production Stored	35	18	50	105	301	385
Transport Capacity	2	2	1 **	3	5	6
Invasion Capacity	2	2	2	2	4	4
War Effort	110%	110%	120%	130%	140%	145%
* German + Italian oil points. Germany and Italy share the same oil stockpile. ** Starts scenario with 2 transports loaded. Q = Quality S = Survivability <span style="color: red;">*****</span>						
Ver. 2.0135						

## 10.3.3 German Start Laboratory/Research Capabilities

**Laboratories / Research**







		1939			1940			1941			1942			1943			1944		
	War Effort	110%			110%			120%			130%			140			145		
	Lab Price	20			79			99			92			78			67		
	Max Labs	11			11			12			13			14			14		
	Total Labs	0			8			12			13			13			13		
	Focus Pts	2			3			3			4			5			4		
Research Area	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%
	Artillery	0	0	0	2	0	22	3	1	0	3	2	52	3	3	75	3	5	26
	Fixed Defenses		1	0		1	19		1	90		3	17		4	26		4	99
	Anti Tank Guns		0	0		0	19		0	91		2	17		4	30		5	0
	Blitzkrieg	0	1	0	2	1	16	3	2	0	3	3	53	3	4	77	3	5	53
	Armour		0	0		0	17		1	0		2	52		3	78		5	35
	Tank Destroyers		0	0		0	21		1	21		3	0		4	52		5	62
	Dog Fight	0	0	0	2	0	18	3	1	22	3	3	13	3	4	58	3	5	66
	Close Air Support		1	0		1	22		2	8		3	50		5	0		5	76
	Strategic Operations		0	0		0	22		1	8		2	50		5	14		4	84
	Surface Ships	0	1	0	1	1	12	1	1	48	2	1	94	2	2	35	2	2	68
	ASW		0	0		0	15		0	60		1	17		1	75		2	11
	SUB		0	0		0	30		1	20		2	34		3	25		4	6
	Industry	0	1	0	1	1	25	2	2	22	2	3	76	2	5	32	2	6	0
	Organization		3	0		3	9		3	44		3	99		4	57		5	14
	Radar		0	0		0	18		0	88		1	98		3	13		4	46

## 10.3.4 Italian Scenario Start Capabilities


	1939 *	1940 *	1941	1942	1943	1944
Rail Capacity	3	3	3	3	3	
Oil Reserves **	300	419	614	595	474	
Manpower Trained	215 - 60%	247 - 68%	304 - 84%	300 - 83%	217 - 60%	
	Q (-1)	Q (-1)	-	-	Q(-1)	
Production Stored	0	16	9	29	84	
Transport Capacity	1	1	1	1	3	
Invasion Capacity	1	1	1	1	2	
War Effort	10%	17%	85%	110%	130%	
* - Starts scenario Neutral. ** German + Italian oil points. Germany and Italy share the same oil stockpile. Q = Quality						
Ver. 2.0135						

## 10.3.5 Italian Start Laboratory/Research Capabilities

## Laboratories / Research







		1939			1940			1941			1942			1943			1944		
	War Effort	10%			17%			85%			110%			120%					
	Lab Price	20			23			59			68			62					
	Max Labs	1			1			8			11			13					
	Total Labs	0			1			8			10			11					
	Focus Pts <small>***</small>	2			3			3			4			5					
Research Areas	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%
	Artillery	0	0	0	0	0	0	2	0	44	3	1	60	3	2	41			
	Fixed Defenses		0	0		0	0		0	38		1	34		2	41			
	Anti Tank Guns		0	0		0	0		0	38		1	34		2	47			
	Blitzkrieg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	Armour <small>***</small>		0	0		0	0		0	0		0	0		0	0			
	Tank Destroyers		0	0		0	0		0	0		0	0		0	0			
	Dog Fight	0	0	0	0	0	0	2	0	44	2	2	47	3	4	16			
	Close Air Support		0	0		0	0		0	53		1	85		3	0			
	Strategic Operations		0	0		0	0		0	54		1	85		2	0			
	Surface Ships	0	0	0	0	0	0	2	0	28	2	0	90	2	1	67			
	ASW		0	0		0	0		0	35		1	10		2	5			
	SUB		0	0		0	0		0	35		1	11		2	83			
	Industry	0	0	0	1	0	5	2	0	48	3	1	43	3	3	0			
	Organization		0	0		0	4		0	34		1	0		1	60			
	Radar		0	0		0	8		0	69		2	0		3	18			

## 10.3.6 British Scenario Start Capabilities


	1939	1940	1941	1942	1943	1944
Rail Capacity *	9	9	6	11	7	14
Oil Reserves *	1011	913	910	1664	2691	2498
Manpower Trained	376 - 66%	427 - 75%	514 - 90%	554 - 97%	612 - 107%	609 - 106%
	Q (-1)	Q (-1)	-	-	-	-
Production Stored	34	23	58	100	85	69
Transport Capacity	2	2	2	5	6	8
Invasion Capacity	1	1	2	3	4	5
War Effort	55%	62%	99%	120%	130%	136%
* Britain + France (if unconquered) + USA (if at war). These countries share the same oil stockpile. Q = Quality						
Ver. 2.0135						

## 10.3.7 British Start Laboratory/Research Capabilities

## Laboratories / Research

		1939			1940			1941			1942			1943			1944		
	War Effort	35%			62%			99			120			130			136%		
	Lab Price	20			63			75			84			79			68		
	Max Labs	5			6			9			12			13			13		
	Total Labs	0			6			9			12			13			13		
	Focus Pts	2			3			3			4			4			4		
Research Areas	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%
	Artillery	0	0	0	1	0	7	2	0	52	3	1	83	3	3	0	3	4	17
	Fixed Defenses		0	0		0	5		0	43		1	53		2	62		3	66
	Anti Tank Guns		0	0		0	6		0	42		1	53		2	62		3	66
	Blitzkrieg	0	0	0	0	0	0	1	0	9	2	0	74	3	2	0	3	3	17
	Armour		1	0		1	0		1	7		1	74		2	33		3	57
	Tank Destroyers		0	0		0	0		0	10		0	93		2	0		3	42
	Dog Fight	0	0	0	2	0	13	2	1	7	3	3	13	3	4	23	3	5	50
	Close Air Support		0	0		0	17		1	0		2	33		3	58		5	5
	Strategic Operations		0	0		0	18		0	96		2	29		4	0		5	40
	Surface Ships	0	1	0	2	1	21	2	1	93	2	3	2	2	4	55	2	5	88
	ASW		0	0		0	46		2	23		4	10		5	0		5	85
	SUB		0	0		0	23		1	41		2	41		3	24		4	5
	Industry	0	0	0	1	0	22	2	1	8	2	2	17	2	3	22	2	4	25
	Organization		2	0		2	9		2	40		3	1		3	40		3	77
	Radar		1	0		1	17		1	80		2	55		3	28		4	0








## 10.3.8 French Scenario Start Capabilities

	1939	1940	1941	1942	1943	1944
Rail Capacity *	9	3	Surrendered			
Oil Reserves *	1011	913				
Manpower Trained	319 - 76%	326 - 76%				
	-	-				
Production Stored	15	22				
Transport Capacity	1	1				
Invasion Capacity	1	1				
War Effort	40%	47%				
* Britain + France (if unconquered) + USA (if at war). These countries share the same oil stockpile.						
Ver. 2.0135						




## 10.3.9 French Start Laboratory/Research Capabilities

## Laboratories / Research







		1939			1940			1941			1942			1943			1944			
	War Effort	40%			47%															
	Lab Price	20			20															
	Max Labs	4			4															
	Total Labs	0			0															
	Focus Pts	2			3															
Research Areas	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	
	Artillery	0	0	0	0	0	0													
	Fixed Defenses		0	0		0	0													0
	Anti Tank Guns		0	0		0	0													
	Blitzkrieg	0	1	0	0	0	0													
	Armour		1	0		1	0													
	Tank Destroyers		0	0		0	0													
	Dog Fight	0	0	0	0	0	0													
	Close Air Support		0	0		0	0													
	Strategic Operations		0	0		0	0													
	Surface Ships	0	0	0	0	0	0													
	ASW		0	0		0	0													
	SUB		0	0		0	0													
	Industry	0	0	0	0	0	0													
	Organization		1	0		1	0													
	Radar		0	0		0	0													

## 10.3.10 USA Scenario Start Capabilities


	1939 *	1940 *	1941 *	1942	1943	1944
Rail Capacity **	9	9	6	11	11	14
Oil Reserves **	1011	913	910	1664	2691	2498
Manpower Trained	296 - 45%	354 - 54%	476 - 73%	578 - 89%	640 - 99%	658 - 101%
	Q(-1) S(-1)	Q(-1)	Q(-1)	-	-	-
Production Stored	0	27	286	87	80	82
Transport Capacity	3	3	3	4	5	8
Invasion Capacity	2	2	2	3	4	5
War Effort	4%	13%	46%	130%	130%	136%
* - Starts scenario Neutral. ** Britain + France (if unconquered) + USA (if at war). These countries share the same oil stockpile. Q = Quality S = Survivability						
Ver. 2.0135						

## 10.3.11 USA Start Laboratory/Research Capabilities

## Laboratories / Research








		1939			1940			1941			1942			1943			1944		
	War Effort	4%			13%			46			130			130			136		
	Lab Price	20			23			35			84			79			68		
	Max Labs	0			1			4			12			13			13		
	Total Labs	0			1			4			12			13			13		
	Focus Pts ***	2			3			3			4			4			4		
Research Areas	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%
Infantry 	Artillery	0	0	0	0	0	0	1	0	7	3	0	84	3	2	6	3	3	17
	Fixed Defenses		1	0		1	0		1	6		1	69		2	74		3	74
	Anti Tank Guns		1	0		1	0		1	6		1	68		2	74		3	74
Armour 	Blitzkrieg	0	0	0	0	0	0	0	0	10	3	1	17	3	1	10	3	3	17
	Armour *****		0	0		0	0		0	10		1	5		2	0		3	33
	Tank Destroyers		1	0		1	0		1	10		1	60		2	29		3	64
Air 	Dog Fight	0	1	0	0	1	0	1	1	24	3	2	83	3	4	33	3	5	50
	Close Air Support		2	0		2	0		2	16		3	0		4	13		5	40
	Strategic Operations		2	0		2	0		2	15		3	0		4	13		5	40
Navy 	Surface Ships	0	1	0	0	1	0	1	1	33	2	2	39	2	3	88	2	5	16
	ASW		1	0		1	0		1	42		2	78		3	70		4	55
	SUB		2	0		2	0		2	41		3	66		4	60		5	0
General 	Industry	0	2	0	1	2	5	1	2	40	2	3	1	2	3	80	2	4	82
	Organisation *****		2	0		2	4		2	34		2	67		3	24		3	61
	Radar		1	0		1	12		1	59		2	55		3	8		3	82

## 10.3.12 Russian Scenario Start Capabilities

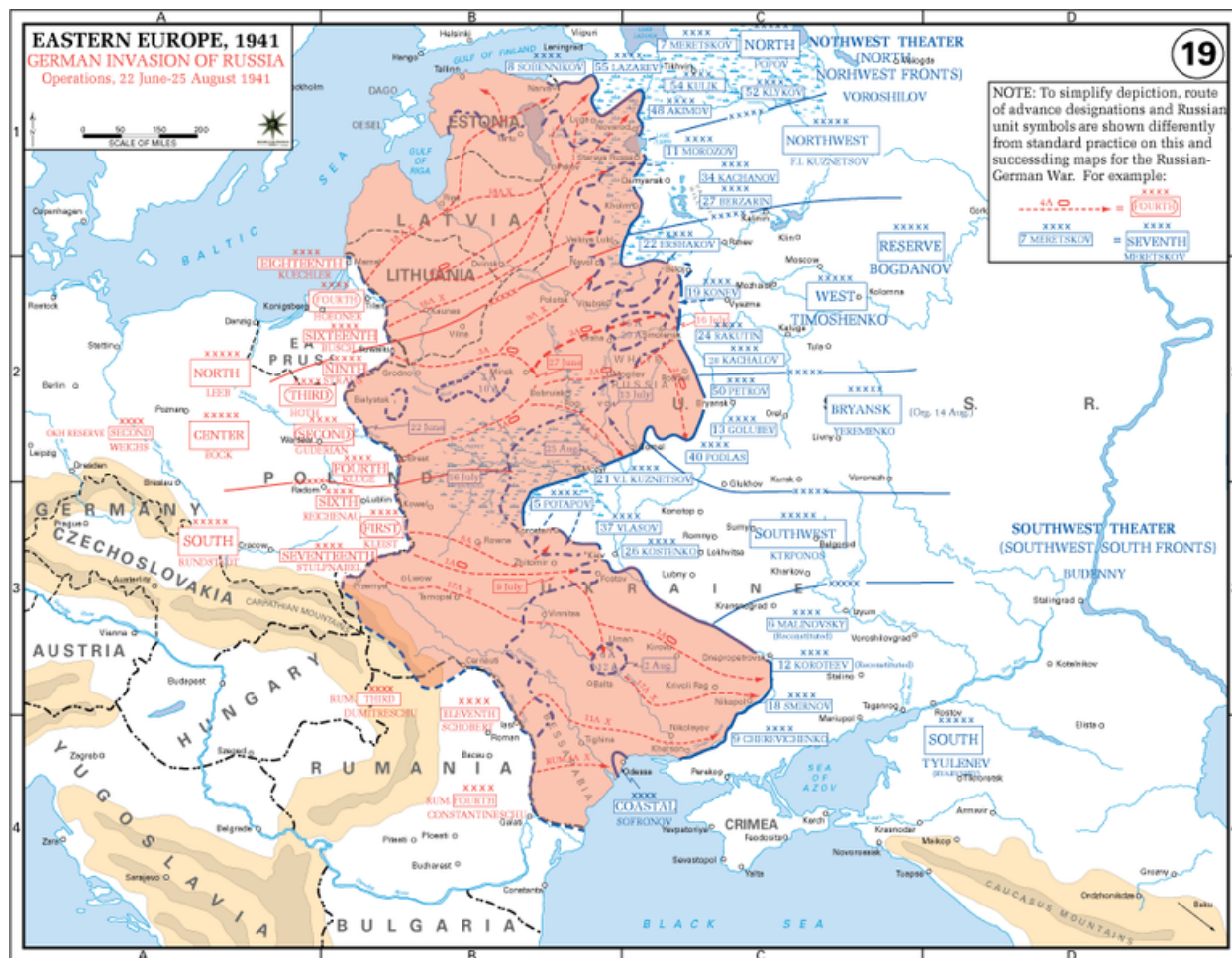
	1939 *	1940 *	1941 *	1942	1943	1944
Rail Capacity	14	14	14	15	15	17
Oil Reserves	200	200	200	1166	2811	3640
Manpower Trained	1219 - 62%	1393 - 71%	1698 - 87%	1658 - 85%	1594 - 82%	1594 - 82%
	Q(-1)	Q(-1)	-	-		-
Production Stored	0	86	173	158	187	182
Transport Capacity	1	1	1	2	2	2
Invasion Capacity	1	1	1	1	2	2
War Effort	4%	12%	42%	120%	130%	130%
* - Starts scenario Neutral. Q = Quality						Ver. 2.0135

## 10.3.13 Russian Start Laboratory/Research Capabilities

## Laboratories / Research

		1939			1940			1941			1942			1943			1944		
	War Effort	4%			12%			42%			120			130			130		
	Lab Price	20			23			27			84			79			68		
	Max Labs	0			1			4			12			13			13		
	Total Labs	0			1			3			12			13			13		
	Focus Pts <small>***</small>	2			3			3			4			4			4		
Research Areas	Focus Area	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%	#	Level	%
	Artillery	0	1	0	0	1	0	1	1	28	3	2	43	3	3	60	3	4	72
	Fixed Defenses		1	0		1	0		1	24		2	21		3	28		4	21
	Anti Tank Guns		1	0		1	0		1	23		2	19		3	28		4	21
	Blitzkrieg	0	0	0	0	0	0	0	0	22	3	1	41	3	3	26	4	4	69
	Armour <small>*****</small>		1	0		1	0		1	22		1	78		3	37		4	69
	Tank Destroyers		1	0		1	0		1	22		2	8		3	37		5	0
	Dog Fight	0	0	0	0	0	0	1	0	34	3	1	73	3	3	33	3	4	42
	Close Air Support		1	0		1	0		1	17		1	94		3	6		4	36
	Strategic Operations		1	0		1	0		1	15		1	98		3	6		4	36
	Surface Ships	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ASW		0	0		0	0		0	0		0	0		0	0		0	0
	SUB		0	0		0	0		0	0		0	0		0	0		0	0
	Industry	0	1	0	1	1	6	1	1	43	3	2	15	3	3	8	3	3	80
	Organisation <small>*****</small>		1	0		1	5		1	29		1	80		2	84		3	84
	Radar		0	0		0	10		0	56		1	64		2	72		3	72

## Chapter 11 Tactics



*Best form of defense is attack*  
Karl von Clausewitz

## 11.1 Chapter TOC

<u>11.3 - The Basics</u>	<u>340</u>
<u>11.3.1 - Writers Note</u>	<u>340</u>
<u>11.3.2 - Unit Strength</u>	<u>340</u>
<u>11.3.3 - Attack Value</u>	<u>340</u>
<u>11.3.4 - Who Attacks First?</u>	<u>340</u>
<u>11.3.5 - Anti-Tank Value</u>	<u>340</u>
<u>11.3.6 - Shock Value</u>	<u>341</u>
<u>11.3.7 - Combat Losses</u>	<u>341</u>
<u>11.3.8 - Unit Retreat (GS 2.2)</u>	<u>341</u>
<u>11.3.9 - Combat Odds</u>	<u>342</u>
<u>11.3.10 - Types of Combat</u>	<u>342</u>
<u>11.3.11 - Effectiveness, Quality, Survivability and Experience</u>	<u>343</u>
<u>11.3.12 - Capture a Country</u>	<u>343</u>
<u>11.4 - General Tactics</u>	<u>344</u>
<u>11.4.1 - Eligible Units for Contested Landings</u>	<u>345</u>
<u>11.4.2 - Leaders</u>	<u>345</u>
<u>11.4.3 - Allied Naval Combat Tactics</u>	<u>345</u>
<u>11.4.4 - Offensive Considerations</u>	<u>346</u>
<u>11.4.5 - Convoy Considerations</u>	<u>346</u>
<u>11.5 - Combat Operations</u>	<u>347</u>
<u>11.5.1 - Attack Technique - Backward Retreat</u>	<u>347</u>
<u>11.5.2 - One Turn Transport</u>	<u>349</u>
<u>11.5.3 - Taking Leningrad/Fortress</u>	<u>350</u>
<u>11.5.4 - River Attack</u>	<u>352</u>

<u>11.5.5 - Contested Invasions</u>	<u>352</u>
<u>11.5.6 - Fighter "Sentry" Function</u>	<u>353</u>
<u>11.5.7 - Fighter Ground Support Attacks</u>	<u>353</u>
<u>11.5.8 - Enemy Fighter Suppression</u>	<u>354</u>
<u>11.5.9 - Attack Odds/Ratios</u>	<u>354</u>
<u>11.5.10 - Fighter - Air to Air Combat</u>	<u>354</u>
<u>11.5.11 - Attack Fighter 3 Times!!</u>	<u>354</u>
<u>11.5.12 - Allied Para Use in the MED</u>	<u>355</u>
<u>11.6 - How to Conserve Oil</u>	<u>356</u>
<u>11.6.1 - Importance of Conserving Oil</u>	<u>356</u>
<u>11.6.2 - Balance tanks and mechanized corps</u>	<u>356</u>
<u>11.6.3 - Balance ground shock and air power</u>	<u>356</u>
<u>11.6.4 - Leave units inactive</u>	<u>356</u>
<u>11.6.5 - Oil and Tech Upgrade</u>	<u>356</u>
<u>11.6.6 - Limit winter movement</u>	<u>356</u>
<u>11.6.7 - Make maximum use of movement points</u>	<u>357</u>
<u>11.6.8 - Rail expensive units wherever possible</u>	<u>357</u>
<u>11.6.9 - Always use rail movement allowance</u>	<u>357</u>
<u>11.6.10 - Don't be afraid to rail short distances</u>	<u>357</u>
<u>11.6.11 - What is the value of an oil point?</u>	<u>357</u>
<u>11.6.12 - Conclusion</u>	<u>357</u>
<u>11.7 - Strategic Bombers</u>	<u>358</u>
<u>11.7.1 - Axis</u>	<u>358</u>
<u>11.7.2 - Allies</u>	<u>358</u>

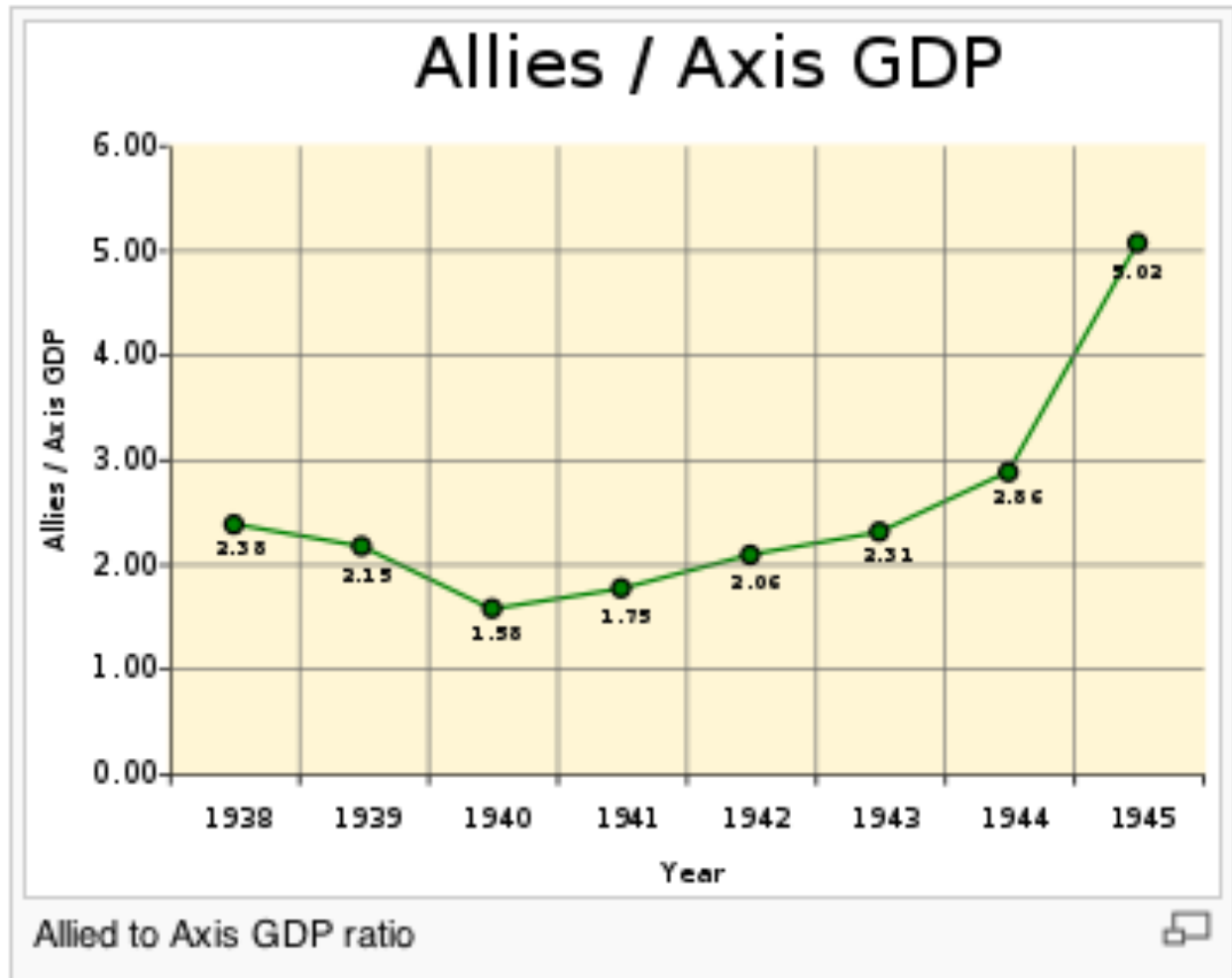


## 11.2 Editor Note on Tactics

The Grand Strategy expansion has been an on-going effort for over 2 years. This manual has followed that development path.

The reader should be aware that there may be certain tactics described in the "Tactics" section that may have become outdated or superseded by more recent changes to Grand Strategy.

Having said that -- good tactics are generally good tactics. Read and learn! Also visit the GS Forums at Slitherine.



## 11.3 The Basics

*What counts is not necessarily the size of the dog in the fight – it's the size of the fight in the dog*

General Dwight D. Eisenhower

### 11.3.1 Writers Note

This guide is the result of contributions by several individuals with many hours of gaming experience on Grand Strategy and its previous versions. It should be considered as examples of successful strategies and tactics, not the only way to win the game. There is no “only way” to do anything, which is one of the beautiful things about Grand Strategy and CEaW in general.

### 11.3.2 Unit Strength

Unit strength does not affect the effectiveness but instead the number of "rounds" you fire during a battle. So, more men means you fire more. Strength+4 is the total number of rounds you fire in a battle, so with strength 10 you will fire:

$$10 + 4 = 14$$

rounds and that is then also the max damage a unit can inflict if all of them hit their target .

### 11.3.3 Attack Value

An attack value in combat will be combined with effectiveness to determine the chance of hitting enemy when shooting at it. Also enemy survivability will affect it so a enemy with high survival is tougher to hit. Terrain can reduce attackers chances of a successful attack. Even the defender capabilities can be reduced, for example, if you place an ARM in mountain it will be less effective.

### 11.3.4 Who Attacks First?

In the following scenarios - the first to attack/fire is notes:

- ◆ Ground vs. Ground - **Defender**
- ◆ Naval vs. Naval - **Attacker**
- ◆ Air vs. Air - **Simultaneous**
- ◆ Air vs. Ground (Air is attacker) - **Defender**

### 11.3.5 Anti-Tank Value

There is a special anti-tank value for units used ONLY against ARM. It reduces enemy survivability so if you for example have AT 4 and enemy has survival 6 then in that battle enemy will use survivability

$$6 - 4 = 2$$

which is only one third its original value of 6. It means the unit will be 3 times as easy to hit which means in this extreme example the AT bonus made a huge impact.

### 11.3.6 Shock Value

In combat, units can fire or use shock. Some battles have shock phases but some have only fire phases. Being hit by a shock attack reduces your morale=effectiveness. Being hit by a fire attack reduces your strength by 1 point. In shock attack a unit will use its "Shock Attack" value. A fire attack it will use its attack value corresponding to the enemy unit type. For example, if a fighter attacks a garrison, the fighter will use ground attack on the garrison -- while the garrison will use air attack on the fighter.

### 11.3.7 Combat Losses

When losing a strength point you also lose some effectiveness, and a high quality value of a unit will lose less effectiveness than a low quality one.

### 11.3.8 Unit Retreat (GS 2.2)

If a ground unit attacks any non-naval unit, there is a chance the defender will be forced to retreat. The defender must take at least one Casualty Point and their Effectiveness must be below the Retreat Threshold to have a chance of retreating. The retreat chance increases as the unit's Effectiveness drops and the amount of Effectiveness lost during the attack increases.

**Units can never retreat from Cities or Fortresses - except air units.**

```

/* Battles+EFFICIENCY                                     */
/* ----- */
RETREAT_REMAINING_EFFICIENCY_THRESHOLD 65 /* EFFICIENCY lost during attack+
(Threshold-EFFICIENCY) is together proportional to chance of retreat*/
RETREAT_CASUALTY_THRESHOLD 0 /*Casualty must be higher than this value to
make it even possible for retreat*/
RETREAT_FROM_CITY_CAPITAL_FORTRESS 0 /*Proportional to chance of retreat from City,
Capital, Fortress*/
RETREAT_FROM_NON_CLEAR 95 /*Proportional to chance of retreat from non clear
hex*/
RETREAT_FROM_CLEAR 140 /*Proportional to chance of retreat from terrain or
presource*/
    
```

If a unit is forced to retreat it automatically picks an adjacent empty friendly hex to retreat to. If no such hex is available, the unit will instead hold ground and fight to the last man. Retreats will attempt to go to hexes that are not adjacent to the attacker, and also if possible, not adjacent to any other enemy units.

#### GS 2.2 Changed retreat rules.

- ◆ Air units will always retreat from most resource hexes.

- ◆ Naval units may now retreat during combat.
- ◆ Subs and convoys start with 0, BB's, CV's start with 10, DD's with 20, Transports with 30. For each step loss below 10 on the defender the chance goes up by 5, the retreat chance may go down by 5 for each step loss below 10 on the attacker.
- ◆ Defenders will not retreat from ports.
- ◆ Convoys will not retreat.

Battle example:

- ◆ A UK 9 step BB attacks an 8 step Italian DD.
- ◆ Combat result is 3:1 so the BB has 8 steps and the DD 5 steps after battle.
- ◆ Base retreat chance is 20% (destroyer).
- ◆ Modifier for defender =  $5 \times (10 - 5) = 25\%$ .
- ◆ Modifier for attacker is  $5 \times (10 - 8) = 10\%$ .
- ◆ End result =  $20\% + 25\% - 10\% = 35\%$

### 11.3.9 Combat Odds

Combat odds shown prior to a battle do not take into account the battle sequences. These odds only consider how much firepower is present prior to the battle. Except in a dogfight where both fire simultaneously, even odds (for example) could mean that either the attacker or the defender is at an advantage. The shown odds is on purpose larger than the real odds to allow finer levels of indication instead of the large error margins you get when rounding a small number to an Integer. For example if the real casualty expected is 2.6 for attacker and 3.4 for defender it would be shown as 3-3 if rounding. If instead upscaling these numbers say by +50% would mean 3.9 vs 5.1 and here you round it to 4-5 and you can then see even a small advantage expressed in the combat odds.

### 11.3.10 Types of Combat

- ◆ Strategic Battle - Unit vs Resource
- ◆ Dogfight - No attacker or defender, totally equal terms with simultaneous fire
- ◆ Navy vs Navy - Attacker Shock, Attacker Fire, Defender Fire
- ◆ Standard battle (means all of the rest combinations) - Attacker Shock, Defender fires, Attacker Fire

#### Strategic Battle

Occurs when a Strategic bomber attacks a hex with a resource. Regardless of the enemy unit there, the bomber will just battle the resource and the enemy unit in that hex is not used in any way. Case i) also occurs if any unit with a strategic attack value attacks a hex that has no unit on it -- for example, if a tactical bomber attacks a unit-less London, this counts as a strategic battle.

In Strategic Battle, the defending resource first fire on the attacker, attacker takes that loss and then fire on the resource.

### **Dogfight**

Occurs if 2 units who have dog fight capability meet i.e. air unit or carrier. When this happens they both fire simultaneously and take damage.

### **Navy vs Navy**

Occurs when two naval units battle. The attacker first use its shock value to reduce defender effectiveness. After that, attacker fires at defender damaging it. Finally the defender fires at attacker but from its weakened state! This means in navy vs navy it is better to be the attacker.

### **Standard Battle**

The standard is air vs ground, ground vs ground, navy vs ground, air vs navy and any other possible combinations left. Here the attacker first does a shock attack, then defender fires a attacker and finally attacker fires at defender. Since the defender can damage the attacker first, it is beneficial being the defender unless the attacker has a huge shock attack beforehand.

## **11.3.11 Effectiveness, Quality, Survivability and Experience**

**Effectiveness** - is how many of your soldiers that are battle ready and will shoot instead of just sticking their heads in the sand. A unit with strength 10 and effectiveness 0 will be totally harmless and will not inflict any damage.

**Quality** - is mental toughness of a unit. High quality means it won't break as easily. It will take casualties and still maintain high effectiveness, and it will not retreat as quickly.

**Survivability** - how well protected a unit is.

**Experience** - Will increase quality and survivability.

## **11.3.12 Capture a Country**

When a country is conquered all cities in that country become the possession of the conquering country unless they're occupied by another nation's forces. For example, the UK/USA captures Rome, thus conquering Italy. They could immediately rail units to Genoa, Milan or Venice if those cities were unoccupied. If these cities were occupied by German or other non-Italian Axis unit, then control would pass to the Germans. But if they were occupied by Italians, control would pass to the UK at the end of the Allies' turn, and the Germans could not rail units to or next to these cities until the Germans are able to occupy them.

## 11.4 General Tactics



*Marines under the cover of a large boulder engaging the Chinese. [Battle of Chosin Reservoir](#)*

*They are in front of us, behind us, and we are flanked on both sides by an enemy that outnumbers us 29:1. They can't get away from us now!*

*[Lieutenant General Lewis B. "Chesty" Puller, USMC](#)*

*When the Marines were cut off behind enemy lines and the Army had written the 1st Marine Division off as being lost because they were surrounded by 22 enemy divisions. The Marines made it out inflicting the highest casualty ratio on an enemy in history and destroying 7 entire enemy divisions in the process. An enemy division is 16,500+ men while a Marine division is*

*12,500 men.*

### 11.4.1 Eligible Units for Contested Landings

Modified the amphibious model so at the start of the game only corps units (INF) are amphibious capable. MECH units become amphibious capable from 1942 so they can land in Torch. ARM units become amphibious capable from 1943.

This means that e. g. the Germans with Sea Lion must use corps units for opposed landings. MECHs or ARM can only land in unoccupied or friendly hexes.

### 11.4.2 Leaders

Range of leaders is now their quality rating -2 instead of 8, the old default. This range also works across the sea. When you have several leaders within range then only the best will increase your efficiency.

Leaders with "plus" defense or attack ratings give a bonus only to the unit they are attached to, not to all units under their command.

Commanders provide support on a national basis so you cannot have German leaders commanding Italians, for example.

### 11.4.3 Allied Naval Combat Tactics

#### OOB for Naval battles in Atlantic & Arctic

Naval combat is very random. It's not so easy to soften up targets because you rarely have air range to the battle hex. So CV's are very important and can be used to soften up the submarine, BB or DD one wants to attack.

The subs can be really dangerous if they operate in wolfpacks (3-4 or more subs working together). They can early in the game sink a BB or a CV. CVs are especially vulnerable. Always try to use BB's to protect CV's.

The British will need to get 2 strike forces of (1 DD + 1 CV) against subs. Then you can protect 2 escorts. Later you get a third strike force too. When USA joins you can have as many as 5 strike forces. It's always smart to build a few CV's as USA. CV's are great to soften up targets in the Mediterranean because it takes time until you get airbases there for land based air units. They can also be used to get rid of the Italian navy if they dare to intervene in the Allied invasion plans.

BB's won't do well against the subs so they do better as protection for the convoy itself or the CV's. It's even more important to protect transports (e. g. the Royal Canadian Fighter unit).

A good strategy is to have 5-6 DD+CV strike forces when USA joins the Allies. That means you can use 1 strike force against each submarine if the Axis has about 4-6 subs. It's ok to have a little more strike forces than the Axis has subs because you don't know where they will strike.

Using 2 strike forces as protection for each convoy is a good idea. When you need to transport units across the Atlantic then you dedicate 2 strike forces plus your BB's to make a perimeter around a cluster of transports. That means you may use about 8 units to protect a group of transports.

You need some naval units in the Mediterranean after you know the Axis will not make a Sea Lion. A force of 1 CV, 1 DD plus 4 BB's and maybe another submarine is a good force. You need the DD to hunt the Italian subs. They start with one, but will often build more.

### 11.4.4 Offensive Considerations

Never send units across rivers on advances unless you can do it in force with many units. The reason is that the rivers protect you as much as the defenders. You can get across when you need to, but the defenders won't usually attack if you're behind the rivers. The odds are too bad. You just attack the units across the river with air support because you want to destroy them and force the defenders to plug the hole.

If you do this for some turns then you will see the defense line will vanish. It's important to be patient and just continue to eliminate units. When the front crumbles then you can advance on your objective in no time. When most of the enemy corps units have been killed then you can go all out and attack as many units as you can. You will know when this is possible.

### 11.4.5 Convoy Considerations

A convoy surrounded by friendly naval combat units moves THROUGH one of those units in the convoy movement phase. If there is an enemy submarine hidden next to the friendly unit through which the convoy moves, a couple of interesting things happen. First, the convoy will either bounce back to its starting position, or be diverted to a new course and continue -- but, it WILL BE ATTACKED. Second, in the next players turn, the after-combat display will make it appear as if the submarine attacked the friendly naval combat unit---which can be very confusing.



## 11.5 Combat Operations



*The KV-2 Heavy Artillery Tank's 152-mm howitzer was housed in an enormous turret. This prototype differs from the production version in several ways. It was called the Dreadnought by its crews. (Zaloga 1984:118-19)*

*You may have to fight a battle more than once to win it.*

*Margaret Thatcher*

### 11.5.1 Attack Technique - Backward Retreat

TIP -- If the enemy's unit can't retreat back, always leave a room for it to retreat forward, closer to your troops! After the forward retreat - hit it again with more air and land units and poof - it is gone!! Tricks of the trade!

This way you will kill 1 British unit per turn, and soon the Brits will not have enough units. If you feel tough or lucky you may try to occupy the vacated hex, empty after destruction of British unit, but its not safe the safest move.

Please note below: on the left - the wrong way to attack; second picture - the correct way to attack that allows a “forward retreat”. Use TAC air units to hit the middle allied corps INF unit first. Then attack with the German panzer (ARM) to the north-east hex - again at the middle allied corps INF unit with no river penalty. This will likely force allied unit to retreat and it can only go forward. Then be destroyed by the waiting Axis INF and/or air units!





A second defensive lines use the Nile and Suez, but they are easier to breach. There is more maneuver room for your troops and British have likely been somewhat depleted by The Battle of the Bottleneck!

If you dealt a significant blow to the RN in the MED, you may want to land troops near Jerusalem to flank allies defending Nile area. Generally, this should not be needed once you breakthrough the bottleneck.

After taking Egypt the situation you will face as Axis commander is hard to predict. Advancing into Iraq is hard to recommend specific strategies. You may be facing Brits, Americans, Russians or all of them. It depends on how fast you advance and take Egypt. Patrolling transportation loop near western African coast with naval power to interdict allied efforts to reinforce the Middle east. Possible Soviet forces cannot be directed interdicted, but have reduced supply when operating in the Middle East. Thus, the faster you advance and later the DoW on the Russia the better. Air support will help you to fight through any allied resistance and take Basra and oilfields.

### 11.5.2 One Turn Transport

Any unit (eligible for transport) that starts its turn adjacent to a port hex that's also adjacent to another land hex (e.g., Copenhagen) may load, unload and attack (if applicable) in the same turn.

If you're playing a mod hat includes added ports such as Messina, Belfast, Portsmouth or Cherbourg, then you can use this tactic to move from one land mass to another in a single turn without risk of interception of your transport by enemy naval forces. The exception to this is if the enemy has implemented a naval blockade of this one-turn transport sea route. Grand Strategy no longer supports a

one-turn transport to or from Great Britain.

### 11.5.3 Taking Leningrad/Fortress

**TACTIC 1:** From one contributor on the Forum - It took me a whole fighting season of 1942 (i.e., all the good weather turns) and concentrated attacks to finally capture Leningrad. Here are the steps I followed (but not necessarily in the order given):

- ◆ Surround Leningrad, which means it will have a maximum supply level 3. This means no new units can be built there and a maximum of 3-steps per turn can be repaired.
- ◆ Bomb, bomb and then bomb some more. Initially I hit it with a STR strategic bomber (which reduces the city) and a TAC tactical bomber (which reduces the defenders and lowers their entrenchment).
- ◆ Attack with fresh infantry as often as you can; especially from the Leningrad side. From the south you're not only attacking a highly entrenched unit in a fort but also across a river.
- ◆ Keep bombing and attacking.
- ◆ Eventually the city will be reduced to a point where the Russians can only repair a 1-step (or better no steps) per turn.
- ◆ Use a German units with a +1 attack bonus to attack the city; preferable from the north.

Eventually, Leningrad will fall.

**TACTIC 2:** Your primary goal should be to lower enemy effectiveness, preferably into the red. Make sure you keep it there once it is low -- do not pause in your attacks. Even a guard unit can't do much with only 10% of its troops in fighting shape. Strong TACs with a LEADER supporting them are the best units to do this. The best units for the ground assault are MECHs; they have much stronger attack than INF and don't suffer from the fort's anti-tank penalty.

**TACTIC 3:** Another contributor from the forum posted









- ◆ I usually initiate the attack by using strategic bombardment (STR) on the resources inside. If you get the resource down to red then the supply level in Leningrad will drop from 3 to just 1. That means the Russians can only repair 1 step per turn.
- ◆ You attack with units from 4 sides and ensure you have 2 airstrikes to keep the entrenchment level down. The Leningrad unit will almost certainly become a guard unit, but will eventually drop to low efficiency (red). Then you can just hit the unit every turn with air and land units until it falls. Each attack will drop the strength of the resource too and thus the supply level.
- ◆ So Leningrad WILL fall if you can begin the process as early as August 1941. When winter comes it's usually too late to finish off the city. The Axis losses will become very high, especially on the first land attacks, but you have to take these losses to capture the city.
- ◆ The real Germans didn't want to lose to many soldiers so they screened the city and bombarded

it with artillery and airstrikes hoping to starve the Russians to submission. That failed and Leningrad actually survived about 1000 days of siege. No wonder Leningrad became a hero city similar to Stalingrad, Sevastopol and Odessa.

### 11.5.4 River Attack

The following chart shows the penalty any attacking unit suffers when attacking an opponent across a river hex side. You can see that weather conditions also change the impact.

See examples of the impact in the next sections.

Weather	Fair	Mud	Winter	Severe Winter
Icon				
Attack Penalty River and Special Hexside	 -50%	 -65%	 -50%	 -30%
Ver 2.10				

### 11.5.5 Contested Invasions

Transports carrying infantry, mechanized or armor corps can now attack occupied coastal hexes. These attacks consume one amphibious invasion point and if the attacked unit retreats the invasion transport can land its parent unit. The attack strength of the invasion transport is independent of its parent unit and is weaker than the attack strength of a normal infantry corps. This attack strength represents brigade size marines and airborne units that make up the first wave of a seaborne invasion. The parent unit represents the second, third and subsequent waves that come ashore over the remaining 19 days of the turn assuming that the initial wave was successful in securing the beach (i.e., destroying the enemy unit or forcing it to retreat).

Note however if the transport takes damage during the invasion attack it is the parent unit that suffers this damage.

An invasion transport that successfully clears a hex advances into it the same way a ground unit would. It does NOT unload and if you click off the unit before advancing you cannot advance or unload that turn. Note that an invasion transport could clear a hex and choose not to advance leaving that hex open for another invasion transport to land and attack. This action would use two amphibious invasion points. One for the transport that attacked and the second for the second transport that landed in an enemy controlled hex.

For those into equations here they are for how technology impacts transports:

attack strength = attackVal + max(0, floor((techSurfaceShips + 1) / 2))

shock = shockVal + max(0, floor((techSurfaceShips + 3) / 4))



```
quality = qualityVal + max(0, floor(techSurfaceShips / 4))
flak = flakVal + max(0, techRadar - 4)
```

attackVal, shockVal, qualityVal and flakVal are the current values for these variables and are passed to the methods in which the above equations are added.

The coefficients of these functions are controlled through the general.txt file in order to be able to tweak these functions as necessary. The general form for equations (a-c) is:  $\text{val} + (\text{A} * \text{techSurfaceShips} + \text{B}) / \text{C}$  and for equation d is:  $\text{val} + (\text{A} * \text{techRadar} + \text{B}) / \text{C}$ . The coefficients A, B & C are set separately for each of the four areas in the general.txt file.

### 11.5.6 Fighter “Sentry” Function

One way to avoid Enemy Fighter Suppression is to place your fighters on sentry by pressing the “s” key. With this function turned on, the fighter will not intercept air attacks on friendly units but it will defend itself. This allows you to keep fighters close to the front line--and in range of your commanders--without facing more than one instance of combat per turn. This will make them much more effective than sitting in some isolated corner of the map with no leader nearby. This can be particularly useful for the UK and Russia, as particularly the Soviets will lag behind Germany in fighter technology until later in the war.

Note – the sentry function can only be implemented if the fighter has not yet been in combat protecting a TAC/STR stack or performed a separate attack. Clicking on the fighter will take it off sentry, so be careful to reapply sentry after clicking on a fighter for whatever reason.

You can move a FTR and then immediately place in in Sentry mode. However, you must do it immediately before clicking anywhere else. The same can be done when repairing a FTR -- immediately place it in “Sentry” mode.

The Sentry function can also be used by a player to pre-determine which FTRs will escort attacking bombers - for example: simply put all nearby FTRs into Sentry mode except the FTR you want to use as escort. Launch the air attack with a TAC or STR. If an enemy FTR intercepts, then the FTR that you have left available will fly escort. After the air combat is resolved, simply click onto the other FTRs to revoke their Sentry status.

### 11.5.7 Fighter Ground Support Attacks

The objective(s) of this tactic are:

- ◆ Weaken and reduced the effectiveness of ground units for follow up attacks by air, naval and / or ground units.
- ◆ Draw out and use up enemy fighters so that tactical and strategic bombers can attack unmolested.
- ◆ Reconnaissance of where, if any, enemy fighter wings are located.
- ◆ Reconnaissance of what if any occupies a given hex (e.g., port of city).

**Warning.** If intercepted by an enemy fighter this tactic will result in the consumption of twice the

number of oil points (e.g., 2 x fighter use oil points) and subject the fighter air wing to additional steps losses (first from the intercepting fighter and secondly from the ground unit air defenses).

The success of a fighter ground support attack can be measured in both step losses inflicted AND in reduced effectiveness. In most cases reduced effectiveness is the primary benefit of such attacks. In effect the fighter is softening up an enemy unit for subsequent attacks. As the effectiveness of an enemy unit is significantly drawn down its ability to inflict damage on attacking ground or air units is significantly reduced.

If the fighter ground support attacks are the first air attacks then enemy fighters within range of the targets attacked are drawn out and used up. This allows subsequent air attacks to occur uncontested against those targets. However, fighter wings that perform such precursor attacks suffer higher step losses and use up more oil.

### 11.5.8 Enemy Fighter Suppression

- ◆ Any air unit attacked by a ground unit will not fly that turn.
- ◆ Fighter ground support attack against a unit within range of the enemy fighter.
- ◆ Attack the enemy fighter directly with a fighter (counter-air attack).

### 11.5.9 Attack Odds/Ratios

v2.00 has introduced "3 dice roll averaging" to reduce the chance of extreme combat results. In practice what this means is that all combat rolls (except Strategic bombing and Shock calculation) are made three times and averaged for a final result. Hence a 4:1 attack is now quite likely to produce a 3:1 or 2:1 result with 4:1 and 1:1 being possible. Extreme results such as 5:0 or 0:2 which used to be fairly common are now extremely rare. Even so, it's still important to first soften up the hexes with air attacks. Even if the air units fail to score many hits, the attacks will considerably reduce the efficiency of the defending unit quite considerably and that means you're less likely to experience nasty ground combat results.

### 11.5.10 Fighter - Air to Air Combat

Fighter air-to-air combat is the combat whose outcome is the most unpredictable. You don't know which fighter will intercept your fighter and the battle can end up anywhere from 5:1 to 1:5 attacker-to-defender step losses. So it's always a lottery and that's one reason it's nice to have tech advantage in dogfight. It means the bad results are less likely.

It's devastating for the British to be unlucky with fighter attacks early in the game. They don't have the economy to pay for the losses. This is a good reason to just keep British fighters as interceptors and not as a weapon to counter attack. That will be done later when the Axis are fighting inside France.

### 11.5.11 Attack Fighter 3 Times!!

For the Expert



There are several scenarios where fighter (FTR) units can be attacked more than twice - describe two scenarios where this can happen and when attacks on the FTR unit from land or surface bombardment do not count. Below - the word "target" = the fighter (FTR) to be attacked 3 times.

#### First Scenario

1. The target intercepts an opponents attack on a nearby unit,
2. One direct airbase attack on the target and
3. A naval CV attacks the target.

#### Second Scenario

1. A target FTR being transported (Naval transport) can be attacked more than three times.

#### Third Scenario

1. Draw a target fighter up in air to air combat (#1),
2. Then air attack the target fighter at it's base (#2),
3. Attack target's base with a ground unit and force target to retreat (doesn't count) and then air attack the target fighter at it's new base (#3).

### 11.5.12 Allied Para Use in the MED

A good way to be able to use paras in the Med is to let the para be close to a good leader. You need 70 efficiency to drop.

Max efficiency = 40 + unit quality \* 2 + unit supply level \* 3 + leader in range quality \* 2 + organization bonus

Let's say you have a para in Tunisia with quality 6, supply level 3, Monty nearby (7) and tech 2 in organization (3+8 = 11).

**Then the max efficiency is = 40 + 2\*6 + 3\*3 + 2\*7 + 11 = 86**

So the unit can get well above the required 70 efficiency. Even without Monty in range it could get to 72 efficiency. With tech 3 organization you get +21 from organization instead of +11. So getting to tech 3 (should happen in 1942) would make it easy for Britain to be able to paradrop from the Med.

## 11.6 How to Conserve Oil

### 11.6.1 Importance of Conserving Oil

We can't tell you the number of times PBEM opponents have told me in emails, "you must be getting low on oil." Then look down at my stockpile, and it's still at 400. Conserving oil is one of the smartest things an Axis player can do, and it takes a full-game commitment right from the start. [Role of synthetic fuel in WW II Germany.](#)

### 11.6.2 Balance tanks and mechanized corps

Pick one or the other to be the shock arm of your army. Both use oil, but tanks use 3-5 times as much of it. So you can go with 6 tanks and 15 mechanized, or 10 tanks and 5 mechanized. You absolutely cannot have high numbers of both.

### 11.6.3 Balance ground shock and air power

The same goes for balancing oil-consuming ground units and air units. You can't hope to fuel a fleet of 10 bombers, escorting fighters, and 10 tanks in 1942. One possible composition is 10 tanks, 6 tactical bombers, 4 fighters, 4 mechanized. You can adjust this composition any way you like, but you must maintain a balance that will keep you from running out of oil.

### 11.6.4 Leave units inactive

It's ok to leave a full-strength unit inactive if there's no real gain to be had from attacking with it. Example, an enemy infantry unit can only be attacked from one hex. Should you attack with your tank? Often times the answer is no. Even if you cause 6 damage, the enemy will be able to repair it to near full strength.

This goes for air units as well. Don't attack with a bomber unless you can follow up with ground assaults. The exception is if you think you can destroy a unit with air attacks alone. You must limit your attacks to those that can pass your cost-benefit analysis, and oil expenditure must be taken into account when considering the costs.

### 11.6.5 Oil and Tech Upgrade

Being careful with TECH is also important. For example, armour lv. 1 gives you +1 survivability, but also increases oil consumption by 1. So maybe you choose to "skip" this upgrade for Barbarossa, and do it during the winter instead. Is it worth the oil spent to gain +1 extra survivability against weak, low-effectiveness Russian troops? Not making this upgrade can save quite a bit of oil in a game, and may not cost many tank steps at all.

### 11.6.6 Limit winter movement

With a few exceptions, it is best to leave all your units inactive for the duration of the winter months,

especially oil-consuming units. Follow this rule, and you will be amazed at how much oil you will have ready to use come springtime.

### **11.6.7 Make maximum use of movement points**

If you're going to move an oil-consuming unit without attacking, try to use all of its movement points. The game charges you the same amount of oil to move a tank 1 hex or 6 hexes, so get the most burn for your buck!

### **11.6.8 Rail expensive units wherever possible**

Try to rail tanks and tac bombers as much as I can rather than paying the high oil costs to move them. Sometimes rebase fighters manually, but almost never manually rebase bombers. If you plan to move a tank without using it to attack, then you might want to think about railing it instead.

### **11.6.9 Always use rail movement allowance**

Never click the end of turn arrow until you check for all possible rail movements on all fronts! In other words, do not leave rail movement allowance unused if possible. Think several turns in advance if possible and pre-position forces where possible.

### **11.6.10 Don't be afraid to rail short distances**

Here is a common game situation. You have an Armour unit that was inactive last turn for repairs. Now it's 8 hexes away from the front line. There is a city 2 hexes from the front line that is now eligible for receiving rail shipments. Ask yourself this: do I have any other units I really want to rail this turn? If not, then why not rail that tank and save the oil? Even if you end up moving fewer hexes than you would via driving cross-country, you save oil without losing more than a few PP (Production Points).

### **11.6.11 What is the value of an oil point?**

Here is an equation I play by: 1 oil point > 1 PP (Production Points). If you gave me the choice of purchasing 100 oil points for 100 PP (Production Points), do it in a heartbeat. You would probably buy 100 oil points for 200 PP (Production Points) if given the option. Keep this inherent value of oil in mind when you're debating whether to spend extra PP (Production Points) on rail movement to avoid oil expenditure.

### **11.6.12 Conclusion**

With all this advice to conserve oil, we must caution you not to let the stuff ruin your game. You still have to be aggressive, you still need to use submarine warfare, and you still need to do everything necessary to win the game. Being too conservative with your oil can lose you the war just as easily as running out of it can. It's a tough technique to master, but doing so can make you a much tougher opponent.

## 11.7 Strategic Bombers

### 11.7.1 Axis

Germany should build at least one, for spying deep into Russia (or the UK, when 1944 approaches). Strategic bombers have additional utility as a long range tactical bomber.

One can also use them to reduce the re-supply capability of a surrounded resource (city/fortress). Please see the Taking Leningrad technique in this manual.

### 11.7.2 Allies

For the Allies, strategic bombers are indispensable. Early in the war, they can provide reconnaissance (isn't it nice to know when German troops leave France, and the threat of Sea Lion fades?). On top of this, they can hurt u-boats. Try stationing one in Northern Ireland and one in Labrador.

Once the USA enters the war, they should have a couple of strategic bombers already built and ready to go. Then build two more, at least. Bombing the industrial hexes in the Ruhr and other accessible parts of Germany hurts the German economy, once you reduce those centers to zero production, keep them there.

It is a mistake to consider the worth of strategic bombers in terms of cost effectiveness. Although they might cost more than the amount of Production Points they can ever kill, so what? The Allies (USA in particular) can afford it. With strategic bombers, the key is the word "strategic". The loss of five or six Production Points per turn to the Germany economy, turn after turn after turn, is a terrible loss. It can add up to the equivalent of three or four panzers, or a couple of air units. Those are units you won't have to face in Russia or Normandy. Another strategic consideration is that removing some of these Production Points from the German economy inhibits their ability to conduct research. If the Axis is running a bit low on Production Points, and has a choice between replacing a badly needed infantry corps NOW, or gaining a tech level six turns or so from now, which one is the player likely to choose?

At higher tech levels, US and UK bombers can range deeply into Germany, and without escort (the increased dogfight value at higher techs simulates long range escort).



## 12.1 Chapter TOC

<u>12.4 - Lab Strategies</u>	<u>369</u>
<u>12.4.1 - German Lab Strategies</u>	<u>369</u>
<u>12.4.2 - Italian Lab Strategies</u>	<u>369</u>
<u>12.4.3 - British Lab Strategy</u>	<u>369</u>
<u>12.4.4 - Russian Lab Strategy</u>	<u>370</u>
<u>12.4.5 - USA Lab Strategy</u>	<u>370</u>
<u>12.5 - Axis Early War Strategy Guidelines</u>	<u>371</u>
<u>12.5.1 - Guidelines</u>	<u>371</u>
<u>12.5.2 - Use your rail points</u>	<u>371</u>
<u>12.5.3 - Winter in Europe</u>	<u>371</u>
<u>12.5.4 - Surprise Attack</u>	<u>371</u>
<u>12.5.5 - How to Spend Your Resources</u>	<u>371</u>
<u>12.6 - Axis - Early War Execution</u>	<u>372</u>
<u>12.6.1 - Turn 1 – September 1, 1939</u>	<u>372</u>
<u>12.6.2 - Turn 2 – September 20, 1939</u>	<u>372</u>
<u>12.6.3 - Turn 3 – October 11, 1939</u>	<u>373</u>
<u>12.6.4 - Turn 4 – October 31, 1939</u>	<u>373</u>
<u>12.6.5 - Turn 5 – November 20, 1939</u>	<u>373</u>
<u>12.6.6 - Turn 6 – December 10, 1939</u>	<u>373</u>
<u>12.6.7 - Turn 11 – March 19, 1940</u>	<u>374</u>
<u>12.6.8 - Fighting the French</u>	<u>375</u>
<u>12.7 - Axis - A Case White Strategy</u>	<u>376</u>
<u>12.7.1 - Overall</u>	<u>376</u>
<u>12.7.2 - Battle Plan</u>	<u>378</u>



<u>12.7.3 - Armia Lodz Corps - Destruction</u>	<u>379</u>
<u>Armia Pomorze Corps - Retreat or Destruction</u>	<u>380</u>
<u>Grupa Kutno Garrison - Destruction</u>	<u>381</u>
<u>12.7.4 - Lodz Garrison - Destruction</u>	<u>382</u>
<u>12.7.5 - Armia Warszawa Corps - Serious Depletion</u>	<u>383</u>
<u>12.7.6 - Turn 1 - Final Details</u>	<u>384</u>
<u>12.7.7 - Turn 1 - Polish Counter Attack</u>	<u>385</u>
<u>12.7.8 - Turn 2 - Poland Falls &amp; Scandinavian Blitz in Place</u>	<u>386</u>
<u>12.7.9 - Hot Seat Testing Scorecard</u>	<u>387</u>
<u>12.7.10 - Case White Checklist</u>	<u>388</u>
<u>12.8 - Axis - Take Holland &amp; Belgium in '39 (GS 2.2)</u>	<u>389</u>
<u>12.8.1 - Turn 1</u>	<u>389</u>
<u>12.8.2 - Turn 2</u>	<u>389</u>
<u>12.8.3 - Additional Testing</u>	<u>395</u>
<u>12.9 - SnapKrieg - Taking Holland &amp; Denmark Early</u>	<u>397</u>
<u>12.9.1 - Getting Ready</u>	<u>397</u>
<u>12.9.2 - Poland &amp; Positioning - Turn 1</u>	<u>397</u>
<u>12.9.3 - Denmark Attack - Turn 2</u>	<u>398</u>
<u>12.9.4 - Holland Attack - Turn 2</u>	<u>399</u>
<u>12.9.5 - Holland Attack - Turn 3</u>	<u>399</u>
<u>12.10 - Blitz-Sitz - Denmark &amp; Norway Invasion Strategy</u>	<u>400</u>
<u>12.10.1 - Overview</u>	<u>400</u>
<u>12.10.2 - Why Invade?</u>	<u>401</u>
<u>12.10.3 - What Are the Risks?</u>	<u>401</u>
<u>Decision Tree</u>	<u>403</u>

<a href="#"><u>12.10.4 - Task List</u></a>	<a href="#"><u>404</u></a>
<a href="#"><u>12.10.5 - Additional Screenshots</u></a>	<a href="#"><u>406</u></a>
<a href="#"><u>12.10.6 - Refinement 1</u></a>	<a href="#"><u>411</u></a>
<a href="#"><u>12.10.7 - Refinement 2</u></a>	<a href="#"><u>412</u></a>
<a href="#"><u>12.10.8 - Refinement 3</u></a>	<a href="#"><u>413</u></a>
<a href="#"><u>12.10.9 - Refinement 4</u></a>	<a href="#"><u>414</u></a>
<a href="#"><u>12.11 - Axis Invasion of Other Countries</u></a>	<a href="#"><u>415</u></a>
<a href="#"><u>12.11.1 - Why Invade Norway?</u></a>	<a href="#"><u>415</u></a>
<a href="#"><u>12.11.2 - How to Invade Norway</u></a>	<a href="#"><u>415</u></a>
<a href="#"><u>12.11.3 - Invading Yugoslavia</u></a>	<a href="#"><u>415</u></a>
<a href="#"><u>12.11.4 - Invading Greece</u></a>	<a href="#"><u>416</u></a>
<a href="#"><u>12.12 - Balkan Blitz</u></a>	<a href="#"><u>417</u></a>
<a href="#"><u>12.12.1 - The Strategy</u></a>	<a href="#"><u>417</u></a>
<a href="#"><u>12.12.2 - What is Needed</u></a>	<a href="#"><u>417</u></a>
<a href="#"><u>12.12.3 - Taking Greece</u></a>	<a href="#"><u>417</u></a>
<a href="#"><u>12.12.4 - Set Up for Yugoslavia</u></a>	<a href="#"><u>417</u></a>
<a href="#"><u>12.12.5 - One Caveat</u></a>	<a href="#"><u>419</u></a>
<a href="#"><u>12.13 - Sea Lion</u></a>	<a href="#"><u>420</u></a>
<a href="#"><u>12.13.1 - Difficulty of Sea Lion</u></a>	<a href="#"><u>420</u></a>
<a href="#"><u>12.13.2 - Air Superiority</u></a>	<a href="#"><u>420</u></a>
<a href="#"><u>12.13.3 - Submarines</u></a>	<a href="#"><u>421</u></a>
<a href="#"><u>12.13.4 - Armour</u></a>	<a href="#"><u>421</u></a>
<a href="#"><u>12.13.5 - Leader</u></a>	<a href="#"><u>421</u></a>
<a href="#"><u>12.13.6 - Procedure</u></a>	<a href="#"><u>421</u></a>
<a href="#"><u>12.14 - Sea Lion - Alternative Strategy</u></a>	<a href="#"><u>422</u></a>



<a href="#"><u>12.14.1 - General Conduct</u></a>	<a href="#"><u>422</u></a>
<a href="#"><u>12.14.2 - Axis Conditions</u></a>	<a href="#"><u>422</u></a>
<a href="#"><u>12.14.3 - Allied Conditions</u></a>	<a href="#"><u>422</u></a>
<a href="#"><u>12.14.4 - What you will need</u></a>	<a href="#"><u>423</u></a>
<a href="#"><u>12.14.5 - Where and when to execute Sea Lion</u></a>	<a href="#"><u>423</u></a>
<a href="#"><u>12.14.6 - Priority</u></a>	<a href="#"><u>423</u></a>
<a href="#"><u>12.14.7 - Tactics</u></a>	<a href="#"><u>423</u></a>
<a href="#"><u>12.14.8 - Submitter Note</u></a>	<a href="#"><u>424</u></a>
<a href="#"><u>12.15 - Alternatives to Sea Lion</u></a>	<a href="#"><u>425</u></a>
<a href="#"><u>12.15.1 - Ignore England Entirely</u></a>	<a href="#"><u>425</u></a>
<a href="#"><u>12.15.2 - Bomb London Strategically</u></a>	<a href="#"><u>425</u></a>
<a href="#"><u>12.15.3 - Feint at Sea Lion</u></a>	<a href="#"><u>425</u></a>
<a href="#"><u>12.16 - Sea Lion Defense</u></a>	<a href="#"><u>426</u></a>
<a href="#"><u>12.16.1 - Importance of Defense</u></a>	<a href="#"><u>426</u></a>
<a href="#"><u>12.16.2 - Sea Lion Defense Preparation</u></a>	<a href="#"><u>426</u></a>
<a href="#"><u>12.16.3 - Sea Lion Defense Principles</u></a>	<a href="#"><u>426</u></a>
<a href="#"><u>12.16.4 - Sea Lion Defense Counter Points</u></a>	<a href="#"><u>427</u></a>
<a href="#"><u>12.16.5 - Sea Lion Defense Final Overview</u></a>	<a href="#"><u>427</u></a>
<a href="#"><u>12.17 - Tallinn Gambit</u></a>	<a href="#"><u>428</u></a>
<a href="#"><u>12.17.1 - Overview</u></a>	<a href="#"><u>428</u></a>
<a href="#"><u>12.17.2 - Setup</u></a>	<a href="#"><u>429</u></a>
<a href="#"><u>12.17.3 - Attack</u></a>	<a href="#"><u>430</u></a>
<a href="#"><u>12.17.4 - Plan B</u></a>	<a href="#"><u>431</u></a>
<a href="#"><u>12.17.5 - Analysis of Results</u></a>	<a href="#"><u>432</u></a>

<u>12.18 - Barbarossa</u>	<u>433</u>
<u>12.18.1 - When to Invade</u>	<u>434</u>
<u>12.18.2 - Controlled Urgency</u>	<u>434</u>
<u>12.18.3 - Aircraft</u>	<u>434</u>
<u>12.18.4 - Know when to stop</u>	<u>434</u>
<u>12.18.5 - Scorched Earth</u>	<u>434</u>
<u>12.19 - How to Defeat the Soviet Union</u>	<u>435</u>
<u>12.19.1 - Defeating Soviet Union</u>	<u>435</u>
<u>12.19.2 - Play to Your Strengths</u>	<u>436</u>
<u>12.19.3 - Maintain Air Superiority</u>	<u>436</u>
<u>12.19.4 - Focus Your Energy</u>	<u>436</u>
<u>12.19.5 - Don't Panic</u>	<u>436</u>
<u>12.19.6 - Win by Maneuver</u>	<u>436</u>
<u>12.19.7 - Set Goals</u>	<u>437</u>
<u>12.20 - Fortress Europa</u>	<u>438</u>
<u>12.21 - Barbarossa Alternative - Bleed The Brits</u>	<u>440</u>
<u>12.21.1 - Why Go for Northern Africa and Middle East?</u>	<u>440</u>
<u>12.21.2 - Early Preparations</u>	<u>440</u>
<u>12.21.3 - Sea Lion or Barbarossa?</u>	<u>441</u>
<u>12.21.4 - North Africa Supply Problem</u>	<u>442</u>
<u>12.21.5 - Combat Operations</u>	<u>444</u>
<u>12.21.6 - Additional Notes</u>	<u>447</u>
<u>12.22 - Russian War Strategy - Survive the First 2 Years</u>	<u>449</u>
<u>12.22.1 - Research</u>	<u>449</u>
<u>12.22.2 - When To Buy Russian Units - Before/ After DoW?</u>	<u>449</u>

<a href="#"><u>12.22.3 - Initial defense line</u></a>	<a href="#"><u>450</u></a>
<a href="#"><u>12.22.4 - Air Units</u></a>	<a href="#"><u>450</u></a>
<a href="#"><u>12.22.5 - Tactics</u></a>	<a href="#"><u>450</u></a>
<a href="#"><u>12.22.6 - The Key</u></a>	<a href="#"><u>451</u></a>
<a href="#"><u>12.23 - Breaking the Double Defensive Line</u></a>	<a href="#"><u>452</u></a>
<a href="#"><u>12.23.1 - Common Russian Defense</u></a>	<a href="#"><u>452</u></a>
<a href="#"><u>12.23.2 - Units Needed</u></a>	<a href="#"><u>452</u></a>
<a href="#"><u>12.23.3 - KILL ENEMY UNITS !!</u></a>	<a href="#"><u>453</u></a>
<a href="#"><u>12.23.4 - Terrain is Everything</u></a>	<a href="#"><u>453</u></a>
<a href="#"><u>Quote - Guderian on Russian underestimation</u></a>	<a href="#"><u>453</u></a>
<a href="#"><u>12.23.5 - Resist Temptation</u></a>	<a href="#"><u>453</u></a>
<a href="#"><u>12.23.6 - Select</u></a>	<a href="#"><u>454</u></a>
<a href="#"><u>12.23.7 - Attack</u></a>	<a href="#"><u>454</u></a>
<a href="#"><u>12.23.8 - Analyze</u></a>	<a href="#"><u>455</u></a>
<a href="#"><u>12.23.9 - Goal</u></a>	<a href="#"><u>455</u></a>
<a href="#"><u>12.23.10 - Alternative Goal</u></a>	<a href="#"><u>455</u></a>
<a href="#"><u>12.24 - Axis Submarine Warfare</u></a>	<a href="#"><u>456</u></a>
<a href="#"><u>12.24.1 - Changes from Standard CEAW</u></a>	<a href="#"><u>456</u></a>
<a href="#"><u>12.24.2 - General Operations</u></a>	<a href="#"><u>456</u></a>
<a href="#"><u>12.24.3 - Investing in Research and Submarines Early</u></a>	<a href="#"><u>456</u></a>
<a href="#"><u>12.24.4 - Submarine Build Strategy &amp; Deployment</u></a>	<a href="#"><u>457</u></a>
<a href="#"><u>12.24.5 - Russian Convoys</u></a>	<a href="#"><u>457</u></a>
<a href="#"><u>12.24.6 - Play Waiting Game</u></a>	<a href="#"><u>458</u></a>
<a href="#"><u>12.24.7 - Prioritize</u></a>	<a href="#"><u>458</u></a>

<a href="#"><u>12.24.8 - Run with Wolfpack</u></a>	<a href="#"><u>458</u></a>
<a href="#"><u>12.24.9 - Block the Path</u></a>	<a href="#"><u>458</u></a>
<a href="#"><u>12.24.10 - Hide from Allied Bombers</u></a>	<a href="#"><u>459</u></a>
<a href="#"><u>12.25 - Allied Anti-Submarine Operations</u></a>	<a href="#"><u>460</u></a>
<a href="#"><u>12.25.1 - Allied Numbers</u></a>	<a href="#"><u>460</u></a>
<a href="#"><u>12.25.2 - Early Research Needed</u></a>	<a href="#"><u>460</u></a>
<a href="#"><u>12.25.3 - Convoy Escort Warning</u></a>	<a href="#"><u>460</u></a>
<a href="#"><u>Quote - Sighted sub - sank same</u></a>	<a href="#"><u>460</u></a>
<a href="#"><u>12.25.4 - Bombers, Bombers, Bombers!</u></a>	<a href="#"><u>460</u></a>
<a href="#"><u>12.25.5 - Destroyer Sweeps</u></a>	<a href="#"><u>461</u></a>
<a href="#"><u>12.26 - Allied Naval Strategy</u></a>	<a href="#"><u>462</u></a>
<a href="#"><u>12.26.1 - Introduction</u></a>	<a href="#"><u>462</u></a>
<a href="#"><u>12.26.2 - Winning the War at Sea</u></a>	<a href="#"><u>462</u></a>
<a href="#"><u>12.26.3 - Graphics</u></a>	<a href="#"><u>464</u></a>
<a href="#"><u>12.26.3.1 - GS Forces Screen – March 24, 1943 (Turn 66)</u></a>	<a href="#"><u>464</u></a>
<a href="#"><u>12.26.3.2 - Enemy Naval Units (Estimates)</u></a>	<a href="#"><u>464</u></a>
<a href="#"><u>12.26.3.3 - Friendly Naval Units (Exact Count)</u></a>	<a href="#"><u>465</u></a>
<a href="#"><u>12.26.3.4 - Step and Unit Losses -- March 24, 1943 (Turn 66)</u></a>	<a href="#"><u>465</u></a>
<a href="#"><u>12.26.3.5 - Naval Unit Losses</u></a>	<a href="#"><u>465</u></a>
<a href="#"><u>12.26.3.6 - Murmansk Escort Group #1</u></a>	<a href="#"><u>466</u></a>
<a href="#"><u>12.26.3.7 - Murmansk Escort Group #2</u></a>	<a href="#"><u>466</u></a>
<a href="#"><u>12.26.3.8 - Central Convoy Escort</u></a>	<a href="#"><u>467</u></a>
<a href="#"><u>12.26.3.9 - Can't Defend Everything – But will be able to soon</u></a>	<a href="#"><u>468</u></a>
<a href="#"><u>12.26.3.10 - Troop Escort</u></a>	<a href="#"><u>468</u></a>
<a href="#"><u>12.26.3.11 - Head for Troop Escort</u></a>	<a href="#"><u>468</u></a>

<a href="#"><u>12.26.3.12 - Med Fleet</u></a>	<a href="#"><u>469</u></a>
<a href="#"><u>12.26.3.13 - Escort Sweeps in Place</u></a>	<a href="#"><u>469</u></a>
<a href="#"><u>12.26.3.14 - Keeping the Kriegsmarine Bottled Up</u></a>	<a href="#"><u>470</u></a>

## 12.2 Editor Note on Strategy Section

The Grand Strategy expansion has been an on-going effort for over 2 years. This manual has followed that development path.

**The reader should be aware that there may be certain strategies described in this “Strategy” section may have become outdated or superseded by more recent changes to Grand Strategy. Regardless, they have been retained because they show good strategic thinking and associated implementation.**



*A Soviet Air Force Il-2M*

## 12.3 References

[Eisenhower's Report on Operation Torch](#)

[BBC - Siege of Malta](#)

[BBC - The Norway Campaign in World War Two](#)

[BBC - The Battle of the Atlantic by Dr Gary Sheffield](#)

[Why did they decide to do it that way?](#)

Some lesser known campaigns. The Grand Strategy developers and testers researched these and many more to insure historical accuracy for force levels and locations for each of the scenarios.

[Anglo-Soviet invasion of Iran](#)

[Syria-Lebanon Campaign](#)

[Anglo-Iraqi War](#)

## 12.4 Lab Strategies

### 12.4.1 German Lab Strategies

All tech areas are important for Germany so the issue is **priority** and **strategy**. Air tech is the most critical for Germany as TACs pave the way for German offensives and the FTRs can inflict critical PP losses on the Russian and allied players. Infantry tech is important because at game's end, it will be the INF units that are doing most of the fighting due to oil supply issues. General is also important because of the Organizational bonuses that it provides to units, the increased production that it allows and the improved anti-air factors that it provides to cities and resource hexes. Armour tech and Submarine tech are relatively less important but still critical to the success of the German war effort.

### 12.4.2 Italian Lab Strategies

Not all tech areas are important for Italy because it's comparatively low production means that it can't build numbers of all types of units. Personal preference is very much the case with the tech strategy for Italy. Therefore, the following commentary shouldn't be regarded as gospel, but, more a reflection of one type of strategy.

If your strategy is to play a long game for Italy, then INF and General techs are important for Italy because the Organizational bonuses have a big impact on Italian unit capability. The increased production is very handy and the improved anti-air factors that are provided to Italian cities and resource hexes. Naval tech and Submarine tech in particular can be important for the Italians as it is possible to plan lab research so that the Italians reach level 6 tech even before the Germans who have many competing demands.

Air and ARM tech can be considered to be irrelevant for Italy if the strategy is not to build any further (expensive) planes or ARM units. It should be noted though that the Italian TAC will benefit from naval (ASW) research and can therefore have some longer term utility in protecting against allied SUBs, even if no AIR labs are built.

### 12.4.3 British Lab Strategy

Like Italy, Britain has a couple of options regarding research strategy. Like Germany, AIR is the most critical area to research as all air units are required to help bring the axis down. Naval and ASW in particular are also critical to ensure control of the seas and the ability to transport units across the Atlantic, as well as to ensure the safety of convoys. General is also important because of the Organizational bonuses that it provides to units and the increased production that it allows. With respect to INF and ARM techs though, Britain usually doesn't have the labs available to go all out in both, along with AIR, Naval and General.

Hence, a strategy for the British player is to choose one of INF or ARM to focus on and ignore the other. As Britain starts off with quite a number of INF and does develop a reasonable manpower pool over time, one strategy is to ignore ARM tech and focus on INF tech alone in order to improve existing INF units and to allow the production of formidable MECH units. This is especially handy if you are thinking of launching major invasions before 1944 as ARM cannot amphibiously invade until 1944, although they can land in the second wave.

#### 12.4.4 Russian Lab Strategy

Has a major choice to make. Is it going to develop powerful ARM units for making sweeping drives into Germany, or will it rely on TACs paving the way for MECH units? AIR is the most critical area to research as the Russian as TACs will be required to weaken tough German defensive units and FTRs will be required to help get them through to targets unscathed. General is also important because of the Organizational bonuses that it provides to units and the increased production that it allows (even a 10% bonus is significant given the high Russian production – for example, 10% of 180 PP's is 18, which is 3 TAC repair steps). INF and ARM are both important to the Russians so the only question is which is given priority and this depends upon your strategy and personal preference. Naval tech can be safely ignored by the Russians.

#### Why is organization an important research area for the Russian's?

This is because Russia starts with organization tech 1 while Germany has organization tech 3. Each organization tech advance will increase the max efficiency of the unit. The more effective the Russian unit is the higher casualties it will inflict on the German units and the less damage they will receive.

Russia will struggle with destroying German units late in the war unless the organization tech has advanced at least to tech 3. At tech 1 the efficiency increase is just 3. At tech 2 it's 11 and at tech 3 it's 21. So 2 extra levels in organization will boost the efficiency by 18. That's more than the best leader (Zhukov). Even better is that the efficiency increase from organization applies to ALL units and is CUMULATIVE with the increase from a leader.

#### 12.4.5 USA Lab Strategy

Every tech is important to the USA, so it really is an issue of what to emphasize and when. Early on, AIR and naval (ASW) are important to help win the battle of the Atlantic and build powerful aircraft carriers, but, General is also important. INF and ARM cannot be neglected either, although it is possible with the USA, like Britain, to ignore one altogether and go all out the other. Other players though prefer to go equal in both. This again depends upon your strategy and personal preference.



## 12.5 Axis Early War Strategy Guidelines

### 12.5.1 Guidelines

Players often underestimate just how important the 1939-1940 campaign in Western Europe is to the Axis. Make a mistake here, and you could be feeling the ramifications for the rest of the game. Allowing France to last into fall 1940 or suffering prohibitively heavy casualties will make [Barbarossa](#) weaker and/or later, and that hurts your chances in Russia from 1942-on. It also limits your time and options when you're thinking about invading England, Egypt, and the minor countries scattered around the map. This part of the guide is designed to help you achieve a quick and low-cost victory in France. Keep in mind that there are many variations to this strategy, but I believe this is a good starting point.

### 12.5.2 Use your rail points

Germany starts out with 8 rail points per turn, and lots of units to move out west. Each non-garrison unit will cost 3-5 points to rail depending on what it is. You should try to use 9-11 rail points per turn. The reason is 2 overuse points will only cost you 3 PP (Production Points), which is well worth it. Don't be afraid to spend a little extra on rail movement to get your troops in position to invade the west sooner.

### 12.5.3 Winter in Europe

Know ahead of time that winter in Europe changes everything. It lowers mobility and attack strength for 3 turns in January and February.

### 12.5.4 Surprise Attack

The units of every country (including Poland) at DoW will lose effectiveness immediately, giving the attacker an initial advantage - use it wisely.

### 12.5.5 How to Spend Your Resources

It is important to get research up and running early. Industry is always on the list, followed by air, armour, infantry and naval in that order.

You also want to make sure to have built another tactical bomber (maybe 2) and a fighter before you invade France. You will probably be facing 2 British fighters and the French one, so expect the Luftwaffe to get a little beat up.

## 12.6 Axis - Early War Execution

*Strategy is the art of making use of time and space. I am less concerned about the latter than the former. Space we can recover, lost time never.*

*Napoleon Bonaparte*

### 12.6.1 Turn 1 - September 1, 1939

#### Poland

Well, here we go. The first thing to do is declare war on the Poles. The new setup gives you the option of actually letting Poland stay neutral, but we don't recommend it. You will see that the Polish units lose 10 effectiveness because of surprise attack, making the initial invasion easier on you. It also means the Polish fighter cannot intercept on the first turn. [German "Fall Weiss" OOB](#).

#### Penetration

Use your air units and infantry to clean up the Polish corps closest to you and open up lanes for your tanks to drive into the interior. You should be able to eliminate every Polish corps that is not in a city, except for the one in the far south, which you're better off just leaving alone. It is entirely possible to get 2 or more Armour units adjacent to Warsaw on turn 1. Just be careful not to give the Poles sitting in the cities a chance to sally forth and cut off your supply. I usually just place infantry units adjacent to these cities instead of attacking them. They will attack me on their turn, and I will lose a few steps, but it's much cheaper and faster than trying to take the cities on the way to Warsaw.

#### Denmark

Rail two of the corps you have near Krakow to Kiel in preparation for the invasion of Denmark next turn. You have more than enough units to conquer Poland next turn, and these are just overkill. Put them to better use elsewhere.

Move your subs out of the Baltic Sea via the transport loop. The sooner you get them out into the Atlantic hunting convoys, the better.

[Rundstedt](#) is free and already in your force pool. You can place him in Poland or out west, where he can start raising the effectiveness of units as they arrive. I usually choose the latter option.

### 12.6.2 Turn 2 - September 20, 1939

#### Poland

If you can, attack the Polish fighter with a ground unit so it can't intercept your bombing. You should have no problem capturing Warsaw, and you should have some units idle and available to rail to the west. Do so.

## Denmark

Declaring war on Denmark knocks their effectiveness down by 20. Attack Copenhagen with both your DD and your BB (from the north). Use a submarine to block the channel next to the Gothenburg port. Now attack Copenhagen with a bomber and a fighter. Next board one of your corps at Kiel on transport, and unload in the hex directly south of Denmark. Attack the city with this unit, then run your other corps around by land and attack from the adjacent hex. Only bad luck will keep you from conquering Denmark with this method, but it does happen. Don't sweat it; just finish the Danes off on turn 3.

Want to go further north later? Read how the Germans actually did it:

[BBC - The Norway Campaign in World War Two](#)

### 12.6.3 Turn 3 - October 11, 1939

Just repairs and more railing this turn. Get yourself into position to invade Holland on turn 4. That probably means manually rebasing your fighters and bombers. That's fine; the oil spent will be well worth it.

### 12.6.4 Turn 4 - October 31, 1939

Declaring war on Holland knocks their effectiveness down by 20. Use your bombers to attack Hague and your fighters to hit Arnhem. Capturing Arnhem should be a cakewalk. Clear the hexes around Hague and attack the city with ground forces, even if you don't think you can capture it. You will see why next turn.

Rail more troops from Poland to the west.

On a side note, the corps you used to conquer Denmark can probably just march to the western front. You don't have to rail them.

### 12.6.5 Turn 5 - November 20, 1939

#### Winter in Europe

Remember earlier how I said this would change everything? Well, now winter is here, and you get a nice little message box on the screen telling you how it's going to disrupt your western offensive. This is why you attacked Hague last turn with ground units. During winter, your bombers are only half as good and your fighters won't damage ground units at all, so you wouldn't have been able to capture the city this turn unless it was already damaged.

Now finish Holland off, and continue railing troops from Poland. The job should be almost complete by now.

### 12.6.6 Turn 6 - December 10, 1939

Now comes decision time. You have 2 main options !!

### Option 1

Declaring war on Belgium knocks their effectiveness down by 20. Know ahead of time that you will not be able to capture Brussels this turn. Focus all your energy on taking Antwerp and Liege. Also, eliminate the garrison northeast of the capital.

The French will probably intervene. They may place French units in Brussels and Antwerp, if you failed to take it. This is fine. One of the major benefits to this strategy is that you can take your time during winter, eliminating one or two French units per turn if they choose to come to the Belgian's aid.

It may take you a couple turns to capture Brussels, but that's ok. Because you invaded early, you have time. Just make sure you are done with Belgium and ready to attack the French when spring rolls around in March.

### Option 2

Do nothing further on the western front until spring arrives on March 19, 1940. This allows you the chance to capture Belgium in one turn, and gives your troops a few turns to catch their collective breath, repair, and raise effectiveness. Your army will be mighty indeed by the time spring arrives.

The drawback to this strategy is that you will find yourself pressed for time. The French have been waiting all winter for a crack at you, and they haven't lost any units fighting in Belgium. A one turn capture of Belgium is a must here.

## 12.6.7 Turn 11 – March 19, 1940

### Blitzkrieg

Continue your attacks against the French. See below for further tips.

### Sitzkrieg

DoW Belgium and capture it. Here's how:

- ◆ The Belgians lose 20 effectiveness from surprise attack. As it is, there are 3 hexes adjacent to Brussels that you can reach. But you will probably need more. Capturing Antwerp is the way to get them.
- ◆ Hit Antwerp and Brussels with 2 air attacks each, with any extra units attacking Liege. Depending on the damage done to Antwerp, you may be able to capture it with just infantry units. Make sure to leave all the hexes adjacent to Brussels open while doing this!
- ◆ Now take Liege and destroy the garrison northeast of Brussels. Attack the capital from 4 or sometimes 5 sides and it should fall without too much of a problem. You are now ready to confront the French.

### 12.6.8 Fighting the French

Make no mistake, the French are dangerous!! They can kill a German infantry or even a tank if you're not careful. And they get to defend behind rivers, making your job even harder. With the British fighters flying overhead, you don't have air superiority either. Here are some tips to putting the French in their place without leaving German carcasses and burning tanks all over the country. This section was adapted from the original BJR strategy guide. It is a tried and true method that works in any version of the mod and Standard CEAW.

After Brussels has fallen you should make your main priority to capture the city of Lille. The reason is that the French can place new reinforcements adjacent to this city to plug holes. The German strategy should be to focus attacks against 2-3 units every turn and make sure these are killed. If you can attack garrison units at the front with good odds then you should do it as well AFTER all the important attacks have been made. Then you force the French to repair steps and it doesn't matter than you might have to do it as well. You can afford it while they can't. Another reason to do this after the important attacks have been completed is that you might get a chance to move the unit to capture an empty hex and form a contiguous line.

It's important to plan the attacks properly and check before you even start to move a unit if all the units you need have range to get to the hexes they need to attack. Also take into your planning that you might empty a front line hex and then you can use the empty hex to get another unit against maybe an important adjacent hex. This is a good way to get the important Lille city. Destroy the adjacent defenders so you control 2-3 adjacent hexes. Then you can focus air attacks and capture the city with repeated land attacks.

France falls due to attrition and not because you make a breakthrough a la the real war. It happens very rarely. If it happens then it's most likely it happens just west of the Maginot line close to the French Lorraine resource hex. But the French can easily retreat a bit and shorten the defense line. So it's not that dangerous.

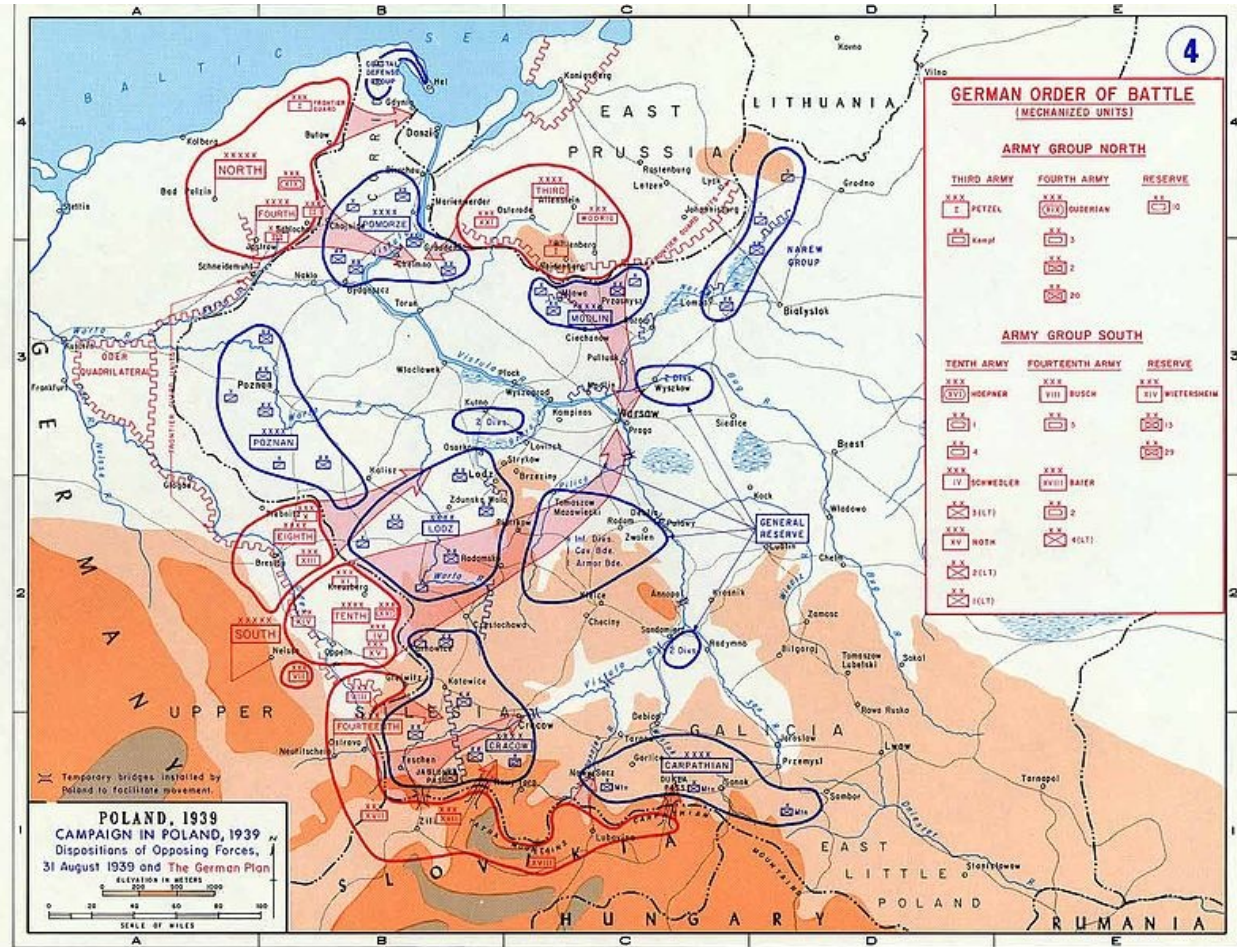
So my biggest advice is to make sure you kill 2-3 French units every turn and be patient. Kill good corps units if you know you can make it (that means using air units and attack it from 3 hexes). If not then you can focus on killing garrisons units and not advance after combat if it means you leave a straight defense line. The French can only rebuild 1 garrison per turn. So if you kill 3 per turn then France will eventually run out of garrisons and you can attack the corps units.

*Of the love or hatred God has for the English, I know nothing, but I do know that they will all be thrown out of France, except those who die there.*

*Joan of Arc*



## 12.7 Axis - A Case White Strategy



*Dispositions of opposing forces, August 31, 1939, and the German plan of operation.*

### 12.7.1 Overall

## Case White Strategy Article

### Case White

- Code name for the German invasion of Poland

### Objectives

- 2-turn conquest of Poland with possibility of a 1-turn conquest
- Inflict 6 or more step losses on corps in Warsaw (Armia Warszawa) on turn 1.
- End turn 1 with two tank corps adjacent to Warsaw.
- End turn 1 in position to support Scandinavia Blitz operations on turn 2 and invasions on turn 3.

## 12.7.2 Battle Plan

### Case White Battle Plan

1. Armia Lodz Corps – destruction using 3 German infantry corps.
2. Armia Pomorze Corps.
  - a. Retreat using fighter and infantry corps.
  - b. If retreat fails, destruction using garrison and armor corps.
3. Grupa Kutno Garrison (not seen due to fog of war) – destruction using mech and infantry corps.
4. Lodz Garrison – destruction using TAC, infantry, mech and infantry corps.
5. Armia Warszawa (not seen due to fog of war) – serious depletion (or destruction) using Fighter, TAC and 2 armor corps.



A 2<sup>nd</sup> turn Scandinavian Blitz (i.e., invasion of Norway and Denmark) requires that a mech (or armor) + infantry corps, or better, mech and armor corps are in position to be railed on turn 2.



### 12.7.3 Armia Lodz Corps - Destruction

#### 1. Armia Lodz Corps - Destruction

- The goal is the destruction of Armia Lodz corps using 3 German corps.
- This goal will be achieved an estimated 65% of the time.
- The error bound on this estimate is +/-10%.
- In the particular example shown the goal was NOT met.
- Will move on to other attacks to decide how best to finish off this attack.



## 2. Armia Pomorze Corps – Retreat or Destruction

- Goal is to force a retreat of the Armia Pomorze Corps and failing this, is its destruction.
- The initial attack is made by a fighter and infantry corps.
- In this case, the corps retreated leaving a tank corps available to assist in other attacks.
- For example, to finish off the destruction of Armia Lodz Corps (1).



### 3. Grupa Kutno Garrison - Destruction

- The German mech and infantry corps destroyed the targeted garrison.
- The mech and infantry corps attack will destroy the targeted garrison 90 to 95% of the time.
- The available armor corps from (2) was used to finish off the Armia Lodz corps (1).



#### 12.7.4 Lodz Garrison - Destruction

### 4. Lodz Garrison – Destruction.

- Lodz Garrison attacked by a TAC, infantry corps, mech corps and infantry corps.
- In this example, it survived by 1-step.
- The 2<sup>nd</sup> fighter was used to finish it off. If 2 or 3-steps had remained then the 2<sup>nd</sup> TAC would have been used.
- If the 3<sup>rd</sup> tank corps hadn't been needed to finish off Armia Lodz Corps (1) then it would have been used to finish off the Lodz garrison.



### 12.7.5 Armia Warszawa Corps - Serious Depletion

#### 5. Armia Warszawa Corps – Serious Depletion

- Armia Warszawa Corps attacked by TAC and 2 tank corps.
- The goal was to attack it with a fighter, TAC and 2 tanks corps.
- However; the fighter was needed to finish off the destruction of the Lodz garrison (4).
- In some cases, the TAC may also be needed to finish off other attacks.
- While 2 of the 5 attacks didn't go as planned the final result was good (Warsaw corps knocked down to 3-steps).





## 12.7.6 Turn 1 - Final Details

## Case White – Turn 1 Final Details

- SAC railed (yellow arrow) to Stettin to provide air support as needed next turn. SAC is also in position to cover the Norway invasion fleet that will move into position next turn.
- The two armor corps adjacent to Warsaw will prevent any Polish ground unit from replacing the badly depleted corps in Warsaw.
- German corps (red arrow) moved to prevent garrison from moving into hex directly north of Warsaw.
- Garrison (blue arrow) railed to Königsberg to protect city from Polish corps 3 hexes south of city.
- Turn 1 rails exceed capacity by 1 point (or 1-PP). SAC could have been moved but railing saved 4 oil points.



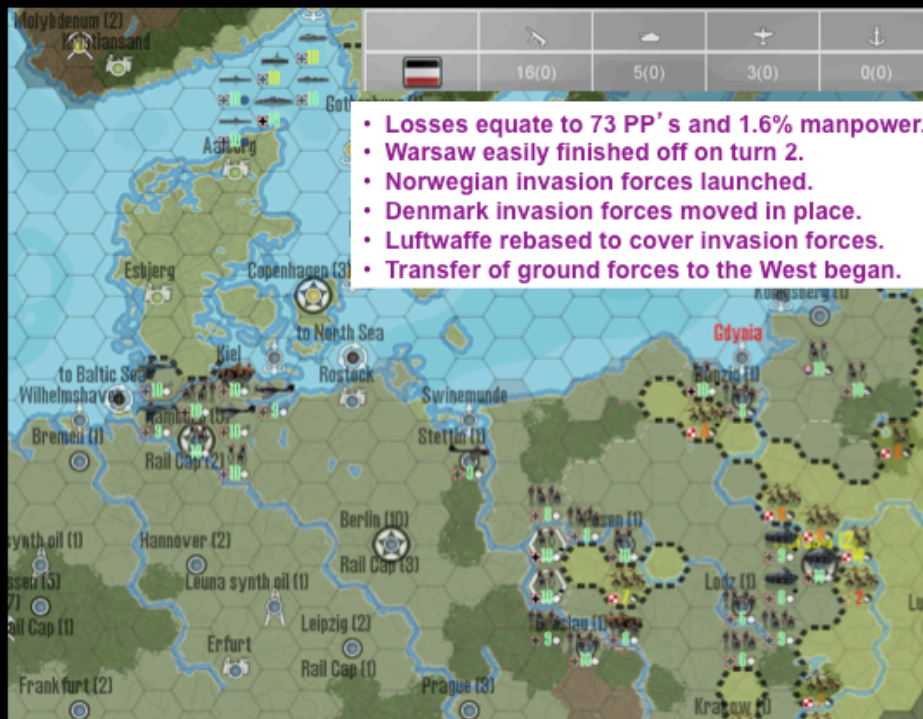
### 12.7.7 Turn 1 - Polish Counter Attack

#### The Polish Counterattack – Turn 1.



## 12.7.8 Turn 2 - Poland Falls & Scandinavian Blitz in Place

### Turn 2. Poland Falls and Scandinavian Blitz Forces in Place



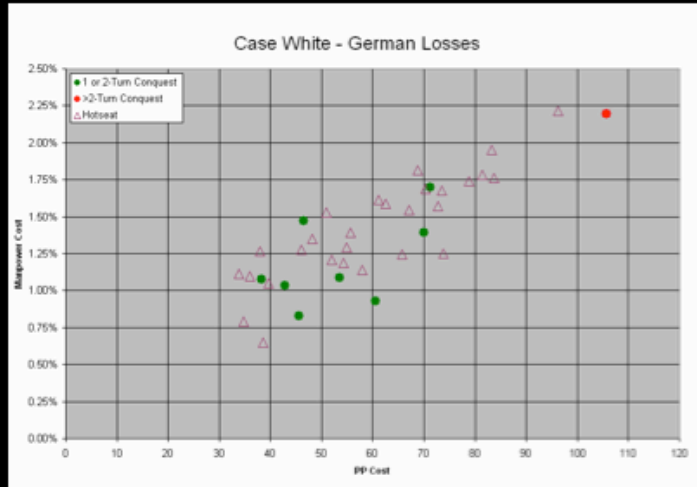
10



## 12.7.9 Hot Seat Testing Scorecard

**Case White – Hot Seat Testing Score Card (28-samples)****Objectives**

- 2-turn conquest (96.4%)
- 1-turn conquest (3.6%)
- $\geq 6$  step losses on corps in Warsaw on turn 1 (67.9%)
- End turn 1 with two tank corps adjacent to Warsaw (85.7%)
- End turn 1 in position to support Scandinavia Blitz operations on turn 2 and invasions on turn 3 (96.4%)



### 12.7.10 Case White Checklist

#### Case White Checklist

##### Turn 1

- ☐ Purchase 1<sup>st</sup> lab (e.g., air)
- ☐ Pay to convert garrison to airborne
- ☐ Scandinavian Blitz Preparations
  - ☐ Move u-boats and naval units
  - ☐ Move and rail two infantry corps in place
  - ☐ Deploy Rundstedt
- ☐ Declare War on Poland

##### Turn 2

- ☐ Purchase 2<sup>nd</sup> and 3<sup>rd</sup> labs (e.g., armor and infantry)
- ☐ Finish off Poland
- ☐ Launch Norwegian invasion transports
- ☐ Rail armor (or mech) and infantry corps for Denmark invasion
- ☐ Redeploy Luftwaffe to cover Norway and Denmark invasion forces

## 12.8 Axis - Take Holland & Belgium in '39 (GS 2.2)

### 12.8.1 Turn 1

Transfer 2 INF, 1 MECH, 1 ARM and entire Luftwaffe from the east. Position as noted below.

Move GAR in Bremen to SW 2 hexes. Move GAR NW from Cologne to The Ruhr. They need to be used in turn 2.

Positioning of units is important.



### 12.8.2 Turn 2

This image shows the start location of the units at turn 2. The key is to get the 2 garrison units into fighting.



1. Move the garrison 2xSE of Arnhem to 1xNE of Arnhem and attack garrison in Arnhem.
2. Move corps 1x NW of Essen to 1x N of Arnhem and attack and attack garrison in Arnhem. Advance after combat.

This is the situation after the first 2 attacks.



3. Move the garrison 1xN of Scholven to 1xN of Arnhem and attack garrison 1xSE of Hague.

4. The unit will often retreat to 1x S of Hague. Send strategic bomber to the garrison and finish it off with a bombardment.

This is the situation after the Dutch units are dealt with. Hague is left for now. It can be dealt with in turn 3-4.



5. Use fighter 1xNW of Frankfurt to bombard Belgian garrison 1x NE of Brussels. This attack serves 2 purposes. One is to engage the French fighter and the other is to deplete and drop efficiency on the garrison. This attack must happen first so the English fighter can't engage.

6. Use fighter 1xSE of Cologne against Belgian corps in Brussels. This will engage the British fighter and maybe inflict a step loss upon the Belgian corps.

7. Use tactical bomber 1xNE of Cologne to bombard the Antwerp garrison.

8. Use the tactical bomber 1xS + 1xSE of Cologne to bombard Brussels. Expect 1-2 step losses on the Brussels corps.

This is the situation after all the airstrikes.





9. Use corps 1xNW of Scholven to 1x NE of Antwerp to attack the Antwerp garrison . **Do NOT advance after combat.**

10. Use corps in Cologne to move to Antwerp and attack garrison 1xS of Antwerp. Do NOT advance after combat. Remnant of garrison will almost always retreat 1xS.

11. Use corps 1xS of Cologne to 1xS of Liege and attack Belgian garrison 1x SE of Brussels. Advance after combat.

This is the situation when Brussels is stripped of its defenders.





12. Move the German mech unit 2xN of Cologne to 1xNE of Brussels and attack Brussels. Expected Brussels losses is 3 steps.

13. Move the German armor unit 1xN of Cologne to 1xNW of Brussels and attack Brussels. Expected Brussels losses is 2 steps. Advance after combat to force a Belgian surrender.

This is the situation when Belgium surrenders. Notice that the 2 airstrikes on Brussels will usually inflict 2-3 steps. The armor and mech attacks will inflict usually 5 steps, sometimes more. You only need a total of 7 hits to take Brussels.



The creator tested this about 10 times and failed only once. Brussels remained with 1 step when it failed. Failure to capture Brussels is usually caused when the airstrikes fail to do any damage. That happens rarely.

Sometimes you get better than normal results so you don't need the strategic bomber to attack the Dutch garrison. Then it can be used against the Belgian garrison 1xNE of Brussels. Then you get another fighter against Antwerp or you can accept bomber losses and use both fighters against Antwerp and both bombers against Brussels.

### 12.8.3 Additional Testing

Tester made 20 trials.

Average combat losses inflicted:

- ◆ Average hit for FTR was 1,09
- ◆ Average hit for TAC was 1,45
- ◆ Brussels usually was reduced to 5-6 steps.
- ◆ ARM average was 2,61
- ◆ MECH was 1,37 (attack was through river).

Results:

- ◆ Managed to take Brussels 8 out of 20 trials (40%)
- ◆ 8 failed attempts was Brussels holding at 1-2 step
- ◆ 2 failed attempts was Antwerp holding at 1 step
- ◆ 2 last cases was other failures.

When Brussels held at 1 step was the cases when I used reserve TAC which I now must use for taking Antwerp.

Observed that Java random engine produces some weird cases in the first 10 trials was total disaster - only 1 attempt succeeded, however, in the next 10 attempts resulted in success 7 out of 10 times.

## 12.9 SnapKrieg - Taking Holland & Denmark Early

### 12.9.1 Getting Ready

Polish campaign strategy to allow for the early conquest of Denmark/Holland.

One of the options when attempting to conquer Poland is to work on the basis of a 2 turn campaign and to transfer some units west to either attack Denmark or Holland on turn 2. To do so, requires the following attack sequence.

### 12.9.2 Poland & Positioning - Turn 1

- ◆ Luftflotte 3 (TAC) does a strike on Armia Lodz - should achieve 2 or 3 steps damage.
- ◆ XVII corps moves to the hex directly south of Armia Lodz and attacks (forecast is usually 5:1 or 5:0 depending on how well Luftflotte 3 did) - do not advance.
- ◆ XIII corps moves two hexes east to attack Armia Lodz and attacks - do not advance.
- ◆ VIII corps is available to attack Armia Lodz if it has survived the earlier attacks - usually it ends up in the hex south east of Posen (behind the river) - do not advance.
- ◆ Luftflotte 4 (FTR) does a strike on Lodz Garrison (should do 1 step damage and inflict efficiency loss)
- ◆ XIV Panzer corps moves to the hex north of Lodz and attacks (forecast is usually 6:1)
- ◆ IV corps moves to the hex south of Lodz and attacks across the river (forecast is usually 3:0) - do not advance even if successful as this unit is positioned to screen Armia Krakow in Krakow.
- ◆ XV PzG corps moves to the hex south west of Lodz and attacks (forecast is usually 4:0) - if successful, this unit may advance after combat
- ◆ XI corps in Breslau is available to move to the hex north west of Lodz if the earlier attacks have failed. If the attacks were successful, it can be railed west or used to help destroy Grupa Kutno - see further below.
- ◆ Luftflotte 2 (TAC) strikes Armia Pomorze
- ◆ Grenshultz Commando 1 (GAR) moves to Danzig to secure the city and break supply between Warsaw and London
- ◆ III PzG corps moves to the hex south west of Armia Pomorze (forecast is usually 7:1) and attacks - advance after combat to get away from Armia Poznan in Posen which will likely launch a counterattack on the allied turn.
- ◆ XXI corps moves one hex south to engage the retreated Armia Pomorze. Do not advance after combat as this corps is used to pin Armia Modlin

- ◆ II corps is available to finish off Armia Pomorze if it has survived the earlier attacks - advance after combat.
- ◆ XII corps south of Krackow can be railed west to; the hex north of Hamburg and west of Kiel to attack Denmark, or to Ruhr to attack Holland, as it is not required to do anything.
- ◆ XVI Pz corps moves to the hex north west of Armia Prusy and attacks (forecast is usually 8:2) - do not advance after combat as this will expose the unit to counterattack during the allied turn. Only Armia Prusy or Armia Warsaw can potentially attack the Pz corps if it doesn't advance and either would be welcomed by the German player.
- ◆ Move Grenshultz Kommando 2 to the hex north of Posen to pin Armia Poznan.
- ◆ Move X corps (GAR) to the hex south of Posen to pin Armia Poznan
  - If Denmark is to be attacked, XIX Pz corps can be moved to attack Grupo Kutno - advance after combat. If XI corps in Breslau has been committed to attack, then rail IX corps located in Frankfurt to Kiel, in order to attack Denmark. Deploy leader Rundstedt to XXXIII corps (GAR) to provide leadership to the Danish assault forces.
  - If Holland is to be attacked, rail XIX Pz corps to the hex north west of Essen. Deploy leader Rundstedt to XXVII corps at Essen to provide leadership to the Holland assault forces. Move IX corps in Frankfurt to the hex south east of Arnhem.
- ◆ Move Luftflotte 1 (FTR) west to either support the attack on Denmark or Holland
- ◆ Move the German DD next to Copenhagen to support an attack on Denmark.
- ◆ Move V corps (GAR) one hex north of Cologne.

### 12.9.3 Denmark Attack - Turn 2

- ◆ Move the German BB to the hex north of Copenhagen and do shore-bombardment (forecast is 1:0)
- ◆ Use the German DD to do shore-bombardment (forecast is 0:0 - looking mainly to do efficiency damage in this case but sometimes you get to do 1 step damage)
- ◆ Luftflotte 3 (TAC) strikes Copenhagen (forecast is 2:0)
- ◆ INF corps next to the Kiel port does an amphibious landing on the hex south of Copenhagen and attacks (forecast is usually 5:0)
- ◆ The remaining INF north of Hamburg, next to Kiel moves (walks) to the hex south west of Copenhagen and attacks across the strait (forecast is usually 2:0). If the earlier attacks have been as per forecast, Denmark may well fall. Otherwise it typically survives with 1 or sometimes 2 steps.

#### 12.9.4 Holland Attack - Turn 2

- ◆ IX corps attacks Arnhem (forecast is usually 6:1)
- ◆ XXVII corps (Rundstedt) moves to the hex north of Arnhem and attacks (forecast is usually 6:0)
- ◆ If required, XXII corps moves to the hex north east of Arhem and attacks (forecast is usually 6:0)
- ◆ Luftflotte 5 (STR) strikes III Legerkorps (Luftflotte 1 is available to provide FTR escort) (forecast is usually 2:0)
- ◆ If Luftflotte 5 (STR) was not intercepted by the british FTR, then Luftflotte 1 (FTR) can also strike III Legerkorps (forecast is usually 2:0)
- ◆ XIX Pz corps moves to the hex north east of III Legerkorps and attacks (forecast is usually 13:0) - advance after combat.
- ◆ Move V corps (GAR) 2 hexes north west to capture the hex of dutch territory that has not gone German
- ◆ Move Luftflotte 3 (TAC) west to support the attack on The Hague next turn.

#### 12.9.5 Holland Attack - Turn 3

- ◆ Move XXVII corps (Rundstedt) to the hex south east of The Hague and attack (to get rid of the entrenchment level and allow the air units to bomb better)
- ◆ Luftflotte 3 (TAC) strikes The Hague
- ◆ Luftflotte 1 (FTR) strikes The Hague if it was not intercepted by the british FTR - do not do this step if the weather is MUD/WINTER as the FTR cant do any damage
- ◆ XIX Pz corps moves to the hex south west of The Hague and attacks
- ◆ XXII corps moves to the hex south of The Hague and attacks (if the weather is clear, The Hague will usually fall given average luck)

## 12.10 Blitz-Sitz - Denmark & Norway Invasion Strategy

### 12.10.1 Overview

What is the Blitz-Sitz? It's a '39 Blitz against Poland, Denmark and Norway followed by a 1940 fair weather invasion of France (i.e., Sitz). The Blitz-Sitz strategy has always been possible in GS; however, until recently there was a 4.7% chance that the invasion transports formed to invade Norway would have to abort with the loss of 16 PP's for the cost of the transports.

However; a recent change that's included in GSv2.1 is that the cost of a transport is recovered for transports unloaded from friendly ports.

**IMPORTANT UPDATES:** Please ensure that you read the 4 Refinements added to this strategy at the end of this section.

Another significant change in GSv2.1 is that the three garrisons defending Norway will spawn at 2-steps each provided Denmark was not invaded in a previous turn. Otherwise, they spawn at 10-steps each. Similarly for Denmark their two garrisons will spawn at 2-steps each provided Norway was not invaded in a previous turn. Otherwise, they spawn at 10-steps each. Defenders spawning at 2-steps versus 10-steps represent the effect where either or both of these countries are totally unprepared for war and have not mobilized. With respect to this effect Norway and Denmark are linked. If both are not invaded on the same turn then the country that's invaded later is assumed to have mobilized, hence their defenders spawn at 10-steps; but will still suffer the surprise effectiveness loss. Thus, it's advantageous to invade both Norway and Denmark on the same turn and the strategy presented herein is based on that. As a side note and unrelated to this strategy, Holland and Belgium are similarly linked and with their defenders spawning at less than full strength.

However; if one of the two is invaded on a later turn the defenders for that later invasion spawn at full strength.

**Figure 3. 1939 Amphibious Invasion of Norway Summary**

	Central Europe	Northern Europe	Oct 11	Oct 31	Nov 20
<b>47.0%</b> <ul style="list-style-type: none"> <li>'39 invasion of Norway &amp; Denmark</li> <li>No rail on turn of invasion in Norway</li> </ul>	FAIR	FAIR	37.5%	9.4%	0.1%
<b>48.3%</b> <ul style="list-style-type: none"> <li>'39 invasion of Norway &amp; Denmark</li> <li>Rail on turn of invasion in Norway</li> </ul>	FAIR	NOT FAIR	37.5%	9.4%	1.4%
<b>4.7%</b> <ul style="list-style-type: none"> <li>No '39 invasion of Norway possible</li> <li>Abort &amp; recover transport costs</li> </ul>	NEVER FAIR	FAIR -- or -- NOT FAIR			4.7%



### 12.10.2 Why Invade?

Why the Blitz-Sitz? In a number of games I will sandwich the invasion of Norway, and now Denmark, between the conquest of France and the invasion of the Balkans. Also, in those games where I may struggle through France due to a late spring or strength of my opponent resulting in an August capture of Paris, I am hard pressed to get the invasion of Norway in before bad weather strikes; especially, if I get unlucky in October with the weather rolls. Even with a normal fall of France (May – July), I like to support my invasion of Norway with 2, or better yet 3, sub flotillas and most of the Luftwaffe. I do this as a hedge against a strong allied intervention. In general, my experience has been that the allies don't intervene except by sending air units to Bergen and Trondheim. However; there's been a couple of games where my opponent sent a strong force of two transports supported by the RN and it was in those games where my strong supporting force of subs and air units were able to significantly blunt that intervention. It may be that in most games I don't need these supporting forces but in those that I do it would be near disastrous (i.e., possibly conceding Norway to the allies) if I didn't have them at hand. So my philosophy is better safe than sorry.

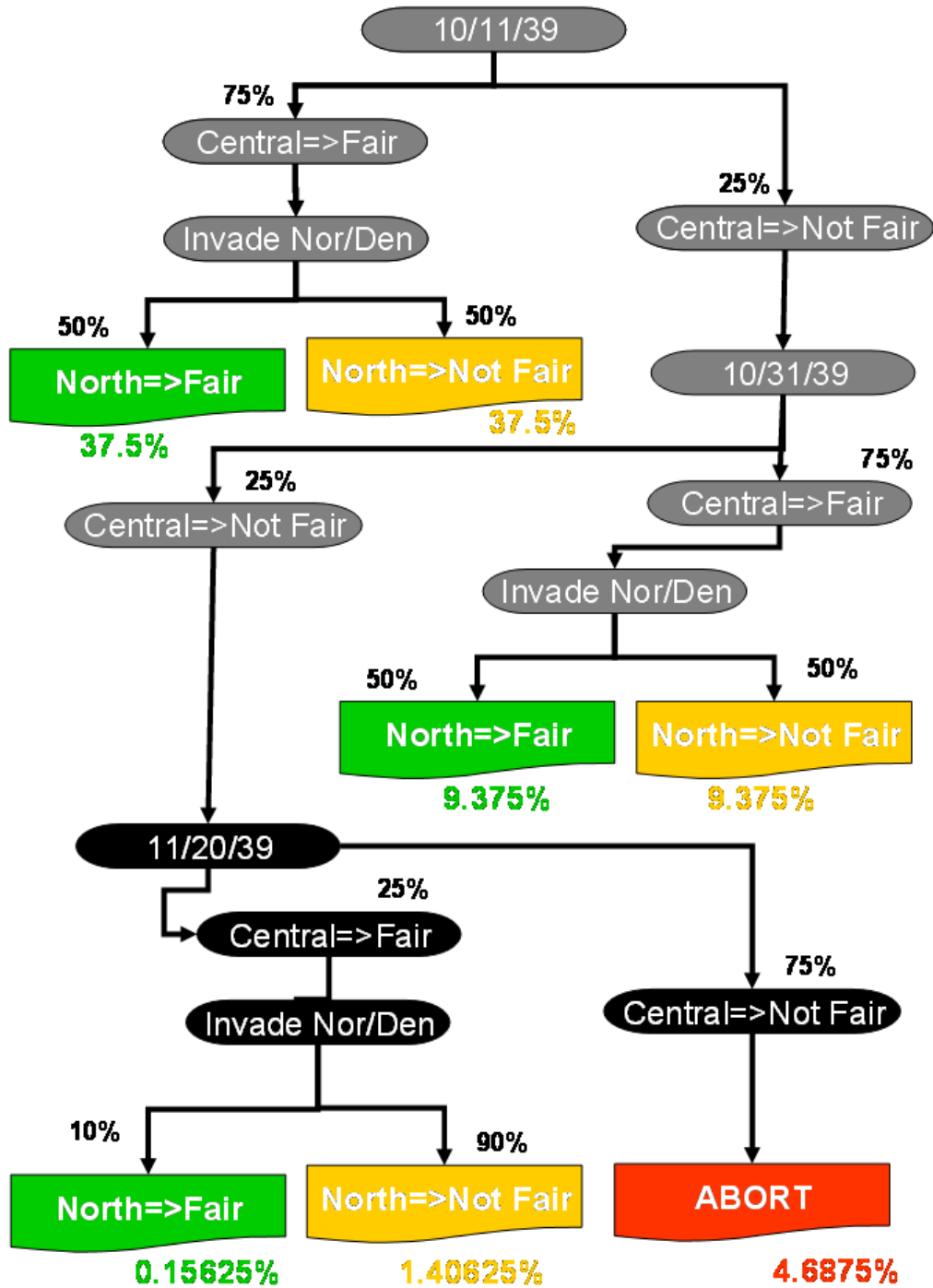
"Getting" Norway out of the way in '39" allows the axis player more flexibility after the fall of France. This flexibility can be manifest in both action (e.g., early invasion of the Balkans) and / or threat (e.g., Sea Lion). In effect the axis player is able to transition fully and with maximum focus (i.e., naval and air forces) to their next objective (e.g., Balkans, Sea Lion, rejecting the armistice and going for Spain, close the med) and without having to sacrifice Norway (e.g., Sea Lion or Spain). If nothing else a '39 conquest of Norway means the axis player doesn't need to fret if progress in France is proceeding slower than desired.

### 12.10.3 What Are the Risks?

In any combat operation there are risks and this one is no different. With no allied intervention there is a 4.7% chance that the operation will have to be aborted due to weather alone. Of course this means a 95.3% chance that it will be carried. However; if aborted the transport costs of 16 PP's for two transports can be recouped by unloading these transports from a friendly port. Thus the only "loss" for a weather only abort is a bit of oil. Now things get a bit trickier if the allies decide to intervene by sending a strong naval force to try to disrupt the Norway landings. First off the allied player on turn 1 must be expecting a Germany '39 move on Norway and would have had to put their naval forces in harms way to fully block such an invasion. The RN naval forces in harm's way would be subject to German air, naval and sub attacks outside the coverage of the RAF. In this case the axis player could simply cancel the invasion before even forming the transports and go after the RN.

A more subtle or reactive allied intervention would be one that forms outside of German air and naval spotting and then moves into and traps the German invasion forces in the Skagerrak straits (figure 1). But, in my opinion, the risks to the allies are far greater than the risks to the Germans. Whether permitting (75% chance), the Germans could still conduct their Norwegian landings, devastate allied naval units with German air and subs, capture Denmark which would open up access to the Baltic through the Kattegat straits and the port of Copenhagen. If the weather does not cooperate German air, naval and sub forces should be able to protect the invasion transports until they can land while pounding allied naval units outside of allied air coverage. Even in the worse case scenario where the weather never cooperates in '39 (4.7% chance) and the Germans are not able to land in Norway, their navy and invasion transports could still escape into the Baltic through the Kattegat straits by conquering Denmark. While this would make a '41 conquest of Norway more difficult because their 3 garrisons would be fully mobilized to 10-steps each I think this difficulty would be more than offset by the losses that should have been inflicted on the RN and French navy by German navy, air and sub forces.

I put the threat of this type of allied intervention and the subsequent risk of this type of abort as very low. And in fact, this low-risk scenario is even possible for a '41 invasion of Norway especially for a late summer fall of France. I don't want to exaggerate the risk from an aggressive allied intervention. The chance of it, I believe, is low and even if it does occur the consequences of it should be worse for the allies than the axis. This is war after all and all combat operations do carry some element of risk. I believe the benefits of this operation far out weight any potential risks and is; therefore; worth carrying out.



#### 12.10.4 Task List

Sample of Detailed Forum Post on this Topic

Here's my 12-item check list that I follow on turn 1. Note that the DOW and invasion of Poland are the last 2 items on the list. I like to take care of my non-combat related items where possible at the start of a turn in order not to overlook any of them. This check list is also illustrated in figure 5 below.

- ◆ Purchase lab (e.g., air lab).
- ◆ Convert garrison to FJR (airborne) division.
- ◆ Move German BB to hex directly southeast of Aalberg, Demark in the Kattegat Straights.
- ◆ IMPORTANT. Move German DD to the North Sea transport loop. It's important that this unit be moved first to the transport loop so that it exits in port (i.e., Wilhelmshaven).
- ◆ Move two u-boat flotillas to the North Sea transport loop. These two flotillas will screen the supporting naval units and invasion transports.
- ◆ Move u-boat flotilla 2, which is out at sea west of Ireland back toward Ireland. This flotilla will be used to screen Bergen and try to interfere with any allied transports headed there.
- ◆ Rebase German SAC bomber to the hex directly northeast of the Baltic Sea transport loop.
- ◆ Move the German infantry corps in Essen to the hex directly southwest and adjacent to the port Wilhelmshaven.
- ◆ Rail the infantry corps in Frankfurt to the hex directly southeast and adjacent to the port Wilhelmshaven.
- ◆ Deploy Rundstedt to the garrison to the garrison in Bremen.
- ◆ DOW Poland.
- ◆ Blitz Poland.



## 12.10.5 Additional Screenshots














Zones	North / East Europe				Central Europe			Mediterranean
Sea Hex Weather								
Land Hex Weather								
Month	Percentage %							
January	-	-	100	100 *	-	25	75	100
February	-	-	100	-	25	50	25	100
March	-	25	75	-	75	25	-	100
April	15	50	35	-	100	-	-	100
May	100	-	-	-	100	-	-	100
June	100	-	-	-	100	-	-	100
July	100	-	-	-	100	-	-	100
August	100	-	-	-	100	-	-	100
September	100	-	-	-	100	-	-	100
October	50	25	25	-	75	25	-	100
November	-	50	50	25 *	25	50	25	100
December	-	-	100	75 *	-	25	75	100





Figure 10. Norway & Denmark Invasion Forces in Position.

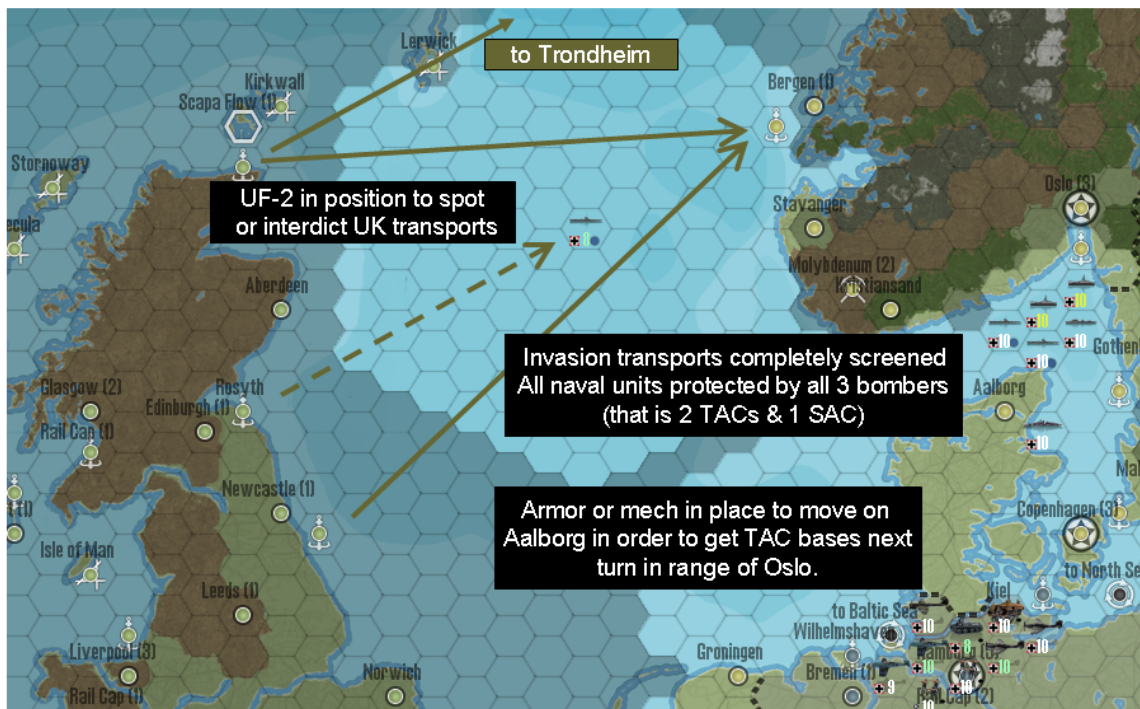


Figure 11. The Invasions Turn

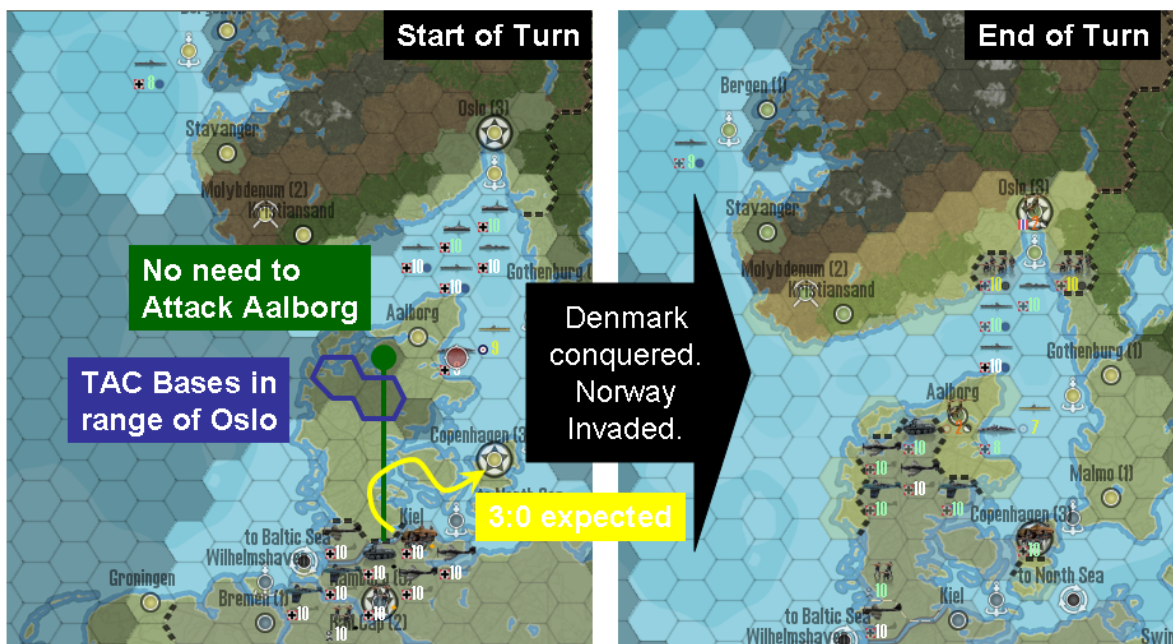


Figure 12. Stick to the Plan. Don't Get Sidetracked.



## 12.10.6 Refinement 1

## The '39 Norwegian Blitz Strategy –Refinement #1

Given any strategy and repeated use against actual opponents I tend to discover refinements that improve the efficiency of such a strategy. The '39 Norwegian Blitz (as Alec has come to name it) is no exception.

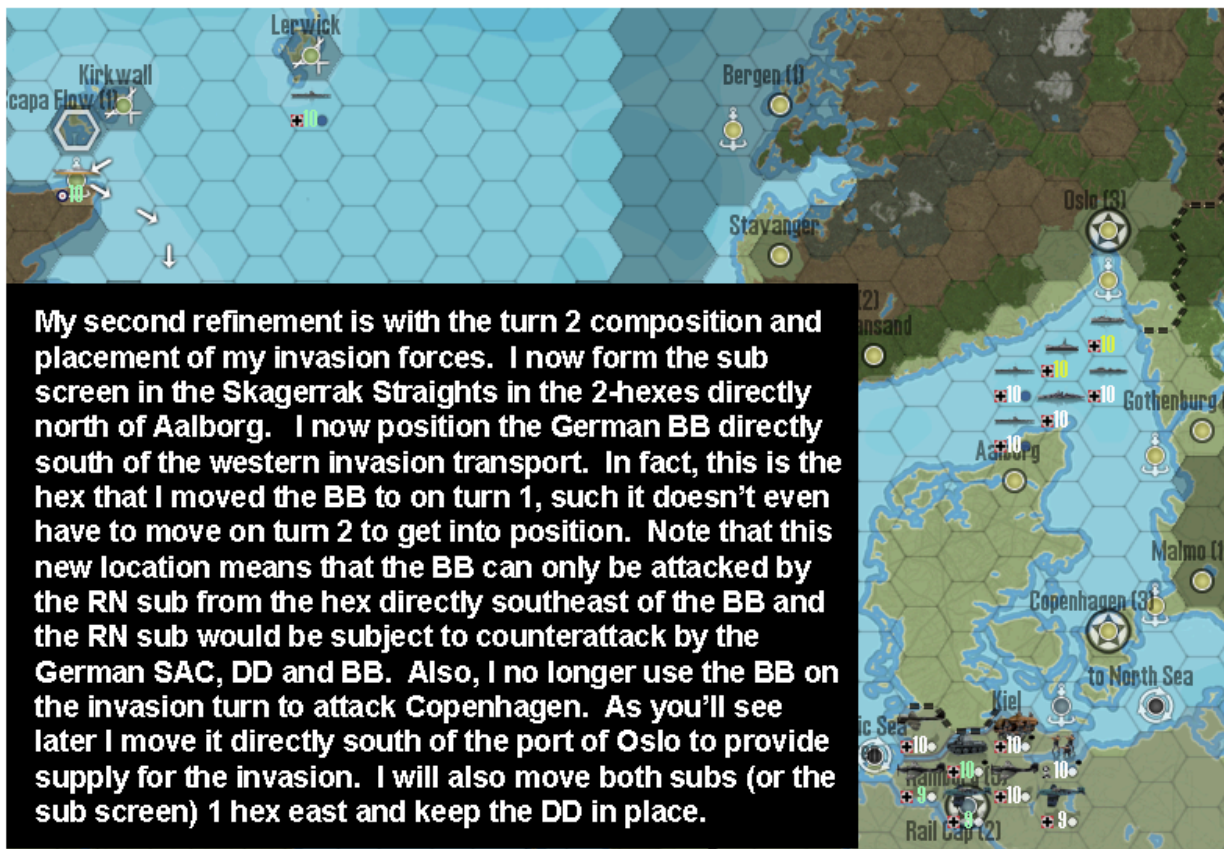
The first refinement was where u-boat flotilla 2 was moved on turn 1. Initially, I moved it between the islands of Benbecula and Stornoway in order to determine if the RN fleet based at Scapa Flow moved west and away from Norway. However; this location placed the sub flotilla in harms way of such movement and risked a couple of steps of unnecessary losses to the flotilla.

I've found that moving flotilla 2 to hex (52,6) can accomplish the same recon objective and significantly reduces risk to the flotilla. Note that (52,6) can see RN movement whether or not that movement goes north or south of Stornoway.



## 12.10.7 Refinement 2

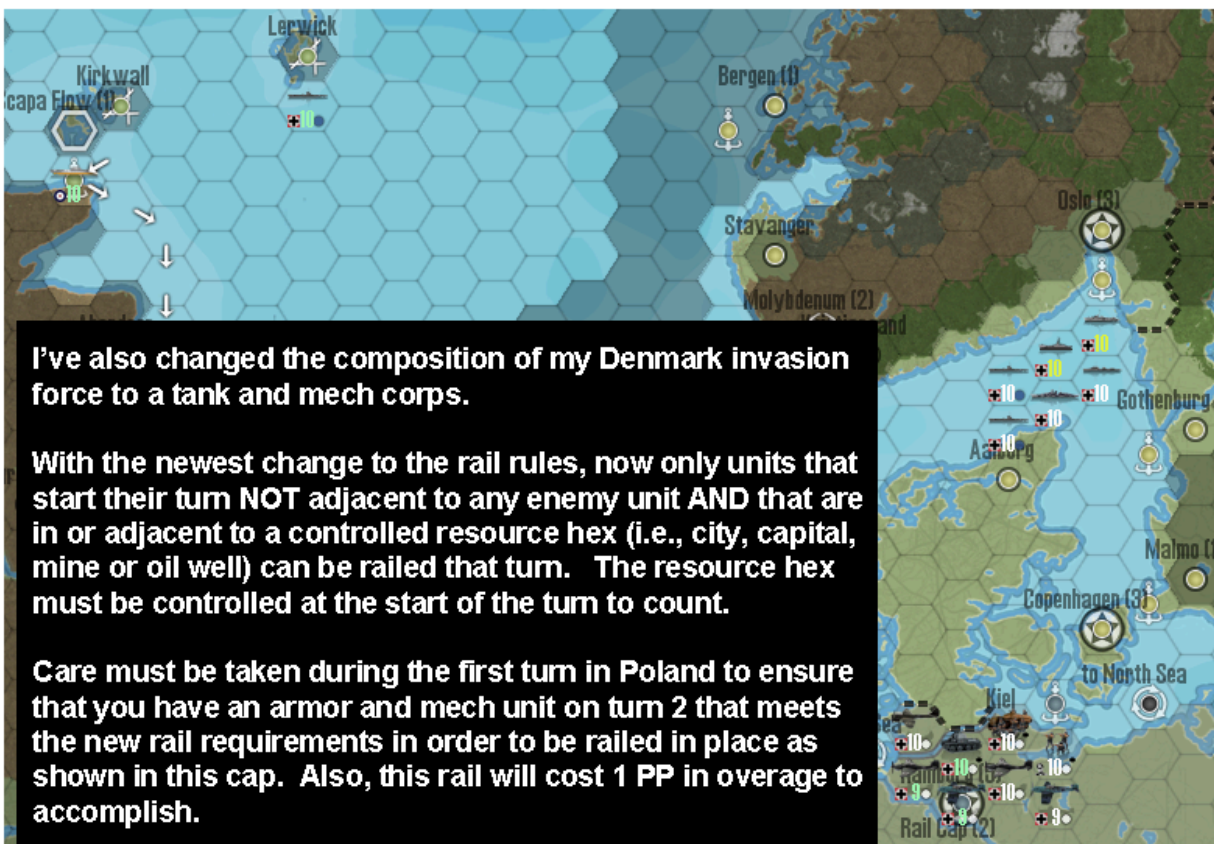
## The '39 Norwegian Blitz Strategy –Refinement #2





## 12.10.8 Refinement 3

## The '39 Norwegian Blitz Strategy –Refinement #3



## 12.10.9 Refinement 4

## The '39 Norwegian Blitz Strategy –Refinement #4

My last refine is on the first turn of both invasions (hopefully turn 3). I use the Mech unaided to capture Copenhagen. The expected odds are 3:0 and in two games I've inflicted 2-steps of loss (exactly what is needed) at a loss of 1-step.

I now also use the tank corps not only to move adjacent to but to attack and capture the city of Aalborg. I do this in order to ensure that I can move both fighters in range to attack the hex directly southwest of Oslo on the turn following the invasion if necessary (see screen cap). And this will be necessary if the weather is NOT fair in Northern Europe (50% chance) on the turn of the invasion. That is, a non-fair turn in Northern Europe will give the allied player rail in Norway on the invasion turn allowing him to rail the two 2-step garrisons in position as shown in the cap.

Also, note that I move the SAC bomber where it is in range to attack any naval unit or transport that ends the allied turn adjacent to the sub flotilla southwest of port of Bergen (except if it's in the port itself). If not needed, the SAC bomber could be used to strike the garrison southeast of Oslo if the invasion turn is not fair.





## 12.11 Axis Invasion of Other Countries

### 12.11.1 Why Invade Norway?

Many players have questioned idea of attacking Norway in 1940 before Barbarossa. If you're doing Sea Lion then taking Norway is not so easy before Britain is subdued. One reason is that you need all the naval units you can for Sea Lion. The most important reason is that you need the amphibious capacity for Sea Lion and not Norway.

But if you're not doing Sea Lion then going after Norway definitely has merit. One reason is that you get access to 3 extra ports, the Bergen port being the most important one. The ports of Bergen and Trondheim can house the [Kriegsmarine](#) or be used to upgrade / repair German subs. You can then put the Russian convoy under even more pressure after you launch Barbarossa.

Norway gives you airbases to protect the Kriegsmarine or bombard the Russian convoy before it arrives at the Murmansk port.

Norway has a production of 6 and that means you get 3 extra PP's per turn if you capture Norway. That's equals a MECH corps each year and you don't even have to worry about partisans. You need to garrison Oslo, Bergen and maybe even Trondheim. That's 45 PP's.

The Norwegian production is a bit higher than it could have been. That's done to simulate that the Germans get iron ore from Sweden during the winter turns when the Luleå port in the Gulf of Bothnia is frozen. Then the iron ore is railed to the Norwegian port of Narvik and sailed to Germany along the Norwegian coast. With Norway neutral or Allied controlled it would have been very hard to get the iron ore to Germany. Britain mined the Norwegian coast line prior to Weserübung and could have sunk those transports going from Narvik.

### 12.11.2 How to Invade Norway

In GS v2.0 you can use a paradrop to land near Oslo to make it easier to take Norway. So Norway is definitely an interesting target for Germany to take prior to Barbarossa. The risk is not so high either. Granted, the Royal Navy can intervene and engage the Kriegsmarine or land units in Bergen / Trondheim.

The invasion usually takes place when Germany is getting newly built subs and these can guard the Skagerrak for the crucial turn to get the land units ashore near Oslo.

The Luftwaffe in Denmark can retaliate against the RN as well.

The Danish city of Aalborg is very important as a rail hub. You can quickly get a paratrooper and a fighter to this city to have range to Norway.

Bottom line is that going after Norway is a good way for Germany to increase the income and get vital air and naval bases to harass the Russian convoy.

### 12.11.3 Invading Yugoslavia

As you can see in the game manual, Hungary will usually join the Axis a few turns before Romania does. If you invade Yugoslavia from Hungary, it is virtually impossible to capture Belgrade in one turn. If you invade from Romania, it is relatively easy to force Yugoslavia to surrender in one turn. Another

consideration is winter in Europe. Invade during winter and a one-turn capture will be much more difficult. The following section assumes a non-winter invasion, but the principles are the same.

From Hungary - Your objective here should be to put yourself in position to attack Belgrade from 3 or more hexes on turn 2 of the invasion. It still might be a good idea to bomb the capital to lower effectiveness and force the UK to spend pp on repairs. Then hit Belgrade with everything you have on turn 2 and it should fall fairly easily.

From Romania - Two strong German bombers are required to bomb Belgrade, but you should not have to attack any other units. To capture Belgrade in one turn, you must be willing to march units to the Romanian border east of the city. Having a tank in that force helps, but it can be done with just infantry. It is crucial to position a unit in hex (97,39) so it can attack Belgrade from the southern side of the river, thereby avoiding the combat penalty. Attack with this unit first, then attack from the two hexes north of the city. Even though these are across the river, with a little luck you should be able to finish off the defender and occupy the city. And if not, the defender will be so weak that turn 2 will be a cakewalk.

Other Tips - It may be wise to place a few German bombers by Tirana. If they have been upgraded to Strategic Operations Lv. 1, then you can attack Belgrade and Athens on successive turns without moving. Or you could base them in Hungary and then rail them down to Tirana once Yugoslavia surrenders.

Read about [German Operations in the Balkans in the Spring of 1941](#).

#### 12.11.4 Invading Greece

Conquering Greece in one turn takes flawless execution and quite a bit of luck. Therefore, don't sweat it if it doesn't happen for you. Follow the procedure in this section, and the defender in Athens should be weak enough that you can easily finish it off on turn 2.

On the turn before the invasion, load two corps (preferably German) on transports and have them move into position to land in the 2 hexes north and northeast of Athens. The inlet west of the city is ideal for this as it is easy to protect the transport from the Royal Navy. If the RN has been active in the MED, going for Greece is a calculated gamble. If you think the British will intervene, you need to plan accordingly. Escort the transports with the Italian Navy and try to place air units in position to fly cover for them. A few bomber attacks can dissuade even the most aggressive BB commanders.

Here is your attack order for the assault on Athens:

- ◆ Naval bombardment (as much as you can)
- ◆ Bomber attacks
- ◆ Land in the hex north of the city and attack it
- ◆ Naval bombardment from the now empty sea hex in the inlet
- ◆ Land in the hex northeast of the city and attack it

If more than 2 or 3 steps is left of the defender, you got really unlucky. Finish Athens off next turn and Greece is yours.

## 12.12 Balkan Blitz

I've recently been reading comments about Axis players forgoing Greece and/or Yugoslavia. Some even say it's a necessity. So at the request of one of my opponents, I'm making this post about my "Balkan Blitz" strategy.

### 12.12.1 The Strategy

- ◆ Near-simultaneous "pacification" of both Yugoslavia and Greece by the end of October 1940
- ◆ Preparation for and execution of seaborne invasion of Greece immediately after fall of France
- ◆ Land invasion of Yugoslavia on first possible turn (September 15, 1940)
- ◆ Guaranteed 2-turn capture of Yugoslavia if weather in first October turn is fair
- ◆ Virtually guaranteed 3-turn capture even if weather turns bad for both October turns

### 12.12.2 What is Needed

What you need:

- ◆ Early fall of France (by June)
- ◆ Four German tactical bombers on the map

### 12.12.3 Taking Greece

The invasion of Greece is nothing special, so I won't bother to show screenshots. Just take the whole Italian fleet, 2 German Tacs, 2 German ground units, and whatever supporting units you choose. If you don't conquer France until July or August, you may have to delay as your Yugoslavia rail moves will take up your rail cap. The nice thing about Greece is that it's in the Med weather zone, but the sooner you go the better. It won't mess up your Barbarossa and the chances of RN intervention are much lower.

Or you can just skip Greece altogether if that's your preference. That decision shouldn't impact the invasion of Yugoslavia.

### 12.12.4 Set Up for Yugoslavia

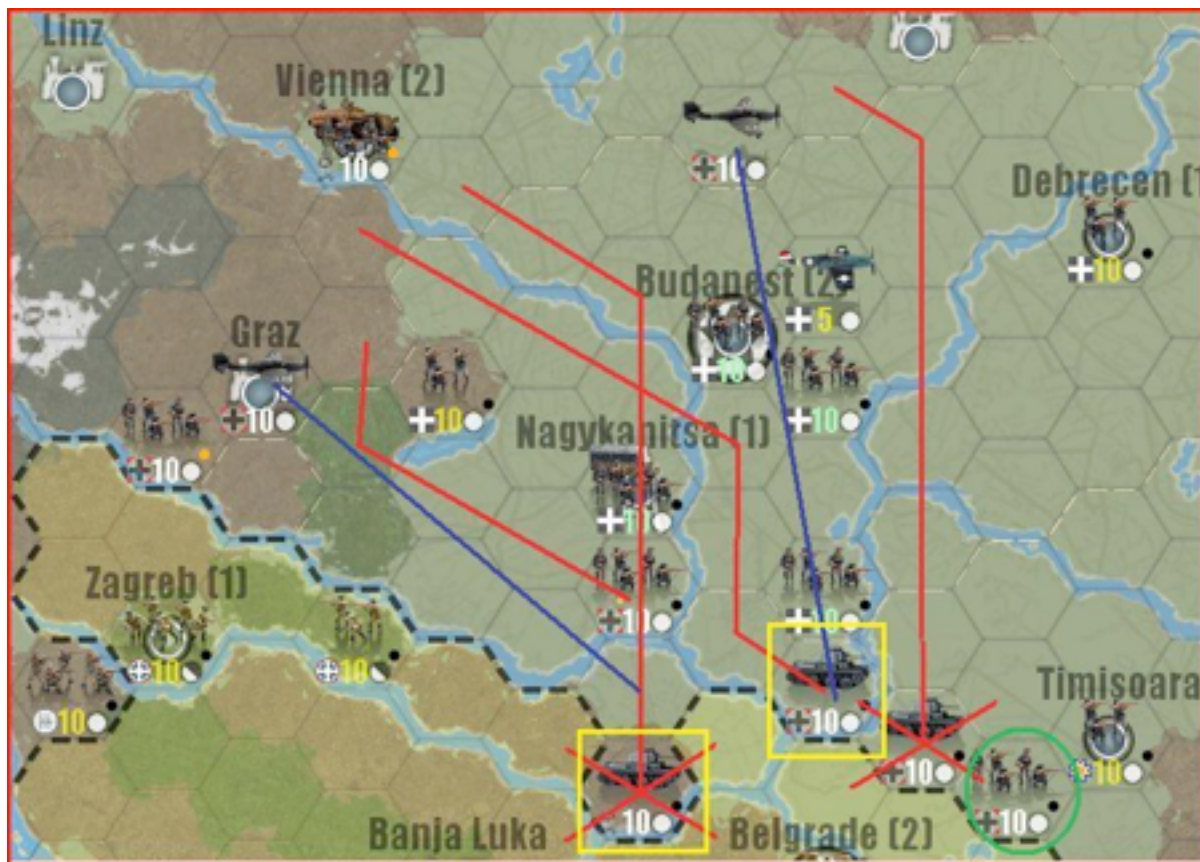
You will need at least 3 ARM and 2 TACs ready to roll by September 15, 1940, as shown in the following screenshot.



The 2nd Vienna Award should have been signed at the end of the previous turn, so Hungary (and possibly Romania) are ready to join. Declare war on Yugoslavia. Hungary will join the Axis. Their units won't be able to move yet, but your Germans certainly will! Use the TACs and ARM to obliterate the two enemy units north and northwest of Belgrade. See the screenshot below:

Yellow square = starting positions of Yugoslavian units

Green circle = German corps railed in this turn



The Allies will not be able to rail troops to Belgrade, giving you a free shot at the capital next turn. Even if the weather goes bad, you will still be able to mount a strong attack from 4 hexes, 2 on the south side of the river. That Yugoslavian corps will be beat up, and if you play your other cards right the Allies will have to replace it with a weak garrison.

So there you have it. Greece and Yugoslavia in Axis hands before November, and at least 5-6 months to prepare for Barbarossa without having to worry about the Balkans!

#### 12.12.5 One Caveat

This strategy leaves no room for Norway; you must either take care of it in 1939, do it later, or not at all. Though I suppose you could do it in fall 1940 instead of Greece. Decisions, decisions...



## 12.13 Sea Lion



Bundesarchiv, Bild 10111-144-45  
Foto: Engelmeier | 1940

*A Panzer III Tauchpanzer under test (1940)*

### 12.13.1 Difficulty of Sea Lion

Make no mistake, [Sea Lion](#) is the single most difficult offensive operation to pull off in Grand Strategy. It is a very risky endeavor. But if you succeed -- you will put the Western Allies in a hole from which they may never recover. For those brave enough to try it, the following is a guide meant to save you from catastrophe while maximizing your chances of victory.

[Read an analysis of Sea Lion.](#)

[Read a second analysis.](#)

The following sections detail what you will need.

### 12.13.2 Air Superiority

In Grand Strategy, this is a must. You will probably need at least 4 tactical bombers and at least one more fighter than the British have. Bring the Italians into the fray too. It may seem like overkill now, but it

won't look that way when you go to land.

### 12.13.3 Submarines

The eastern end of the English Channel is only 1 hex wide, and is easy to cover. The western end is 3 passable hexes wide at several points, so this is more difficult. You will need 5-6 subs, enough so you can switch damaged ones out if the RN tries to break through your sub screen.

### 12.13.4 Armour

These units will be among the first you land. They are tough and stand the greatest chance of destroying enemy units or making them retreat, which is what you want.

### 12.13.5 Leader

Station one so he can cover all your landed troops, because just the act of landing will lower a unit's effectiveness greatly.

### 12.13.6 Procedure

The Southern English coastline is long, and it is difficult for the British to cover the entire thing. First, soften your intended landing zone with aerial bombardment. Then land a tank and attack, hopefully forcing a unit to retreat. Occupy the conquered hex and land another unit in the friendly hex your unit just vacated.

This is because you need to conserve your hostile landings. Your limit is low, and they are extremely expensive to overbuy. Extra transports, on the other hand, are relatively cheap. Don't be afraid to put 6 or more transports in the water at once to give yourself more landing options.

Once you've landed, keep pounding away at the enemy with your bombers and cleaning up what's left with your ground troops. Land reinforcements in friendly hexes every turn. Your goal is to capture a city. Once you do that battle is basically over.



## 12.14 Sea Lion - Alternative Strategy

### 12.14.1 General Conduct

The Axis player should consider a Sea Lion Operation from the outset of the game. The actual game conduct at the starting of the war through 1940 will determine if it is a viable option.

Plan ahead for such an operation. Usually the Axis player will purchase fighters and tactical bombers for the Battle of France, but do not stop there. Continue to purchase them providing you have the Production Points and the Axis game is going according to plan. Do not forget to buy labs!!

The Allied player has the Royal Navy and Royal Air Force so you need to counter them with as much air power as you can muster. Air power is needed to neutralize the naval, air and ground units of Great Britain.

When do you know if you should consider Operation Sea Lion? The Axis player needs to have had some success already in order to launch Sea Lion.

### 12.14.2 Axis Conditions

Axis player was able to force surrender on Poland, Denmark, Holland, Belgium, France by turn June 27, 1940 (If the Axis player was able to force Denmark to surrender on the second turn, and to launch invasion against Norway before the first winter, this is even better.) The buildup of Production Points is one of the keys to success.

Axis player blocked or destroyed the Canadian ground and/or air units that the Allied player may have deployed to reinforce Great Britain. (Blocked simply means that they were attacked by German subs and were forced back to Canada.) The Canadian ground units will reach Halifax by turn #7 - December 10, 1939 for the mechanized corps and turn #10 - February 28, 1940 for the infantry corps. Your subs should be in position by these dates waiting for the Allied player to transport them to England or elsewhere.

German fighters engage the British fighters and inflict more step losses on the British. This forces the Allied player to repair their fighters vs attacking Axis transports off the English coast. If you can destroy 1 or both of the British fighter units prior to the invasion -- great!!

Sink one or more British naval units.

Do not lose any German units through the fall of France.

### 12.14.3 Allied Conditions

If the Allied player sends the Canadian ground units to North Africa. If they send the Canadian air unit -- even better!! I have yet to see anyone send the Canadian fighter to North Africa vs sending it to help guard England.

If the Allied player sends the British naval units out in search for the German subs. If they are near the Eastern United States or in the NW Atlantic close to where the northern convoys spawn, then these Allied units will be a full two or three turns away from being able to help repel a Sea Lion invasion.

If the Allied player sends in British naval units to support the French -- you may not get a better opportunity to sink them. Do that!!

#### 12.14.4 What you will need

Note these are minimum amounts

- ◆ 4 tactical bombers, 3 fighters, and 4 subs.
- ◆ You should have enough Armour, mechanized corps and infantry corps, providing you have not lost any ground units at all up to this point.
- ◆ Preferred: have 5 tactical bombers and 5 subs.
- ◆ [Manstein](#) as the commanding general for the operation to give your units better effectiveness.

#### 12.14.5 Where and when to execute Sea Lion

The best time for Sea Lion would be just after the fall France. This should be the autumn of 1940, before winter sets in and makes an invasion impossible.

You could try it before the fall of France, but now you would have to contend with the French navy. Also you would need to keep a sufficient force on the continent to repel any French attacks. With your forces tied down against France, you would not be able to use them to reinforce the invasion forces in Britain.

The best choice for a sea invasion would be the southern coast of Great Britain.

#### 12.14.6 Priority

The first priority of the invasion is to capture a port city. For obvious reasons your supply level will be at 1 due to the fact that a naval unit can only give a supply of 1. Once you capture a port city the supply jumps to 3. You will need the port not just for supply but for reinforcements in winter. You cannot launch a sea invasion in winter.

#### 12.14.7 Tactics

Submarines - With four subs you will be able to block the English channel on either end. With four subs you can block the English Channel on either end: three subs blocking the west opening and one in the east opening.

Surface naval units - You will need to have your surface naval units close by to assist in:

- ◆ Repelling the British naval forces
- ◆ Shore bombardment

- ◆ Supply before you take a port city.

How many units in the first wave of the invasion is a key factor. The Allied player will try to block an invasion before it even begins by placing ground units in hexes where you have placed your transports. So you will need just enough to have some capability of landing in an open hex. Six units should be a minimum to send on the first wave. This will cost you but it is worth the cost if you succeed. You will lose a turn's worth of Production Points.

What units do you land in the first wave? I feel infantry should be first. If you lose 1 or more in the beginning while you establish a beachhead and try to take a port city, it will cost you a lot of Production Points. Remember the high cost of the initial transport and landing of your invasion force. Also when you build an infantry unit it takes 1 turn vs 2 and 3 respectively for the mechanized infantry and Armour units. So infantry units will get back into the battle much quicker.

First turn of the invasion - concentrate your tactical bombers on ground units next to hexes that are open in which you will be landing. Once this unit lands it should attack the hex with the British unit that is blocking your other unit from landing. You should have a reasonable chance of forcing this unit to retreat due to the fact it has lost some effectiveness from the tactical bombers. If you are able to attack the target port city with air units, do that as well. Thus, when your ground units reach the port city the unit holding the city will have lost some of its effectiveness and its entrenchment will also have been reduced.

#### 12.14.8 Submitter Note

I hope this helps players decide whether to try a Sea Lion invasion. From my own experience, I know that Sea Lion can be successful. This article offers strategic and tactical advice based on successful game-playing experiences. But you can try variations, building units and planning a Sea Lion invasion as you see fit.

## 12.15 Alternatives to Sea Lion

### 12.15.1 Ignore England Entirely

Go for Egypt or build up for a massive and early Barbarossa. Or pursue a more creative strategy like an invasion of Spain.

### 12.15.2 Bomb London Strategically

Build another strategic bomber and knock London down to 0 production. This costs the British 8 PP per turn, which adds up pretty quickly. It might also give the Luftwaffe a chance to fight the RAF, which is a good thing since you will have the effectiveness and probably a technological edge by mid-1940. And if the British choose not to intercept your bombers, that's fine too.

### 12.15.3 Feint at Sea Lion

Lure the Royal Navy into combat. If the RN is hanging around the British Isles, luring them out of port can be a very effective way to sink some British ships. You will probably need to load a couple infantry units on transports. If your enemy goes for the ruse, hit him with all your air and naval units. You can also do this if you're serious about Sea Lion.

*All warfare is based on deception.*

Sun Tzu

## 12.16 Sea Lion Defense

### 12.16.1 Importance of Defense

The new [contested amphibious invasion](#) rules which allow transports to attack beach defenders have a big impact on the British defense against Operation Sea Lion. You can no longer rely on a Garrison unit to simply block a landing hex because there is the possibility that it might retreat. This is particularly the case if the Garrison has been subjected to air or naval bombardment. The new naval shore-bombardment rules have reduced the amount of damage that ships can inflict, however, the efficiency damage inflicted can lower a unit's resistance. Then that unit is more vulnerable to an amphibious attack that can generate a retreat result. It should be noted that the attacking transport does not have to land after retreating a unit, instead, a different transport could land in the vacated hex and launch a regular attack against another beach defender.

The second new v 2.0 factor a British player has to contest with are para drops. They can be used to assist the amphibious landings, attack air units on the ground or to seize unguarded interior cities (e.g. Cardiff and Birmingham which are within 6 hexes of para based in Cherbourg).

### 12.16.2 Sea Lion Defense Preparation

Operation Sea Lion is defeated by preparing for it. This means:

- ◆ Not buying all of the LABs available to the British
- ◆ Not being bled badly PP-wise in France or the MED

The loss of a couple of units and some FTR steps in France is not a catastrophe, but, if you suffer heavy PP losses you need to be sure that the Germans will not be landing before September as you will not have the force to fully defend your coastline.

### 12.16.3 Sea Lion Defense Principles

As a result of the above, the following principles should be followed when defending against Operation Sea Lion:

- ◆ Make sure you get the British SUB into hex 65,20 (north west or Norwich) early on as this is a great place for the German player to put a transport as it threatens 4 hexes with invasion. A SUB here should be provided FTR cover to counter the German STR which will attack it once it is discovered. Base the FTR north of Newcastle so that it won't intercept any other attacks. This FTR also keeps an eye on the sea area between Aberdeen and Newcastle.
- ◆ Only deploy Garrison units in cities, the rough ground around Plymouth or in locations where they are blocked from retreating by other units (e.g. other Garrisons). Don't deploy Garrisons in the two rough hexes south east of London as they can potentially be killed by two TACs, shore-bombardment and amphibious assault. INF corps are the best units for these hexes as they are unlikely to be killed by such an attack combination.
- ◆ Garrison units can be reasonably safely deployed in the two clear hexes south and south east of

London provided that a Garrison is also deployed in the hex south west of London as well - unlikely that two TACs and a single amphibious assault could kill a 10 step Garrison outright. INF corps (or MECHs) should be deployed in all other clear coastal hexes on the south coast.

- ◆ Garrison units can be safely deployed in the hexes north of Norwich as the German TACs normally do not have the range to bomb these hexes (only 6 hex range normally unless the German player has focussed on Strategic Operations research and been lucky with Random Research)
- ◆ The second British FTR could be reasonably safely deployed (a para will not kill it) in Birmingham (on Sentry) to be ready for any air strikes needed. Likewise, the STR could be deployed in Cardiff where it can reach hexes as far north as Edinburgh (allows you to strike any northern transports without having to move any ships to sea).
- ◆ Deploy the British CV in the Cardiff port to provide air cover in this area. Also deploy 3 BBs in the neighboring 3 hexes to ensure that the CV can escape if things go wrong. A DD should be deployed in the Belfast port to keep an eye on that area and be available to do SUB sweeping.
- ◆ Deploy a second DD in Scapa Flow to keep an eye on the northern sea area.
- ◆ Deploy the British para in Norwich - this city is quite vulnerable due to its exposure to air and naval bombardment and a para (with a +1 defense leader if available) will be a tough nut to crack. Although not a port, the city is a supply source for the Germans and will greatly assist their operations if captured.

### 12.16.4 Sea Lion Defense Counter Points

Some might argue that building a large number of British INF to defend against Sea Lion is a waste; however, a successful defense against an Operation Sea Lion, in which the German player has made a heavy commitment, is usually fatal to the Axis. The effect of a failed/costly Sea Lion leaves the Germans insufficient remaining resources to heavily damage Russia in 1941. In the event that the German player does not do Sea Lion or breaks it off very quickly once they realize the extent of the defenses, the INF built can be used for other operations like; knocking out and garrisoning Ireland, or supporting MECH units landing in Norway, France or North Africa (Torch).

### 12.16.5 Sea Lion Defense Final Overview

The above defense has the British fleet deployed mostly on the west coast where it could potentially intervene around Cardiff-Plymouth, but, is positioned primarily to escape if necessary. This approach is deliberate because of the over-riding importance of keeping the fleet intact rather than have it trying to counterattack and running into SUBs, which potentially allows the ships to be destroyed.

Hence, the above defense relies primarily on ground forces backed with the RAF for counter-attacks. Repairing and building INF are cheaper than repairing ships and air units so the aim of this defense is to drag things out until the weather turns poor. If the Germans have not secured a port by then, then their forces will be quite vulnerable. Even if they secure a single port (or Norwich), they will still have to fight their way through many INF in poor weather so are unlikely to make much ground by the clear weather in 1941, when they will be starting to think about assembling their Russian assault force.

## 12.17 Tallinn Gambit

### 12.17.1 Overview

#### The Tallinn Gambit

- ❑ The capture of Tallinn by amphibious invasion and airborne drop on the first turn of Barbarossa.
- ❑ If executed successfully, the axis force the scuttling of the Russian sub group there and gain a bridgehead to quickly move on Leningrad or subdue the Baltic States.
- ❑ To ensure a near 100% probability of success this gambit requires the first turn commitment of 2 German infantry corps, +1 offensive leader, 2 TAC, 2 airborne and the entire German surface fleet (2 BBs and 1 DD).
- ❑ 70 to 80% of the time the 2 airborne drops are NOT needed to do the job and may be used elsewhere.
- ❑ This gambit was successfully executed in 10 out of 10 hotseat trails.



1



## 12.17.2 Setup

- ☐ April 23, 1941 (31) – The turn before the launch of Barbarossa.
- ☐ 2 Infantry corps invasion transports launched.
- ☐ 1 corps with +1 attack leader.
- ☐ 2 TACs, 2 airborne and German fleet in addition to 2 infantry corps in place for several turns to get high effectiveness.
- ☐ 2<sup>nd</sup> airborne created from a high effective garrison deployed this turn east of Königsberg.
- ☐ It's important that both airborne divisions can attack Tallinn in consideration of where the two amphibious corps will invade.



2

## 12.17.3 Attack

**April 23, 1941 (31)** – End of turn.  
Tallinn invasion and support forces  
in place.



Note that this turn is the earliest that two German airborne divisions can be on the map. This requires forming of the 2<sup>nd</sup> on January 13, 1941 (26).

**May 13, 1941 (32)** – Barbarossa!  
Tallinn successfully captured with  
TAC-BB-TAC-inf-inf\* attack sequence.



TAC-BB-TAC-inf-inf\* attack sequence  
was sufficient in 8 of 10 hotseat trials.  
Note: inf\* is corps with +1 attack leader.

## 12.17.4 Plan B

In 1 of the other 2 trials, 1 airborne drops finished the job. The other required both drops and to do that, that required that the 2 Russian garrisons in front of the 2<sup>nd</sup> airborne division be made to retreat.



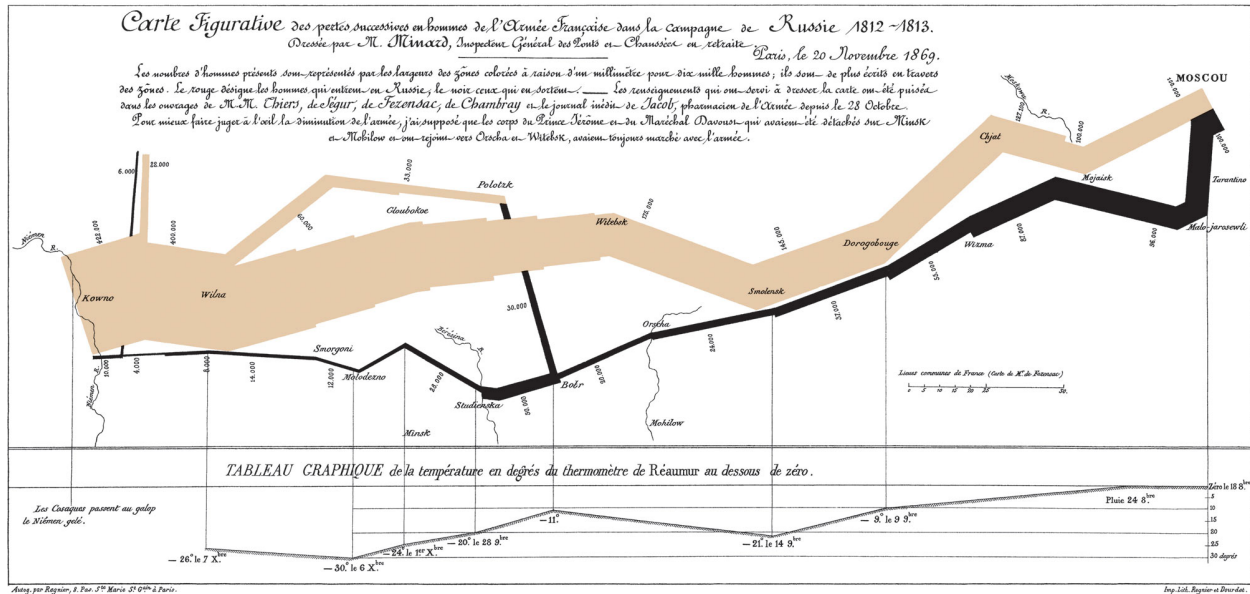
## 12.17.5 Analysis of Results

Attack Sequence	Cost (PP's)	# Occurrence	% Occurrence
TAC-BB-TAC-INF*	8	4	12.9%
TAC-BB-TAC-INF-INF*	16	17	54.8%
TAC-BB-TAC-INF-INF*-AB	26	5	16.1%
TAC-BB-TAC-INF-INF*-AB-AB	36	5	16.1%
	<b>Total</b>	31	
	<b>Ave Cost</b>	<b>19.8</b>	

- ☐ 67.7% of the time (~2/3) Tallinn falls w/o airdrops
  - o 13% of the time only 1 amphibious invasion is required; thus saving 8 PP's if desired.
  - o 16% of the time 2 airborne drops are required.
- ☐ While nothing is a sure thing; with proper setup and high effectiveness this is almost a sure thing.

5

## 12.18 Barbarossa



## Charles Minard's [flow map](#) of Napoleon's March

Minard was a pioneer of the use of graphics in engineering and statistics. He is famous for his *Carte figurative des pertes successives en hommes de l'Armée Française dans la campagne de Russie 1812-1813*, a [flow map](#) published in 1869 on the subject of [Napoleon's](#) disastrous [Russian campaign of 1812](#).

The graph displays several variables in a single [two-dimensional](#) image:

- ◆ the size of the army - providing a strong visual representation of human suffering, e.g. the sudden decrease of the army's size at the crossing of the [Berezina river](#) on the retreat;
- ◆ the geographical co-ordinates, latitude and longitude, of the army as it moved;
- ◆ the direction that the army was traveling, both in advance and in retreat, showing where units split off and rejoined;
- ◆ the location of the army with respect to certain dates; and
- ◆ the weather temperature along the path of the retreat, in another strong visualisation of events (during the retreat "one of the worst winters in recent memory set in"[1]).



*Fools say that they learn by experience. I prefer to profit by others experience*

Otto von Bismarck

### 12.18.1 When to Invade

The historical date for the invasion was June 22, 1941, and that is a good start point. Earlier is better, but only if you feel you're ready. Invading after July 12 is probably a bad idea, as you won't get that much penetration before winter hits.

### 12.18.2 Controlled Urgency

This is how you need to fight. There are many cities to conquer and not much time to do it in. So you need to move quickly and decisively, using your tanks to strike ahead of the main army. But you must also be controlled in your aggression, keeping advanced units within movement range of your main forces. This will allow you to make the Soviets pay for it should they decide to counterattack.

### 12.18.3 Aircraft

Use bombers and sometimes fighters to soften up cities. The Russian fighters will probably be nowhere to be seen, so use yours as mobile long-distance scouts. They only cost 2 oil to move and can provide useful intelligence if you rebase them before moving your ground units.

### 12.18.4 Know when to stop

Your offensive operations should pretty much cease in November, when winter in Europe arrives. The effectiveness drop won't hit for another few turns, so use the time to consolidate your position and make sure the Russians aren't in a position to hurt you when your units are at their weakest.

### 12.18.5 Scorched Earth

The fighting in the east was brutal and without mercy. Both the Germans and Russians in retreat destroyed as much usable materials as they could over leaving them behind for the enemy to use.

Any Russian core city captured, or recaptured, will lose an additional 5-steps if above 5-steps or be reduced to 0-steps if at 5-steps or less. Damaged cities and ports regenerate at the rate of 1-step per turn.

Modified scorched earth in Russia so that it only applies on the second turn and later of Barbarossa. That is, it does not apply on the first turn.

## 12.19 How to Defeat the Soviet Union



Bundesarchiv, Bild 183-1982-0927-503  
Foto: Zwilling, Ernst A. | 12. Januar 1942

*The art of concentrating strength at one point, forcing a breakthrough, rolling up and securing the flanks on either side, and then penetrating like lightning deep into his rear, before the enemy has time to react.*

*Field Marshal Erwin Rommel*

### 12.19.1 Defeating Soviet Union

The 1942-43 Eastern Front is where the war is often decided. This is the most crucial campaign for both sides. Push the Russians back to Siberia, and you stand a good chance of at least satisfying the victory conditions in 1945 and winning the game. Get bogged down and suffer heavy losses, and the Germans won't even make it until 1945. If the Germans have to go on the defensive before 1944, it's all over for them. This part of the strategy guide is designed to help you make sure that doesn't happen.



### 12.19.2 Play to Your Strengths

By 1942, you probably have plenty of tanks and planes. And where is the best place to utilize those units? I'll tell you one thing; it's not in those northern forests. No, the best place to use air and Armour units is in the clear terrain south of Moscow.

### 12.19.3 Maintain Air Superiority

I can't stress how essential this is. There are only 2 German units that can strike the fear of God into the Russians, tanks and tactical bombers. But even heavy tanks will take lots of damage without air support, and your infantry will be cut down like wheat if they attack Russian units with entrenchment. By spring 1942, you want to have 5-8 bombers and 3-6 fighters (not including the Finnish and Romanian ones) depending on how many fighters the Soviets have built.

Some Russian players will try to fight you for control of the skies early in the war. Turn this in your favor. Fighter repairs are expensive, and yours should be much better in technology by now if you've invested in air research. If the Russians are losing 4 steps to your 2 for every fighter interception, this basically turns into a giant PP (Production Points) black hole for him. You can be aggressive because you know that every PP (Production Point) he's spending on air repairs is one he's not spending on more ground units.

Another interesting thing you can do if you have air superiority is bomb Moscow strategically during winter 1941-42. Get it down to zero production, and you're basically taking 10 PP (Production Points) away from the Russians each turn. That kind of loss adds up very quickly.

### 12.19.4 Focus Your Energy

Pick a section of the Russian line and hit it with everything you have. DO NOT make piecemeal attacks along the entire line. This is prohibitively expensive and will get you nowhere fast. You can't completely ignore the neglected areas, but a single line of infantry can act as an effective holding force while you drop the hammer on the other part of his line.

### 12.19.5 Don't Panic

So you've been hammering away at the Soviets for four or five turns and you haven't gained much ground? Don't sweat it. If you keep killing enemy units, their line will crack eventually. And when it does, miles upon miles of territory will fall to you very quickly.

### 12.19.6 Win by Maneuver

This goes hand-in-hand with all the previous tips. If you smash one part of the Russian line, the Soviets will have to withdraw the entire line or risk being enveloped and leaving a clear path into the heart of Russia. For example, if you break through south of Moscow, the Soviets will have to pull back from their tough line in the northern forests. You can kick them off the best defensive terrain west of Siberia without even attacking them on it!

### 12.19.7 Set Goals

You should have a specific objective in mind for each campaigning season, a place you want to be when winter hits the following November or December. Here is one possible set of goals for the end of each specified year:

- ◆ 1941 – Stalino, Kharkov, Kursk, Bryansk, Smolensk, Novgorod
- ◆ 1942 – Moscow, Gorki, Stalingrad
- ◆ 1943 – further into Siberia, Caucasus

## 12.20 Fortress Europa

A GS Forum Contributor proposed the following strategy called “**Fortress Europa**”

1. Take control of ALL EUROPE, and also have Spain switch to the Axis sides, to maximise revenue.
2. Take control of Gibraltar.
3. Join the 3 Axis fleet (Spanish, Italian and German) as soon as possible and station them either in England or MED (still needs to be decided)
4. Build a large Axis fleet later in the game (mid 1942).
5. Potential landing / offensive fall 1942.
6. 1942 Summer offensive in the North to "break some Russians" and also relieve pressure on the Finns for them to last the winter 1942-1943. The goal is to kill Russian units - not to gain ground.
7. Then the rest of the game will be dedicated to react to allied move since from 1943 we should loose the initiative.

The sequence was as follows:

- ◆ Early blitz of Belgium/Netherlands (surrendered on turn 2 and turn 3) and early blitz of France. Poland surrendered on turn 3 or 4.
- ◆ Grinding campaign in France till June 1940, war declaration on Yugoslavia in ay 1940 (attacked from Italy and southern Germany)
- ◆ Greece conquered fall 1940 in fair/mud weather (depending on the hex, the clear ones were fair)
- ◆ Norway/Denmark invaded while still mopping up northern England first and second turn of fair weather 1941.
- ◆ Invasion of Britain before France surrendered in May 1940, London fell somewhere in July.
- ◆ North-African campaign as early as possible from the time of the Italian entry into the war.
- ◆ Spain entry into the Axis fold January-February 1941.
- ◆ Portugal/Gibraltar conquered mid-1941.
- ◆ Now preparing an possible invasion of Suez summer 1943. This will be the last offensive move by the Germans.
- ◆ Then simply "lock the map" and win the game.

Actual revenue (with industrial technology level 3) = 185 pp / turn. I should reach 200 pp / turn with level 4 or 5...



## 12.21 Barbarossa Alternative - Bleed The Brits

*Pursue one great decisive aim with force and determination.*

Karl von Clausewitz

### 12.21.1 Why Go for Northern Africa and Middle East?

The first and most obvious reason is oil. It has large oil fields, which not only provide your army with lots of oil but also are PP sources.

The second reason is that it is one of the most reliable strategies, if you do things properly. In 1940-41 the Axis has a huge edge over Britain in PP income and troop quality....Britain gets some convoys, but your U-boats should reduce them. Also, Britain has a poor manpower pool that will degrade quickly if British troops engage in heavy fighting. So if you plan your "Middle East adventure" well, Britain will not be able to defeat it.

### 12.21.2 Early Preparations

In 1939 - first half of 1940 you should do traditional European campaign, conquering Poland, Denmark, Low Countries, and France. Ideally France should fall before Italian activation, but it's hard to achieve and it's not a must. I don't advise attacking other countries such as Norway or Yugoslavia, but if you think you have the resources to spare, why not?

The essential thing to take care of at the very start of the game are labs. You should build air (dog fight) lab at the very start of the game, and build a second one at the very start of 1940.

Why? Because later in Egypt your Luftwaffe fighters will engage the RAF. If you get good results you will drain Allied PPs. But if you get bad results you will be forced to repair fighters instead of escorting TAC. And if you can't use TAC, you can't advance.

Another important lab is the naval one. Since you will have captured the Suez Canal, you will be able to unite the efforts of the Kriegsmarine and the Regina Marina in the Atlantic. If you have naval tech upgrades, you will beat the Allies handily. I recommend starting with the Subs tech for both Italy and Germany. It is the cheapest naval tech and it progresses quickly. You don't have many BBs at the start of the game, but later you can switch focus to surface ships, if you see your opponent mostly producing destroyers, for example. (Remember that in GS 2.0 you will have 2 free BBs in early 1941 - 1 German and 1 Italian.)

Other labs are also useful and should be maxed out as soon as possible -- you do want to have good troops! But it is not wrong to delay a lab purchase to build additional urgently needed units or leaders.

In terms of units, by the end of French campaign you should have built 2 additional TACs and 2 FTRs (and have a total 4 of each) and a [Fallschirmjäger](#) (German para) unit, and possibly a second German leader. If you have more spare PPs (and all labs built) build additional u-boats and then fighters.

### 12.21.3 Sea Lion or Barbarossa?

When you do an Axis North Africa and Middle East strategy, I strongly advise that you launch a Sea Lion as well. The reason is that both operations/strategies target Britain, which simply doesn't have enough resources to prevail. If you conquer both Britain and the Middle East, this achievement will give you more PPs and Oil income than would any Barbarossa campaign. Then you can aim to win an attrition war with Soviet Union or at least hold them at bay. Not doing a Barbarossa may look bad at first glance, but it has a deep advantage. It is not a good idea to DoW Soviet Union, unless you have superior forces. Remember, you likely will not have superior forces against the Russia if you concentrate in the Middle East.

#### Barbarossa??

If you launch a Barbarossa in these circumstances, you will get bogged down; you will boost the Soviet war effort; and you will suffer heavy casualties. If you do the smart thing and refrain from Barbarossa, you will have 40 turns (almost half the game!) to deal with France and Britain. Instead of launching Barbarossa, prepare an eastern defensive line. Build infantry corps and DoW against the Soviet Union just before its automatic activation date. I suggest the last September 1941 turn, since it's guaranteed fair weather and the Soviets will suffer their DoW penalty. You may want to take border cities like Brest-Litovsk, Lvov and Kaunas to deny their use as rail hubs for the Red Army. Bad weather will likely start one or two turns after you DoW the Russia, and will slow down Soviet troops. The idea of all this is to delay any real fighting in the East as long as possible. You will aim just to collect your PPs and build overwhelmingly good troops. By 1942 the Axis should be done in both Britain and the Middle East, and can focus on the Soviets.

Another reason to delay a DoW against the Russia is that, once you do, Soviet troops will most likely march into Persia and Iraq to help their British allies.

I hope everything discussed above explains why, if you decide to focus against Britain, you should do it everywhere, not just in one theater.

#### Sea Lion??

There are two usual times to launch Sea Lion: summer 1940 or spring 1941. Summer 1940 is preferred, and Sea Lion typically is launched immediately after the Fall of France. You will know the time for Sea Lion is approaching when, during a French campaign, any of the following happens:

- ◆ You sunk or badly damaged some RN ships, or
- ◆ You destroyed or badly damaged RAF fighter(s), or
- ◆ Allied player sent some BEF into France, but didn't manage to evacuate it.

Any of these is a good signal for Sea Lion's success.

#### Arguments Against 1940 Sea Lion

- ◆ You don't have many naval units, and even if you have ordered naval builds they take many turns to appear.
- ◆ You don't have a second fallschirmjäger available.
- ◆ You don't have SS units. (Both SS and fallschirmjäger units are great -- the fallschirmjäger for surprise, and the SS for power while counting as normal units against transport and invasion caps.)

- ◆ You may not have achieved a higher level of industry tech that would enhance your transport capacity.
- ◆ Another drawback of 1940 Sea Lion is that the Allied player will probably expect it, and will have made preparations against it.

### 1941 Sea Lion

If you go for 1941 -- you will have more air, naval units, SS and para units noted above, and the surprise effect. All British income will be gone to pay for heavy fighting in Egypt most likely, so they will be fewer in numbers and short in PPs.

WARNING: If the Allied player has not reinforced Egypt, and if your reconnaissance shows that they have prepared an intensive defense against 1941 Sea Lion, do NOT launch it !!

Instead:

- ◆ Attack some minor countries in Europe, or
- ◆ If you have done well in North Africa and are advancing into the Middle East, launch a Barbarossa (just make sure that Russian troops cannot reach the Middle East oil fields before you do), or
- ◆ Hurt the British by indirect approaches (convoy raiding, strategic bombing, invasion feints, etc.).

### 12.21.4 North Africa Supply Problem

The first challenge is getting more supply, since the default 15 supply points are not enough for a good campaign in North Africa.

British Forces will have:

- ◆ 5 INF corps + MECH + ARM + 1-2 fighters
- ◆ Whatever reinforcements they send
- ◆ Good defensive positions - the "bottleneck" mentioned later

If the Allied player realizes what you are doing and maintains a defensive posture, the Axis player will have difficulty attacking successfully with just 15 supply points in North Africa. Exceeding your allowed supply points produces harsh penalties and will lead to an Axis defeat.

So let's look into supply sources. The goal is to increase your supply allowance so that it can support enough Axis forces to permit a decisive conquest of North Africa and the Middle East with the DAK ([Deutsches Afrikakorps](#)).

### Going for Spain After France

This is not the best option. Spain has a reasonable army, rugged terrain and a high partisan spawn rate. It takes time to conquer, and even after Spain surrenders you will need to capture Gibraltar to get your North African supply improvement. If the Allied player replaces the Gibraltar garrison unit with something more resilient, you may find yourself besieging the fortress forever. So if you choose to go for Spain, deploy subs to screen near Gibraltar, to stop British reinforcements.

Capturing Gibraltar does have strategic importance -- it is the gateway to the Mediterranean, after all, but



is closing the Med so important? The oil and PP increase from the Middle East is still a better strategic win.

**Bottom line** -- invading Spain takes too long, costs too much, and your goals can be stymied by a determined British defense of Gibraltar.

### Vichy France

Vichy has several poorly protected ports in Algeria, which will provide you with supplies for the North African campaign. As a free bonus you will get a couple of good cities in France.

Disadvantages: it takes time; the Allies will gain two more battleships (at a low step level, but it takes 15 turns to produce these units from scratch); and sailing invasion troops to Algeria is not safe if the Royal Navy is roaming the area.

Note: If you conquer both Algeria and Spain/Gibraltar, you will be able to establish rail supply in Libya. But what good will this do if it occurs so late?

**Bottom line** -- again, it takes too long; costs too much; and a determined RN can sink your plans.

### Malta

This is the best option. The goal is to disable Malta's capability. You do not to invade and conquer it -- just hurt it!

All you need is a couple of fighters, a strategic bomber, and maybe a tactical bomber and a commander. Additionally, it is useful to keep the Italian Navy in bases near Malta to engage the RN if it attempts to support Malta. Additional tactical bombers also can suppress roving RN support.

Base all these forces on Sicily, and start attacking the British air unit deployed on Malta airfield with FTR's and bombing the Malta port using SAC. They will degrade fast, thus raising your supply allowance for North Africa and Middle East operations.

As a bonus, the Allied player's repair of the British fighter on Malta will help to drain the British economy. Once you destroy

Malta port to 0 repair value, it will become a death trap for naval unit, if any are placed there.

**Bottom line** -- this is the best option, with minimal risk, known enemy forces, limited British response capability, and increased supply allowance for you.

### Destroying the RN in the MED

Another way to get +10 supply is to reduce the size of the RN in the Mediterranean. The easiest way is to sink the British carrier, if you spot it unescorted. The general rule of thumb for the Axis is that if you want to engage the RN with Italian capital ships, you should do so within range of German tactical bombers. The RN usually will try to avoid this kind of engagement!

If the battle goes against the Axis, the Italian fleet will be reduced instead of the Allied one. Another risk is that more British or American naval units can be sent to the Mediterranean, decreasing your supply

allowance by -10 and forcing you to pay a huge penalty for several turns.

Some players think that Greece is valuable for the African campaign (because of Crete's potential as an air base), but I don't agree. Air units in Crete can reach Libya, but aren't we going to Egypt and beyond?

**Bottom line** -- this is not a good move. For the Axis to succeed, the British have to use the RN unwisely. So you might lose the naval battle, and the Allied navies can reinforce the Mediterranean in any case.

### 12.21.5 Combat Operations

Finally, we solved the logistics problem to support decisive forces and can send the DAK.

#### Balanced DAK Operations

- ◆ 2 German fighters (FTR)
- ◆ 2 German tactical bombers (TAC)
- ◆ Armour (ARM)
- ◆ Mechanized infantry (MECH)
- ◆ Corps infantry (INF)

They require a total of 19 supply points (+1 for the Italian mechanized infantry already in Africa). If you want more forces, and have supply (PPs), it's always good to have more air units. You may want to replace the suggested infantry unit with a mech, or even a second panzer unit. The force balance is up to you. Remember, it is a balance between support here, Sea Lion operations, and other needs. The goal is to bleed the British of units and of PPs!

#### Additional Unit Considerations

- ◆ Sending lots of INF corps is not recommended. There is little area to maneuver in so front line units need to be powerful.
- ◆ Paratroopers also are good, since they are more powerful units with no supply cost. A German paratroop, [Fallschirmjäger](#), can paradrop if it is based next to an air unit. There are few, if any, well positioned cities in which to base the German paratrooper.
- ◆ Remember that Italian paratroopers cannot reach high enough effectiveness to make a paradrop before they have two levels of Organization tech. That takes a long time.
- ◆ Last but not least, the DAK should have a strong German commander with 7-8 leadership. Try Rommel or Kesserling. Ideally place the commander on an armor or mechanized unit.

#### DAK Transport to North Africa

There are several options for transporting the German forces to Libya.

- ◆ A relatively safe option is to send them one by one from Reggio port to Bengazi port. This is a slow process but there is less risk of suffering damage from the RN.
- ◆ The fast and dangerous way is to send troop convoys all at once, covered by the Regia Marina and by as much airpower as you can. If the RN tries to interfere you can beat them, but you can't guarantee that the troop transports will escape unscathed.

### Libya Operations

Ideally allies will have started to attack Tobruk and be defeated there. That is quite easy with the recommended force balance. Then you are free to advance towards Cairo and the Middle East. Unfortunately, the allies will wisely retreat to "bottleneck" position and form solid defense.

This bottleneck, shown on the right, is hard to break through. The brown North-South ridge acts as a river, with a penalty for the attacker.

TIP -- If the enemy's unit can't retreat back, always leave a room for it to retreat forward, closer to your troops! After the forward retreat - hit it again with more air and land units and poof - it is gone!! Tricks of the trade!

This way you will kill 1 British unit per turn, and soon the Brits will not have enough units. If you feel tough or lucky you may try to occupy the vacated hex, empty after destruction of British unit, but its not safe the safest move.

Please note below: on the left - the wrong way to attack; second picture - the correct way to attack that allows a "forward retreat". Use TAC air units to hit the middle allied corps INF unit first. Then attack with the German panzer (ARM) to the north-east hex - again at the middle allied corps INF unit with no river penalty. This will likely force allied unit to retreat and it can only go forward. Then be destroyed by the waiting Axis INF and/or air units!





A second defensive lines use the Nile and Suez, but they are easier to breach. There is more maneuver room for your troops and British have likely been somewhat depleted by The Battle of the Bottleneck!

If you dealt a significant blow to the RN in the MED, you may want to land troops near Jerusalem to flank allies defending Nile area. Generally, this should not be needed once you breakthrough the bottleneck.

After taking Egypt the situation you will face as Axis commander is hard to predict. Advancing into Iraq is hard to recommend specific strategies. You may be facing Brits, Americans, Russians or all of them. It depends on how fast you advance and take Egypt. Patrolling transportation loop near western African coast with naval power to interdict allied efforts to reinforce the Middle east. Possible Soviet forces cannot be directed interdicted, but have reduced supply when operating in the Middle East. Thus, the faster you advance and later the DoW on the Russia the better. Air support will help you to fight through any allied resistance and take Basra and oilfields.

#### 12.21.6 Additional Notes

- ◆ Conquering Turkey can also give you rail supply into North Africa, but Turkey will be hard to overrun. They have a reasonable army, have rail capacity when linked to British or Soviet territory, and Turkey's air force and navy can cause you problems also.
- ◆ The Atlantic-Red Sea transportation loop can be used by both sides, no matter who controls Suez and Basra. The Allies may attempt to land here and outflank your forces by fighting somewhere

in Persia.

- ◆ Italian infantry have no supply cost -- have as many as you need in North Africa and the Middle East, to prevent Allied landings from the Red Sea, in Libya, or elsewhere.
- ◆ If you do not plan to increase the Italian air units' technical level, do not take them with your army into North Africa and the Middle East. They have poor combat value, but consume valuable supply points (less than German units, but valuable supply points nonetheless).

## 12.22 Russian War Strategy - Survive the First 2 Years

*Nazis did not expect Soviet resistance to be so strong. The deeper they moved into this country's territory, the more fierce it became. When Hitler's armies approached Moscow, every man and woman here thought it imperative to resist the enemy. And that resistance grew by the day. The enemy was sustaining heavy losses, one after another. In fact, Hitler's best troops perished here. Nazis believed the Red Army was not capable of defending Moscow, but their schemes failed.*

Marshall Zhukov

*There is at least one thing worse than fighting with allies - And that is to fight without them*

Sir Winston S. Churchill

### 12.22.1 Research

Buy as many labs as you can in infantry, Armour, air and general. Put focus on dogfight for air and industry for general. It's a big mistake to only buy infantry labs and little else. Buying general labs is particularly important because you need new industry levels to get more production and also organization levels. Air is important because with better dogfight you can challenge the Germans in the air later in the war. Armour levels are important for the future Russian offensives.

### 12.22.2 When To Buy Russian Units - Before/After DoW?

To achieve maximum effectiveness of USSR troops purchased beyond the original OOB is it better to:

- ◆ A) purchase and place them before the DOW
- ◆ B) purchase them in advance and place them the turn after the DOW
- ◆ C) purchase them the turn of the DOW and place them next turn
- ◆ D) purchase them the turn following the DOW and place them

For purposes of this question assume all new units placed next to an identical leader.

**ANSWER: D - "purchase them the turn following the DOW and place them"**



### 12.22.3 Initial defense line

Playing Russia is not easy. I think the big mistake most Russian players do is that they try to defend too far to the west. That means they lose some units every turn and will always be weaker than the Germans. This is how we play.

Many people try to defend behind the Dvina and Dnepr rivers, but the Germans will reach these rivers too quickly and breach them. Then Russia will have problems. Form the initial defense line just west of the following cities will be ideal, Leningrad, Novgorod, Kalinin, Moscow, Tula, Voronezh and Rostov. Use the Don River in the south and place your units behind them.

It's possible to form a contiguous straight southeastern defense line from the Gulf of Finland to about Moscow (in the forest hexes) and then a contiguous southern defense line to the Black Sea. Make sure you build a double defense line so the front line units can't retreat. This contiguous defense line can only be attacked from 2 hexsides and will need support from several air units to be destroyed.

Use the already existing garrisons in the second line of defense. Armour and motorized units should also be placed in the second line of defense. It's better for Russia to build corps units instead of garrisons because you will be able to form a double defense line in time before the Germans can break it. Start building it from the south since it's clear terrain here.

When you see the defense line you appreciate to have many cities just east of the defense line. That means you can place reinforcements very close to the front and replace losses. Your Armour units in the second line of defense should be used to counter attack Axis spearheads who destroyed front line units so you don't have a contiguous defense line anymore. Do NOT advance with the Armour after combat. Let a corps unit move to the front and reform the contiguous straight defense line. If it's impossible to regain the contiguous straight defense line then you just retreat instead to form it or allow some bulge in the front line. The key is to always form a double defense line so the Axis can't make deep penetrations.

### 12.22.4 Air Units

The Russian air units should retreat outside the Axis fighter range so they won't be forced to intercept Axis attacks. The Russian fighters are too weak to engage in combat in 1941. That's why it's so important with many air labs and focus in dogfight.

### 12.22.5 Tactics

During the winter of 1941 you will notice that the Axis efficiency is very low (especially for the Axis minors). This means you can then counter attack front line Axis minors with your land units.

Build a few generals during the late Fall of 1941 and place them behind the front lines so all your front line units are covered. I like to build the best generals so I get the best increase. Each general has a range of 8 and will increase the efficiency of each unit by 2 times its value. So Zhukov will increase the efficiency of all units within range by 16 since he has a value of 8.

I would start building fighters when I know my defense line will hold, not before. New tac bombers should wait until you can afford to engage the Axis in the air (usually late 1942 or 1943). The new fighters should be placed in the reserve and not enter the front lines unless the Germans threaten to make a major breakthrough.

Later in the war it will be very smart have 2 strategic bombers and base them on the Crimea. These strategic bombers should bombard Ploiesti and continue to do so every turn so the oil production will remain at 0. I like to have 2 strategic bombers so they can alternate with repairs due to Axis fighters. That means they will never be destroyed and always keep the production from Ploiesti down. Remember that Ploiesti produces 5 oil \* 4 = 20 oil per turn in the vanilla game. So keeping the production down to 0 means the Axis receive 20 oil less per turn. That means he will soon be out of oil. So the Axis player will be forced to send several fighters to Romania to try to intercept. Then you just build even more strategic bombers since you have good production in 1943+. Germany can never keep up and have to accept to not get Ploiesti oil.

### 12.22.6 The Key

**The key for the Russians is to make sure the 1941 forces survive as long as possible.** Only let the garrisons remain in cities and retreat all the other units asap to the defense line I described above. The Germans won't be able to advance really fast so you will not see the Germans there before late Fall 1941. Then you can hold the line until the Winter.

In a CEaW mod we've given motorized and Armour units a movement penalty of 1 in forest and rough terrain. That works very well and means Armour and motorized units can't move quickly through the northern Russian forests. It makes life easier for Russia since the Armour will be located in the center and the south. That means the Russians can concentrate their Armour here too (behind the lines). So the north will be less active as it was in the real war.

## 12.23 Breaking the Double Defensive Line



*In the absence of orders, go find something and kill it.*

*Field Marshal Erwin Rommel*

### 12.23.1 Common Russian Defense

It is the most common and probably the most effective defensive strategy you will see in Grand Strategy. So what do you do when your advance is halted by a double row of infantry, stretching for miles in either direction? Well, you break it. There are many ways to do so, and here's one.

### 12.23.2 Units Needed

- ◆ Bombers (fighters work fine in clear terrain)
- ◆ Armour (the more upgraded the better)

- ◆ Supporting infantry

### 12.23.3 KILL ENEMY UNITS !!

We can't stress enough the importance of this simple rule. Double defensive lines are great, but they take many units to maintain. If you kill enough units, your enemy will run out and either withdraw or thin out his line. And if he does either, you've won.

### 12.23.4 Terrain is Everything

If the defender is sitting on clear terrain, breaking his line is much easier. If he is perched on rough or forested terrain or worse, mountains, then you will need plenty of air units to have a chance of breaking him. It might be best to consider focusing your energies elsewhere.

*We have severely underestimated the Russians, the extent of the country and the treachery of the climate. This is the revenge of reality.*

General Heinz Guderian, letter to his wife 1941

### 12.23.5 Resist Temptation

You will notice that the strategy outlined here only involves attacking a relatively small portion of the enemy line. That leaves many of your units inactive. You will be sorely tempted to attack with these units, but be careful. Ask yourself the following questions before attacking a unit without air support:

How many units can I attack with? Only attack a unit if you have a reasonable chance of destroying it. Attacking from three sides obviously gives you a better chance than two sides.

What are the odds? If you're getting odds like 5:4 or 7:5, it's probably better to just leave your units inactive. They will gain effectiveness and you won't have to pay repair costs. Remember winning by maneuver? You don't have to destroy every unit in the enemy line to win.

Sometimes you can get odds like 7:4 on an enemy unit, and then it may be worthwhile to attack. You figure only your first unit will take high losses, and the follow up units will have more success. Again, go for destroying the enemy unit, not simply damaging it.



Bundesarchiv, Bild 1011-219-0595-23  
Foto: o. Ang. | 1943 Juni - Juli

*Strike hard and fast and do not separate*

*General Heinz Guderian*

### 12.23.6 Select

Pick a row of front-line enemy infantry, probably about 6-10 units long. Hit every unit in this row with enough air attacks to get rid of the defender's entrenchment and reduce effectiveness. It helps to have a couple extra air units to follow up on any attacks that failed.

### 12.23.7 Attack

Attack an enemy unit with an Armour (ARM) unit last where possible. If your air support did its job, losses should be somewhere between 0:10 and 3:5. The latter represents an extremely unlucky result, but they will happen. You must now decide if the enemy unit can most likely be finished off with an infantry attack. If so, make the attack and occupy the vacated hex. If not, you may need to attack with another Armour instead.

### 12.23.8 Analyze

Look at the next unit in line. One of your units has penetrated the line right next to it, and you should have 2 hexes from which to attack the next unit. Use the same procedure on this unit, and continue along down the line in this way until you run out of tanks or into entrenched enemy units.

Sometimes a unit will be so damaged by your air force that you think you can kill it with two infantry attacks. Be careful with this. One enemy unit holding out at 1 step can ruin a large part of your planned offensive for a turn.

### 12.23.9 Goal

Your goal at the end of the turn should be to have killed at least 6-10 enemy infantry units. Your own infantry is occupying the captured hexes, and is in the greatest danger of enemy counterattack. Your valuable Armour units are safely behind this infantry line. It's ok to have one or two Armour units on the front line, but try to avoid it. Tanks fare much better as offensive units than they do defensively, so try not to give your enemy clean shots at yours,

### 12.23.10 Alternative Goal

Another option is to attack on two or more smaller fronts instead of one large one. Killing 4-5 enemy units in two places can be just as effective as killing 8-10 in one place.

Do this for a number of turns, and your enemy will be unable to maintain his line because of the great number of units he is losing each turn. He will either retreat or be torn to pieces. You have successfully broken the double defensive line.

## 12.24 Axis Submarine Warfare

*The only thing that really frightened me during the war was the U-boat peril.*

[Winston Churchill](#)

### 12.24.1 Changes from Standard CEAW

If you're new to Grand Strategy, this is one of the biggest changes from Standard CEAW. It is also one of the most important aspects of the game. Germany doesn't stand a chance if huge British and Soviet convoys continually get through. The Allies don't stand a chance if every large convoy is being sunk. Winning the submarine war in the Atlantic can dramatically shift the balance of power in your favor. This section details how to execute the strategy. Below is an interesting historical analysis!

[BBC - The Battle of the Atlantic by Dr Gary Sheffield](#)

Subs no longer move along the map on the surface. Instead they dive, appearing simply to teleport to their destination hex. This means that they can no longer be stopped by enemy naval units unless that unit is in the destination hex itself. It also means that a submarine can never be trapped in place by enemy naval units; it will simply dive underneath them and escape.

Subs can only be attacked by a maximum 2 air/CV units per turn.

### 12.24.2 General Operations

The big question for the axis player is what level of PP commitment should they give to submarines? Early in the game, submarine warfare is easy. The British have few bombers and naval units to stop you, and their ASW tech is relatively low.

The next question is how many labs to build for subs and how early they should be built. Again this is closely linked to whatever your strategy is. If your intention is not to try and go all out for Russia in 1941 and 1942, then you should build two labs for Naval tech quite early on so that you will be able to challenge the allied surface ships early on for supremacy of the seas, and thereby strangle the convoys and possibly target allied surface vessels. If your intention is to try and go all out for Russia in 1941 and 1942 on the other hand, then the purpose of your subs is nuisance value only – to hit the odd convoy or transport here or there, and to make sure that the allied player is building some DDs at least (ie keeping them honest with respect to escorting).

### 12.24.3 Investing in Research and Submarines Early

Should you decide to go with a strong emphasis on subs, then you will want to build a couple naval labs with submarine Focus early on. Submarine tech is the fastest area to develop in the game, as each lab produces 6.5 research points (with Focus) per turn, making reaching 100 points to advance a level quite speedy. With two naval labs, this means 8 turns. With three naval labs, it means 5 turns (19.5 research points per turn rounded to 20).



For the allied player who will be investing in naval tech, even with ASW Focus, each lab will only produce 5 points per turn. Hence, it is quite possible (and likely) for the allied player to steadily fall behind in the ASW-Sub tech race up until 1941 (when 3 naval labs are permitted) and even then they will only make up a 2 research point differential per turn (if the German player sticks to two Sub labs). As a result, the German player can maintain a significant tech edge up until some-time in 1942 when they reach Submarine tech level 6.

### 12.24.4 Submarine Build Strategy & Deployment

A quite lethal submarine strategy for the German player is to build an additional two to three subs (beyond the three starting ones) before US entry, as soon as your build strategy for other units allows, and deploy them between hexes 4,45 and 36,45. Hex row 45 is in clear weather all year round and allows all of the southern convoys to be detected and intercepted by three subs usually. It also allows any allied transports leaving Canada or the UK to North Africa to be detected and potentially intercepted.

When the US enters the war, the German player should re-position their subs starting from hex 32,28 vertically down to 32,45 to detect the convoys but remain outside of Strategic bomber (STR) range. Seven subs is an ideal number to blockade this line (the more the merrier!) but the number you have depends on your other build priorities. The deployment number is also challenged by the desire to deploy around four subs near the Murmansk transit point to attack the Russian convoys.

A benefit of this deployment is that the subs remain close to the French ports which allows heavy damage to be quickly repaired, as well as upgrades to be done.

The above paragraphs outline a tactic of getting your subs together to wait patiently for convoys to come to them. This approach has benefits in that it minimizes oil use and allows your subs to come to the aid of one another readily, but, can become predictable.

Another approach is to situate your subs near the likely spawning points and sink convoys as soon as they appear.

To avoid predictability, you can switch between the tactics periodically and occasionally have one sub move around a bit and undertake a patrol path.

Either way, think like an ambush predator, not an oceanic shark. You don't want all of your subs to be constantly "swimming around" looking for prey.

### 12.24.5 Russian Convoys

As noted above, once the Russians enter the war, it is very compelling make targeting of their convoys a high priority. The reason is that the Russians are in a position to deploy those resources with immediate impact to the Germans - for example, by repairing damaged units or building more infantry (or armour/ aircraft!).

Therefore, the Russians are in position to hurt you the most directly, so starving them of additional resources can greatly assist your eastern campaign and therefore the outcome of the game.

### 12.24.6 Play Waiting Game

Get a group of subs together and wait patiently for convoys to come to you. Don't go hunting around for them, as it wastes oil. You can form a screen that covers the entire Atlantic from Spain to the top of the map, and then converge on any convoys that enter your line of sight. Or you can sit at the likely spawning points and sink the convoys as soon as they appear. Either way, think like an ambush predator, not an oceanic shark. You don't want to be constantly swimming around looking for prey.

### 12.24.7 Prioritize

Once the Soviets enter the war, I always make sure to go after their convoys first. The reason is that the Soviets are in a position to do the most with those resources. They don't have to make a difficult sea landing in France like the British and Americans do. All the Russians have to do is build more units and send them to the front line. Therefore, the Russians are in position to hurt you the most. Giving them extra resources is a very bad idea.

### 12.24.8 Run with Wolfpack

Keep your subs in groups of at least 3 early in the war. Later, you want to be attacking large convoys with 6 subs at once. This benefits you in several ways.

Obviously, the convoy can't escape, and you torpedo it again next turn without having to chase it down first.

It discourages the Allies from escorting the convoys. If they know you have 6+ subs in a single area, it makes it less likely that they will risk their valuable surface ships in trying to protect them. Losing a couple ships can entirely offset the gain of saving even an enormous convoy, so running in wolfpacks can make it economically unfeasible for the Allies to send naval escorts.

It minimizes the time you have to spend under the sights of Allied bombers. This is especially important later in the war, where the Allies will probably have bombers covering every hex in the Atlantic. If the Allies invest adequately in ASW tech, you will be losing 3-5 steps per bomber attack by 1943! But bombers can only attack once per turn, and they can't attack what they can't see. So hit that convoy with everything possible for one or two turns, and then disappear beneath the waves.

### 12.24.9 Block the Path

Blocking the path of a convoy in v2.00 is much more difficult than in earlier versions of the game because of the random starting route that they now take. With at least three subs though, it is quite feasible though to set up a screen that the convoy will bump into. The advantage of setting up a screen is that it allows you to potentially bring in more subs that are just outside of range so that when the convoy bumps into one of your hidden subs, you can the following turn, hammer it with a large number of subs before it gets to move on further, possibly into an area where there is allied air cover. Monitor the situation

If you follow these tips, submarine warfare should always be profitable to you. i.e. PP (Production Points) losses for the Allies > PP spent on submarine repairs. Nevertheless, if you begin to see submarine warfare is costing you more than the Allies, you need to do something. Move your favorite hunting zone, upgrade your subs, or consider abandoning it altogether for a short period. If your opponent thinks the threat of your subs has diminished, he will probably divert some of his bombers away from anti-

submarine duty. Then, the door can reopen for the u-boats.

#### 12.24.10 Hide from Allied Bombers

The following is a post from: “metolius” on the Slitherine Forum.

Interesting note for the use of U-boats, particularly in GS. There is an air coverage dead-zone over the central Atlantic. Unless and until the Allies can put CVs in that area, this is a great place to do as much damage as possible, without risking air attack.

Caveats: coverage at range 17 for strategic bombers, which is where the Allies will be in the middle of the game, usually. Later, they will be up to 19, and that makes this zone more like a ribbon, which coincides with hex column 34, starting at hex 34,28. One hex either side of this, it is possible for the allied player to strike a sub with one strategic bomber, which isn't something to be feared, just avoided if not necessary. From the allied perspective, the range of CVs steadily increases from 3 to 5 to 7, which means a couple of CVs with DD escorts, can sit somewhere in hex column 34 and can blanket most of the area frequented by the larger convoys with their anti-submarine air.

## 12.25 Allied Anti-Submarine Operations

### 12.25.1 Allied Numbers

Conversely, the only Allied advantage in the early game is numbers. The Germans simply don't have enough subs to sink every convoy, so some will inevitably get through. But this won't last forever. Sooner or later you will need to take proactive steps to combat the u-boat menace. The following are some methods to accomplish this!

### 12.25.2 Early Research Needed

If investing in research is important for the Germans, it is doubly so for the Allies. Fortunately for you, ASW tech is also relatively easy to develop, and the payoffs are enormous. Late-war DDs get up to 12 submarine attack or higher, and the best the Germans can do is 6 naval attack. The sooner you tap into this huge advantage the better, so buy labs early and watch your scientists work their magic.

### 12.25.3 Convoy Escort Warning

DDs are by far the best naval units to place in this role. They have the best submarine attack ratings, and are cheaper to replace and repair than CVs or BBs. If you use BBs or CVs as escorts, make sure to screen them with an adequate number of DDs. It should be noted, however, that early in the war, the German subs can obtain enough of a tech advantage to deliberately target escorting DDs so a careful decision should be made as to whether to escort convoys or not. Remember that a DD is worth 60 PPs and takes 6 turns to build, so losing one denies you the ability to conduct other operations with it.

It's also an interesting fact that depending upon the tech difference, it is possible for three (and sometimes even 2 subs if lucky) to sink a DD. The same three subs would normally only score around 25-35 build points of damage on a convoy in one round (albeit without loss if there are no escorts adjacent). Hence, sometimes it makes great sense for the German subs to target escorting DDs in preference to the convoys themselves!

*Sighted submarine, sank same.*

*Enlisted pilot Donald F. Mason: radio dispatch, Jan. 28, 1942*

*Mason believed that he had sunk a German U-boat.*

### 12.25.4 Bombers, Bombers, Bombers!

Strategic bombers are unequivocally the best submarine hunters!!

The effect can be enormous, and even with downgraded submarine attack values in v2.00, they can do significant damage to German subs. There are many ideal anti-submarine bases placed around the Atlantic, for example Greenland, the British Isles, and Azores. The best thing about strategic bombers is

that they attack subs with impunity; u-boats have no defense against

Allied aircraft. If you make submarine warfare costly enough for the Germans, you drive your opponent away from patrolling certain areas. If convoys stop getting torpedoed, then you've won.

Due to the aircraft range there is a "dead-zone" in a North-South strip in the Atlantic. STRs are not, however, the total answer to dealing with the submarine threat.

### 12.25.5 Destroyer Sweeps

One tactic that can be used to good effect late in the war, once the tech difference between DDs and subs has been reduced or eliminated is to use, say, half a dozen DDs to sweep 6 side-by-side hex rows – in effect hunting for hiding subs. This is particularly useful to clear a passage for large convoys. The tactic is most effective when the DDs are at maximum tech, and backed up by strategic bomber cover and/or carriers.

If not conducted under the right circumstances, however, it can lead to heavy losses if aggressive German players use reserve full strength subs to target and sink the damaged DDs, so be warned!

## 12.26 Allied Naval Strategy

A strategy submitted by one of the more experienced players on the Grand Strategy Forum.

### 12.26.1 Introduction

Grand Strategy (GS) v2.10 is a corps level strategic game that focuses on the war in Europe and North Africa. As it was historically, control of the oceans and seas represented in GSv2.10 is necessary for the allies if they are to win. Note, that in the strictest mathematical sense I used the term “necessary” (for the allies to win) and not the term “sufficient”. In mathematical jargon “necessary” means that to even have a chance of achieving a given result (e.g., allied victory) that the stated condition must be satisfied (e.g., allies controlling the oceans and seas). “Sufficient” would mean that if a certain condition is met then the given result is achieved; which is NOT true in this case. That is; the allies have to do more than just controlling the oceans and seas to win; but if they fail to do that then they will lose.

One of the most significant improvements from GSv2.10 is that naval warfare plays, in my opinion, very accurately and historically at the strategic level. Now, I know there are some that will, and do, quibble with this statement; but in my opinion, the historical accuracy of the naval model is not only improved over the previous versions; but at the strategic level is darn near perfect. Note that I’m referring to the historical accuracy at the strategic and not tactical level. By that I mean that if you make sound decisions regarding force composition (i.e., build strategy), employment strategies and objectives then you will likely control the oceans and seas as the allies. The decision I listed are consistent with a strategic game such as GS and are the type of decisions that would be made by the Joint Chiefs of Staff (JCS), Commander in Chief of the fleet (CIC) or Overall Supreme Commander. I do believe that historically sound strategic decisions at this level by the allied player will determine victory at sea in GS.

The two biggest changes in GSv2.10 that lead to this increased historical realism are made to submarine warfare. This first, is that subs are now much more lethal to unescorted convoys (i.e., convoys which are not adjacent to warship escorts) and the second (and most important), is that subs are now much less lethal to and less survivable against destroyers (i.e., DD units). No longer in the early game does the Royal Navy (RN) run to and hide in port in fear of German u-boats. No longer do German u-boats actively seek out and target allied destroyer units (DDs); but now they avoid them or risk significant damage. Now, even in 1939, the RN can send out their destroyers with confidence to escort convoys and transports, as they did historically. This change doesn’t mean that German u-boats are inept against allied warships. They aren’t; because they still are a mortal threat to battleship (BB), aircraft carriers (CV) units and the lone or wounded destroyer (DD) units. But now the axis player must employ their u-boats with more thought and caution. Submarines in GSv2.10 are best used to sink unescorted or lightly escorted convoys, BBs or CVs. And, as it was historically, if operating under a strong axis air umbrella (e.g., Norway or Sicily), axis submarines in combination with bombers can wreak havoc on allied warships (including DD’s) and escorted transports. In the remainder of this article I will give examples from games that I’m playing or have played that illustrate my claim of, “darn near perfect historical accuracy at the strategic level”.

### 12.26.2 Winning the War at Sea

Winning the war at sea as the allied player takes commitment and effort and should be the first priority of the allied player. On the flip side, it is rare that the axis player can win the war at sea against a determined allied player; however, that doesn’t mean that the axis player should automatically cede control of the seas to the allies. The goal for the axis player should be to make the allied player fight for it by building enough u-boats to force the allied player to put significant resources and effort to gain and

maintain control of the seas. In general, 6 to 9 u-boat flotillas back with 2 naval labs focused on submarines will do the job in the Atlantic. As the axis player you want to create uncertainty in the allied player's mind about the size of and whereabouts of the German u-boat threat in order to force him to escorts everything important that moves across the Atlantic.

There's a saying that goes as, "he, who tries to defend everything, defends nothing." What this means to me in this case is that it's better to escort the higher priority items in force than to try to escort everything too weakly. My escort priorities, in order, are: (1) troop transports, (2) Murmansk convoy, (3) the central convoy to the UK and (4) the southern convoy to the US. The full protection of convoy routes (i.e., priorities 2-4) requires two escort groups (3 to 4 DDs each) per route. The first group will escort a convoy from its origination to half-way and then hand it over to the second group who will then escort it to its destination. In my opinion using only one escort group per route would leave too much of the route unguarded for too long and; thus a number of it convoys vulnerable to attack. However; one escort group is better than none.

There are times when higher priority needs will demand diversion of naval resources away from their normal escort duties. Such needs include invasion support, meeting the surface threat from a moving Kriegsmarine or Regia Marina. These needs, in my opinion, take priority over normal escort duties except escorting troop transports. With respect to responding to the Kriegsmarine, I would gladly trade ship for ship to eliminate that threat. With respect to the Regia Marina, which we'll cover in the next section, I would not make be willing (in general) to make that trade. The Regia Marina is a paper tiger and can be defeated most of the time without the loss of a single allied naval unit.

The following screen caps and summaries are taken from a game that I'm currently playing. In that game I have control of the Atlantic, with the exception of the south Atlantic, and the Mediterranean. The Murmansk convoy and the central convoys are getting through regularly and I can transport combat units at will. However; I have not had the resources to defend the southern convoy to the US which has consistently been attack and destroyed by German u-boats. As you will see, I have 5 DD's in the US build queue that will soon address that problem.

In the Med, I have had complete dominance of the Italian navy for some time and move naval units and transports at will. My navy, on its part, successfully supported a landing against Italy in Sicily in '42; but the landing failed not because of my navy but because of miscalculations on my part of my opponent's strength and determination. Not to go into the nitty and gritty details; but I tried to accomplish the invasion with too few air units. In fact, I had started moving air units to England for a planned '43 invasion there. Air units which if I had had in the Med, probably could have turned the tide of my now failed invasion. Another error I made was invading without first upgrading my ground units. I should have been more patient and waited 2 or 3 turns to upgrade; but instead I rushed the invasion because I thought I saw an opportunity to quickly finish off Italy. I was wrong and paid a heavy price for that. However; my navy in support performed exceptionally through all this; though the botched operation did cost me a US CV and BB. In the east, my opponent controls Moscow, Leningrad and Stalingrad and my "rushed" invasion, in addition to hoping to take Italy out early, was designed to take pressure off =the Russians. In turns out that my opponent was stopping in the east to prepare for winter '42 and this freed up a number of fighters and bombers which he moved from Russia to southern Italy. He used these air unit quite mercilessly to bomb my fleet and support counterattacks against my ground units that landed on Sicily. This botched operation cost me 2 UK infantry, 2 UK mech, 1 US armor, 1 US mech and 1 Free French armor corps. This was 7 corps in total that I lost. To my credit I had only lost 4 corps when I decided to abort the operation and regroup. There were still 3 near full strength corps on Sicily; but with no way to pull them I had to leave them to their destruction. My overall assessment is that I will lose this game. The only thing in doubt is the level of victory my opponent will achieve. The fact that his level of victory is still in doubt is owed to the fact that I do control the Atlantic Ocean and the Med Sea. The resources that I've devoted to winning the war at sea had nothing to do with my failed invasion of Sicily.



The following screen caps and summaries are intended to convey the amount of effort that I believe is require to win the war at sea in most games. Of course, all this is only one sample; but I do feel this sample is representative of the effort required.

### 12.26.3 Graphics

#### 12.26.3.1 GS Forces Screen – March 24, 1943 (Turn 66)













#### 12.26.3.2 Enemy Naval Units (Estimates)

Turn		German Naval – Count Samples				Italian Naval – Count Samples			
#	Date	BB	CV	DD	Sub	BB	CV	DD	Sub
62	1/3/42	1	0	1	4	1	0	0	2
63	1/23/42	2	0	1	3	0	0	0	0
64	2/12/42	2	0	0	7	0	0	0	2
65	3/4/42	0	0	0	3	0	0	0	0
66	3/24/42	0	0	2	7	1	0	1	0
<i>Estimates</i>		<i>0</i>	<i>0</i>	<i>1</i>	<i>5</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>2</i>

## 12.26.3.3 Friendly Naval Units (Exact Count)

Country	<u>Naval Counts (exact)</u>			
	BB	CV	DD	Sub
<b>UK</b>	6	2	13	3
<b>USA</b>	2	1	10 (*5)	1
<b>USSR</b>	0	0	0	1
<b>UK+USA</b>	<b>8</b>	<b>3</b>	<b>23 (*5)</b>	<b>4</b>
* 5 of 10 USA DDs under construction in build queue				

## 12.26.3.4 Step and Unit Losses -- March 24, 1943 (Turn 66)

Casualties				
				
	151(2)	82(1)	174(0)	35(1)
	153(7)	4(0)	10(0)	37(3)
	50(3)	27(2)	109(0)	54(1)
	153(12)	20(2)	10(0)	0(0)
	18(0)	32(3)	34(0)	17(2)
	1478(131)	142(12)	44(0)	26(2)

## 12.26.3.5 Naval Unit Losses

Country	Naval Unit Losses			
	BB	CV	DD	Sub
<b>Germany</b>	0	0	0	1
<b>Italy</b>	3	0	0	0
<b>UK</b>	0	0	1	0
<b>USA</b>	1	1	0	0
<b>USSR</b>	2	0	0	0

### 12.26.3.6 Murmansk Escort Group #1



### 12.26.3.7 Murmansk Escort Group #2



#### 12.26.3.8 Central Convoy Escort









#### 12.26.3.12 Med Fleet



#### 12.26.3.13 Escort Sweeps in Place

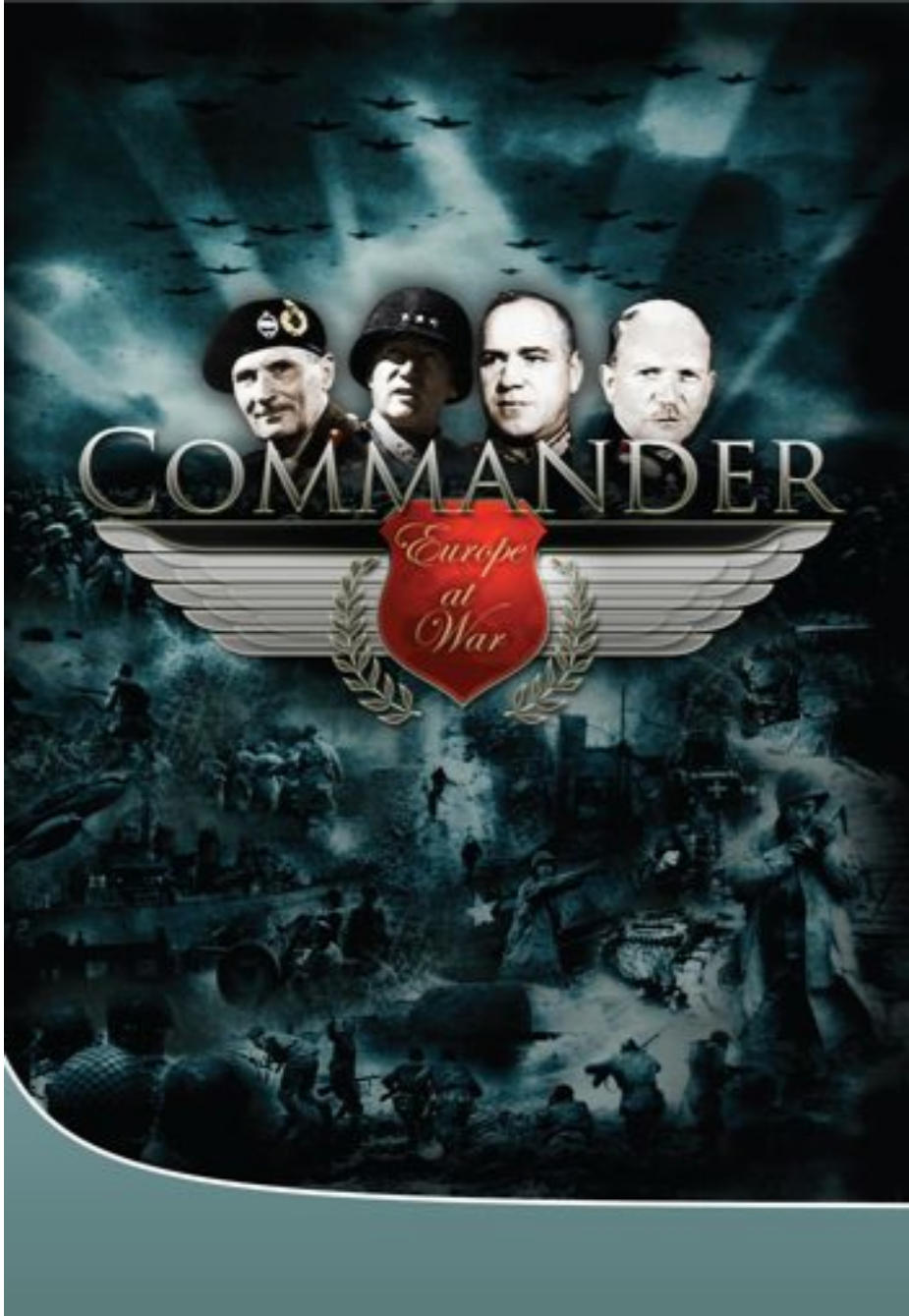


#### 12.26.3.14 Keeping the Kriegsmarine Bottled Up



### Chapter 13 Original CEaW Manual





### 13.1 Note

Permission was obtained from Iain McNeil of Slitherine via email in late March 2012 to incorporate text and graphics from the original CEaW Manual.

## 13.2 Original Manual TOC

<u>13.3 - Commander: Europe at War</u>	<u>476</u>
<u>13.3.1 - Minimum System Requirements</u>	<u>476</u>
<u>13.3.2 - Installation Procedures</u>	<u>476</u>
<u>13.3.3 - Uninstalling The Game</u>	<u>476</u>
<u>13.3.4 - Product Updates</u>	<u>476</u>
<u>13.3.5 - Game Forums</u>	<u>477</u>
<u>13.3.6 - Technical Support</u>	<u>477</u>
<u>13.4 - Introduction</u>	<u>477</u>
<u>13.5 - Conventions</u>	<u>477</u>
<u>13.5.1 - Keyboard and Mouse Controls</u>	<u>477</u>
<u>13.6 - The Main Menu</u>	<u>477</u>
<u>13.7 - Game Setup</u>	<u>478</u>
<u>13.7.1 - Basic Options</u>	<u>478</u>
<u>13.7.2 - Advanced Options</u>	<u>479</u>
<u>13.7.3 - Multiplayer Options</u>	<u>479</u>
<u>13.8 - Loading and Saving Games</u>	<u>480</u>
<u>13.9 - The War Map</u>	<u>480</u>
<u>13.9.1 - Sides, Factions and Countries</u>	<u>480</u>
<u>13.9.2 - Ownership and Nationality of Hexes</u>	<u>481</u>
<u>13.9.3 - Terrain</u>	<u>481</u>
<u>13.10 - Control Panel</u>	<u>482</u>
<u>13.10.1 - Production Overview</u>	<u>482</u>
<u>13.10.2 - Mini-Map</u>	<u>483</u>
<u>13.10.3 - Control Panel Buttons</u>	<u>484</u>

<a href="#"><u>13.10.4 - Dynamic Unit Panel</u></a>	<a href="#"><u>484</u></a>
<a href="#"><u>13.11 - Resources</u></a>	<a href="#"><u>485</u></a>
<a href="#"><u>13.11.1 - Production Points</u></a>	<a href="#"><u>485</u></a>
<a href="#"><u>13.11.2 - Manpower</u></a>	<a href="#"><u>486</u></a>
<a href="#"><u>13.11.3 - Oil</u></a>	<a href="#"><u>486</u></a>
<a href="#"><u>13.11.4 - War Effort</u></a>	<a href="#"><u>486</u></a>
<a href="#"><u>13.11.5 - Country Deficits</u></a>	<a href="#"><u>487</u></a>
<a href="#"><u>13.11.6 - Cities, Fortresses, and Resources</u></a>	<a href="#"><u>487</u></a>
<a href="#"><u>13.11.7 - Convoys</u></a>	<a href="#"><u>487</u></a>
<a href="#"><u>13.12 - Politics and War</u></a>	<a href="#"><u>488</u></a>
<a href="#"><u>13.12.1 - The Political Map</u></a>	<a href="#"><u>488</u></a>
<a href="#"><u>13.12.2 - Conquering and surrender</u></a>	<a href="#"><u>488</u></a>
<a href="#"><u>13.12.3 - Vichy France</u></a>	<a href="#"><u>489</u></a>
<a href="#"><u>13.12.4 - Victory Conditions</u></a>	<a href="#"><u>489</u></a>
<a href="#"><u>13.13 - Units</u></a>	<a href="#"><u>489</u></a>
<a href="#"><u>13.13.1 - Unit Types</u></a>	<a href="#"><u>490</u></a>
<a href="#"><u>13.13.2 - Units List</u></a>	<a href="#"><u>490</u></a>
<a href="#"><u>13.13.3 - Unit Attributes</u></a>	<a href="#"><u>491</u></a>
<a href="#"><u>13.13.4 - Commanders</u></a>	<a href="#"><u>492</u></a>
<a href="#"><u>13.14 - Unit Actions</u></a>	<a href="#"><u>492</u></a>
<a href="#"><u>13.14.1 - Movement</u></a>	<a href="#"><u>492</u></a>
<a href="#"><u>13.14.2 - Zone of Control</u></a>	<a href="#"><u>492</u></a>
<a href="#"><u>13.14.3 - Movement Costs</u></a>	<a href="#"><u>493</u></a>
<a href="#"><u>13.14.4 - Attacking</u></a>	<a href="#"><u>493</u></a>
<a href="#"><u>13.14.4.1 - Automatic Attacks</u></a>	<a href="#"><u>493</u></a>

<u>13.14.4.2 - Strategic Attacks</u>	<u>493</u>
<u>13.14.4.3 - Automatic Attacks</u>	<u>494</u>
<u>13.14.4.4 - Strategic Attacks</u>	<u>494</u>
<u>13.14.5 - Reinforcing Units</u>	<u>494</u>
<u>13.14.6 - Upgrading Units</u>	<u>495</u>
<u>13.14.7 - Railroad Moves</u>	<u>495</u>
<u>13.14.8 - Transportation Loops</u>	<u>496</u>
<u>13.14.9 - Naval Transport</u>	<u>496</u>
<u>13.15 - Combat</u>	<u>496</u>
<u>13.15.1 - Shock Phase</u>	<u>496</u>
<u>13.15.2 - Fire Phase</u>	<u>497</u>
<u>13.15.3 - Air to Air Combat</u>	<u>497</u>
<u>13.15.4 - Naval Combat</u>	<u>497</u>
<u>13.15.5 - Effectiveness</u>	<u>497</u>
<u>13.15.6 - Defense Bonuses</u>	<u>497</u>
<u>13.15.7 - Experience</u>	<u>498</u>
<u>13.15.8 - Combat Odds</u>	<u>498</u>
<u>13.15.9 - Retreats</u>	<u>498</u>
<u>13.15.10 - Exploitation Movement</u>	<u>499</u>
<u>13.15.11 - Air Defense</u>	<u>499</u>
<u>13.15.12 - Submarine Surprise Attacks</u>	<u>499</u>
<u>13.16 - Supply</u>	<u>499</u>
<u>13.16.1 - Supply Sources</u>	<u>499</u>
<u>13.16.2 - Supply Effects</u>	<u>500</u>
<u>13.16.3 - Supply Exceptions</u>	<u>500</u>

<a href="#"><u>13.17 - Visibility and Fog of War</u></a>	<a href="#"><u>500</u></a>
<a href="#"><u>13.18 - Purchasing Units</u></a>	<a href="#"><u>501</u></a>
<a href="#"><u>13.18.1 - Unit Statistics</u></a>	<a href="#"><u>501</u></a>
<a href="#"><u>13.18.2 - Production Queue and Force Pool</u></a>	<a href="#"><u>501</u></a>
<a href="#"><u>13.19 - Research</u></a>	<a href="#"><u>502</u></a>
<a href="#"><u>13.19.1 - Research labs</u></a>	<a href="#"><u>503</u></a>
<a href="#"><u>13.19.2 - Technologies</u></a>	<a href="#"><u>503</u></a>
<a href="#"><u>13.19.2.1 - Infantry</u></a>	<a href="#"><u>503</u></a>
<a href="#"><u>13.19.2.2 - Armour</u></a>	<a href="#"><u>503</u></a>
<a href="#"><u>13.19.2.3 - Air</u></a>	<a href="#"><u>503</u></a>
<a href="#"><u>13.19.2.4 - Naval</u></a>	<a href="#"><u>504</u></a>
<a href="#"><u>13.19.2.5 - General</u></a>	<a href="#"><u>504</u></a>
<a href="#"><u>13.19.3 - Technology Progress</u></a>	<a href="#"><u>504</u></a>
<a href="#"><u>13.19.4 - Technology Levels and Upgrading</u></a>	<a href="#"><u>505</u></a>
<a href="#"><u>13.19.5 - Research Focus</u></a>	<a href="#"><u>505</u></a>
<a href="#"><u>13.19.6 - Research Progress</u></a>	<a href="#"><u>506</u></a>
<a href="#"><u>13.20 - Turn Summary</u></a>	<a href="#"><u>506</u></a>
<a href="#"><u>13.21 - Special Events</u></a>	<a href="#"><u>506</u></a>
<a href="#"><u>13.21.1 - USSR Winter Event</u></a>	<a href="#"><u>506</u></a>
<a href="#"><u>13.21.2 - Partisans</u></a>	<a href="#"><u>507</u></a>
<a href="#"><u>13.22 - Statistics</u></a>	<a href="#"><u>507</u></a>
<a href="#"><u>13.23 - In-game Options</u></a>	<a href="#"><u>507</u></a>
<a href="#"><u>13.24 - Modding Scripts</u></a>	<a href="#"><u>508</u></a>

## 13.3 Commander: Europe at War

### 13.3.1 Minimum System Requirements

To play Commander: Europe at War, your computer system must meet these requirements:

- ◆ Windows® 98/ME/2000/XP
- ◆ Intel Pentium 4, 1.4 GHz or fully compatible 512 MB RAM
- ◆ 300 MB of free space on hard drive
- ◆ 32mb Graphic card with the latest drivers
- ◆ For maximum performance, your computer system must meet these requirements:
- ◆ Intel Pentium 4, 2 GHz or fully compatible 1 GB RAM

For multiplayer games, your computer system must meet these requirements:

- ◆ Internet (TCP/IP) or LAN (TCP/IP) play supported
- ◆ Internet play requires broadband connection and latest drivers LAN play requires network interface card with latest drivers.

### 13.3.2 Installation Procedures

Download and then run the Commander Installer. Double-click the Commander: Europe at War icon to play the game. Select your graphics options and then you will be taken to the main menu.

Please Note: Commanders Europe at War was developed in Java and as part of the installation it will install the Java Run Time environment to your machine, which it requires to run.

### 13.3.3 Uninstalling The Game

Please use the Add/Remove Programs option from the Windows Control Panel to uninstall the game.

### 13.3.4 Product Updates

If you wish to be kept up to date with the release of patches and upgrades please register on the Slitherine forum at

<http://www.slitherine.com>

### 13.3.5 Game Forums

Our forums are one of the best things about Slitherine Games. Every game has its own forum with our designers, developers and the gamers playing the game. If you are experiencing a problem, have a question or just an idea on how to make the game better, post a message there. Go to <http://www.slitherine.com> and click on the Forums hyperlink.

### 13.3.6 Technical Support

Should you have a technical problem with the game, the best way to get help is to post a note in the Commander : Europe at War forum at <http://www.slitherine.com>. You'll then hear back from our personnel, or from one of the many helpful players of the game.

## 13.4 Introduction

Commander: Europe at War is a grand scale turn based wargame set during World War II. It puts you, the player, in command of either Axis or Allied forces of the European Theatre for the duration of the war. As well as controlling the armed forces of these mighty alliances, you'll be making decisions on recruitment, research, and diplomacy.

The game has been carefully designed to be easy to play yet hard to master. The challenging AI opponent will give even the most experienced players a good game. The user interface is laid out in a clear and easy-to-use manner, meaning you'll be spending your time fighting the enemy and not the game's interface. All in all, Commander: Europe at War is the game strategy gamers have been waiting for and will not disappoint!

## 13.5 Conventions

Throughout the manual we use a number of terms and we list their meaning here for those who may be unfamiliar with the jargon.

### 13.5.1 Keyboard and Mouse Controls

- ◆ **<Enter>** - Chat / Send Chat Message
- ◆ **<Page Up>** - Scroll through ready units
- ◆ **<Page Down>** - Scroll through ready units +/- Keys – Zoom In/Out
- ◆ **Mouse Wheel** – Zoom In/Out
- ◆ **Arrow Keys** - Scrolls the map

## 13.6 The Main Menu



From the Main Menu, you have a number of options:

- ◆ New Game: Takes you to the game setup screen for a new single player game.
- ◆ Load Game: Loads a saved single player game.
- ◆ New Multiplayer Game: Takes you to the game set up screen for a new Hotseat, PBEM or TCP/IP multiplayer game.
- ◆ Load Multiplayer Game: Loads a Hotseat, PBEM (Play By E-Mail) or TCP/IP multiplayer game.
- ◆ Tutorial: Starts a single player game, by passing game setup to get you straight in to the action. Throughout the tutorial you'll be prompted with useful information on how to play the game. We recommend all new players start with the Tutorial.
- ◆ Credits: The credits list.
- ◆ Exit: For when you finally decide its time to go to bed!



### 13.7 Game Setup

Before you can start your new game, you must select settings for it. The same options are available in Single Player and Multiplayer games. There are a number of Basic and Advanced options, as follows:



#### 13.7.1 Basic Options

**Side.** You can play as either the Axis or Allies. To select one or the other, click on the large button associated with that side. In a Single Player game, the AI will control the other side, while in Multiplayer, it will be controlled by your opponent.

**Scenario.** The large number between the Axis and Allies buttons is the Starting Date of your campaign. Click on this button to change the Start Date. Each Start Date is associated with a different scenario, so the

1941 scenario is called Operation Barbarossa, while the 1944 scenario is called D-Day.

**Handicap/Difficulty Levels.** The round grey and green buttons are used to set the Handicap Level. You can give a side a small, medium, or large advantage, or keep it even for both. This will affect the resources available, the income collected, and a number of other factors that all add up to making it easier for that side. This can be used to play Multiplayer games between novice and experienced players, or for experienced players to get a more challenging game against an AI opponent.

### 13.7.2 Advanced Options

By default, the Advanced Options are hidden, but you can display them by clicking the 'Show Options' button. Advanced Options are as follows:

**Fog of War.** This toggles the Fog of War feature on and off. With Fog of War off, you will be able to see all enemy units and the enemy's production at any time, with the exception of enemy submarines (these are always hidden until they attack). With Fog of War on, the map will be shrouded in a black fog that hides anything your troops are not aware of. This makes for a much tougher game!

**1945 End.** This option toggles the compulsory end date of 1945 on and off. With this option off, you can continue to play as long as you like.

**Random Research.** This option toggles on the randomized research. With this option on there is a much higher random factor to research meaning the game will be less predictable and players have to adapt their strategies as events unfold.

**Oil Consumption.** This toggles the Oil Consumption feature on and off. With Oil Consumption off, you can move your units as often as you like with no penalty. With Oil Consumption on, every time you move a mechanised, air, or naval unit you will use up some of your oil supplies. You will have to carefully manage your movement, making good use of Rail Redeployment and possibly even targeting oil-rich areas like Iran or the Caucasus to feed your war machine. This adds a whole new layer of complexity to the game and affects Germany much more than any other nation.

### 13.7.3 Multiplayer Options

In addition to the above options, there is an extra option available for TCP/IP multiplayer games:

**Timers.** In TCP/IP multiplayer games you can limit the amount of time available to your opponent to do his or her turn. It works very much like a chess clock. At the top right of the screen is a timer that counts down. When this timer runs out you cannot issue any more orders and your turn ends, but don't worry you don't lose the game! Any unused time accumulates for future turns.

Once you're happy with your settings, click the check button to start your game.

When playing against someone in TCP/IP or PBEM, both players must have the same version of the game including patches.

For best results you should have the Hattenschweiler and Franklin Medium Gothic fonts installed on your PC. If you do not have these fonts, the game will find a substitute font.

## 13.8 Loading and Saving Games

When you click the Load Game button, a window will pop up with a list of saved games available for loading. If you have not saved any games, no games will be available to load.

If you are loading a multiplayer game, please note that you cannot change game mode, so if you started the game in Hotseat, you cannot later load it in single player, PBEM, or TCP/IP mode.

You can save the game at any point in your turn from the Options menu. The game will also autosave your progress every turn as a backup in case any problems arise.

## 13.9 The War Map

The War Map is 150 by 72 hexes, spanning from the USA in the west to the USSR in the east and from Scandinavia in the north to northern Africa in the south. Each hex has a terrain type such as open ground, forest, city, and more. Hexes can also contain a Resource or City.



### 13.9.1 Sides, Factions and Countries

There are two Sides in the game – Axis and Allies.

However, the Allies are split into two Factions, the USSR and the Western Allies. The Axis is comprised of only one Faction. Each Faction has a Faction Leader, and for the Axis it is Germany, for the USSR it is the USSR, and for the Western Allies it is the United Kingdom. These Factions are further subdivided into Countries.

The Western Allies at the start of the war include the following countries: United Kingdom, France, and Poland.

Every Country is either a Major or Minor. Major Countries have their own Manpower Levels, collect their own Production, and do their own Research. Minor Countries are controlled by their Faction Leader.

- ◆ Countries in the same faction will share their Oil Pool and Railroad Capacity.

- ◆ Manpower and Production Points are NOT faction-based and are counted on a per-country basis.
- ◆ Faction Leaders fund any Minor Countries that join that Faction and receive any Production generated by that Minor Country. So, at the start of the war, Poland is a Minor Country. The Western Allies Faction is led by the United Kingdom, so any repairs made to Polish troops are funded through the United Kingdom. Any Polish production is also collected by the United Kingdom.

Every country owns land and units and its allegiance can be:

- ◆ Axis – This nation is at war and under the control of the Axis Side.
- ◆ Allied – This nation is at war and under the control of the Allied Side.
- ◆ Neutral – This nation is Neutral and has no allegiance to either the Axis or Allied Sides. Both Axis and Allied Sides may declare war on Neutral Countries.
- ◆ Pro-Axis – This nation has allegiance to the Axis Side. It may join the war later in the game and become a fully Axis Country. The Axis Side may not declare war on Pro-Axis Countries.
- ◆ Pro-Allied - This nation has allegiance to the Allied side. It may join the war later in the game and become a fully Allied nation. The Allied Side may not declare war on Pro-Allied Countries.

Any hexes belonging to a Faction will be tinted to show who controls it. Axis-owned hexes will tint hexes blue, Western Allies-owned green, and USSR-owned red.

### 13.9.2 Ownership and Nationality of Hexes

Every land hex has a Nationality, which is based on the national boundaries in 1939; these are the nations 'Core' hexes. Each hex also has an owner, which is the Side that currently controls that hex. If German troops conquer Poland, the hexes in Poland will have their Nationality displayed as Polish, but the owner as Axis.

Conquered Cities and Resources do not generate as much Production as Cities and Resources on Core hexes.

### 13.9.3 Terrain

Every hex has a Terrain Type. Terrain affects Movement, can give defensive bonuses, reduces the Effectiveness of Armoured units, and determines the maximum Entrenchment Level.

Type	Move Cost	Vehicle Penalty	Attack Penalty	Armour Penalty	Max Entrenchment
Sea/Ocean	1	-	0	-	-
Clear	1	0	0	0	1
Desert	2	0	0	0	1
Dune	4	0	0	0	1
Forest	1	0	10	15	2
Rough	2	0	15	25	2
Swamp	2	1	20	45	0
Mountain	2	2	50	50	3
River	+1	0	30	0	-
City	-	0	20	35	5/8*
Resource	-	0	10	0	2
Fortress	-	0	50	40	4
Entrenchment	-	-	15	0	-
Port	-	-	30	0	-

\* 5 for City and 8 for Capital.

The river effect is applied if across a River get an Attack Penalty.

Cities and Resources override the terrain in a hex for combat effects, so if a city is in a mountain hex, the terrain type is counted as City for combat, not Mountain, but the movement cost for mountain.

Entrenchments are created automatically by units that do not move. Each turn that a unit does not move, the Entrenchment Level of the hex it is in will increase by one up to the maximum Entrenchment Level possible for the Terrain Type it occupies. Each attack on a hex reduces the Entrenchment Level by 1, regardless of outcome.

Ports are located on sea tiles and cannot be directly owned. Instead, each Port is attached to an adjacent Resource hex or Fortress hex and is owned by the owner of that Resource or Fortress.

## 13.10 Control Panel

At the bottom of the screen, you will see the Control Panel.



### 13.10.1 Production Overview

The Production Overview, on the left side of the Control Panel, displays a list of Counties in the game

and gives useful information about them, as follows:

- ◆ Production Stored. This is the number of Production Points available to spend.
- ◆ Oil Reserves. This is the number of Oil Points stored.
- ◆ Railroad Capacity. This is the number of unused Rail Points.
- ◆ War Effort %. This is the War Effort %, which affects Production and Oil collection.

If you have Fog of War turned on, you will only be able to see information about countries you control; enemy information will be hidden.

### 13.10.2 Mini-Map

In the middle of the panel is the Mini-Map. This gives an overview of the entire European Theatre of Operations. The current date is shown at the top right and a number of control buttons are at the top left. From left to right these buttons are:

**Unit tab.** This tab shows units on the Mini-Map. Axis forces are shown as blue dots and Allied forces as red dots. Neutral Country forces are not shown on the map. Convoys are shown as black dots.

**City & Resource tab.** This tab shows Cities and Resources on the Mini-Map. Anything controlled by Axis is blue, by the Allies is red, and by Neutral Countries is green.

**Politics tab.** This tab shows the political view. Axis Countries are light blue, while Pro-Axis countries are dark blue. Allied Countries are red and Pro-Allied Countries are dark red. Neutral Countries are beige.

**Toggle units on/off.** This buttons shows and hides all units on the Main Map view.

**Toggle names on/off.** This button shows and hides all city and Resource names on the Main Map view.

**Cycle zoom level.** This button cycles through the three zoom levels available in the Main View. You can also zoom with the + and - buttons on your keyboard or with the mouse wheel.





### 13.10.3 Control Panel Buttons

The Control Panel at bottom right displays several large buttons that you'll need to access throughout the game. From left to right these buttons are:



**Repair.** This toggles Repair Mode on or off; see Repairing for more details.



**Upgrade.** This toggles Upgrade Mode on or off; see Upgrading for more details.



**Force Pool.** This opens the Force Pool Deployment Window.



**Declare War.** This toggles the Political Mode, where you can declare war on other Countries.



**Options.** See in game options for more details.



**War Map.** This takes you to the war map if you were viewing another screen.



**Produce Units.** This takes you to the unit production screen.



**Research.** This takes you to the unit research screen.



**Statistics.** This takes you to the statistics screen.



**End Turn.** This ends your current turn and passes control over to your opponent or the AI.

### 13.10.4 Dynamic Unit Panel



When you put the mouse over one of your units, the Production Overview Panel is replaced by the Unit Panel. This also happens when you select a unit; this display remains in place until you deselect that unit. The unit panel contains a lot of information, as follows:

**Unit Type.** This can be Armour, Submarine, Mechanised Corps etc.

**Unit Graphic.** This is a large image of the selected unit. As you develop new technologies, this graphic will update.

**Commander Image.** If there is a commander with the unit, his image appears, along with a small 'x' button, which is used to dismiss the leader and send him back to the Force Pool.



**Experience.** The Experience Level is shown by stacking Nationality icons next to the unit. Each icon means one Experience Level.

**Unit & Terrain Buttons.** These icons are used to switch between Terrain info and Unit info.

The right-hand box shows information about the unit's Nationality, Strength, Effectiveness, Supply Level, Movement, and Entrenchment Level.

The bottom of this panel shows detailed information about the unit's combat abilities, which will be covered later in the Units section.

If you use the Terrain button, the Unit Panel will change to show a picture of the Terrain you are occupying and details about its effects, such as Movement Cost, Vehicle Penalty, Attack Penalty, Armor Penalty, Air Defense Bonus, and Survivability Bonus (all explained in more detail later).

## 13.11 Resources

There are three resources in the game:



**Production Points.** Production points are generated by cities and resources and are a measure of the industrial capacity of the nation.

**Manpower.** Manpower is a measure of the number of men the country can call on for military service.

**Oil.** Oil is a measure of the amount of fuel you have available to allocate to your armed force for military operations. Oil is an advanced option and defaults to off.

### 13.11.1 Production Points

Every Major Country collects Production Points (PP) from the cities and resources they control each turn; these can be used or stored for later use. Each Country also has a Base Value it gets from the land it controls and this Base Value never changes.



PP are used for many different actions in the game, including purchasing new units, buying laboratories for research, repairing damaged units, upgrading old units, loading troops on transport ships, and overusing your rail capacity.

Every City and Resource on the map has a number next to it indicating the PP produced by that hex each turn. The number of PP received by a nation is a combination of this value, multiplied by the nation's War Effort % (see War Effort, below).

The number of stored PP is shown on the right of the top bar, with a factory icon. If more than one country belongs to the faction you are controlling, the order of the flags on the left of the bar show which PP number applies to which country.

### 13.11.2 Manpower

Every country also collects Manpower Points. Whenever a unit is purchased or reinforced, Manpower is used up. Manpower does not run out, but the more you recruit the worse those new recruits will get. Manpower is shown in the middle of the top bar with a man icon.



Every country has a maximum manpower rating. This is maximum amount of manpower the country can store. As a country recruits reduces the % of free manpower. The colour of the number shows which penalty bracket you are in. As the % of free manpower reduces the recruitment penalties start to increase:

White: 75-100% = No Penalty

Yellow: 50-74% = -1 Quality for all new recruits

Orange: 25-49% = -1 Survivability for all new recruits

Red: 0-24% = -2 Quality & -1 Survivability for all new recruits Red: <0% = -2 Quality & -2 Survivability for all new recruits

Every turn, manpower increases by a fraction of the maximum manpower level. In game, the free manpower is shown a ToolTip shows what % this is of total manpower.

### 13.11.3 Oil

Oil is collected by Factions rather than Countries. This means that German and Italian oil is all fed in to the Axis Oil Pool and then used up by any Axis units that require it. The oil stored by a Faction is shown next to the Rail Capacity on the left of the top bar.



Each country has a base Oil Production Value and then adds on three Oil Points for every Production Point generated at an Oil Field. Oil Fields are very rare and the Axis side will need to defend its reserves in Romania and look for opportunities to take oil from the Middle East or the Caucasus. A country's Industrial Capacity modifies this Oil Production up or down, so new industrial technologies can offer a vital few extra points of oil per turn.

Each unit type has its own Oil Consumption Level. Infantry Corps and Garrisons use no oil, but all other units use oil every time they move and then again every time they attack. If you have no oil remaining your Motorized units will not be able to move or attack!

Units may still use Rail Redeployment even if their owning Faction is out of oil.

### 13.11.4 War Effort

The War Effort % varies from country to country and generally rises as the war progresses. For example, the USA starts with 0% War Effort, meaning that they have no resources allocated until their War Effort % increases. Industrial Technologies can also be researched which increase the War Effort % of a nation.

The War Effort % affects PP and Oil Production but not Manpower. The War Effort % increases every quarter from September 1939 onward and there is also a one-time boost to output when a country enters

the war.

### 13.11.5 Country Deficits

A country can only recruit new units and buy Research Labs if sufficient PP are available. However, repairing, railroad moves, and loading transport ships can still be utilized if the country has more than 0 PP, even if one of these new actions takes their total into a production deficit.

### 13.11.6 Cities, Fortresses, and Resources

Scattered around the map you will find many Cities, Capitals, Fortresses, Mines, Ports, and Oil Fields. They have terrain effects explained above, but many of them also produce Resources for the controlling Major Country. The amount they produce is shown by a number next to the name.

Every Resource or City has a strength from 0-10. As combat rages in these hexes or strategic bombing raids are carried out, this strength is reduced. The color of the number and name will also change as strength drops to show at a glance which areas have been damaged. Black means it is strong, yellow means it has suffered some damage, orange means it is heavily damaged, and red means it is almost completely destroyed. Each turn the City or Resource will attempt to repair itself, slowly recovering up to full strength.



### 13.11.7 Convoys

During World War II, convoys were a lifeline for both the United Kingdom and the USSR, supplying huge amounts of material to both. In Commander: Europe at War, these convoys actually appear on the War Map and can be attacked by Axis forces. Therefore, it is in the Allies' best interests to escort and defend these convoys as closely as possible.

A convoy is a naval unit that contains Production Points. The number displayed underneath the convoy is the number of Production Points it contains, so at a glance you can easily see which convoys are most important.



Convoys can be attacked and destroyed like any other unit. Convoys are automated and move to their destination ports before each Allied turn. When they arrive at their destination, they automatically unload their Production Points, adding them to the major Country's (the United Kingdom's or USSR's) pool. United Kingdom convoys must reach the mainland United Kingdom (England/Scotland), while USSR convoys have to reach the Murmansk convoy route hex.

Convoys are automatically generated and will have varying amounts of Production Points aboard. This number depends on the United Kingdom and USA War Effort % and will grow as these nations gear up for war.

### 13.12 Politics and War

At the start of the 1939 scenario, only a few Countries are actually involved in the war. Other Countries may enter the war by joining one Side or the other, or they may be dragged into the war if someone declares war on them.

As mentioned above, you may only declare war on Countries that are not friendly to your Side. If a Side declares war on a Country, that Country automatically joins the other Side.

Although the USA and USSR are Major Countries, initially they are not in the war. Major Countries that are not in the war still collect Production Points and can spend them, but cannot move any troops until they join the war.

#### 13.12.1 The Political Map

To get an overview of the political situation, click the Declare War button. This zooms out the display for a wide view of every country colored to show its allegiance. Each country's flag is displayed over its capital. The color-coding is the same as the Mini-Map, so Axis Countries are light blue, Pro-Axis Countries are dark blue, and so on.

Your units may only enter the territory of Countries in your Faction or those you are at war with. You may only attack units you are at war with.

To declare war on a Country, click on its flag. A confirmation window will display, which is your chance to change your mind. If you want to declare war, click the checkmark button. If you change your mind, click the 'X' button.

Once you have declared war, the Country will join the opposing Side. Its units and production will now be controlled by that Side. You will now see its units on the Mini-Map and will be able to not only invade the country but attack those units as well.



#### 13.12.2 Conquering and surrender

Most Countries have one capital, but the United Kingdom and the USSR each have two. When a Country loses all its Capitals, they surrender to the Country that occupied their capital(s). The country is then out of the game and all of its Production Points are lost and units disbanded. Any core hexes owned by the Country are captured by the conquering Country. Any hexes controlled by the surrendering Country that are not in core hexes, but are in supply, will be passed over to the Faction Leader unless the Faction Leader has already surrendered; in this case the hexes go to the conqueror.

For example, Italy has conquered Greece and Germany has conquered Yugoslavia. The USA then captures Rome, forcing Italy to surrender. As Germany is the Faction Leader and has a supply route to Greece, Greece is in supply and so all Greek hexes become German-controlled.

### 13.12.3 Vichy France

When France surrenders a special event occurs. Mainland France is divided into occupied France (in the north) and Vichy France (in the south). Syria becomes controlled by the United Kingdom, and Algeria becomes an independent Neutral Country. Any Axis units that are in Algeria or Syria when Paris falls will get free passage home to join the Axis Force Pool.

### 13.12.4 Victory Conditions

Victory in Commander: Europe at War is determined by the number of Capitals you hold when the war finishes in Summer 1945. However, if at any point a Side has no Capitals left under its control it immediately loses the game and their opponent gets a Major Victory.

The score is the number of enemy Major Country Capitals held (Berlin, Rome, London, Paris, Washington, and Moscow).

#### Example 1:

If France and the United Kingdom surrender in 1940, this leaves the Allied player with no capitals as the USSR and USA are still not at war. This would result in Axis victory.

#### Example 2:

In Summer 1945, the Axis side holds Berlin, Rome, and Paris, while the Allies hold London, Washington, and Moscow. The Axis gets one point for holding Paris, but the Allies will get no points as they only hold friendly Capitals. This gives a score of Axis 1, Allies 0, and results in an Axis victory.

## 13.13 Units

There are a wide variety of units available in Commander: Europe at War and each has its own strengths and weaknesses. Units can either be deployed on the Map at the start of a Scenario or be deployed later from the Force Pool.

Each turn your units may take an action (see Unit Actions for more details). Once that action is made the unit cannot be controlled until the next turn. The actions available to a unit are:

Each turn your units may take an action (see Unit Actions for more details). Once that action is made the unit cannot be controlled until the next turn. The actions available to a unit are:

- ◆ Move
- ◆ Attack
- ◆ Move and attack
- ◆ Repair
- ◆ Upgrade
- ◆ Load on Transport & Move
- ◆ Rail Redeployment

### 13.13.1 Unit Types

Units are divided into types and this determines how they move, which attack value is used against them, and how combats are resolved. These types are:

**Infantry** – can move and occupy hexes. Use ground attack value against this unit.

**Armor** – can move and occupy hexes. Use ground attack value against this unit. Also apply the anti-tank bonus when attacking this unit.

**Air** – air units can only move to hexes already controlled by their side. They can launch attacks on units a number of hexes away, and return to their hex after the attack. Use air attack values against this unit.

**Naval** – naval units can only go in sea hexes or ports. Use naval attack values against these units. Subs – sub units can only go in sea hexes or ports. Use sub attack values against this unit.

### 13.13.2 Units List

**Garrison.** Garrisons are Infantry units. They are slow and lightly armed, weaker than regular Infantry Corps, and best used to defend entrenched positions.

**Infantry Corps.** Infantry Corps are Infantry units. They represent around 50,000 men and make up the bulk of most armies. It is a very cost-effective unit, but uses up a lot of Manpower and lacks the punch of some of the more expensive units.

**Motorized Corps.** Motorized Corps are Infantry units. They represent an Infantry Corps with an intrinsic transport capacity. They have similar combat stats, but can move farther and have higher Shock Attack values.

**Armor.** This is the fastest and most powerful ground unit, but suffers combat penalties in difficult terrain,

including Cities.

**Fighter.** Fighters are Air units. They are used to establish and hold air superiority. They have limited ability to hit Ground and Naval units, but this is not their core purpose.

**Tactical Bomber.** Tactical bombers are Air units. They are the most effective at Ground and Naval Attack. They are weak in dogfights, so Fighter support would be wise.

**Strategic Bomber.** Strategic bombers are Air units. They have great range and are specialists in destroying enemy Resources and Cities. The Strategic Bomber is the only unit that will attack a Resource or City rather than the unit occupying it.

**Submarine.** Subs are hard to detect and only appear when launching an attack, or if an enemy ship accidentally discovers them by attempting to move through them.

**Destroyer.** Destroyers are Naval units. These are best unit at battling Submarines, but are weaker against other surface naval units.

**Battleship.** Battleships are Naval units. These are powerful units that dominate the seas and can provide bombardment in support of Naval landings, but are vulnerable to Submarine attack.

**Carrier.** A naval unit with Air capability. Carriers can dogfight against enemy Air and can strike Ground units from distance and are strong in Naval battles.

**Convoys and Transports.** These are non-combat Naval units. They carry either Production Points (Convoys) or ground units (Transports).

### 13.13.3 Unit Attributes

Every unit is rated in a number of areas that determine its fighting ability. These are:

**Ground Attack.** How good the unit is at offensive maneuvers.

**Ground Defense.** This is used when defending against a ground unit.

**Shock.** This relates to aerial bombardment, artillery, and speed of attack. It reduces the defender's Effectiveness prior to the Fire Phase.

**Anti-Tank Bonus.** This is used against Armored units. It reduces their Survivability. **Air Attack.** This is used against Air units.

**Naval Attack.** This is used against surface Naval units.

**Sub Attack.** This is used against Subs.

**Strategic Attack.** Used against Production and Resources

**Movement.** This is the number of Movement Points this unit receive each turn when fully supplied.



**Attack Range.** This is the number of hexes away the unit may strike an enemy unit. This applies to Air units only.

**Land Spotting.** How many hexes the unit can see on land to spot enemy units. **Naval Spotting.** How many hexes the unit can spot at sea.

**Quality.** This determines how much Effectiveness the unit loses due to combat, how quickly it regains it afterwards, and its maximum Effectiveness.

**Survivability.** The higher this value, the less casualties a unit takes from combat. **Production Cost.** The number of PP required to build the unit.

**Manpower Cost.** The amount of Manpower used up building the unit.

**Oil Consumption.** How many oil points are used for moving and attacking with this unit. **Build Time.** How many turns it takes to construct this unit.

### 13.13.4 Commanders

Commanders are a special type of unit. They must always be with a Ground unit and they can never move around the map on their own. Commanders are deployed to a unit and can be reassigned back to the Force Pool and on to another unit, but this takes time and costs PP.

Each Commander has a Leadership Rating, which increases the maximum Effectiveness of all units within his Leadership Range.

In addition, some Commanders also have bonuses that will apply to the unit they are attached to. Commanders may give a +1 bonus to Ground Attack or Ground Defense values.

If a unit with a Commander is destroyed, the Commander will get injured. If a unit is destroyed, there is a chance the Commander will be injured. The length of time he is injured varies and he will be placed in the Production Queue and be available for reassignment after he has recovered.

## 13.14 Unit Actions

### 13.14.1 Movement

Units that are available to move will have their national icon flash. Once moved the icon stops flashing and fades out. To select a unit that has not moved, click on it. To deselect the unit, right click. Once selected, it will show all the possible destination hexes that the unit can move to, and all the possible hexes it can attack.

### 13.14.2 Zone of Control

Land Units have a Zone of Control (ZOC) on adjacent land hexes. ZOCs can reduce enemy movement. Naval units are not affected by Land units ZOCs.

### 13.14.3 Movement Costs

When moving a unit the hexes highlighted are calculated from the starting location and take in to account the unit's Movement Points, subtracting the movement cost of each hex and any additional penalties like ZOCs or vehicle penalties.

A ZOC hex increases movement cost by two. A hex is ZOC'ed if either:

- ◆ The destination hex is in the ZOC of at least 2 enemy land units
- ◆ Both the hex the unit is leaving and the hex it is entering are in a ZOC.

There is an exception to the Movement Cost rules above that allows units that have low Movement rates to move even through difficult terrain. A unit that has Movement Points and start its turn outside of enemy ZOC can always move at least one hex.

### 13.14.4 Attacking

Units may attack anything within their Attack Range. Most units have an Attack Range of one, meaning they can only attack enemy units they are adjacent to, but air units have higher ranges, allowing them to attack enemy units from a distance.

Ground units may not attack Naval units unless the Naval unit is in a Port. Naval units, except submarines, can attack ground units. Air and Naval units may also attack Cities or Resources.

Ground and Naval units can attack, or move then attack. Air units may either attack or move, but may not do both.

#### 13.14.4.1 Automatic Attacks

Interceptions. Fighter and Carrier units can intercept enemy air attacks, if the attack is made within their Attack Range. Interceptions occur before any air attacks are made.

Escorts. Fighter and Carrier units may escort Strategic and Tactical Bombers if they have not already moved or attacked this turn. If the enemy attempts to intercept, Fighter and Carrier units will automatically engage the interceptors, protecting the bombers.

Interceptors and Escorts are randomly selected from among the candidates within Attack Range of the attacked hex. To be able to intercept or escort, the unit must have at least half its maximum strength left and must not have already fought or moved this turn (including Escorting or Intercepting). Interception and Escort battles are fought without any terrain effects hence no defense bonuses.

#### 13.14.4.2 Strategic Attacks

If an air unit attacks an empty City or Resource it becomes a Strategic Attack. The defender uses the

strength of the City/Resource and adds in any air defense bonus from the hex.

Strategic Bombers have a special ability that allows them to directly attack the City or Resource even if it is occupied by an enemy unit.

In a Strategic Attack, the attacker fires first using the Strategic Attack value, reducing the target's strength; the target then returns fire.

Casualties lower the strength of the Resource and this reduces its production values. Each turn Cities and Resources regain some strength up to their maximum value.

### 13.14.4.3 Automatic Attacks

Interceptions. Fighter and Carrier units can intercept enemy air attacks, if the attack is made within their Attack Range. Interceptions occur before any air attacks are made.

Escorts. Fighter and Carrier units may escort Strategic and Tactical Bombers if they have not already moved or attacked this turn. If the enemy attempts to intercept, Fighter and Carrier units will automatically engage the interceptors, protecting the bombers.

Interceptors and Escorts are randomly selected from among the candidates within Attack Range of the attacked hex. To be able to intercept or escort, the unit must have at least half its maximum strength left and must not have already fought or moved this turn (including Escorting or Intercepting). Interception and Escort battles are fought without any terrain effects hence no defense bonuses.

### 13.14.4.4 Strategic Attacks

If an air unit attacks an empty City or Resource it becomes a Strategic Attack. The defender uses the strength of the City/Resource and adds in any air defense bonus from the hex.

Strategic Bombers have a special ability that allows them to directly attack the City or Resource even if it is occupied by an enemy unit.

In a Strategic Attack, the attacker fires first using the Strategic Attack value, reducing the target's strength; the target then returns fire.

Casualties lower the strength of the Resource and this reduces its production values. Each turn Cities and Resources regain some strength up to their maximum value.

### 13.14.5 Reinforcing Units

During combat, units become damaged. You may repair them up to their maximum strength of 10. To reinforce units, click the Repair button in the Control Panel (the button with the wrench on it) to enter Repair mode. To leave Repair mode, right click. While in Repair mode, any damaged units that have not yet moved will be highlighted to show they can be repaired.

The number of Strength Points you can repair is linked to the Supply Level. The higher the Supply Level, the more you can supply, up to a maximum of five. If a unit is out of supply, it cannot be repaired. Naval

units can only repair when in a Port hex.



When you put the mouse over a highlighted unit, the cost of repairing that unit in Production Points and Manpower is shown. The cost of reinforcing is a percentage of the build cost, depending on unit type:

- ◆ Ground Units 70%
- ◆ Air Units 60%
- ◆ Naval Units 80%

### 13.14.6 Upgrading Units

As new technologies are discovered they are automatically included in any new units, but those already built must be upgraded. To upgrade units, click the Upgrade button (the button with the star on it) in the Control Panel. You can only go into Upgrade mode once you have researched a technology and have units available for upgrading. You can leave Upgrade mode by right clicking.

### 13.14.7 Railroad Moves

Rail movement allows you to strategically redeploy units around the map. To use rail movement, the unit must not start adjacent to an enemy unit, must have medium supply level, or higher and its destination must be a city, or fortress or surrounding hex owned by the player with an unbroken connection of friendly hexes. There is also a maximum distance you can rail move per turn, but it is quite high and only starts to affect you when transporting units across the USSR.

You may only rail move to hexes controlled by your Faction so the USSR may not rail move to any hexes controlled by the Western Allies.

Each Faction has Railroad Points, displayed in the top bar. Each rail move uses up one Railroad Point. You may continue to use rail moves once your capacity is at 0, but this starts to cost you industrial output.



### 13.14.8 Transportation Loops

Transportation Loops are connections between two points of the map that cannot be moved through normally. There are two loops – the Suez Canal, linking the Red and Mediterranean Seas, and the other is around Africa linking the Atlantic with the Red Sea. Only the owner of Port Said in Egypt can use Transportation Loops.

Units that enter a Loop will instantly disappear and are added to a queue. You will be told how many turns it will take for them to arrive at their destination. When arriving, the unit will automatically be deployed as close to the other end of the loop as possible.

### 13.14.9 Naval Transport

Ground units may load on to transports at a friendly port. If they start the turn adjacent to the port, they may load onto a ship. When loaded they may then make a naval move. Loading on to ship costs Production Points.

To unload from a transport you must start your turn next to an unoccupied and non-neutral land hex. Click the Unload button and then select which hex to offload to. Landing units from transports heavily reduces their Effectiveness.

## 13.15 Combat

Whenever an attack is launched, combat results. Combat is split in to two phases, the Shock Phase and Fire Phase.

Every combat has modifiers that can dramatically affect the result. The Combat Modifier for a combat is the unit's effectiveness, modified by any terrain penalties for attacking or for armored units. The Combat Modifier is then divided by the opponent's Survivability. If the target is an armored unit and the firing unit has Anti-Tank capabilities, this reduces the armored unit's Survivability.

### 13.15.1 Shock Phase

All attacks, except Strategic and Air, have a Shock Phase. This occurs before the Fire Phase. During the Shock Phase the attacker uses their Shock value to make a Shock Attack, disrupting the defender before they can fire back.

The Shock value of the attacker is multiplied by its Combat Modifier to produce a Shock Attack Chance. This value is a percent chance for each Strength Point to achieve a hit; each hit reduces the defender's Effectiveness.

### 13.15.2 Fire Phase

After the Shock Phase is the Fire Phase. The defender fires first in the Fire Phase, using the appropriate combat attribute as specified in the Unit Attributes above. This is multiplied by the Combat Modifier to get a percent chance of each Strength Point in the unit hitting and killing an enemy Strength Point and reducing the unit's Effectiveness. Once the defender has fired, the attacker gets a chance to attack back with any remaining Strength Points.

### 13.15.3 Air to Air Combat

In Air to Air combat, both attacker and defender fire simultaneously; there is no Shock Phase.

### 13.15.4 Naval Combat

In Naval versus Naval combats, the attacker fires first and then the defender fires back after removing its casualties.

### 13.15.5 Effectiveness

The Effectiveness of a unit takes in to account many factors. It is the major determinant when calculating the results of a combat and also affects the chance of units retreating from combat.

The maximum Effectiveness of a unit depends on Supply, Quality, Organization and Leadership. If a unit loses Effectiveness, it will regain a percentage of it each until it reaches its maximum Effectiveness.

There are a number of ways to lose effectiveness, as follows:

- ◆ Being out of supply
- ◆ Unloading from transport ship
- ◆ Railroad redeployment
- ◆ Upgrading
- ◆ Combat

### 13.15.6 Defense Bonuses

Defense bonuses reduce the attacker's combat value. If the terrain has Attack Penalty of 75, it means a unit attacking into that terrain will attack at 75% of its normal Strength.

Hexes with Cities or Resources do not use terrain effects, but instead use the effects of the City or Resource.

Defense bonuses do not affect air to air combat.

### 13.15.7 Experience

Every time a unit fights, it gains some Experience Points. Over time these build up and the unit will gain an Experience Level, shown by the nationality icons on the Control Panel. Each experience level gives the unit a bonus to its Quality or Survivability.

As replacements are recruited, the Experience Level of the unit may be reduced, which will cause bonuses to be lost.

### 13.15.8 Combat Odds

When you have a unit selected and it is possible to attack an enemy, the attack icon will appear over the available targets. If you put the mouse over one of these targets, the Control Panel will display the combat odds in the center between the currently selected friendly unit on the left and the target unit on the right.



Odds are expressed in ratio format (1:1, 4:2, etc.). In Commander: Europe at War, this ratio is the number of potential casualties your unit will inflict (the number to the left) compared to the number of potential casualties the enemy unit will inflict (the number to the right). So, for example, if the odds are 2:1, the attacker is, on average, going to inflict 2 casualties to the defender's 1. These values are averages and the actual results will vary due to random factors.

One factor to note is that the odds do not take in to account the attack sequence. This means Naval odds of 6:6 heavily favor the attacker as the attacker strikes first, while ground odds of 6:6 heavily favor the defender as they attack first. It also does not take in to account the effects of the Shock Attack, so use them only as a guide!

### 13.15.9 Retreats

If a ground unit attacks any non-naval unit, there is a chance the defender will be forced to retreat. The defender must take at least one Casualty Point and their Effectiveness must be below the Retreat Threshold to have a chance of retreating. The retreat chance increases as the unit's Effectiveness drops and the amount of Effectiveness lost during the attack increases. Units can never retreat from Cities or Fortresses.

If a unit is forced to retreat it automatically picks an adjacent empty friendly hex to retreat to. If no such hex is available, the unit will instead hold ground and fight to the last man. Retreats will attempt to go to hexes that are not adjacent to the attacker, and also if possible, not adjacent to any other enemy units.

Retreats are more common from clear terrain than difficult terrain like forests and mountains.



### 13.15.10 Exploitation Movement

A ground unit that attacked and either destroyed or forced the defender to retreat from its hex has the option to make an Exploitation Move in to the vacated hex. Exploitation moves do not consume Oil

### 13.15.11 Air Defense

If the defender has an Air Combat value of 0, then it cannot fire back on an attacking air unit. Submarines have no Air Defense value so they cannot return fire on Air units or Carriers.

### 13.15.12 Submarine Surprise Attacks

If a unit is trying to enter a hex containing a hidden sub, the submarine surfaces and attacks the moving unit. The sub will then be visible to the enemy until it moves away.

## 13.16 Supply

Supply is a very important part of Commander; Europe at War. It represents vital supplies needed to keep armies functioning, such as food, ammunition, and medical supplies, as well as intangible things such as administrative components that keep things running. Well-supplied troops fight better, while those out of supply will soon fall apart.

To be in supply you must be connected to a Supply Source. Two hexes are considered connected if they have an unbroken land route between them where all the tiles are controlled by their side. You cannot trace supply through neutral countries or across water hexes.

### 13.16.1 Supply Sources

There are a number of Supply Sources:

**Capital.** This is the best supply source and allows a maximum level of full supply.

**City.** These allow a maximum level of medium supply.

**Port.** These allow a maximum level of medium supply.

**Fortresses.** These allow a maximum level of medium supply to any units occupying them. If the hex also has a production value, they can also supply any units connected to them.

**Surface Naval Unit.** These allow a maximum level of low supply.

A unit uses the best supply source it is connected to. If a unit is connected to its Capital, this is always the best supply source. If it is cut off from its Capital it will attempt to take supply from a friendly City or Port. If neither of these is available it will attempt to take supply from surface Naval units on the coast. If

none of these is available, the unit is out of supply.

If using Capital supply, the distance from the Capital affects the level of supply. Once you are more than 50 hexes from your Capital your supply level will be reduced to Medium.

### 13.16.2 Supply Effects

**Full:** No Penalties

**Half:** Movement Points -1

**Low:** (Movement Point/4) +1

**None:** Movement =1, Effectiveness drops each turn.

### 13.16.3 Supply Exceptions

Naval units are always in full supply.

Air units are able to fly in the basics to supply themselves so always have a minimum of low supply. This allows Air units to operate from small isolated islands which were strategically important.

## 13.17 Visibility and Fog of War

15.0 visibility and Fog of War

In the game set up screen it is possible to turn the Fog of War (FoW) option on. With FoW, areas of the map which you cannot see will be covered in a dark shroud. Enemy units in the shroud will not be displayed and you will see no information on enemy Resources and Manpower.

Every unit has a Spotting Range for land and sea, which is the number of hexes it can 'see.' As you move your units around the shroud will be revealed. Naval units will only reveal the shroud at the start and end of their moves; when patrolling, and do not patrol while on route.

If a unit in the shroud joins a combat (for example, Intercepting or Escorting Fighters), the unit is immediately revealed.

At the end of each turn the shroud is recalculated, hiding hexes that you can no longer see.

Submarines are special and are always hidden, even if the hex they are in is not in the shroud. This means with FoW turned off, submarines are still invisible. Submarines only become visible if they attack an enemy unit, or if an enemy unit accidentally attempts to move into the hex they're in. Once revealed, a submarine stays visible until it has moved.



## 13.18 Purchasing Units

You can purchase new units and recruit Commanders from the Production Screen. Each Major Country recruits their own unique troops and commanders. Minor Countries may only Repair existing units. The flag icon at the top left of the screen shows which Major Country you are currently controlling; the arrows allow you to cycle to other countries on that Side. Select the unit type you wish to recruit and click the Purchase button.

When a unit is purchased it is placed in the Production Queue across the top of the screen. Purchasing units cost both Production Points and Manpower.



### 13.18.1 Unit Statistics

Detailed information about each unit is shown on the left side of the screen when a unit is selected from the right side of the screen. Numbers in white are the default values. If a number has been increased, through Research, it is shown in green. If a number has been reduced, due to Manpower shortages, it is shown in red.

### 13.18.2 Production Queue and Force Pool

Some units are ready immediately, while others take a number of turns to be produced. When construction is complete the units are marked as “Ready” and added to the Force Pool.



The Force Pool button is in the bottom right control panel (the button with four arrows). When clicked, this takes you to the map and shows a list of units available for deployment. Hexes will be highlighted to show where you can deploy them. The leftmost unit displayed in the Force Pool window (on the left side of the screen) will be the first unit deployed, so just click the hex you want it to appear in.

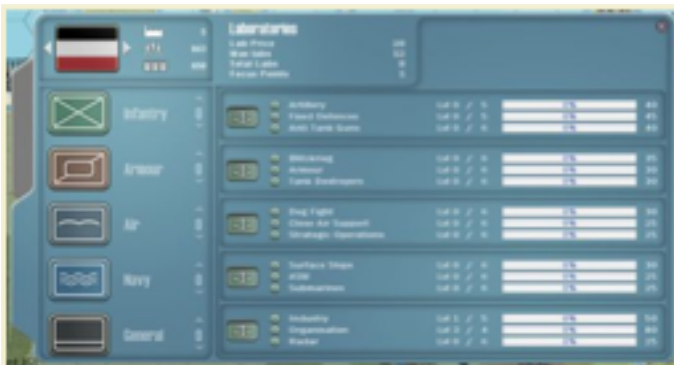
Troops may only be deployed in national core hexes (hexes that start under your control in 1939) and must be in or adjacent to a City, or for Naval units, a Port. US troops may not deploy in the United Kingdom and vice versa. The hex must also be connected to the Country's Capital by an unbroken chain of friendly hexes.

You may deploy one unit per City or Port per turn. You may deploy as many units as you can fit next to your Capital.

Commanders can only be deployed to units owned by that nation. Allocating a commander uses up the unit's turn, so only units that have not already moved can have a Commander allocated to them. If you have a Commander ready to deploy, any units that are available for him to be allocated to will be highlighted.

## 13.19 Research

Major Countries can improve their economy and units by conducting Research.



At the top left of the screen is a flag icon showing which Major Country's Research you are conducting. You can cycle through countries using the arrow buttons in the same way you control the Production Screen.

Below this is a list of Research areas – Infantry, Armor, Air, Naval, and General. Each Research area has a number next to it showing how many Research Labs you have in that category and arrows to increase and decrease this number.

To the right of the flag icon is the cost of each Lab, the maximum number of Labs you can deploy, the total number of Labs you currently have, and how many Focus Points you have remaining.

Below this is a progress chart for each Research area and buttons to focus Research in specific areas.

### 13.19.1 Research labs

Major Countries can build Research Labs up to their Maximum Lab level. This level is dependant on the War Effort %, so it increases as your War Effort % increases. Labs can also be sold, but only at a percentage of their cost. The cost of buying a Lab increases each time you buy a Lab. The cost of Research in general declines over time, so later in the war Labs will be cheaper than at the start, meaning Research is always worthwhile.

Every Lab produces 1, 8, or 15 Research Points per turn. Low values are much more likely and you'll receive a "Major Breakthrough" message if you get the full 15 points in a turn.

You cannot move Research Labs from one area to another (e.g. from Armor to Air); instead, you must sell a Lab from the area you want to remove it from, then buy one in the area you want..

### 13.19.2 Technologies

There are 15 Technologies in the game, split among the 5 research areas. They are as follows:

#### 13.19.2.1 Infantry

Infantry Weapons – Increases the Ground Attack and Shock Attack values of Infantry. Fixed Defenses – Increases Ground Defense and Survivability values of Infantry.

Anti Tank Guns – Increases the Anti-Tank bonus of Infantry.

#### 13.19.2.2 Armour

Blitzkrieg – Increases the Ground Attack and Shock Attack values of Armor units. Armor – Increases Ground Defense and Survivability values of Armor units.

Tank Destroyers – Increases the Anti-Tank bonus of Armor units.

#### 13.19.2.3 Air

Dog Fight – Increases the Air Combat and Survivability values of Air units.

Close Air Support – Increases the Ground Attack and Naval Attack values of Air units.

Strategic Operations – Increases the Movement, Range, Spotting, and Strategic Attack values of Air units.

### 13.19.2.4 Naval

Surface Ships – Increases the Naval Combat and Survivability values of Naval units ASW – Increases the Sub Combat values of Naval units

Submarines – Increases the Naval Combat and Survivability values of Submarines.

### 13.19.2.5 General

Industry – Increases by a percentage the Oil and Production Points received per turn

Organization – Increases Effectiveness values

Radar – Increase Survivability values, Production Resources and Air Combat values of some units, and Resources.

### 13.19.3 Technology Progress

Each technology update affects specific units. You can see which units are affected in the Research Detail window. A unit can be updated by certain levels, while other units may not get as many Infantry

Attack updates (e.g. a Garrison unit may not get as many increases as, say, a Corps or a Motorized Corps).



Click on one of the five Research Area icons (Infantry, Armor, Air, Navy, or General) you wish to investigate in detail on the left side of the window. This changes the view in the window to the right, which displays the Levels that are possible to gain through Research.

Note at the top right above this window are three buttons. In this case, they are Surface Ships, ASW, and Submarines. Each Research Area is subdivided into three areas, which can be viewed through each of these buttons. This will change the display to indicate the area that you want to view.

Once you've selected a Research Area and then selected one of the three sub-areas, the display will show

each level that can be gained through Research. In the example above, we're looking at Surface Ships and can see six Levels (one through six) displayed within their own smaller window.

At the top of these smaller windows, the exact technology you're researching is displayed (in this case, Surface Ships). Below this title are unit icons showing which units will be affected by gaining this Level of technology. Right now you can see "Lvl 4," or Level 4, and that Destroyers and Battleships are affected by a gain here.



Under "Lvl 4" is a progress percentage bar that details at a glance any progress your Research has made in that particular Level. Of course, you start at Level 1 and progress upwards from there, regardless of Research Area. So, before you can research Surface Ships Level 4, you have to gain Levels 1 through 3 first.

Underneath the unit icons, the actual benefit for gaining this particular Level is displayed. In this case, we can see that Destroyers and Battleships gain a +1 to their Survivability values when Surface Ships Level 4 technology is achieved.

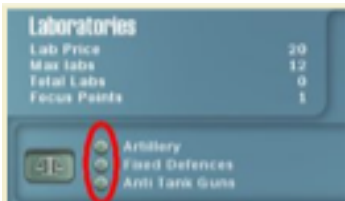
### 13.19.4 Technology Levels and Upgrading

Each Major Country has a Technology Level in each of the 15 Technologies. Minor Countries do not conduct Research themselves, but instead are 'given' older technologies researched by their Faction Leaders. New technologies allow you to upgrade existing troops and mean any new recruits will have these improvements.

Minor Countries may upgrade to a Technology Level equal to that of their Faction Leader's Tech Level minus 2. So if Germany has a Tech Level of 3 in Surface Ships, any Minor Axis Country may upgrade to Tech Level 1.

### 13.19.5 Research Focus

Unless otherwise directed, Research is split between the three technologies in each Research Area randomly. By using Focus Points, you can concentrate on specific technologies at the expense of other technologies in that Area.



By clicking on the small round focus buttons on Research Summary Screen you can tell your scientists to focus on this specific technology. If you later decide to return to a more balanced policy, then click the Balance button (with the scales on it).

Each time you click on a Focus button it uses one Focus Point. The number of remaining Focus Points is



shown at the top of the screen.

With a balanced focus, every Technology within the Tech Area gets a 33% chance of progressing. With focus set to a certain Technology, that technology will get a 50% chance of progressing, while the others two techs will only have a 25% chance.

Focus Points accumulate twice a year, in January and July up to a maximum level, which is equal to half your maximum Lab level.

### 13.19.6 Research Progress

The progress through each technology is shown on the Summary page. If you discover a new technology you will be notified during the End Turn phase. The number of Research Points required for the next level varies from technology to technology, with some being much harder to research than others.

Underneath the unit icons, the actual benefit for gaining this particular Level is displayed. In this case, we can see that Destroyers and Battleships gain a +1 to their Survivability values when Surface Ships Level 4 technology is achieved.

**If a Technology has reached its Max Tech Level any Research Points allocated to that technology will be wasted**

### 13.20 Turn Summary

When you end your turn, the enemy side will make their moves. Once they have completed their turn and it is time for you to start yours again, the Turn Summary window will display.



This window lists every Major Country you control, the Production Points each received this turn, and their War Effort %. It also lists any important technology-related events.

### 13.21 Special Events

#### 13.21.1 USSR Winter Event

Every winter, units occupying USSR core hexes will suffer a winter penalty causing a sudden drop in

Effectiveness. The winter may start at any time between October to February. The first year causes the greatest penalty as this was the most severe winter of the war and neither side was totally prepared for it. The Axis suffers a greater penalty as they were less prepared than the USSR.

## 13.21.2 Partisans

Each turn there is a chance partisans will appear in occupied hexes. They are more likely to appear in remote areas away from cities.

## 13.22 Statistics

The Statistics screen lets you review the current situation. You can see the casualty counts on each side, the number of units each nation controls, industrial output, and more.



	US	UK	FR	USSR
US	10,000	4,100	2,000	20,000
UK	0	0	0	0
FR	0	0	0	1,000
USSR	0	0	0	0
Axis	0	0	0	0

Return To Map

## 13.23 In-game Options

The in-game options allow you to save your game, end the game and return to the Main Menu, quit to desktop, and change a number of visual and audio settings.

You can play in a window, turn the hex grid on or off, turn ToolTips on or off, use darker tinting for sides to make it clearer who owns what, and turn counters on or off. (Counters are alternative unit icons, displayed like NATO unit symbols.)



### 13.24 Modding Scripts

Most of the data files in Commander: Europe at War are set up to be easily modded.

**If this is something you are into, feel free to play around, but make sure you back up your game first!**

The scripts are located in the data folder of Commander: Europe At War. When playing multiplayer games, you must ensure that all machines are using the same modified scripts or the game will become corrupt and go out of synch.

For the English version, the scripts are

**unit\_eng.txt** – Unit script

**leader\_eng.txt** – Commander script

**technology\_eng.txt** – Technology script

**terrain\_eng.txt** – Terrain modifiers script

**general.txt** – Script that affects all aspects of the game

## Chapter 14 GS Developers Initial Notes

We shall defend our island whatever the cost may be; we shall fight on beaches, landing grounds, in fields, in streets and on the hills. We shall never surrender and even if, which I do not for the moment believe, this island or a large part of it were subjugated and starving, then our empire beyond the seas, armed and guarded by the British Fleet, will carry on the struggle until in God's good time the New World with all its power and might, sets forth to the liberation and rescue of the Old.

Prime Minister Winston Churchill (after the fall of France)

## 14.1 Chapter TOC

<a href="#"><u>14.2 - Usage Note</u></a>	<a href="#"><u>512</u></a>
<a href="#"><u>14.3 - Developers Highlights on GS v 1.07 Changes</u></a>	<a href="#"><u>512</u></a>
<a href="#"><u>14.4 - Overall</u></a>	<a href="#"><u>513</u></a>
<a href="#"><u>14.5 - Contested Amphibious Invasions</u></a>	<a href="#"><u>514</u></a>
<a href="#"><u>14.6 - Elite Units</u></a>	<a href="#"><u>515</u></a>
<a href="#"><u>14.7 - Airborne Units and Airdrops</u></a>	<a href="#"><u>515</u></a>
<a href="#"><u>14.8 - Experience Level</u></a>	<a href="#"><u>517</u></a>
<a href="#"><u>14.9 - Leadership</u></a>	<a href="#"><u>517</u></a>
<a href="#"><u>14.10 - Allied Aggression</u></a>	<a href="#"><u>518</u></a>
<a href="#"><u>14.11 - Tension in the Balkans</u></a>	<a href="#"><u>518</u></a>
<a href="#"><u>14.12 - Eastern Europe</u></a>	<a href="#"><u>519</u></a>
<a href="#"><u>14.13 - Softer Air Bases when Used in a Ground Defense Role</u></a>	<a href="#"><u>519</u></a>
<a href="#"><u>14.14 - Convoy Movement Updates</u></a>	<a href="#"><u>520</u></a>
<a href="#"><u>14.15 - Transport Fog of War</u></a>	<a href="#"><u>520</u></a>
<a href="#"><u>14.16 - Commonwealth Units and Leaders</u></a>	<a href="#"><u>520</u></a>
<a href="#"><u>14.17 - Out of supply units</u></a>	<a href="#"><u>521</u></a>
<a href="#"><u>14.18 - Ferry Crossing</u></a>	<a href="#"><u>521</u></a>
<a href="#"><u>14.19 - Map and Scenario Changes</u></a>	<a href="#"><u>521</u></a>
<a href="#"><u>14.20 - Poland and Belgium Setups</u></a>	<a href="#"><u>522</u></a>
<a href="#"><u>14.21 - Other Updates</u></a>	<a href="#"><u>523</u></a>
<a href="#"><u>14.22 - GS v1.10 Patch to v1.06</u></a>	<a href="#"><u>524</u></a>
<a href="#"><u>14.22.1 - general.txt file</u></a>	<a href="#"><u>524</u></a>
<a href="#"><u>14.22.2 - Tension in the Balkans</u></a>	<a href="#"><u>524</u></a>
<a href="#"><u>14.22.3 - Allied Aggression</u></a>	<a href="#"><u>525</u></a>

<a href="#"><u>14.22.4 - German Volunteers</u></a>	<a href="#"><u>525</u></a>
<a href="#"><u>14.22.5 - Port Damage</u></a>	<a href="#"><u>526</u></a>
<a href="#"><u>14.22.6 - Scorched Earth</u></a>	<a href="#"><u>526</u></a>
<a href="#"><u>14.22.7 - Initial Setups</u></a>	<a href="#"><u>526</u></a>
<a href="#"><u>14.22.8 - Transport Fog of War</u></a>	<a href="#"><u>526</u></a>
<a href="#"><u>14.22.9 - Contested Invasions</u></a>	<a href="#"><u>527</u></a>
<a href="#"><u>14.22.10 - The Atlantic Wall</u></a>	<a href="#"><u>527</u></a>
<a href="#"><u>14.22.11 - Commonwealth Country Specific Graphics</u></a>	<a href="#"><u>527</u></a>
<a href="#"><u>14.22.12 - Map and Scenario Changes</u></a>	<a href="#"><u>528</u></a>
<a href="#"><u>14.22.13 - Softer Air Bases</u></a>	<a href="#"><u>528</u></a>
<a href="#"><u>14.22.14 - Commonwealth Units and Leaders</u></a>	<a href="#"><u>529</u></a>
<a href="#"><u>14.22.15 - Elite Units</u></a>	<a href="#"><u>529</u></a>
<a href="#"><u>14.22.16 - Experience Level</u></a>	<a href="#"><u>530</u></a>
<a href="#"><u>14.22.17 - Garrisons as Headquarter Units</u></a>	<a href="#"><u>531</u></a>

## 14.2 Usage Note

These are the basic guide used to develop major parts of GS 2.0. Some notes on using it:

- ◆ It is NOT comprehensive
- ◆ It is not exact - as beta testing helped refine and improve the GS 2.0 features and ensured game balance
- ◆ You must use regular parts of the manual for the most up to date data, values and behaviors
- ◆ Remember - this was the guide for the developers

## 14.3 Developers Highlights on GS v 1.07 Changes

The following are high level comments from the developers of the features and changes in **Grand Strategy**.

- ◆ Major changes to the map and added new cities in most countries
- ◆ Lots of changes to unit graphics so all countries now have unique graphics (both unit images and NATO counter symbols)
- ◆ Submarine warfare is completely changed. Submarines can't be attacked after movement so convoys must be escorted all the way to be protected. Submarines can move under enemy naval units so you can't surround submarines.
- ◆ Ports can now only be attacked by max 1 sub per turn and 2 air units. So no naval units in ports can be attacked by other naval units. If the city controlling the port is occupied by enemy forces then the naval unit in port will be destroyed (sunk by friendly forces to avoid capture).
- ◆ Changed motorized units into mechanized units. All unit types have different tech upgrades and effects compared to the standard game.
- ◆ Oil reserves cannot fall below 0.
- ◆ You can put fighters and CV's on sentry with the S key to prevent them from intercepting enemy air attacks.
- ◆ Changed air warfare so maximum 2 air attacks per hex per turn (instead of unlimited as in the standard game).
- ◆ Rail capacity is now linked to major home cities and tech in industry. The rail capacity from each major home city can be bombarded just like strategic bombardment. So it's now possible to hurt the enemy available rail capacity by striking these cities. Captured capitals, cities and fortresses can only be railed to from the turn AFTER you capture them. You can now rail adjacent to fortresses with production. These fortresses can even get reinforcements adjacent to the fortress just like cities.
- ◆ The map is divided into 4 weather zones with 4 different weather possibilities: fair, mud, winter, and severe winter. Sea hexes have 2 different weather possibilities: calm and rough seas. No sea invasions are allowed from rough sea hexes. Severe winter can only occur in the Russia weather zone.
- ◆ Introduced limits to sea invasions and transports. Overuse must be paid for similar to overuse of rail capacity. Techs in industry and surface ships can increase the sea invasion and transport capacity.
- ◆ Combat values are now dependent upon weather. Ground attack factors are reduced by 1 and 2 for armor, while shock, air attack and spotting range factors are halved in non-fair weather.
- ◆ Soviet, Finnish, Swedish and Norwegian units are winterized so they don't suffer the reduced combat values during winter and severe winter, but they're also affected by mud.
- ◆ Units attacking across rivers have 50% combat efficiency (instead of 70% as before) in fair weather, 35% combat efficiency in mud and 70% combat efficiency in winter and severe winter.
- ◆ Maximum supply in each hex is changed dependent upon terrain type. Clear terrain, capitals, cities, and fortresses have a maximum of 5. Forest and rough hexes have a maximum of 4. Mountain hexes have a maximum of 3. Swamp and desert hexes have a maximum of 2. Dune hexes have a maximum of 1.
- ◆ Axis supply in Africa is dependent upon the number of Axis controlled ports in North Africa, occupation of Malta and Gibraltar and Allied naval presence. Overuse of supply must be paid



for.

- ◆ New terrain types added (desert hills and airfields). Airfields can only be occupied by air units and not invaded. Airfields are added in the Atlantic -- 2 each in: Greenland, Iceland, Azores, Hebrides and Isle of Man. Then Gibraltar, Malta and Rhodes receive 1 each. The Atlantic airfields makes it possible for the Allies to fly bombers from USA to Britain or North Africa.
- ◆ Partisan rules are completely changed. Partisans can now appear only as garrisons at different strengths in any unoccupied hex, including cities and resources. The biggest countries receive stronger garrisons and can even receive partisans after being conquered.
- ◆ Free France is added as a minor Allied power that will activate when Vichy France is activated.
- ◆ Persia will activate as an Allied minor power once Russia is activated. 15 PP's per turn of lend-lease will be sent to Russia via Persia.
- ◆ Germany receives oil from Russia and iron ore from Sweden as long as these countries are neutral.
- ◆ Minor countries receive reinforcements at 3 steps near their capitals each January if they're active. Type of unit changes over time starting with garrisons, then corps and finally mechanized.
- ◆ Most countries will suffer a surprise attack efficiency loss when DoW'ed upon. The actual loss is dependent upon country, but varies from -10 to -30 efficiency. Units inside France will lose 20 efficiency when Belgium is DoW'ed upon. This simulates the effects from the German blitzkrieg upon French units.
- ◆ The Victory conditions are now completely changed. The game ends in May 1945 and the Axis will win if they control at least one of the major power capitals. The Allies win if they capture all capitals prior to May 1945. The level of victory is determined upon how early the final major power capital is captured for the Allies and how many major power capitals are controlled in May 1945 for the Allies. USA and Germany now also have 2 capitals so you need to capture both New York and Washington to force USA to surrender and Hamburg and Berlin to force Germany to surrender.

#### 14.4 Overall

In our attempt to maximize historical realism we have proposed a set of changes to GS that are now going through play test. Our definition of historical realism is NOT that the historical chain of events are, or must be, followed every game but that the option to follow the historical chain of events is as least as appealing as following other non-historical, but possible, events. For example, it had become standard practice for the allied player to invade Ireland and often Portugal to establish airbases to use for ASW. Also, it was becoming standard practice in some quarters for the axis player not to invade Yugoslavia and Greece. While these are certainly valid and historically possible strategies these did not happen historically. We didn't want the game to evolve to where historical options would never be chosen but to a point where it's good strategy in some games to do so and in other games not to.

It was becoming common practice to use air units in ground defense roles. Because of the movement range of these units they were at times being deployed at speeds and distances that modern airmobile forces would envy. Also, they were often times holding up just as well or even better against ground attacks than normal ground units. While air units do have a significant number of ground troops that were historically used in infantry roles they had no where near the ability to hold as did regular infantry. The biggest changes in v2.00 are contested amphibious invasions, elite units, airborne units and airdrops, updated experience level model, updated leadership model, allied aggression, tension in the Balkans and Eastern Europe, softer airbases, convoy movement updates, game updates including mechanic and a number of graphical (i.e., chrome) changes. To ensure maximum flexibility the implementation of these features are controlled through the general.txt file and may be configured as players desire.

Sometimes we can have different views of what's the goal of GS. I think we (the GS developers) share a common goal and that is to make GS a more historical WW2 in Europe simulation without scripting the players from 1939 to 1945. It means that the players should be able to feel they're playing with the same constraints as the real WW2 leaders had, but they should have a chance to make different choices. This means we need to anticipate the outcome of possible ahistorical events that people would find credible. One is how USA would react to a German

invasion of Canada. Another is how the Axis minor powers would react to still neutral Yugoslavia and Greece.

GS has no real diplomacy, but we have scripted the behavior of certain minor powers to simulate their behavior to certain events. Some people don't like that because they want the freedom to do what they like to. It's very hard to make a balanced game if players have full freedom to do anything they want. E. g. the Soviet armor blob strategy ruined game balance in CEAW. Some Axis players don't like they can't easily reach Omsk. I would rather say that it should be virtually impossible for the Axis player to get all the way to Siberia. Hitler's grand strategy was to reach the Urals and keep the Russians at bay there. He believed that Stalin would either be overthrown or the Russians would sue for peace before the Germans ever reach the Urals.

Since GS is supposed to be more historical than CEAW it means that the Axis IS supposed to feel the problems of being expanded around 1942-1943 and then slowly crumble until the Allies are in Berlin. I think GS is working quite well having that goal.

One great thing about the GS victory conditions is that you won't know who will win and at what level until Berlin has fallen. It means the Axis player has good reason to continue fighting till the very end. So both sides get a chance to excel both at the offense and defense. In CEAW many Axis players folded once their expansion was halted and the

Allies started to move in the direction of Berlin. These players knew the game was lost because they had fewer capitals than the Allies. So they folded. That meant many Allied players never had a chance to have fun doing Overlord, destruction of Army Group Center etc. For that reason alone I felt that CEAW was rather flawed. In order to win in

GS you need to be good at both attacking and defending. The game won't end prematurely until one side is sure of an ultimate victory.

We are telling you this so you know the ultimate goal we have with GS, i. e. to have a WW2 in Europe simulation game that's quite historical without steering players in a certain direction. So if we introduce new things then we have to answer the question: Are these changes compatible with the main goal of GS. If yes, then we should consider it, if no then it should be scrapped.

## 14.5 Contested Amphibious Invasions

Transports carrying infantry, mechanized or armor corps can now attack occupied coastal hexes. These attacks consume one amphibious invasion point and if the attacked unit retreats the invasion transport can land its parent unit. The attack strength of the invasion transport is independent of its parent unit and is weaker than the attack strength of a normal infantry corps. This attack strength represents brigade size marines and airborne units that make up the first wave of a seaborne invasion. The parent unit represents the second, third and subsequent waves that come ashore over the remaining 19 days of the turn assuming that the initial wave was successful in securing the beach (i.e., destroying the enemy unit or forcing it to retreat). Note however if the transport takes damage during the invasion attack it is the parent unit that suffers this damage.

An invasion transport that successfully clears a hex advances into it the same way a ground unit would. It does NOT unload and if you click off the unit before advancing you cannot advance or unload that turn. Note that an invasion transport could clear a hex and choose not to advance leaving that hex open for another invasion transport to land and attack. This action would use two amphibious invasion points. One for the transport that attacked and the second for the second transport that landed in an enemy controlled hex.

For those into equations here they are for how technology impacts transports:

```
attack strength = attackVal + max(0, floor((techSurfaceShips + 1) / 2))
shock = shockVal + max(0, floor((techSurfaceShips + 3) / 4))
quality = qualityVal + max(0, floor(techSurfaceShips / 4))
flak = flakVal + max(0, techRadar - 4)
```

attackVal, shockVal, qualityVal and flakVal are the current values for these variables and are passed to the methods in which the above equations are added.

The coefficients of these functions are controlled through the general.txt file in order to be able to tweak these functions as necessary. The general form for equations (a-c) is:  $\text{val} + (\text{A} * \text{techSurfaceShips} + \text{B}) / \text{C}$  and for equation d is:  $\text{val} + (\text{A} * \text{techRadar} + \text{B}) / \text{C}$ . The coefficients A, B & C are set separately for each of the four areas in the general.txt file.

## 14.6 Elite Units

German SS units were “elite” because they were both composed of more fanatical troops than regular army units and because they got priority on equipment, manpower and training. It was often the later that contributed to their “eliteness”.

Russian “Guards” units were the elite units in the Russian army. They achieved their elite status through extraordinary performance on the battlefield.

German units can be “upgraded” to SS units by renaming them to include SS, which a space either before or after, in their new name. This upgrade follows the rules of a technology upgrade where the unit cannot be adjacent to an enemy unit and will not be able to move the turn of the upgrade. The cost of the upgrade, however, is 15 PP for armor, mechanized and infantry corps and 10 PP garrisons and is quite a bit more than a technology upgraded. The upgrade results in an increase of 1 in attack, defense, shock, quality and survivability. Also, the image or counter for the upgraded unit will change to a SS version of the image or counter. There is a limit on the maximum number of SS units in play at any one time, which is 0 (1939 – 1940), 1 (1941), 3 (1942), 5 (1943), 8 (1944) and 10 (1945).

Soviet units that achieve an experience level of 75 (i.e., level 3), or higher, are promoted to a “Guards” unit. Once promoted they will never lose that status unless completely destroyed. There is no cost for this promotion; however Guards units do get an increase of 1 in attack, defense, shock, quality and survivability. Also, the image or counter for the promoted unit will change to a Guards version of the image or counter. There is a limit on the maximum number of Guards units in play at any one time, which is 0 (1939 – 1940), 2 (1941), 5 (1942), 8 (1943), 12 (1944) and 16 (1945). When at this limit no more units will be promoted until the limit increases or a Guards unit is destroyed.

A German, or Russian, unit must be in supply level 4 (or higher) to be converted, or promoted, to an elite unit.

The 1942, 1943 and 1944 scenarios were slightly updated by adding some, but not many, Guards and SS units.

## 14.7 Airborne Units and Airdrops

Airborne units are a subset of the elite units but have an advantage in which they can drop by air behind enemy lines or over water into empty hexes.

Airborne units can only be “built” by converting garrisons into airborne divisions by renaming them to include the following triggers in their name.

- ◆ PARA
- ◆ AIRBORNE
- ◆ Abn
- ◆ FALLSCHIRM

- ◆ LUFTWAFFE
- ◆ FJR

It costs 15 PP's to convert a garrison into an airborne division. This conversion can only be done when the garrison is in supply level 5.

Infantry corps currently CANNOT be converted into airborne corps but that capability does exist and can be enable through the general.txt file.

Airborne divisions in addition to moving like regular infantry can also drop into unoccupied hexes. These drop hexes are indicated by parachute symbols and this distinguishes them from the hexes that it can move to via normal movement. Paradrops cost 10 PP's each and consume 4 oil points. They are subject interception by enemy fighters (so you better either have suppressed those fighters or have fighter escort to the drop hex available), subject to loss from flak form the landing hex and subject to random loss (0 to 3-steps) from the drop. So a drop into an unoccupied city or resource hex would subject the airborne division to loss from flak and the random loss due to an airdrop. Without fighter cover this would add loss from enemy fighter interception and would be a suicide drop for the division.

Airborne divisions cannot move but can attack and advance if successful on the turn they drop. However; these units while elite are divisions with lighter weapons than their infantry counterpart and cannot dislodge full strength enemy corps. Compared to garrisons, airborne divisions have +1 ground attack, +2 ground defense, -1 shock, +2 quality, +2 survivability, -1 anti-tank, -1 air defense and they have a movement of 3 (which is between 2 for a garrison and 4 for an infantry corps) and have a minimum of supply level 1.

The number maximum number of airborne divisions is a function of year and country. Only major powers can build airborne divisions.

You also have to think about the para units dropped can be intercepted and lose a lot of steps. After interception they can lose even more steps by landing. This means a para unit will quite damaged. So it will not become a defensive fortress that the enemy will struggle with destroying. E. g. a para division will have ground defense of 5 in 1944. That's definitely nothing to be really scared about. A para corps will have ground defense of 6. These units can be destroyed by enemy land units.

We have to ask ourselves WHY would players want to use para units? I can see three reasons for using them. One is to quickly reach areas at another continent. E. g. you can paradrop units to Norway or Crete and bypass an Allied naval blockade. With air

bombardment you can destroy the defender in Oslo or Heraklion and use the para to capture the city. So paras can be used to avoid dangerous naval operations, or support these naval operations.

Another reason to use paratroopers is to use them like in Overlord. You can drop them behind the hexes you intend to land in to prevent enemy units from killing your units at the beachheads. You sacrifice your paras to have a chance to break out from the beach head next turn. This is probably the most important reason to use paras and I think it will add to game playability to actually plan your invasions with paradrops as well. You can e. g. use them in operations like Market Garden to capture rear empty cities or choke points hoping that your land offensive will get to the area in time before the enemy can dislodge the para blocking the path for the enemy units.

The third reason to buy them is to bump garrisons and to some extent corps units to have a good defensive ground unit. Germany had many para units, but most of them were grounded. It meant they had the training as elite units, but lacked the paradrop capability. Many of these units were used to hold important cities like Brest.

Late in the war the garrisons are virtually useless because they rarely get tech upgrades. So enemy corps or armor units can almost destroy a garrison with one attack. Garrisons upgraded to paras, however, can be a good defensive unit to have.

## 14.8 Experience Level

There have been extensive changes to how experience is lost and gained in order that units don't lose experience so easily and that units attacking secondary and, usually, easy targets (e.g., naval bombardment) don't gain experience at the same rate as if attacking their primary target (e.g., other ships).

A unit's experience level will be shown as a number of dots equal to its experience at zoom levels 2 and 3.

Ground units. Ground units per attack gain 6 XP points for attacks on other ground units and 3 for attacks on air units. On defense they gain 4 XP points versus defense against other ground units, 4 XP versus defense against air and 2 XP version defense against naval. Ground units lose no experience for repair (i.e., reinforcement) at 8-steps or 9-steps and lose a flat 5 XP points per step; otherwise. For example, a ground unit is at 5-steps and repairs back to 10-steps. They would lose  $5 + 5 + 5 + 0 + 0 = 15$  XP points. The same unit at 3-steps, which repaired 5-steps back to 8, would lose  $5 + 5 + 5 + 5 + 5 = 25$  XP points.

Air units. Air units lose a flat 5 XP points per step repaired even at 8- or 9-steps.

Naval units. Naval units lose a flat 5 XP points per step repaired even at 8- or 9-steps.

NATO images and unit icons for all countries at zoom level 3 will show a number of dots equal to the experience level for each unit.

## 14.9 Leadership

A leader attached to a garrison converts that garrison to a HQ unit that now has a movement of 3 (compared to 2 for a garrison). However; leaders attached to other corps have no impact on that corps' movement.

The biggest changes made to leaders are that they have reduced ranges (quality - 2), cost about 15 PP's each less and can now only be injured if the unit they are attached to is completely destroyed.

When you click on a leader the units possibly influenced by that leader are highlighted. If a unit is possibly influenced by only one leader then the quality of that leader increases the effectiveness of that unit. If a unit is possibly influenced by multiple leaders then the quality of the best leader is used. Therefore; there it no longer hurts a unit if it's in range of an 8 quality and 2 quality leader. The 8 quality will be used.

The leader reassignment range has been increased from 10 to 25 and the leader max injured period has been decreased from 18 to 9.

The ratings of all leaders were revisited and a number were revised. These revised ratings will be reflected in the latest version of GS.

More Italian Leaders. Because of the reduced command range of leaders the following Italian leaders were added to the list of existing Italian leaders.

- ◆ Mario Roatta (1887 to 1968)
- ◆ Pietro Badoglio (1871 to 1956)
- ◆ Italo Balbo (1896 to 1940)
- ◆ Prince Amedeo Savoia-Aosta (Duke of Aosta) (1898 to 1942)
- ◆ Gastone Gambara (1890 to 1962)
- ◆ Guglielmo Nasi (1879 to 1971)

- ◆ Vittorio Ambrosio (1915-1944)

Commonwealth Leaders. See section below on Commonwealth Units and Leaders.

### 14.10 Allied Aggression

Because of the isolationist attitude in the USA before entry in the war certain acts of UK or French aggression have an adverse impact on USA mobilization prior to their entry in the war. Also, an allied attack on Portugal at any time has an adverse impact on their neighbor Spain. Basically, an attack on Portugal would signal danger to Spain and move them close to Germany for their own protection.

Every declaration of war by Britain or France on a minor neutral country (e.g., Ireland, Portugal) prior to USA entry reduces the USA war effort by 5. Since, the USA is at industry level 2 the impact of this reduction is 6 (i.e.,  $1.2 \times 5$ ). After US entry, Allied DoW's on neutrals won't have any effect on the US war effort. The US will mobilize because they're at war. The US will regain any lost war effort immediately when they join the Allies. The reason is that they mobilize and the US public would forget about reluctance to enter the war since they're already at war.

An allied declaration of war against Portugal results in the transfer of 5 PPs per turn from Spain to Germany. These are from the Spanish lead mine traded to Germany for military equipment and training. This training and equipment is represented by Spanish units immediately getting the same as German tech level -2 or keeping their current tech if it's higher. Please notice that if the Germans get more tech later then the Spanish will NOT get that until the Allies DoW Spain as well and then only if the Germans pay for an upgrade of the Spanish units. So the tech received from Germany upon an allied declaration war against Portugal is a one time FREE upgrade to the German tech -2.

### 14.11 Tension in the Balkans

Because of the tension in Balkans between German axis minors and Yugoslavia or Greece these axis minors will defend their borders against these countries unless they are pacified (i.e., invaded) by Germany or Italy. Also, axis minors will activate earlier than expected if the axis invades the Balkans prior to their normal activation times.

Romania and Hungary will join the Axis the turn Yugoslavia is DoW'ed and Bulgaria will join the turn Greece is DoW'ed. So it's possible to speed up the activation of these countries by an earlier DoW. This means an axis player might declare war on Yugoslavia from Austria and Italy and rail reinforcements to Hungary and Romania on that turn (e. g. in August 1940). Remember that the countries joining will NOT move on the turn they join. So the player will probably need two turns to take out Belgrade. It also becomes more attractive to take out Greece from the north since a player can take out Yugoslavia in August / September and move adjacent to Greece to march to Athens in maybe September / October. Weather is always nice down there. A seaborne invasion of Greece was the only way to secure Greece early enough because a player never got through Yugoslavia in time.

One Hungarian and two Romania infantry corps are removed from their initial countries setup and will be spawned on the turn that the axis player declares war on Yugoslavia. If this never happens then these three infantry corps are assumed to be assigned to home defense until released in July 1943 (see 4).

Two Bulgarian infantry corps are removed for Bulgaria's initial setup and will be spawned on the turn that the axis player declares war on Greece. If this never happens then these two infantry corps are assumed to be assigned to home defense until release in July 1943 (see 4).

The Axis minor units that were kept for protection against Yugoslavia and Greece will be released on July 1943 if they weren't released before from activating Yugoslavia and Greece. This simulates that the threat from Russia increases so these units might do more good protecting their borders against Russia than the borders against Yugoslavia and Greece. So a player won't permanently lose these units if they decide to



never DoW Yugoslavia and Greece. Also remember that the units will spawn if the ALLIES DoW Yugoslavia and Greece.

### 14.12 Eastern Europe

Historical events in Eastern Europe that happened after the start of WW-II in Europe were represented by at-start positions of Russian and axis minor allied forces. These events will now happen with units and the map modified accordingly on the timeline that they happened historically.

Here are the turn events:

Turn 2: Russia into Poland

Turn 4: Winter war starts. No effect on map

Turn 11: Finland cedes Karelia. March 1940

Turn 15: Baltic states annexed. June 1940

Turn 16: Bessarabia annexed. June 1940

Turn 19: Romania cedes Transylvania & Southern Dobruja. August 1940.

Here are the codes changes:

- ◆ Changed the map and scenarios to have different at start borders and unit setups. Added the city of Kaunas and gave it 1 PP.
- ◆ Removed 1 PP from Tallinn to balance out.
- ◆ Moved units in Karelia to the prewar borders.
- ◆ Moved Russian units out of Eastern Poland.
- ◆ Made the Baltic countries neutral (conquered so nobody can attack them).
- ◆ Moved Russian units out of Bessarabia
- ◆ Changed the border between Romania and Bulgaria
- ◆ Added code so Russia will invade Eastern Poland at the end of turn 2 or when Poland surrenders. Axis units in Eastern Poland is moved to Warsaw. Units that can't be placed adjacent to Warsaw will be added to the construction pool with delay as the build time.
- ◆ Added code to initiate the Winter War in Finland. No game effect.
- ◆ Added code to let Finland cede Karelia to Russia. Russian units move into Karelia.
- ◆ Added code to let Russia annex the Baltic States and move into these countries.
- ◆ Added code to let Russia annex Bessarabia and move into this area.
- ◆ Added code to let Romania cede Transylvania to Hungary and Southern Dobruja to Bulgaria
- ◆ Added code to not activate Romania unless Bessarabia is annexed.
- ◆ Added code to not activate Hungary and Bulgaria unless they've received Transylvania and Southern Dobruja

### 14.13 Softer Air Bases when Used in a Ground Defense Role

It was becoming common practice to use air units in ground defense roles. Because of the movement



range of these units they were at times being deployed at speeds and distances that modern airmobile forces would envy. Also, they were often times holding up just as well or even better against ground attacks than normal ground units. While air units do have a significant number of ground troops that were historically used in infantry roles they had no where near the ability to hold as did regular infantry.

The survivability for air units attacked by ground units or invasion transports is halved (rounded up) and capped at 5 (i.e., cannot exceed 5).

```
defenderSurv = min(ceil(A*defenderSurv/B), C)
A=1, B=2 & C=5 and are set in the general.txt file
```

The survivability for air units attacked by destroyers or battleships is NOT halved but is capped at 5.

```
defenderSurv = min(defenderSurv,C)
```

C=5 and is set through the general.txt file (the same C as in 24)

### 14.14 Convoy Movement Updates

Convoy movement has been updated to include a random avoidance phase at the beginning of a convoy's movement that will move the convoy 3 to 5 hexes in a random direction if the convoy is greater than 17 hexes from its final destination. This movement can either be in the direction of its destination (which would decrease the time it would take for it to get there), in the opposite direction or somewhere in between. The purpose of this is to make convoy movement less predictable in order to make it harder for the axis player to trap convoys

### 14.15 Transport Fog of War

You will no longer be able to know what unit is loaded on your opponent's transport and vice a versa. This adds a more realistic element to the fog of war and makes transport protection and interdiction more realistic. Player's are no longer required to rename their transports to hidden the unit type for their opponent.

### 14.16 Commonwealth Units and Leaders

The following British, or Commonwealth, units that are name or renamed will have their own country specific unit graphics. This allows players all over the world to easily customize their British forces by just including the following "key" in a unit's name to "unlock" the country's specific unit graphic for that country.

- Canada or Canadian
- Australia or Australian
- India or Indian
- New Zealand
- South Africa or South African
- Poland or Polish

Now players can also command UK/CW forces with a leader from their favorite CW country. Added the following CW leaders to the UK faction.

- Bernard Freyberg, 1st Baron Freyberg (New Zealand) (1889 - 1963).
- Guy Granville Simonds (Canadian) (1903 - 1974).

Sir Thomas Blamey (Australian) (1884 – 1951)  
Harry D.G. Crerar (Canadian) (1888 - 1965)  
Field-Marshal, Jan Christian Smuts (South African) (1870-1950)  
Captain Kodandera "Kipper" Madappa Cariappa (Indian) (1899 - 1993)  
Boleslaw Bronislaw Duch (Polish) (1885-1980)

Both CW units/ leaders are “chrome” and are functionally UK units/leaders. However; players can now customize the look and feel of the UK/CW forces to add a bit more flair, historical realism and / or national pride to their GS gaming experience.

### 14.17 Out of supply units

Non partisan units that have supply level 0 (i.e., out of supply) will lose 1-step per turn due to not having supply.

### 14.18 Ferry Crossing

A ferry crossing allows for free passage of a unit from one land mass to another across a body of water without having to pay the transport cost. This functionality now allows the axis player to reinforce its position in Turkey for free (assuming an axis invasion or defense of Turkey) instead of having to pay a transport cost of 8 PP's per units. Also, the functionality allows the axis player to reinforce, or evacuate, Sicily from mainland Italy. Similarly, the allied player once Sicily and the tip of Italy are under their control can ferry units across the straights of Messina for free.

The following nine ferry crossings were added to the game.

Gibraltar  
Ajaccio  
Kiel  
Messina  
Copenhagen  
Canakkale  
Istanbul  
Kerch  
Scapa Flow

A unit can be ferried if it starts its turn adjacent to one of these ports to any other friendly controlled hex adjacent to the same port. This ferry is free and counts as the movement for the unit that turn. When you click on a unit eligible for ferry a ferry symbol will appear in all hexes to which that unit can be ferried.

### 14.19 Map and Scenario Changes

Fredericton in Canada has been renamed to Saint John. All units starting in Canada has Canadian in their name. Therefore; they will “unlock” the Canadian specific unit graphics.

The US Lend Lease destroyer has been renamed to include Canadian in the name and will also “unlock” the Canadian specific unit graphics.

Spain. Changed the 10-step Spanish fighter to 6-steps. Added a 4-step tactical bomber. Reduced the two 10-step DDs to 5-steps. One is deployed in the Atlantic and the other is in the Med.

USA. Added the leader Devers.

France. Included the ability to add a tactical bomber to France's initial setup. However; this is NOT currently implemented in the GS v1.10e changes.

Greek setup. A 4-step DD is added.

Romania setup. The 5-step fighter was increased to 6-steps. The 10-step DD was reduced to 5-steps. A 4-step tactical bomber was added.

The Atlantic Wall. Strasbourg on the Maginot is changed to city when France falls. This represents that material from the dismantling of this fort being used in the construction of The Atlantic Wall. Brest and Nantes will be changed to fortresses in July 1942. Rouen, Calais (clear hex on the map) and Antwerp will be changed in July 1943. Rouen and Antwerp will be changed in July 1944. Cherbourg and Bordeaux will be in July 1944.

Russian Map Changes. Added the Desna River located north of Kiev and runs east-west from the Dnepr. It wasn't previously shown but was regarded as a significant crossing during both the German advance and retreat. This inclusion would only affect games under limited circumstance but would be nice chrome.

Something that should have a greater game impact is a major swamp-forest mix midway between Gomel and Orel (surrounds the town of Bryansk) which is now included. It should add some variety to the region south of Moscow. It should be a bit of a mixed blessing for the Russians in that it would be tempting to defend but with no supply source adjacent it could become a large pocket if its flanks are breached and units don't withdraw in time.

The coastal hexes along the Black Sea and along the Prut-Danube delta, which were shown as clear terrain; but were in reality swamp hexes, have been changed to swamp hexes. This change will make it harder for the Russians to blitz along the coast late in the game as it was historically.

Turkey Map Changes. Added new cities, which all got new garrisons, and reinforced the country slightly east of Istanbul.

### 14.20 Poland and Belgium Setups

It was becoming common practice for axis players to invade Holland, or even Belgium, on the second turn of September 1939. In effect, Germany was starting the war as a two front war. Historically, Germany had no way of knowing that the Polish army would collapse in a few weeks and surrender in just over a month. Also, Germany didn't know the lack of will that the allies in the west had for fighting and their belief that this war was going to be a repeat of World War I. Of course, we know how wrong the allies were and how easily they would crumble in 1940. The following changes have been made in order make the opening of the game more historical.

Poland. Add Lodz as a city in Poland with a new garrison and moved Army Prusy 1 hex southeast.

Belgium. To represent the fortress at Eben Emael, Liege, Belgium is changed to a fortress in 1939. It reverts back to a city on the first fair weather turn in 1940 as a result of Germany becoming paradrop capable. This represents the ability of the Germans to neutralize Eben Emael with battalion size airborne units, which cannot be represented at the scale of this game, when they invade Belgium.

## 14.21 Other Updates

German Volunteers. There was a history of units composed of foreign volunteers that fought for Germany during WW-II.

Germany will get 1 free garrison in 1940, 1941, 1942 and 1944 and a mechanized corps in 1943. The mechanized corps consists of the SS Wiking Panzergrenadier division, SS Nordland Panzergrenadier division, the Estonian infantry division and some support troops from the Nordic countries. The corps was actually called III Germanic panzer corps, but mechanized corps is a better unit since the divisions were mechanized and not pure armor.

Port Damage. Ports that were captured were often damaged and had to be repaired before they became usable.

Captured ports are reduced to 0-strength, which means that they won't be able to repair or upgrade naval units with red damage (0-1 strength).

Scorched Earth. The fighting in the east was brutal and without mercy. Both the Germans and Russians in retreat destroyed as much usable materials as they could over leaving them behind for the enemy to use.

Any Russian core city captured, or recaptured, will lose an additional 5-steps if above 5-steps or be reduced to 0-steps if at 5-steps or less. Damaged cities and ports regenerate at the rate of 1-step per turn.

Entrenchment level. A units entrenchment level will shown at zoom level three by a colored dot, which color representing the level of entrenchment.

Revised leader ratings. The ratings of all leaders were revisited and a number were revised. These revised ratings will be reflected in the latest version of GS.

More Italian Leaders. Because of the reduced command range of leaders the following Italian leaders were added to the list of existing Italian leaders.

- Mario Roatta (1887 to 1968)
- Pietro Badoglio (1871 to 1956)
- Italo Balbo (1896 to 1940)
- Prince Amedeo Savoia-Aosta (Duke of Aosta) (1898 to 1942)
- Gastone Gambara (1890 to 1962)
- Guglielmo Nasi (1879 to 1971)
- Vittorio Ambrosio (1915-1944)

Improved NATO and unit image draw performance. The code from the vanilla game was made so it loaded a buffered image stored in the hex object instead of trying to

find the image in each hex again. This is probably is needed for the unit images which are quite big; however for the NATO symbols there were situations where the buffer was not empty, but didn't contain the NATO image for the unit. That meant that the NATO image wouldn't be redrawn until the buffers were cleared by clicking on a unit or changing zoom level. Now the NATO images will be redrawn every time regardless of the content of the buffer. Finally, the buffering was disabled completely for updating of unit graphics, which results in unit images being updated much faster and without blank hexes.

## 14.22 GS v1.10 Patch to v1.06

In our attempt to maximize historical realism we have proposed a set of changes to GS that are now going through play test. Our definition of historical realism is NOT that the historical chain of events are, or must be, followed every game but that the option to follow the historical chain of events is as least as appealing as following other non-historical, but possible, events.

For example, it had become standard practice for the allied player to invade Ireland and often Portugal to establish airbases to use for ASW. Also, it was becoming standard practice in some quarters for the axis player not to invade Yugoslavia and Greece. While these are certainly valid and historically possible strategies these did not happen historically. We didn't want the game to evolve to where historical options would never be chosen but to a point where it's good strategy in some games to do so and in other games not to.

### 14.22.1 general.txt file

All proposed GS v1.10 changes described below are enabled, or disabled, and controlled through the general.txt file. Players have the ability to disable all proposed changes and reconfigure their game to that for GS v1.06 as they wish.

### 14.22.2 Tension in the Balkans

Because of the tension in Balkans between German axis minors and Yugoslavia or Greece these axis minors will defend their borders against these countries unless they are pacified (i.e., invaded) by Germany or Italy. Also, axis minors will activate earlier than expected if the axis invades the Balkans prior to their normal activation times.

#### Romania and Hungary

Will join the Axis the turn Yugoslavia is DoW'ed and Bulgaria will join the turn Greece is DoW'ed. So it's possible to speed up the activation of these countries by an earlier DoW. This means an axis player might declare war on Yugoslavia from Austria and Italy and rail reinforcements to Hungary and Romania on that turn (e. g. in August 1940). Remember that the countries joining will NOT move on the turn they join. So the player will probably need two turns to take out Belgrade. It also becomes more attractive to take out Greece from the north since a player can take out Yugoslavia in August / September and move adjacent to Greece to march to Athens in maybe September / October. Weather is always nice down there. A seaborne invasion of Greece was the only way to secure Greece early enough because a player never got through Yugoslavia in time.

One Hungarian and two Romania infantry corps are removed from their initial countries setup and will be spawned on the turn that the axis player declares war on Yugoslavia. If this never happens then these three infantry corps are assumed to be assigned to home defense until released in July 1943 (see 4).

#### Bulgaria

Two Bulgarian infantry corps are removed from Bulgaria's initial setup and will be spawned on the turn that the axis player declares war on Greece. If this never happens then these two infantry corps are

assumed to be assigned to home defense until release in July 1943 (see 4).

The Axis minor units that were kept for protection against Yugoslavia and Greece will be released on July 1943 if they weren't released before from activating Yugoslavia and Greece. This simulates that the threat from Russia increases so these units might do more good protecting their borders against Russia than the borders against Yugoslavia and Greece. So a player won't permanently lose these units if they decide to never DoW Yugoslavia and Greece. Also remember that the units will spawn if the ALLIES DoW Yugoslavia and Greece.

### **Greek setup**

A 4-step DD is added.

### **Romania setup**

The 5-step fighter was increased to 6-steps. The 10-step DD was reduced to 5-steps. A 4-step tactical bomber was added.

## **14.22.3 Allied Aggression**

Because of the isolationist attitude in the USA before entry in the war certain acts of UK or French aggression have an adverse impact on USA mobilization prior to their entry in the war. Also, an allied attack on Portugal at any time has an adverse impact on their neighbor Spain. Basically, an attack on Portugal would signal danger to Spain and move them close to Germany for their own protection.

Every declaration of war by Britain or France on a minor neutral country (e.g., Ireland, Portugal) prior to USA entry reduces the USA war effort by 5. Since, the USA is at industry level 2 the impact of this reduction is 6 (i.e.,  $1.2 \times 5$ ). After US entry, Allied DoW's on neutrals won't have any effect on the US war effort. The US will mobilize because they're at war. The US will regain any lost war effort immediately when they join the Allies. The reason is that they mobilize and the US public would forget about reluctance to enter the war since they're already at war.

An allied declaration of war against Portugal results in the transfer of 5 PPs per turn from Spain to Germany. These are from the Spanish lead mine traded to Germany for military equipment and training. This training and equipment is represented by Spanish units immediately getting the same as German tech level -2 or keeping their current tech if it's higher. Please notice that if the Germans get more tech later then the Spanish will NOT get that until the Allies DoW Spain as well and then only if the Germans pay for an upgrade of the Spanish units. So the tech received from Germany upon an allied declaration war against Portugal is a one time FREE upgrade to the German tech -2.

## **14.22.4 German Volunteers**

There was a history of units composed of foreign volunteers that fought for Germany during WW-II.

Germany will get 1 free garrison in 1940, 1941, 1942 and 1944 and a mechanized corps in 1943. The mechanized corps consists of the:

- ◆ SS Wiking panzergrenadier division
- ◆ SS Nordland panzergrenadier division, the Estonian infantry division and
- ◆ Some support troops from the Nordic countries.

The corps was actually called III Germanic panzer corps, but mechanized corps is a better unit since the divisions were mechanized and not pure armor.

### 14.22.5 Port Damage

Ports that were captured were often damaged and had to be repaired before they became usable.

Captured ports are reduced to 0-strength, which means that they won't be able to repair or upgrade naval units with red damage (0-1 strength).

### 14.22.6 Scorched Earth

The fighting in the east was brutal and without mercy. Both the Germans and Russians in retreat destroyed as much usable materials as they could over leaving them behind for the enemy to use.

Any Russian core city captured, or recaptured, will lose an additional 5-steps if above 5-steps or be reduced to 0-steps if at 5-steps or less. Damaged cities and ports regenerate at the rate of 1-step per turn.

Modified scorched earth in Russia so that it only applies on the second turn and later of Barbarossa. That is, it does not apply on the first turn.

### 14.22.7 Initial Setups

#### Spain

Changed the 10-step Spanish fighter to 6-steps. Added a 4-step tactical bomber. Reduced the two 10-step DDs to 5-steps. One is deployed in the Atlantic and the other is in the Med.

#### USA

Added the leader Devers.

#### France

Included the ability to add a tactical bomber to France's initial setup. However; this is NOT currently implemented in the GS v1.10e changes.

### 14.22.8 Transport Fog of War

You will no longer be able to know what unit is loaded on your opponent's transport and vice versa. This adds a more realistic element to the fog of war and makes transport protection and interdiction more



realistic. Player's are no longer required to rename their transports to hidden the unit type for their opponent.

### 14.22.9 Contested Invasions

Transports carrying infantry, mechanized or armor corps can now attack occupied coastal hexes. These attacks consume one amphibious invasion point and if the attacked unit retreats the invasion transport can land its parent unit. The attack strength of the invasion transport is independent of its parent unit and is weaker than the attack strength of a normal infantry corps. This attack strength represents brigade size marines and airborne units that make up the first wave of a seaborne invasion. The parent unit represents the second, third and subsequent waves that come ashore over the remaining 19 days of the turn assuming that the initial wave was successful in securing the beach (i.e., destroying the enemy unit or forcing it to retreat). Note however if the transport takes damage during the invasion attack it is the parent unit that suffers this damage.

An invasion transport that successfully clears a hex advances into it the same way a ground unit would. It does NOT unload and if you click off the unit before advancing you cannot advance or unload that turn. Note that an invasion transport could clear a hex and choose not to advance leaving that hex open for another invasion transport to land and attack. This action would use two amphibious invasion points. One for the transport that attacked and the second for the second transport that landed in an enemy controlled hex.

For those into equations here they are for how technology impacts transports:

```

attack strength = attackVal + max(0,floor((techSurfaceShips + 1) / 2))
shock = shockVal + max(0,floor((techSurfaceShips + 3) / 4))
quality = qualityVal + max(0,floor(techSurfaceShips / 4))
flak = flakVal + max(0, techRadar - 4)
    
```

attackVal, shockVal, qualityVal and flakVal are the current values for these variables and are passed to the methods in which the above equations are added.

The coefficients of these functions are controlled through the general.txt file in order to be able to tweak these functions as necessary. The general form for equations (a-c) is:  $val + (A * techSurfaceShips + B) / C$  and for equation d is:  $val + (A * techRadar + B) / C$ . The coefficients A, B & C are set separately for each of the four areas in the general.txt file.

### 14.22.10 The Atlantic Wall

Strasbourg on the Maginot is changed to city when France falls. This represents that material from the dismantling of this fort being used in the construction of The Atlantic Wall. Brest and Nantes will be changed to fortresses in July 1942. Rouen, Calais (clear hex on the map) and Antwerp will be changed in July 1943. Rouen and Antwerp will be changed in July 1944. Cherbourg and Bordeaux will be in July 1944.

### 14.22.11 Commonwealth Country Specific Graphics

The following British, or Commonwealth, units that are name or renamed will have their own country specific unit graphics. This allows players all over the world to easily customize their British forces by just including the following “key” in a unit’s name to “unlock” the country’s specific unit graphic for that country.

- ◆ Canada or Canadian
- ◆ Australia or Australian
- ◆ India or Indian
- ◆ New Zealand
- ◆ South Africa or South African
- ◆ Poland or Polish

### Elite Unit Specific Graphics

- ◆ German units with names that include “SS” will trigger German SS NATO images.
- ◆ Soviet units with names that include “Guards”, “GDS” or “Gds” will trigger Soviet Guards NATO images.
- ◆ Soviet units that reach experience level 2 will automatically be promoted to Guards.

NATO images for all countries at zoom level 3 will shows a number of dots equal to the experience level -- when unit images are selected for display.

Feature can be turned off in general.txt with the following variable:

```
SHOW_XP_DOTS 1 /* 1 = dots will be shown. 0 = dots will not be shown */
```

### 14.22.12 Map and Scenario Changes

Fredericton in Canada has been renamed to Saint John.

All units starting in Canada has Canadian in their name. Therefore; they will “unlock” the Canadian specific unit graphics.

The US Lend Lease destroyer has been renamed to include Canadian in the name and will also “unlock” the Canadian specific unit graphics.

### 14.22.13 Softer Air Bases

It was becoming common practice to use air units in ground defense roles. Because of the movement range of these units they were at times being deployed at speeds and distances that modern airmobile forces would envy. Also, they were often times holding up just as well or even better against ground attacks than normal ground units. While air units do have a significant number of ground troops that were historically used in infantry roles they had no where near the ability to hold as did regular infantry.

The survivability for air units attacked by ground units or invasion transports is halved (rounded up) and capped at 5 (i.e., cannot exceed 5).

```
defenderSurv = min(ceil(A*defenderSurv/B), C)
```

A=1, B=2 & C=5 and are set in the general.txt file.

The survivability for air units attacked by destroyers or battleships is NOT halved but is capped at 5.

```
defenderSurv = min(defenderSurv,C)
```

C=5 and is set through the general.txt file (the same C as in 29).

#### 14.22.14 Commonwealth Units and Leaders

The following British, or Commonwealth, units that are named or renamed will have their own country specific unit graphics. This allows players all over the world to easily customize their British forces by just including the following “key” in a unit’s name to “unlock” the country’s specific unit graphic for that country.

- ◆ Canada or Canadian
- ◆ Australia or Australian
- ◆ India or Indian
- ◆ New Zealand
- ◆ South Africa or South African
- ◆ Poland or Polish

Now players can also command UK/CW forces with a leader from their favorite CW country. Added the following CW leaders to the UK faction.

- ◆ Bernard Freyberg, 1st Baron Freyberg (New Zealand) (1889 - 1963).
- ◆ Guy Granville Simonds (Canadian) (1903 - 1974).
- ◆ Sir Thomas Blamey (Australian) (1884 - 1951)
- ◆ Harry D.G. Crerar (Canadian) (1888 - 1965)
- ◆ Field-Marshal, Jan Christian Smuts (South African) (1870-1950)
- ◆ Captain Kodandera "Kipper" Madappa Cariappa (Indian) (1899 - 1993)
- ◆ Boleslaw Bronislaw Duch (Polish) (1885-1980)

Both CW units/ leaders are “chrome” and are functionally UK units/leaders. However; players can now customize the look and feel of the UK/CW forces to add a bit more flair, historical realism and / or national pride to their GS gaming experience.

#### 14.22.15 Elite Units

German SS units were “elite” because they were both composed by more fanatical troops than regular army units and because they got priority on equipment, manpower and training. It was often the later that contributed to their “eliteness”.

Russian “Guards” units were the elite units in the Russian army. They achieved their elite status through extraordinary performance on the battlefield.

##### German Elite Units

German units can be “upgraded” to SS units by renaming them to include SS, which a space either before or after, in their new name.

- ◆ This upgrade follows the rules of a technology upgrade where the unit cannot be adjacent to an enemy unit and will not be able to move the turn of the upgrade.

- ◆ The cost of the upgrade, however, is 15 PPs for armor, mechanized and infantry corps and 10 PP garrisons and is quite a bit more than a technology upgraded.
- ◆ The upgrade results in an increase of 1 in attack, defense, shock, quality and survivability.
- ◆ Also, the image or counter for the upgraded unit will change to a SS version of the image or counter.
- ◆ There is a limit on the maximum number of SS units in play at any one time, which is:
  - ◆ 0 (1939 – 1940)
  - ◆ 1 (1941)
  - ◆ 3 (1942)
  - ◆ 5 (1943)
  - ◆ 8 (1944) and
  - ◆ 10 (1945)

### Russian Elite Units

Russian units that achieve an experience level of 75 (i.e., level 3), or higher, are promoted to a “Guards” unit.

- ◆ Once promoted they will never lose that status unless completely destroyed.
- ◆ There is no cost for this promotion; however Guards units do get an increase of 1 in attack, defense, shock, quality and survivability.
- ◆ Also, the image or counter for the promoted unit will change to a Guards version of the image or counter.
- ◆ There is a limit on the maximum number of Guards units in play at any one time, which is:
  - ◆ 0 (1939 – 1940)
  - ◆ 2 (1941)
  - ◆ 5 (1942)
  - ◆ 8 (1943)
  - ◆ 12 (1944) and
  - ◆ 16 (1945).
- ◆ When at this limit no more units will be promoted until the limit increases or a Guards unit is destroyed.

A German, or Russian, unit must be in supply level 4 (or higher) to be converted, or promoted, to an elite unit.

The 1942, 1943 and 1944 scenarios were slightly updated by adding some, but not many, Guards and SS units.

### 14.22.16 Experience Level

There have been extensive changes to how experience is lost and gained in order that units don't lose experience so easily and that units attacking secondary and, usually, easy targets (e.g., naval bombardment) don't gain experience at the same rate as if attacking their primary target (e.g., other ships).

### Ground units

Ground units per attack gain 6 XP points for attacks on other ground units and 3 for attacks on air units.

On defense they gain 4 XP points versus defense against other ground units, 4 XP versus defense against air and 2 XP version defense against naval. Ground units lose no experience for repair (i.e., reinforcement) at 8-steps or 9-steps and lose a flat 5 XP points per step; otherwise. For example, a ground unit is at 5-steps and repairs back to 10-steps. They would lose  $5 + 5 + 5 + 0 + 0 = 15$  XP points. The same unit at 3-steps, which repaired 5-steps back to 8, would lose  $5 + 5 + 5 + 5 + 5 = 25$  XP points.

GROUND_VS_GROUND_ATTACK_XP	6
GROUND_VS_GROUND_DEFENSE_XP	4
GROUND_VS_AIR_ATTACK_XP	3
GROUND_VS_AIR_DEFENSE_XP	4
GROUND_VS_NAVAL_DEFENSE_XP	2

#### Air units

Air units lose a flat 5 XP points per step repaired even at 8- or 9-steps.

FIGHTER_VS_AIR_ATTACK_XP	6
FIGHTER_VS_AIR_DEFENSE_XP	6
BOMBER_VS_AIR_ATTACK_XP	3
BOMBER_VS_AIR_DEFENSE_XP	3
FIGHTER_VS_NAVAL_ATTACK_XP	3
TAC_BOMBER_VS_NAVAL_ATTACK_XP	6
STRAT_BOMBER_VS_NAVAL_ATTACK_XP	6
AIR_VS_NAVAL_DEFENSE_XP	2
FIGHTER_VS_GROUND_ATTACK_XP	3
TAC_BOMBER_VS_GROUND_ATTACK_XP	6
STRAT_BOMBER_VS_GROUND_ATTACK_XP	3
AIR_VS_GROUND_DEFENSE_XP	2
FIGHTER_VS_RESOURCE_ATTACK_XP	3
TAC_BOMBER_VS_RESOURCE_ATTACK_XP	3
STRAT_BOMBER_VS_RESOURCE_ATTACK_XP	6

#### Naval units

Naval units lose a flat 5 XP points per step repaired even at 8- or 9-steps.

NAVAL_VS_NAVAL_ATTACK_XP	6
NAVAL_VS_NAVAL_DEFENSE_XP	4
NAVAL_VS_AIR_ATTACK_XP	0
NAVAL_VS_AIR_DEFENSE_XP	4
NAVAL_VS_GROUND_ATTACK_XP	0

NATO images for all countries at zoom level 3 will show a number of dots equal to the experience level for each unit.

### 14.22.17 Garrisons as Headquarter Units

A leader attached to a garrison increase the movement of that garrison by 1 as long as the leader is attached.

## Chapter 15 Change Logs



*The secret of politics? Make a good treaty with Russia.*

Otto von Bismark

## 15.1 Chapter TOC

<u>15.2 - GS v1.07 Change Log</u>	<u>539</u>
<u>15.2.1 - v1.02</u>	<u>539</u>
<u>15.2.2 - v1.03</u>	<u>540</u>
<u>15.2.3 - v1.04</u>	<u>542</u>
<u>15.2.4 - v1.05</u>	<u>544</u>
<u>15.2.5 - v1.07</u>	<u>545</u>
<u>15.3 - GS 2.0 Change Log</u>	<u>547</u>
<u>Quote - Clausewitz - Last Victory</u>	<u>547</u>
<u>15.3.1 - v2.00b (9/21/2010)</u>	<u>547</u>
<u>15.3.2 - v2.00c (9/22/2010)</u>	<u>547</u>
<u>15.3.3 - v2.00d (9/26/2010)</u>	<u>548</u>
<u>15.3.4 - v2.00e change log</u>	<u>549</u>
<u>15.3.5 - v2.00f change log</u>	<u>549</u>
<u>15.3.6 - v2.00g change log</u>	<u>550</u>
<u>15.3.7 - v2.00h change log</u>	<u>550</u>
<u>15.3.8 - v2.00i (10/26/2010)</u>	<u>550</u>
<u>15.3.9 - v2.00j (N/A)</u>	<u>550</u>
<u>15.3.10 - v2.00k (11/7/2010)</u>	<u>550</u>
<u>15.3.11 - v2.00L (11/15/2010)</u>	<u>551</u>
<u>15.3.12 - v2.00m (12/4/2010)</u>	<u>551</u>
<u>15.3.13 - v2.00n (12/5/2010) - Hotfix</u>	<u>552</u>
<u>15.3.14 - v2.00o (N/A)</u>	<u>552</u>
<u>15.3.15 - v2.00p</u>	<u>552</u>
<u>15.3.16 - v2.00q (12/21/2010)</u>	<u>553</u>



<a href="#"><u>15.3.17 - v2.00r (December 27, 2010)</u></a>	<a href="#"><u>555</u></a>
<a href="#"><u>15.3.18 - v2.00s (December 28, 2010)</u></a>	<a href="#"><u>555</u></a>
<a href="#"><u>15.3.19 - v2.00t (December 30, 2010)</u></a>	<a href="#"><u>555</u></a>
<a href="#"><u>15.3.20 - v2.00u (December 30, 2010)</u></a>	<a href="#"><u>557</u></a>
<a href="#"><u>15.3.21 - v2.00v (December 31, 2010)</u></a>	<a href="#"><u>557</u></a>
<a href="#"><u>15.3.22 - v2.00w (January 9, 2011)</u></a>	<a href="#"><u>557</u></a>
<a href="#"><u>15.3.23 - v2.00x (January xx, 2011)</u></a>	<a href="#"><u>558</u></a>
<a href="#"><u>15.3.24 - v2.00x1 &amp; v2.00w1 (January 11, 2011)</u></a>	<a href="#"><u>558</u></a>
<a href="#"><u>15.3.25 - v2.00x2 &amp; v2.00w2 (January 11, 2011)</u></a>	<a href="#"><u>559</u></a>
<a href="#"><u>15.3.26 - v2.00y1 &amp; v2.00w3 (January 16, 2011)</u></a>	<a href="#"><u>559</u></a>
<a href="#"><u>15.3.27 - GSv2.00y (January 15, 2011)</u></a>	<a href="#"><u>559</u></a>
<a href="#"><u>15.3.28 - v2.00z &amp; v2.00w4 (January 21, 2011)</u></a>	<a href="#"><u>559</u></a>
<a href="#"><u>15.3.29 - 2.00z changes only (6-10)</u></a>	<a href="#"><u>559</u></a>
<a href="#"><u>15.3.30 - v2.00z4 (January 28, 2011)</u></a>	<a href="#"><u>560</u></a>
<a href="#"><u>15.3.31 - GSv2.00z6 (January 31, 2011)</u></a>	<a href="#"><u>560</u></a>
<a href="#"><u>15.3.32 - GSv2.00z7 (February 2, 2011)</u></a>	<a href="#"><u>561</u></a>
<a href="#"><u>15.3.33 - GSv2.00z8 (February 6, 2011)</u></a>	<a href="#"><u>562</u></a>
<a href="#"><u>15.3.34 - GSv2.00z9 (February 6, 2011)</u></a>	<a href="#"><u>562</u></a>
<a href="#"><u>15.3.35 - GSv2.00z10 (February 9, 2011)</u></a>	<a href="#"><u>562</u></a>
<a href="#"><u>15.3.36 - GSv2.00z11 (February 10, 2011)</u></a>	<a href="#"><u>562</u></a>
<a href="#"><u>15.3.37 - GSv2.00z12 (February 10, 2011)</u></a>	<a href="#"><u>563</u></a>
<a href="#"><u>15.3.38 - GSv2.00z13 (February 13, 2011)</u></a>	<a href="#"><u>563</u></a>
<a href="#"><u>15.3.39 - GSv2.00z14 (February 14, 2011)</u></a>	<a href="#"><u>563</u></a>
<a href="#"><u>15.3.40 - GSv2.00aa (February 17, 2011)</u></a>	<a href="#"><u>563</u></a>
<a href="#"><u>15.3.41 - GSv2.00ab change log.(February 23, 2011)</u></a>	<a href="#"><u>563</u></a>

<a href="#"><u>15.3.42 - GSv2.00ad (February 27, 2001)</u></a>	<a href="#"><u>564</u></a>
<a href="#"><u>15.3.43 - GSv2.00ae (March 6, 2011)</u></a>	<a href="#"><u>565</u></a>
<a href="#"><u>15.3.44 - GSv2.00af (March 6, 2011)</u></a>	<a href="#"><u>566</u></a>
<a href="#"><u>15.3.45 - GSv2.00 aj (March 21, 2011)</u></a>	<a href="#"><u>566</u></a>
<a href="#"><u>15.3.46 - GSv2.00al (April 2, 2011)</u></a>	<a href="#"><u>567</u></a>
<a href="#"><u>15.3.47 - GSv2.00am (April 4, 2011)</u></a>	<a href="#"><u>569</u></a>
<a href="#"><u>15.3.48 - GSv2.00an (April 10, 2011)</u></a>	<a href="#"><u>570</u></a>
<a href="#"><u>15.3.49 - GSv2.00ap (April 17, 2011)</u></a>	<a href="#"><u>571</u></a>
<a href="#"><u>15.3.50 - GSv2.00aq-Hotfix (April 17, 2011)</u></a>	<a href="#"><u>571</u></a>
<a href="#"><u>15.3.51 - GSv2.00aq2-Hotfix (April 18, 2011)</u></a>	<a href="#"><u>572</u></a>
<a href="#"><u>15.3.52 - GSv2.00ar (April 19, 2011)</u></a>	<a href="#"><u>572</u></a>
<a href="#"><u>15.3.53 - GSv2.00.04 (Pre Release Hotfix 04) (April 20, 2011)</u></a>	<a href="#"><u>572</u></a>
<a href="#"><u>15.3.54 - GSv2.00.06 (Hotfix 06) (April 22, 2011)</u></a>	<a href="#"><u>572</u></a>
<a href="#"><u>15.3.55 - GSv2.00.07 (Hotfix 07) (April 26, 2011)</u></a>	<a href="#"><u>573</u></a>
<a href="#"><u>15.3.56 - GSv2.00.08 (Hotfix 08) (April 27, 2011)</u></a>	<a href="#"><u>573</u></a>
<a href="#"><u>15.4 - GS 2.1 Change Log</u></a>	<a href="#"><u>574</u></a>
<a href="#"><u>15.4.1 - Master Change Index</u></a>	<a href="#"><u>574</u></a>
<a href="#"><u>15.4.2 - GSv2.01.01 - May 22, 2011</u></a>	<a href="#"><u>607</u></a>
<a href="#"><u>15.4.3 - GSv2.01.02 - May 25, 2011</u></a>	<a href="#"><u>607</u></a>
<a href="#"><u>15.4.4 - GSv2.01.03 - May 28, 2011</u></a>	<a href="#"><u>607</u></a>
<a href="#"><u>15.4.5 - GSv2.01.04 - June 14, 2011</u></a>	<a href="#"><u>607</u></a>
<a href="#"><u>15.4.6 - GSv2.01.05 - June 18, 2011</u></a>	<a href="#"><u>607</u></a>
<a href="#"><u>15.4.7 - GSv2.01.06 - June 20, 2011</u></a>	<a href="#"><u>610</u></a>
<a href="#"><u>15.4.8 - GSv2.01.07 - July 7, 2011</u></a>	<a href="#"><u>610</u></a>
<a href="#"><u>15.4.9 - GSv2.01.08 - July 9, 2011</u></a>	<a href="#"><u>610</u></a>

<a href="#"><u>15.4.10 - GSv2.01.09 - Not Used</u></a>	<a href="#"><u>610</u></a>
<a href="#"><u>15.4.11 - GSv2.01.10 - July 22, 2011</u></a>	<a href="#"><u>611</u></a>
<a href="#"><u>15.4.12 - GSv2.01.11 - July 23, 2011</u></a>	<a href="#"><u>612</u></a>
<a href="#"><u>15.4.13 - GSv2.01.12 - July 25, 2011</u></a>	<a href="#"><u>612</u></a>
<a href="#"><u>15.4.14 - GSv2.01.13 - July 25, 2011</u></a>	<a href="#"><u>612</u></a>
<a href="#"><u>15.4.15 - GSv2.01.14 - July 26, 2011</u></a>	<a href="#"><u>612</u></a>
<a href="#"><u>15.4.16 - GSv2.01.15 - July 31, 2011</u></a>	<a href="#"><u>612</u></a>
<a href="#"><u>15.4.17 - GSv2.01.17 - August 5, 2011</u></a>	<a href="#"><u>613</u></a>
<a href="#"><u>15.4.18 - GSv2.01.18 - August 6, 2011</u></a>	<a href="#"><u>614</u></a>
<a href="#"><u>15.4.19 - GSv2.01.19 - August 15, 2011</u></a>	<a href="#"><u>614</u></a>
<a href="#"><u>15.4.20 - GSv2.01.20 - August 18, 2011</u></a>	<a href="#"><u>615</u></a>
<a href="#"><u>15.4.21 - GSv2.01.21 - August 19, 2011</u></a>	<a href="#"><u>615</u></a>
<a href="#"><u>15.4.22 - GSv2.01.22 - August 23, 2011</u></a>	<a href="#"><u>616</u></a>
<a href="#"><u>15.4.23 - NOTE: GSv2.01.23 &amp; GSv2.01.24 were dev only versions</u></a>	<a href="#"><u>616</u></a>
<a href="#"><u>15.4.24 - GSv2.01.25 - September 8, 2011</u></a>	<a href="#"><u>616</u></a>
<a href="#"><u>15.4.25 - GSv2.01.26 - September 9, 2011</u></a>	<a href="#"><u>620</u></a>
<a href="#"><u>15.4.26 - GSv2.01.27 - September 18, 2011</u></a>	<a href="#"><u>620</u></a>
<a href="#"><u>15.4.27 - GSv2.01.28 - October 2, 2011</u></a>	<a href="#"><u>621</u></a>
<a href="#"><u>15.4.28 - GSv2.01.29 - October 9, 2011</u></a>	<a href="#"><u>622</u></a>
<a href="#"><u>15.4.29 - GSv2.01.30 - October 9, 2011</u></a>	<a href="#"><u>623</u></a>
<a href="#"><u>15.4.30 - GSv2.01.31 - October 18, 2011</u></a>	<a href="#"><u>623</u></a>
<a href="#"><u>15.4.31 - GSv2.01.32 - October 23, 2011</u></a>	<a href="#"><u>625</u></a>
<a href="#"><u>15.4.32 - GSv2.01.33 - October 30, 2011</u></a>	<a href="#"><u>625</u></a>
<a href="#"><u>15.4.33 - GSv2.01.34 - November, 2011</u></a>	<a href="#"><u>628</u></a>
<a href="#"><u>15.4.34 - GSv2.01.35 - November 14, 2011</u></a>	<a href="#"><u>628</u></a>

<a href="#"><u>15.4.35 - GSv2.10RC1 - December 7, 2011</u></a>	<a href="#"><u>629</u></a>
<a href="#"><u>15.4.36 - GSv2.10RC2 - December 11, 2011</u></a>	<a href="#"><u>629</u></a>
<a href="#"><u>15.4.37 - GSv2.10RC3 - December 11, 2011</u></a>	<a href="#"><u>630</u></a>
<a href="#"><u>15.4.38 - GSv2.10RC4 - December 12, 2011</u></a>	<a href="#"><u>630</u></a>
<a href="#"><u>15.4.39 - GSv2.10RC5 - December 22, 2011</u></a>	<a href="#"><u>630</u></a>
<a href="#"><u>15.4.40 - GSv2.10RC6 - December 27, 2011</u></a>	<a href="#"><u>631</u></a>
<a href="#"><u>15.4.41 - GSv2.10RC7 - December 31, 2011</u></a>	<a href="#"><u>631</u></a>
<a href="#"><u>15.4.42 - GSv2.10RC8 - January 15, 2012</u></a>	<a href="#"><u>631</u></a>
<a href="#"><u>15.4.43 - GSv2.10RC9 - February 3, 2012</u></a>	<a href="#"><u>632</u></a>
<a href="#"><u>15.4.44 - GSv2.10RC10 - February 5, 2012</u></a>	<a href="#"><u>634</u></a>
<a href="#"><u>15.4.45 - GSv2.10RC11 - February 11, 2012</u></a>	<a href="#"><u>634</u></a>
<a href="#"><u>15.4.46 - GSv2.10RC12 (Incremental) - February 13, 2012</u></a>	<a href="#"><u>637</u></a>
<a href="#"><u>15.4.47 - GSv2.10RC13 (Incremental) - February 15, 2012</u></a>	<a href="#"><u>637</u></a>
<a href="#"><u>15.4.48 - GSv2.10RC14 (Incremental) - February 17, 2012</u></a>	<a href="#"><u>637</u></a>
<a href="#"><u>15.4.49 - GSv2.10RC15 (Incremental) - February 18, 2012</u></a>	<a href="#"><u>638</u></a>
<a href="#"><u>15.4.50 - GSv2.10RC16 (Incremental) - February 19, 2012</u></a>	<a href="#"><u>638</u></a>
<a href="#"><u>15.4.51 - GSv2.10RC17 (Incremental) - March 2, 2012</u></a>	<a href="#"><u>638</u></a>
<a href="#"><u>15.4.52 - GSv2.10 Pre-Installer Full File Set - March 18, 2012</u></a>	<a href="#"><u>639</u></a>
<a href="#"><u>15.4.53 - GSv2.10 Pre-Installer Full File Set - March 21, 2012</u></a>	<a href="#"><u>640</u></a>
<a href="#"><u>15.4.54 - GSv2.10 Pre-Installer Full File Set - April 01, 2012</u></a>	<a href="#"><u>640</u></a>
<a href="#"><u>15.4.55 - GSv2.10 Pre-Installer patch - April 02, 2012</u></a>	<a href="#"><u>640</u></a>
<a href="#"><u>15.4.56 - GSv2.10 Pre-Installer patch - April 03, 2012</u></a>	<a href="#"><u>640</u></a>
<a href="#"><u>15.4.57 - GSv2.10 Pre-Installer patch - April 04, 2012</u></a>	<a href="#"><u>640</u></a>
<a href="#"><u>15.4.58 - GSv2.10 Pre-Installer patch - April 09, 2012</u></a>	<a href="#"><u>640</u></a>
<a href="#"><u>15.4.59 - GSv2.10 Pre-Installer patch #2 - April 09, 2012</u></a>	<a href="#"><u>641</u></a>

<a href="#"><u>15.4.60 - GSv2.10 Pre-Installer patch - April 15, 2012</u></a>	<a href="#"><u>641</u></a>
<a href="#"><u>15.4.61 - GSv2.10 Pre-Installer Full File Set - May 30, 2012</u></a>	<a href="#"><u>642</u></a>
<a href="#"><u>15.4.62 - GSv2.11 - December 2012</u></a>	<a href="#"><u>642</u></a>
<a href="#"><u>15.4.63 - GSv2.12 - December 2012</u></a>	<a href="#"><u>643</u></a>
<a href="#"><u>GSv2.13 - Febuary 1013</u></a>	<a href="#"><u>643</u></a>
<a href="#"><u>15.5 - GS 3.0 Change Log</u></a>	<a href="#"><u>643</u></a>
<a href="#"><u>15.5.1 - Master Change Index</u></a>	<a href="#"><u>643</u></a>

## 15.2 GS v1.07 Change Log

### 15.2.1 v1.02

**Games started under GS v1.00 can be continued under GS v1.02. This means that if you apply this update that you can load and continue to play saved games started with GS v1.00.**

12-10-2009

Changed the expected entry date for Poland, who is pro Allied, to 9-1-1939. If not attacked by Germany, Poland will activate at the end of the Allied turn no later than 9-29-1939. If Poland activates then the Polish units do not suffer the 10% efficiency loss. If Germany; however, declares war on Poland then all Polish units suffer an immediate efficiency loss of 10%.

Fixed a messaging bug where the owning player wasn't being notified when a minor ally activated on their own. The axis player was not seeing any messages when Italy, Romania, Bulgaria, Hungary or Finland joined the war. Similarly, the allied player wasn't any messages when the USA and Free France activated. This is now fixed.

12-11-2009 (Hotfix)

Fixed a code bug that caused the game for some players to hang on startup when scenarios are loaded. For those players that experienced this bug this is a critical bug and prevented them from playing the expansion.

12-13-2009

There was a bug where the ownership of a airfield wasn't changing when its adjoining fortress was captured. This is now fixed. Ownership of the airfield now changes at the end of the first turn that the airfield is not occupied. If the airfield is occupied at the time of its fortress capture then ownership is maintained by the side that lost the fortress until their air unit leaves the airfield. The air unit can be attacked by both the adjacent ground unit and one enemy air unit until it leaves.

12-18-2009

Made the expansion compatible with CEaW 1.12.1. Now, the Grand Strategy expansion should work with either CEaW 1.12 or 1.12.1. Also, Grand Strategy games can between played between players where one has applied the expansion over 1.12 and the other over 1.12.1 even though those same two players would not be able to play a standard game.

GS version changed to 1.01 from 1.00. This changed was made in all 8 language file.

Made a number updates and edits to the user manual.

12-20-2009

Fixed a bug that existed in the vanilla game that prevented the placement of a German unit inside of Vichy France at the fall of France if that unit was in a hex controlled by Italy.

1-1-2010

Syria bug. Syria not surrendering when Damascus falls is indeed a bug. The reason for the bug is that the primary capital of Syria belongs to France in the 1939 and 1940 scenarios. That means it's not set properly when loading the game. When Syria is created then the primary capital is not set. So it's without a capital even though it has one on the map. The surrender code checks for a primary capital. This bug has been fixed by defining Damascus as a primary capital for Syria when France surrenders.

Initial weather was not random in the 1940 and 1941 scenarios (not starting in all fair weather).

We noticed that I got the same weather every time the 1940 and 1941 scenarios were started. You always get fair central weather in February in the 1940 scenario and mud weather in February in the 1941 scenario. This bug has been fixed so you now get random weather based on the appropriate probabilities (i.e., chances) for February.

Canadian weather. Changed the code so Canada (including UK controlled part of Canada) plus Greenland and Iceland are now part of the north weather zone.

Convoy bug regarding Halifax. Rewrote the convoy code so New York port will be set as a destination if Halifax becomes Axis controlled.

Convoys when UK surrenders. Changed the code so the convoys will become US and go to New York when UK surrenders (Ottawa falls).

US DoW upon Germany when an Axis unit controls a hex in Canada (including UK controlled part of Canada). Added this code as well because we felt it's an omission to not think about what would happen if Germany landed in Canada. Now USA will automatically join the Allies by DoW'ing Germany if the Axis are so bold to land units in Canada.

Fredericton garrison. Added the Fredericton garrison to all scenarios. The reason was that Canada is neutral until some time in 1941 and that means the Germans can DoW Canada and land directly into Fredericton and get supply without the Allied player being able to stop it. The allies can't move units to Fredericton after England falls because the territory is neutral. So by adding a garrison here it means the Germans must fight for a supply source.

1-2-2010

Changed 2 hexes in Portugal that were incorrectly flagged as Spanish owned.

Added the game turn to the mini-map and changed it so each major power has the same color as their NATO symbol except for Germany, which is still blue because the grey/green color is too similar to the background. Made a common color for all axis minors and another common color for the allied minors.

1-5-2010

GS version changed to 1.02 from 1.01.

## 15.2.2 v1.03

1-23-2010

Fix an issue with the message\_spa.txt file (i.e., Spanish language version) that caused CEaW - GS to bomb.

The hex 1SW of Istanbul is designated as a sea hex, but the map tile shows it as a costal hex. This hex was kept as a sea hex and the map tile was changed such that it contains more sea than land.

2-9-2010

Updated the scenarios so Persia starts with only 2 garrisons instead of 3.

Updated the map and scenarios so the Azores airbase is controlled by Portugal

Changed the code so Persia won't receive any reinforcements each year. This should prevent the use of Persian units for invading Italy and other similar things in the late game.

Changed the code so the Azores airbase is changed to US control when Portugal is DoW'ed regardless of which side makes the DoW. A message about this is shown as well



Changed the code so the Azores will be leased to the Allies on August 11th 1943. A message about this is shown.

Changed the code so Russian units in Allied controlled territory and vice versa will get one supply level less than normal (but never lower than 1).

Changed the code so Russian units in Allied controlled territory and vice versa will max get supply level 3.

2-10-2010

Fixed a minor bug where the game didn't update the ownership of the transportation loops until the end of the turn. That meant the Allies in the 1943 and 1944 scenarios could move through the Kiel canal on the first turn even though they don't control Kiel. Added a test at the start of the game to set ownership of these canals. So the canal message comes immediately before you can move any units.

2-14-2010

Redrew the Ostwall fortifications making them less formidable and more historically accurate.

Hexes 1xSE and 2xSE of Breslau were changed to German control so that almost all of Oder is within Germany.

Updated the map, scenarios and graphics to add the Warthe river in Poland.

Changed the Italian armor images and moved up these images and added the panther at the top level.

2-19-2010

Added tooltip for the unit country owner so it shows the organization upgrade value from tech 0. The country name is colorized if upgrades are available that will increase the organization. (1-4 = Bronze, 5-9 = Gold, 10+ = Yellow) . In addition all colored icons and text are hidden unless the unit you click on is on the same side as you. So no more spying upon enemy units for info about their upgrades.

2-25-2010

Fixed the code such that axis units in Syria, Iraq and Persia are not counted in the Med supply limits if Ankara, Turkey is axis controlled.

Removed hard coded North Africa supply rules ports and placed them in the general.txt file. No new ports were added but did add the slots to include additional ports. It's now possible to have up to 5 Libyan ports and 12 African ports. Also, the impact of Malta and Gibraltar on North Africa Supply was added to the file.

I also fixed several issues in the North Africa Supply code where country numbers were hardcoded (0 instead of Global.GERMANY etc.).

Added some values in general.txt where players can decide the state of each of the countries in Africa and the Middle East. 0 = country never affected by Axis Med supply, 1 = country always affected by Axis Med supply & 2 = country affected by Axis Med supply unless Ankara (Turkey) is Axis controlled. The following values were set for each country: 0: Turkey, 1: Free France, Vichy France, Libya and Egypt and 2: Syria, Iraq and Persia . So now units in Syria, Iraq and Persia won't be affected by Med supply if the Axis have control of Turkey. This simulates that the Axis can use the Turkish rail network to send supply to the nearest countries. Note that Egypt, Libya, Vichy France and Free France were NOT added because they're further away from

Turkey.

Because of the change to the general.txt file, this update will produce a checksum failure if applied to existing games. However; this will not affected the saved game and if both players apply the change will only happen once.

### 15.2.3 v1.04

This is an incremental update, which includes all incremental changes made since the official v1.02 release, and must be manually applied (i.e., copied) over the top of a GS v1.02 install.

This update will NOT invalidate saved game; but, this update will cause a checksum error.

IMPORTANT: This update should only be applied to existing games either before activation of Hungary, Romania or Finland (i.e., before activation of any of these three countries) or after activation of all three of these countries.

Changes since last release. (For all changes made so far in v1.03 beta see the attached change log).

3-9-2010

Fix a bug where if Italy surrenders after Germany and without Rome being allied controlled that the victory conditions stated an axis minor victory. Conditions are now changed to the allied victory is the conquest is prior to May 1945 and a stalemate if in May 1945.

3-11-2010

Fixed the bug about the Copenhagen port changing to the owner of Malmo if Sweden is captured.

Changed the code so Finland will activate for the Germans on the turn Russia activates. The Finnish units can't move on the first turn, though. Finland can still activate by themselves in spring 1941 and be ready for Barbarossa. This change is intended to prevent Finland from being wiped out early in case of an early German attack upon Russia. Then Russia can DoW Finland after having lots of units in the north and crush Finland before the Germans can get to Leningrad.

Added the Hungarian fighter to the game. This includes unit image files too.

Changed the code so that the strength of the Hungarian fighter, Finnish fighter and Romanian fighter is defined in the general.txt. All of these three fighters are set to 5 now, but this can be changed. If players want the status quo then they can set the Finnish and Romanian fighters at 10 and the Hungarian at 0 (means no spawn). All fighters spawn adjacent to the primary capital similar to Axis minor power reinforcements.

Made a change so that USA will get 100% war effort + tech bonus as long as the Axis player controls a hex in Canada or USA. This simulates the emergency situation USA would be in if the Axis would land at the US doorstep. It simulates that production intended for the west is sent to the east instead. This change should make it even less likely that the Axis will land in Canada or USA.

3-12-2010

Changed random research so there is a chance for one tech that would give a spectacular result. With normal research you get a tech progress of 2 and that's multiplied with the number of labs, focus and tech difficulty. Changed random research to following probabilities:

- 40%: 1

- 20%: 1.5
- 20%: 2
- 10%: 3
- 5%: 5
- 5%: 10 (will be flagged as great progress)

This gives an average progress of 2.15. The old system had:

- 87%: 1
- 10%: 8
- 3%: 15

The new system is better because you have to be very unlucky to get lots of 1's. It's only 40% per turn instead of 87%. You won't often get a great result, but enough for random research to be exciting. With random research it means you can't predict when you will get the new techs and that's a good thing. I think it's possible to play with random research the way I designed it. I don't think we need "full" research. i. e. the old system, because the new random research will give enough uncertainty for the players to enjoy the random research. At the same time this reduces the frustration of having one tech lagging too much behind because you always got below 87%.

Made Random Research a default when starting new games.

Increased the efficiency loss for Russian units when German DoW from 20 to 30. This value is not bad because the Russians will regain almost up to 15 efficiency if they do nothing on that turn. Even for units that move they would still regain 5. With the 30 efficiency loss it means most units just below 30 on turn one. These increase to 40-45 on the first Russian turn and drop 5 again when they move. The it repeats itself until the Russian units get max efficiency. So the extra 10 drop means it takes one extra turn to get to full efficiency. The main difference is that the Russians will be too weak on the first few turns of Barbarossa so the Germans can move as far as they can into Russian territory with little fear of retaliation. That is good. So people should NOT worry about the extra efficiency loss for the Russians. They will be just as strong for the first winter.

Moved several units closer to the front line. Now these units will have to run for their lives to survive. Some might even be caught if the Germans are bold. If efficiency loss hadn't been reduced by 30 then the Russians could counter attack spearhead armor units with some sting. Now they can forget about that on the first few turns. So the mech units have little else to do except running for safety.

Moved the Russian fighter from Moscow to Leningrad. This is according to the OOB and it's not so dangerous because Finland will always activate when Russia activates. If the Finnish are afraid of Russian fighter harassment they can always put the fighter on sentry until German fighters get within range. But the Finnish fighter can fight the Russian fighter and expect good results so why hide?

No tech changes were made for the Russians.

3-16-2010

Changed the supply status of the Tunis port to 10 so that axis units may hold out longer in North Africa by controlling Tunis.

Fixed a bug where allied convoys would halt for several turns.

3-17-2010

Updated the mini map to be easier on the eyes.

Updated the GS players manual to align with GS v1.04.

3-18-2010

Change GS version number to v1.04 from v1.02.

3-23-2009

Deleted message\_rus1.txt file in the data folder.

Fixed a bug where games were ending unexpectedly on April 22, 1945 instead of May 12th 1945. This bug occurred from an accumulation of a round error and was fixed by changing the end date to May 14th 1945, even though the last game turn is May 12th 1945.

3-26-2010

Fixed a bug where a ship that ran into a hidden sub could be bounced into an enemy port if one or more hexes adjacent to the hidden sub were occupied.

#### 15.2.4 v1.05

4-12-2010

Fixed a bug about USA activating when Axis units were in Canada if USA had surrendered. This message won't show now and the Russians won't get an extra set of Siberian reserves.

Fixed a bug when UK had surrendered where the southern lend lease route to Russia would shut down. The bug sent the PP's to USA instead. Now Russia will receive the lend lease from Persia regardless.

Changed the code so attacking Belgium during winter or mud weather will NOT create a surprise efficiency loss upon units inside France. Belgian units will still be surprised though. This is done to make sitzkrieg more attractive. If you attack Belgium during bad weather then the French would have been more prepared and the fight would be harder.

Linked the control of the British airfields to certain key cities.

- Aberdeen controls Lerwick
- Glasgow controls Stornoway and Benbecula
- Liverpool controls Isle of Man
- Scapa Flow controls Kirkwall

Changed version from v1.04 to v1.05

4-13-2010

Fixed some geographic translations in the Italian version of city file.

Added capability for partisans to spawn in Ireland and Portugal to spawn partisans after they're

conquered.

Before only France, Russia and Yugoslavia got partisans at full rate after they were conquered. Now Ireland, Switzerland, Germany, UK and USA, France, Russia and Yugoslavia will get them at full rate.

Upped Ireland and Portugal from minor partisans to standard partisans (1-10 instead of 1-5 when spawning).

4-17-2010

Fixed a bug that caused the game to hang when partisans trying to spawn in countries tied to a major faction (i.e., Britain/USA/France, Russia or Germany/Italy) when all countries of that faction have been defeated. For example, in the unlikely case that Britain, USA and France are all defeated partisans that spawn in these countries, or minor countries tied to this faction, will spawn as Russian partisans. Similarly, if Russia is defeated then traditional Russian partisans will spawn in the British/USA/French faction.

May 25, 2010 GS Mini Patch

Fixed a bug where allied convoys would hang at their spawning points if "bottleneck" hexes were occupied by friendly (allied) naval units.

Added <date>ai.scn scenarios, where Switzerland is pro-axis to prevent the axis AI from declaring war on Switzerland. This is the only difference from the <date>.scn scenarios.

Fixed a feature where only <date>.scn (<date> = 1939, 1940, 1941, 1942, 1943, 1944) scenario files would work with GS. That is, the inclusion of a scenario file by any other name would cause GS to crash on startup. This feature has been fixed such that GS will start up and compile any scenario that follows the format <date>\*.scn for <date> = 1939, 1940, 1941, 1942, 1943 or 1944 only.

Updated the GS language file messages so that if the player does try the tutorial there are references to the Players Manual v1.05. There is still a bug in the code where the resource information will come up if user hits the ' - ' (dash) or clicks on the DoW button. However, if the user presses the DoW button again -- the DoW info is presented.

### 15.2.5 v1.07

8/5/2010

Fixed a bug that where Greenland and Iceland airbases would incorrectly switch to German control when certain cities in England/Scotland were captured and if these airbases were unoccupied.

For games in which this bug has already occurred a temporary patch is available that will revert control of these bases back to the USA when unoccupied.

Fixed a feature, which has been present since the original game, where visible subs that do not move or attack in a player's turn become invisible again. Note that this happens at the very end of the turn and, for the axis player, after convoy movement. This means that a sub that attacked a convoy in the previous turn, or which was run into by a convoy in their opponent's turn, will NOT be run into by a convoy the turn in which the sub becomes invisible again.

Changed GS version number to v1.07.

7/14/2010

Spanish Message file fix. Fix an error in the "message\_spa.txt" file in which a double quote (i.e., ") was left off of the end of the message for INDEX-553|. This error caused wrong messages to be displayed for all messages referenced after this index. For discussion on this error see:

<http://www.slitherine.com/forum/viewtopic.php?p=157314#157314>

## 15.3 GS 2.0 Change Log

*There is only one decisive victory: the last.*

Karl von Clausewitz

### 15.3.1 v2.00b (9/21/2010)

- ◆ Removed the bug where the paratroopers could jump immediately after landing into an empty city
- ◆ Made it impossible to upgrade or repair on the same turn as you paradrop
- ◆ Added a value to general.txt about minimum efficiency needed to make a paradrop, which is currently set to 70.
- ◆ Added a value to general.txt about max efficiency after a paradrop, which is currently set to 60. This means it will be at least 10 less than the value needed to make a paradrop so you need to rest for some turns to make the drop. Since the unit is a garrison you need to be within range of a leader to quickly get efficiency back above 70 (2-3 turns if inside a city and no enemy adjacent).
- ◆ In order to see which units are eligible for paradrop, changed the strength color of the para unit to light blue if it's above the threshold level (70 now). That makes it very simple to spot when the unit is para capable again.
- ◆ Changed the images for entrenchments and XP level so they don't bog down the game so much. Have enabled zoom level 2 for entrenchments.
- ◆ Updated scenarios and changed the name of the German Fallschirmjäger into Fallschirmjager so MAC players don't get the strange symbol instead of the ä.
- ◆ Changed some logic so the code didn't have to look through all hexes as it did. I guess that slowed down the computer considerably. Now it looks better on my computer so we can turn on entrenchments on zoom level 2.

### 15.3.2 v2.00c (9/22/2010)

- ◆ Added the functionality to increase damage to paradrops into non-clear terrain
- ◆ No paradrops at all are possible into mountain.
- ◆ Paras now have range as a fighter, meaning the western Allies have a para range of 11 while Russia and Germany have a para range of 9. I think this looks more normal. E. g. in the 1944 scenario you can land behind the landing zone, but not as far in as the Siegfried line or anything. So enemy airbases should be safe unless they're located near the coast line.
- ◆ Added the new Finland emblems so the blue "nazi" symbol is gone.
- ◆ Corrected some misspellings in the uniticon folder.
- ◆ Changed Finland's partisan emblems to the old image to remove the swastika so as to not



cause problems.

### 15.3.3 v2.00d (9/26/2010)

- ◆ Ferry Crossing. A ferry crossing allows for free passage of a unit from one land mass to another across a body of water without having to pay the transport cost. This functionality now allows the axis player to reinforce its position in Turkey for free (assuming an axis invasion or defense of Turkey) instead of having to pay a transport cost of 8 PP's per units. Also, the functionality allows the axis player to reinforce, or evacuate, Sicily from mainland Italy. Similarly, the allied player once Sicily and the tip of Italy are under their control can ferry units across the straights of Messina for free. The following nine ferry crossings were added to the game.
  - ◆ Gibraltar
  - ◆ Ajaccio
  - ◆ Kiel
  - ◆ Messina
  - ◆ Copenhagen
  - ◆ Canakkale
  - ◆ Istanbul
  - ◆ Kerch
  - ◆ Scapa Flow
  - ◆ A unit can be ferried if it starts its turn adjacent to one of these ports to any other friendly controlled hex adjacent to the same port. This ferry is free and counts as the movement for the unit that turn. When you click on a unit eligible for ferry a ferry symbol will appear in all hexes to which that unit can be ferried.
- ◆ More Italian Leaders. Because of the reduced command range of leaders the following Italian leaders were added to the list of existing Italian leaders.
  - ◆ Mario Roatta (1887 to 1968)
  - ◆ Pietro Badoglio (1871 to 1956)
  - ◆ Italo Balbo (1896 to 1940)
  - ◆ Prince Amedeo Savoia-Aosta (Duke of Aosta) (1898 to 1942)
  - ◆ Gastone Gambara (1890 to 1962)
  - ◆ Guglielmo Nasi (1879 to 1971)
  - ◆ Vittorio Ambrosio (1915-1944)
- ◆ Added a new Russian (Chuikov) and a new German (Hoth) leader.
- ◆ Russian Map Changes. Added the Desna River located north of Kiev and runs east-west from the Dnepr. It wasn't previously shown but was regarded as a significant crossing

during both the German advance and retreat. This inclusion would only affect games under limited circumstance but would be nice chrome.

- ◆ Something that should have a greater game impact is a major swamp-forest mix midway between Gomel and Orel (surrounds the town of Bryansk) which is now included. It should add some variety to the region south of Moscow. It should be a bit of a mixed blessing for the Russians in that it would be tempting to defend but with no supply source adjacent it could become a large pocket if its flanks are breached and units don't withdraw in time.
- ◆ The coastal hexes along the Black Sea and along the Prut-Danube delta, which were shown as clear terrain; but were in reality swamp hexes, have been changed to swamp hexes. This change will make it harder for the Russians to blitz along the coast late in the game as it was historically.
- ◆ Turkey Map Changes. Added new cities, which all got new garrisons, and reinforced the country slightly east of Istanbul.

### 15.3.4 v2.00e change log

- ◆ Fixed a bug, which is from the vanilla game, where if you select the reassign leader button and then answer No to the question then the question would pop-up again. Now if you answer No then the unit is deselected and the question is not asked again.
- ◆ Added Aalborg, Denmark. For existing games, this city will appear at the end of the first saved turn after loading the game.
- ◆ Enabled paradrops if adjacent to a friendly air unit.

### 15.3.5 v2.00f change log

- ◆ **Unit-panel bug fix** - In some games units were showing the wrong experience mark due to a bug in the Unit-panel. This update fixes this bug.
- ◆ Improved NATO and unit image draw performance:
  - ◆ The code from the vanilla game was made so it loaded a buffered image stored in the hex object instead of trying to find the image in each hex again.
  - ◆ This is probably is needed for the unit images which are quite big; however for the NATO symbols there were situations where the buffer was not empty, but didn't contain the NATO image for the unit. That meant that the NATO image wouldn't be redrawn until the buffers were cleared by clicking on a unit or changing zoom level.
  - ◆ Now the NATO images will be redrawn every time regardless of the content of the buffer.
  - ◆ Finally, the buffering was disabled completely for updating of unit graphics, which results in unit images being updated much faster and without blank hexes.
- ◆ Unit Entrenchment - Entrenchment level will not drop lower than 1 if a unit is only attacked by airstrike or naval bombardment.
- ◆ Poland - Add Lodz as a city in Poland with a new garrison and moved Army Prusy 1 hex southeast.
- ◆ Belgium - Liege, Belgium to represent the fortress at Eben Emael is changed to a fortress in

1939. It reverts back to a city on the first fair weather turn in 1940 as a result of Germany becoming paradrop capable. This represents the ability of the Germans to neutralize Eben Emael with battalion size airborne units, which cannot be represented at the scale of this game, when they invade Belgium.

- ◆ French/UK Morale Loss - French and UK units in France and Belgium no suffer the 20 point morale loss when Belgium falls and NOT when it's invaded. This represents the impact of refugees fleeing towards Paris and hampering allied operations.

### 15.3.6 v2.00g change log

- ◆ GSv2.00f would hang when the US lend lease destroyer was released in 1941.
- ◆ Severe winter, which now has a random length, was being "randomized" by hex and not by the entire Eastern/Northern Europe weather zone. This bug is now fixed.

### 15.3.7 v2.00h change log

- ◆ Removed the code that changed the name for the Canadian units and cities.
- ◆ Changed the code so that each player will see game messages and city names in the language they've selected. No longer will they see messages and names in the language of the player who started the game. The one exception is on the very first turn of the game played by a player going second. On this turn certain messages will default to English. After that turn; however, all messages and city names will be in the language selected by the second player.

### 15.3.8 v2.00i (10/26/2010)

- ◆ Fixed a calculation bug for updating country names to different languages. A logic bug was introduced that meant countries with numbers from 27 to 36 had wrong names.
- ◆ Severe weather now only in Russia (same hexes that will get efficiency loss when severe winter begins)
- ◆ So Scandinavia, the Baltic states, Eastern Poland and Canada will now only have northern weather.

### 15.3.9 v2.00j (N/A)

This version was unofficially released to several team members and is being skipped in the general release to the team to avoid confusion.

### 15.3.10 v2.00k (11/7/2010)

- ◆ Fixed the tech advance text shown in the begin turn dialog box. It showed the index and now it shows the string in message\_\*\*\*.txt that correlates to the index.
- ◆ Added messages when players create a new game and don't have matching passwords or if the entered password from turn 2+ is wrong. These additions means the players can understand why they're thrown back to the main menu.
- ◆ Updated each language file with translations for the new text (805 and 806).
- ◆ Updated the code and the graphics to show the fighter image for the fighter and CV units and the

flak image for the other units.

- ◆ Updated the General.txt so that the transport group value for calculating overuse is now 2 instead of 3.
- ◆ Updated the message files with the new text (\*\* combat instead of \*\* attack). The message phrase strategic attack was kept since no units would use strategic defense. If a strategic bomber is used against another unit it's using naval combat, sub combat or air combat.
- ◆ Updated the map canvas so also the emblems are shown as the UK minor and Free French when onboard transports.
- ◆ Fixed a bug where Russian air units were erroneously being promoted to guard units. Now only ground corps can be promoted as such.
- ◆ Fixed a bug with the AI that caused the game to hang in the isFerry method.
- ◆ Updated GS so [Ruthenia](#) is added to Hungary. Ruthenia will be added to Hungary in existing games as well.
- ◆ Added the functionality where units of the same type can swap positions. This functionality, which is defaulted on, is controlled through a flag in the general.txt file. When units swap positions you lose one entrenchment level, burn oil as normal movement and drop morale as normal movement. Set a limit so unit swapping will not drop the entrenchment level below 1 (number can be altered). The player will also get a confirmation that asks, "Swap positions of units?".
- ◆ Added a survivability increase for ground and air units defending against shore bombardment. Value set to 2.
- ◆ Reduced the Soviet guards threshold from 75 to 50 so we have a chance to see more of them in play. It seems it's quite hard to get to XP level 50 for Soviet ground units.
- ◆ Increased the ground attack for BB from 1 to 2 to compensate for ground and air units getting +2 survivability against shore bombardment. This means BB's will perform better than DD's when shore bombarding. Added code to up the BB shore bombardment from 1 to 2 in existing games as well.
- ◆ Add the functionality that units adjacent to enemy units can now be upgraded at an additional cost of 2 PP's. (Both this functionality and the extra cost are controlled through the general.txt file.)

### 15.3.11 v2.00L (11/15/2010)

- ◆ Change transport over cost grouping from 1 to 2. This change was supposed to be in v2.00i; but was accidentally left out.
- ◆ Ferry, paratroop and swap can now be done and the existing tech level will be kept
- ◆ Liege is changed from a fortress to city when it becomes Axis controlled (e. g. Brussels falls) if it's not already a city when Germany becomes paratroop capable
- ◆ Page Up and Page Down will now deactivate the swap function so it's possible to move between different available units. If you right click on a hex you re-enable unit swap.
- ◆ Changed Radar Tech, which was showing the airplane icon, to showing the Air Defense icon for some units.

### 15.3.12 v2.00m (12/4/2010)

- ◆ Included updated emblems for various units.
- ◆ When you click on a unit the DOW and options buttons transform into paratrooper and elite buttons. One or both these buttons may be grayed if that unit is not eligible for one or both upgrades. If it is, then the appropriate button(s) are enabled and can be used to upgrade that unit.
- ◆ Fixed a bug where when a sub was moved into a hex not in spotting range and in the center of a concentration of enemy naval and / or transport units then that sub, which would be bounced, was given the ability to attack non-adjacent units, which sometimes included units completely screened on all six sides. Now in such a case the sub can only attack adjacent units.

- ◆ Added Light green to range of unit efficiency colors, which are now:
  - ◆ 0-19: Red (as before)
  - ◆ 20-39: Orange (as before)
  - ◆ 40-59: Yellow (as before)
  - ◆ 60-79: Light green (new color)
  - ◆ 80+: White (changed from 60+)
- ◆ Added automation unit naming. Now when you build a new unit and place it on the map you will have the unit automatically named according to the lowest available number following the existing naming convention for that country. So if you e. g. place a German armor unit then unit will be e. g. called IX Panzer Korps instead of just Armour. If you place a Russian corps it can be called 18th Army and so on. Land, air and naval units follow the same convention as seen in the scenarios. E. g. British BB's will be called nth Battle Sqn while US BB's will be called Battleship Division n. And so on. Numbers of destroyed units will be reused so if you e. g. destroy the German VIII Korps it will reappear later when Germany builds a new land unit. Some countries share numbers within units of the same type and some don't. That's also added. E. g. the German corps unit numbers are shared for infantry, mech and armor.
- ◆ So now you can have unique unit names following the existing naming convention without having to bother to rename units.
- ◆ Updated how Malta impacts axis supply in North Africa. It still has impact on 10 supply points but before the axis had to capture the fort to get those additional points. Now, they can increase their supply points in North Africa by degradation of the Malta fighter and/or Malta port capacity according to the following formula: Axis supply in Africa increased by:

$10 - (\text{strength of fighter} + \text{strength of port}) / 2.$

### 15.3.13 v2.00n (12/5/2010) - Hotfix

The North Africa supply check (i.e., Malta Supply Rule) and application of overage cost is now made at the end of the axis player's turn. This affords the axis player the opportunity to respond in his turn to allied actions that impact his supply in North Africa. The axis player should click on a unit (any unit) in North Africa to make sure that the most up to date supply number is displayed in the upper right hand corner of the GS gui.

### 15.3.14 v2.00o (N/A)

This version numbering was skipped due to the possibility that the letter "o" could be mistaken for the number "0".

### 15.3.15 v2.00p

- ◆ Added code to deSelect so every time you deSelect a unit you recalculate the Malta supply and update the production panel. It's good to have for other purposes like when something we do consume oil or PP's. By linking it to deSelect we make sure it will always be updated. It seems to me the calculations are so fast so we don't get a performance hit. I can at least not notice anything.
- ◆ Make graphic changes to the mini maps better bring out the Italian naval units.
- ◆ Updated the 1941 scenario to move the Russian sub starting position next to the BB in the Leningrad port (Kronstadt), which is where it starts in the 1939 and 1940 scenarios.
- ◆ Changed the code so repairs will only spend manpower multiplied with the repair index (hardcoded in GroundUnit.class, AirUnit.class and NavalUnit.class. The current values are 0.6D for ground and naval and 0.8D for naval. So it means you don't save as much when repairing naval units. I guess this is good with German subs because with a sunk sub then

everybody inside would perish.

- ◆ Gave cities and resources a minimum anti-naval capability so now naval units shore bombarding ground units located in these hexes can receive damage, on average, of 1-step every 2 to 3 turns. This anti-naval capability represents shore batteries and mined waters and is intended to discourage the use of harassing shore bombardment. Note that this capability does not apply to units in non-city or non-resource coastal hexes.
- ◆ Fix a bug where the anti-tank icon was incorrectly showing for general -> radar tech at some levels. It now shows sea spotting range (which is correct).

### 15.3.16 v2.00q (12/21/2010)

- ◆ Updated GS so it's not possible to rename existing paratroopers, SS and Guards units and also added error messages to all the message files.
  - ◆ This will prevent a player of being able to demoting elite units in play and being able to immediately freeing up slots and being able to build new elite units of that type.
  - ◆ This was put in place to prevent the "gamey" tactic, for example, of an axis player dropping a paratrooper division in England, renaming it and then being able to build a new paratrooper division that it could drop in a turn or two. Not that any player would do that, but now once promoted to an elite unit that unit remains as such and the slot for the unit type remains filled until that unit is destroyed.
- ◆ Northern Convoy will now spawn near New York if London is Axis controlled and Russia not active.
- ◆ Fixed a bug where the game tried to create Axis volunteers near Berlin when Germany was conquered. Now this message won't be shown if Germany is conquered.
- ◆ Fixed a bug so that the production panel at the top now shows the correct values if the primary country of a side is conquered (like Germany). It showed the values of the primary country even if it was conquered. This meant that e. g. the Axis player couldn't see Italy was out of oil when they were.
- ◆ Fixed a bug in production panel at the top and south west so the tooltip is NOT shown if country is conquered or belongs to the other side. There was a bug that allowed you to "spy" on the other side by reading the tooltip for the area even if you couldn't see the value. The tooltip had some valuable data and now that bug is fixed.
- ◆ Made a change so convoy arrows will be shown at the start next Axis turn.
- ◆ Altered ASW research and increased some ASW via Radar as well. The end result is that the Allies will gain ASW slightly slower and air units won't get high ASW so soon in the game. Tactical and strategic bombers start at ASW 1 instead of ASW 2.
- ◆ Atlantic Wall Fortresses will now spawn from 1941 to 1943 instead of 1942 to 1944.
- ◆ Subs can now repair 1 step per turn at sea. The reason for that is that subs being attacked by bombers often get 3 steps per attack and that means the sub is so depleted it needs to get to port to be repaired. That means 3-4 turns to port and the same number back to the hunting area. So the sub is out of action for a long time if heavily depleted. Most damaged subs were sunk and didn't have to be repaired in port. The wolfpacks were reinforced by NEW subs sailing to the hunting area. Subs mainly had to get to port to be refitted with better equipment. Subs even got supplies elsewhere than in controlled ports. E. g. the subs used Spanish ports or transport ships to get more diesel, torpedoes etc. With this change it means the subs will be inactive while repairing, but they're still in the area spotting for the full

strength subs. So they get back into action faster. If the sub is almost destroyed you can sail it to port to repair 3 steps per turn. This change alone will make the Allies build more DD's so the subs can be hit harder if they attack an escorted convoy.

- ◆ Victory conditions altered for Allied victories as follows:
  - ◆ Draw: May 1945
  - ◆ Allied Minor: 1945 conquest
  - ◆ Allied Major: July 1944 or later conquest
  - ◆ Allied Strategic: 1944 conquest
  - ◆ Allied Ultimate: Conquest before 1944
- ◆ The partisan spawn rates reduced from 8 / 4 to 6 / 3.
- ◆ The Africa loop turns increased from 1 to 2.
- ◆ Canada activates if London is Axis controlled.
- ◆ Fixed the text for weather in the north / east according to be displayed in a consistent format.
- ◆ Added Allied escort requirement in the Atlantic if London is allied controlled. French and US units at war will also be counted. CV and DD counts as 3 while a BB counts as 1. The requirement is set to 10. If the total capacity of the allies fall below this value then the value of convoys that spawn is multiplied by (escort\_value/10). Thus, convoy value is reduced by 10% for every escort point that the allies fall below 10. A message is sent to the Allied player at the beginning of each turn the requirement is not met, which means he can try to remedy the problem.
- ◆ Added code so combat results for all battles except strategic bombardment can be based on 1 realization of the battle (i.e., 1 roll) or the average between 2 to 4 battles (or rolls). This number of battles (or rolls) is controlled by the variable, `NUMBER_OF_BATTLE_ROLLS` defined in the `general.txt` file. This means you will more rarely get spectacular results or really bad results. The default for now, subject to more play testing is 3. Also, modified the attacker's predicted losses so that it should be a more accurate predictor than before. How much more accurate is currently under evaluation.
- ◆ A feature that's been in place since the initial release of the standard game is that oil consuming units at partial strength use the same amount of oil to move or attack as units at full strength. It just doesn't make sense that moving a 1-step armor corps should consume the same amount of oil as moving a 10-step armor corps. This has now been fixed. Oil consuming units now use oil based on their strength according to the formula:  $\text{oil\_used} = \text{round}(\text{oil\_used\_by\_unit} * \text{initial\_unit\_strength} / 10)$ . Note that the strength of the unit at the start of the action is used. For example, a 9-step air unit attacks a target and that unit is intercepted losing 3-steps. It then follows through with the attack losing another 3-steps knocking the air unit down to 3-steps. That air unit would consume oil at 90% for the intercept and 90% for the ground attack. A second example is that a 10-step armor corps makes a desperate attack and is completely lost. Oil consumption for this attack would be at the full rate. Also, note that armor and mechanized ground units on defense do not use oil.
- ◆ Changed manpower consumption for repairs so that it uses the same discount as for PP repairs. Land and air units use 60% and naval units 80%. If you build a new infantry unit you pay 10 manpower. If you repair e. g. 7 steps on the infantry you before paid 7 manpower. With the new rule you pay:  $7 * 0.6 = 4.2$  manpower. So keeping the cadres alive will be even more important. This change alone should delay the German manpower collapse from maybe late 1942 / early 1943 by maybe one year. That means the battles late in



the game won't be such walk overs as it had been.

- ◆ Modified the amphibious model so at the start of the game only corps units are amph capable. Mech units become amph capable from 1942 so they can land in Torch. Armor units become amph capable from 1943. From 1944 the Allies will get Mulberry capability so they get supply level 2 instead of 1 when supplying units from a BB, DD or CV. This means that e. g. the Germans with Sea Lion must use corps units for opposed landings. Mechs or armor can only land in unoccupied or friendly hexes.
- ◆ Fixed a bug where on activation of Russia displayed an incorrect message that the USA had activated. The message now displays the correct information.

### 15.3.17 v2.00r (December 27, 2010)

- ◆ Fixed a bug where an axis paratrooper landed on a vacant Malta airfield and control of the Malta port was changed to axis while the allies still controlled Malta. This has now been fixed such that control of the Malta port is determined by which side controls Malta. One thing to note is that airborne units can drop on unoccupied airfields and ground combat is possible between enemy ground units adjacent to the airfield
- ◆ The position of the Russian sub moves from adjacent to Leningrad to Tallinn when Russia annexes Estonia. In addition a corps unit is moved into Tallinn instead of a garrison unit. While the sub is adjacent to Leningrad the sub is visible to the Axis player. That means it's not possible to enter the hex. The same about the US sub near Washington. When the sub is moved to Tallinn port it becomes invisible. The Russian sub start in Tallinn because Estonia is neutral at the start of the war.
- ◆ Made a change so air units in Britain also lose 20 morale when Belgium falls.

### 15.3.18 v2.00s (December 28, 2010)

GSv2.00r was short lived due to a critical bug that will cause the game to hang at the end of a turn if a player has a sub in the production queue.

### 15.3.19 v2.00t (December 30, 2010)

- Added in a chance for Italy to join the Axis if there are not sufficient Allied naval units are present in the Med after Belgium has been conquered (i.e., after initiation of Case Yellow).
  - This message is shown at the start of an Allied turn if there are too few Allied naval units.
  - It's also shown at the end of the Allied turn when the die roll is made.
  - This way the Allied player would know the reason why Italy joined the Axis.
    - INDEX-897 | "Too few Allied naval units are patrolling the Mediterranean. Italy has a %s1 % chance to join the Axis at the end of this turn" The following message will be shown when Italy joins the Axis early.
    - INDEX-898 | "Mussolini seizes the opportunity to exploit the insufficient Allied naval presence in the Mediterranean. Italy declares war on the Allies."
- The following values control this behavior:  
/\* Early Italian activation possible if the Mediterranean is not patrolled by CV, BB, DD or sub \*/  
/\* Activation is 100% - a percentage value for each Allied naval unit present in the Mediterranean \*/

EARLY\_ITALIAN\_ACTIVATION 1 /\* 1 = Early activation possible. 0 = not possible \*/

BB\_MED\_PATROL\_VALUE 50 /\* Each BB reduces the percentage chance by this value \*/

CV\_MED\_PATROL\_VALUE 50 /\* Each CV reduces the percentage chance by this value \*/

DD\_MED\_PATROL\_VALUE 30 /\* Each DD reduces the percentage chance by this value \*/

SUB\_MED\_PATROL\_VALUE 20 /\* Each sub reduces the percentage chance by this value \*/

- Changed techs for Surface ships and Radar to implement shore bombardment as tech advance. Also moved around slightly the tech advances to make sure the shore bombardment was added at an appropriate tech level.
  - +1 shore bombardment for BB is added at surface ships tech 3 (meaning more penetrating shells)
  - +1 shore bombardment for BB, CV and DD is added at radar tech 3 (meaning that better radar on the ships meant they could locate the targets better)
  - This means that with max tech we have the following shore bombardment values:

CV: 6

BB: 4

DD: 2

Increased the survivability of ground units from shore bombardment by 4 instead of 2

/\* Value added to ground defense if attacked by naval units \*/

SURVIVABILITY\_BONUS\_VS\_NAVAL 4

Added a value to increase the chance of shore bombardment. This is needed to get enough hits to actually drop the efficiency of bombarded ground units.

SHOCK\_FACTOR 170 /\*Proportional to chance of shock hit\*/

SHOCK\_FACTOR\_SHORE\_BOMBARDMENT 340 /\*Proportional to chance of shore bombardment

The first value is the original one used for airstrikes, armor attacks etc. The latter in the new one for shore bombardments. Added a value to decrease the efficiency of naval units in shore bombardment.

EFFICIENCY\_LOSS\_FROM\_SHORE\_BOMBARDMENT 10 /\*EFFICIENCY points lost when performing shore bombardment\*/

- Added a check for early Italian intervention will only happen after Belgium has fallen.
- Germany, Italy and UK will get an extra BB at turn 25 (December 24th, 1940). The variables are set in general.txt so it's possible to turn on/off each country. Can even set for USA, but currently set to off. Turn number the BB's arrive is variable too.
- Changed how US and UK corps units are automatically named so that they are now named I Corps, II Mech Corps, III Armoured Corps etc. instead of 1st Infantry, 2nd Mech, 3rd Armoured etc. UK minors will still use 1st Australian, 2nd Canadian etc. When you build new units you will get the new names.
- Changed how US air units are called Wing instead of Group. Changed name for tac bombers so they're called Tactical Wing / Tactical Group instead of same as for strategic

bomber (Bomber Wing / Bomber Group). New units will get these names by default.

- Changed all scenarios so these new names are used for UK and US units.
- Added a new Italian sub to scenarios 1939-1943.
- Added 2 UK Destroyers and removed a UK BB for all scenarios. One of these destroyers start in Gibraltar since only DD's were stationed here early in the war.
- Added extra BB for Germany, Italy and UK for the 1941 scenario. They're not added for the 1942+ scenarios since these units were sunk during 1941. Italy lost some battleships in Taranto. Germany lost Bismarck and some other ships in 1941 and Britain lost Hood and several other BB's.
- Fixed name inconsistencies for UK naval units. E. g. the 1st Battle Sqn name was moved from Glasgow to Alexandria since the fleet was in the Med. Renamed the 4th Battle Sqn to the Battle Cruiser Sqn and so on.
- Swapped the French BB and DD in the Med. Oran was the base for the battleships and Toulon for the destroyers.
- Renamed the destroyer unit spawning in Malta to the Royal Australian Navy. Australia sent most of its navy to the Med early in the war before Japan went towards Singapore. These ships were sent to Malta, but evacuated to Egypt in the Summer of 1940 after Italy joined the Axis. This is usually what happens to this unit anyway.

### 15.3.20 v2.00u (December 30, 2010)

Added the warning message (if applicable) prior to Case Yellow, which is signaled by the conquest of Belgium, that the allies are below the minimum naval requirement in the Med and that this could result in early Italian Activation if not corrected by Case Yellow.

### 15.3.21 v2.00v (December 31, 2010)

- Increased the number of turns possible to see in build queue to 50 turns so it's possible to always see the pending BB's in the force pool.
- Increased build time for subs from 4 to 6.
- Increased build time for BB's from 8 to 12.
- Increased build time for CV's from 8 to 15.
- Added a free US CV arriving in July 1941.
- Updated all the message files to show GS v2.00v.
- Added the city of Reggio, which will NOT take control of the Messina port just as for Malmo. Now you can only use the port if the city controlling the port is friendly.
- Added Reggio as a city at the southern tip of Italy; but this city does not count as an Italian surrender city.
- Added Kherson as a city (renamed from Nikolaev).
- Updated the scenarios with the map changes.

### 15.3.22 v2.00w (January 9, 2011)

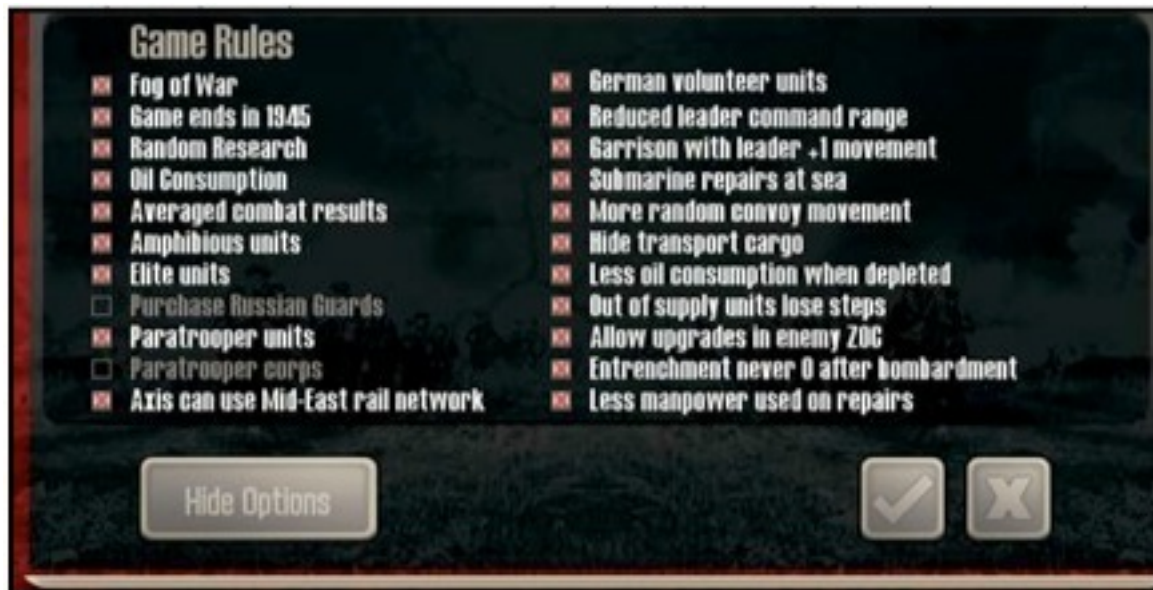
- Fixed a bug where paratroopers loaded onto transports were not counted against the number of paratroopers a country could build. Thus, this bug allowed a country to build over their limit if they wished. This bug is now fixed such that paratroopers on transports are included in the total paratrooper count.
- Fixed a typo in the comments in general.txt regarding Axis supply in the Med. /\* Value = 2

means normally affected, but not if the Axis controls Ankara in Turkey. Text was showing value = 3, but that was wrong. Choices are 0, 1 and 2.

- Fixed a bug where some commanders showed 1st instead of their real name. This means players won't be able to rename unit's that have a commander attached to it.
- Added a weather view to the minimap that uses the following colors for the different weather types:
  - Clear = Light green
  - Mud = Brown
  - Winter = White
  - Severe Winter = grey
  - Calm sea = Light blue
  - Rough sea = dark blue
- Made a minor update to the minimap where the spacer at the beginning was removed to allow for some room between the first group of 4 buttons, then next 2 and the final zoom button.
- Fixed the bug where the game hung for air attackers being destroyed by interception.
- Fixed the bug about automatic naming of paratroopers for the Allies and Russians. For the Allies Airborne was written without a space after Airborne. For the Russians the old name was written and then para plus the old name again. Now it only writes Para <old name>.

## 15.3.23 v2.00x (January xx, 2011)

- Move the show XP and entrenchment dots to the settings menu. These two flags are now stored in the settings.txt file, so when this version is run the player must delete or replace the settings file in their \My Documents\CEAW Grand Strategy folder.
- Added 16 more options, for a total of 20, which the axis player may select on/off at the start of a game. Also, both players at any time can see which options are selected for the game from the stats menu.



## 15.3.24 v2.00x1 & v2.00w1 (January 11, 2011)

- Fixed a bug where the axis were getting the message about early Italian activation when they fell under but then satisfied the minimum naval requirement for the Med.
- Updated name of Wiking and Nordland to SS Wiking and Nordland units.

### 15.3.25 v2.00x2 & v2.00w2 (January 11, 2011)

- Fixed a bug where allied ships north of a certain hex weren't properly being counted for preventing early Italian activation.

### 15.3.26 v2.00y1 & v2.00w3 (January 16, 2011)

- Fixed a bug where the messages about insufficient Allied navy in the Med will no longer show if Italy is activated or conquered.
- Added the Danish garrison in Aalborg as 2nd Jutland Division at 4 steps. Renamed the garrison in Copenhagen to 1st Zealand Division.

### 15.3.27 GSv2.00y (January 15, 2011)

- Fixed a bug regarding language changes when playing hotseat. Added logic at the end to turn to refresh the current language setting to keep it. The reason was probably that the default language for the other player was set to English when the Axis player starts his turn. In hotseat you don't have 2 separate players, but two using the same machine.
- Fixed a minor bug regarding painting borders on hex row 0. Now the complete border is painted.
- Added the strength of the Danish garrison to general.txt. Current value is set to 4. This means Denmark should easily be captured on turn 1 unless the air / naval units destroy the unit so the land unit can't get to Copenhagen. So you have to be careful about using those.
- Scripted the transfer of Iceland to Britain in May 1940 if Denmark is occupied. If Iceland is still neutral then scripted it so that USA takes control of Iceland in July 1941 regardless of former status
- Scripted the transfer of Greenland to the USA in April 1941
- Scripted the spawning of the German corps in northern Finland to occur if, and only if, Norway or Sweden are Axis controlled
- Added appropriate messages for the execution of the scripts with respect to the events in 4-6 (index-944 ... index-947).

### 15.3.28 v2.00z & v2.00w4 (January 21, 2011)

The v2.00w4 changes will work with saved games currently being played with v2.00w; but will cause a checksum error the first time a saved game is loaded with w4.

- Para, SS and Guards units can only be upgraded in home country. This is a setting in general.txt that can be turned off if we later find out it's not a good idea
- Para units will go to the production pool for 2 turns being in training (value can be changed from 0 and above in general.txt).
- SS and Guards (if possible to purchase) will go to the production pool for 1 turn being in training (value can be changed from 0 and above in general.txt).
- Para capacity changes is now the following:
  - Germany (1939:0, 1940: 1, 1941: 2, 1942: 3, 1943: 4, 1944+: 5)
  - Italy (1939-1941: 0, 1942: 1, 1943+: 2)
  - UK (1939-1941: 0, 1942: 1, 1943: 2, 1944+: 3)
  - USA (1939-1941: 0, 1942: 2, 1943: 3, 1944: 4, 1945: 5)
  - Russia(1939-1940: 0, 1941: 1, 1942: 2, 1943: 3, 1944: 4, 1945: 5)
- Updated the French MECH unit images.

### 15.3.29 2.00z changes only (6-10).

These changes will invalidate all saved games for GS v2.00z games started with v2.00y.

- 1x French armor and 1x French corps replaced with 2x French mech by changing the 1939 and

1940 scenarios.

- France gets tech 1 in blitzkrieg so the MECHs get ground attack 5 instead of 4
- Unit statistics changed so only major country losses are shown. So e. g. UK losses will no longer show the Allied minor losses as well.
- Unit statistics will now show the number of steps lost and not the number of soldiers, tanks, airplanes and ships.
- Added to statistics (in parenthesis) the number of units destroyed, e. g.; if you check the French losses for infantry units and see 47 (3) it means 47 steps are lost with 3 units destroyed.

### 15.3.30 v2.00z4 (January 28, 2011)

- Added to game rules the Axis can use the Middle-East rail network if they capture Basra. Now you can turn this option on/off.
- Added to game rules a chance to turn on/off manpower discount if you repair a unit instead of building it from scratch.
- Moved the repair discounts from hardcoded into general.txt so we can alter the values later if we want. Current values are:
  - Naval units. Repairs cost 80% of purchase cost
  - Air units. Repairs cost 60% of purchase cost
  - Ground units. Repairs cost 60% of purchase cost
- Changed the tooltip for unit repairs so you now can see the repair cost and manpower cost with 1 decimal instead of just integer. The game keeps track of these values at double precision (with decimals), but shows them as integers. This gave some strange effects like the game saying the repair cost is 2 PP's and 0 manpower and you see 3 PP's and 1 manpower deducted. Now you will see a repair cost like 2.6 PP's and 0.6 manpower. So now you will be aware that these values are with decimals.
- This is how the new game rules look like. Default values are shown:

### 15.3.31 GSv2.00z6 (January 31, 2011)

- SS increased cost:

SS\_INCREASED\_COST\_GARRISON 10 /\* PP's that must be paid to upgrade unit to SS status \*/  
 SS\_INCREASED\_COST\_CORPS 15 /\* PP's that must be paid to upgrade unit to SS status \*/  
 SS\_INCREASED\_COST\_MECH 20 /\* PP's that must be paid to upgrade unit to SS status \*/  
 SS\_INCREASED\_COST\_ARMOR 25 /\* PP's that must be paid to upgrade unit to SS status \*/

- Guards increased cost:

GUARDS\_INCREASED\_COST\_GARRISON 10 /\* PP's paid to upgrade unit to Guards status \*/  
 GUARDS\_INCREASED\_COST\_CORPS 15 /\* PP's that must be paid to upgrade unit to Guards status \*/  
 GUARDS\_INCREASED\_COST\_MECH 20 /\* PP's that must be paid to upgrade unit to Guards status \*/  
 GUARDS\_INCREASED\_COST\_ARMOR 25 /\* PP's that must be paid to upgrade unit to Guards status \*/

- Guards XP level needed for promotion

GUARDS\_PROMOTED\_XP\_NEEDED 35 /\* XP needed for automatic upgrade unit to Guards status \*/

- Max SS units per year

MAX\_SS\_1939 0 /\* Max number of SS units allowed on the map in 1939 \*/  
 MAX\_SS\_1940 0 /\* Max number of SS units allowed on the map in 1940 \*/



MAX_SS_1941	1 /* Max number of SS units allowed on the map in 1941 */
MAX_SS_1942	2 /* Max number of SS units allowed on the map in 1942 */
MAX_SS_1943	4 /* Max number of SS units allowed on the map in 1943 */
MAX_SS_1944	6 /* Max number of SS units allowed on the map in 1944 */
MAX_SS_1945	8 /* Max number of SS units allowed on the map in 1945 */

- MaxGuards units per year

MAX_GUARDS_1939	0 /* Max number of Guards units allowed on the map in 1939
*/	
MAX_GUARDS_1940	0 /* Max number of Guards units allowed on the map in 1940
*/	
MAX_GUARDS_1941	1 /* Max number of Guards units allowed on the map in 1941
*/	
MAX_GUARDS_1942	3 /* Max number of Guards units allowed on the map in 1942
*/	
MAX_GUARDS_1943	5 /* Max number of Guards units allowed on the map in 1943
*/	
MAX_GUARDS_1944	8 /* Max number of Guards units allowed on the map in 1944
*/	
MAX_GUARDS_1945	12 /* Max number of Guards units allowed on the map in 1945
*/	

- Max XP lost per repair MAX\_XP\_LOSS\_FROM\_REPAIRS 15
  - This value means you can not lose more XP than 15 per time you make a repair. This means that if you can repair many step losses in supply level 4 or 5 you save some XP. This would help Russia a bit since they often fight in home territory when they have good supply.
  - This change won't affect naval units since you can only repair 3 steps per turn at a port. It will only affect air/ground units if they have supply level 4-5. Germany will often have supply level 4 in Germany, but might have supply level 3 far east. So they gain less from this change.

## 15.3.32 GSv2.00z7 (February 2, 2011)

- Updated the Options screen to show which options favor which side.
  - The grey/blue color shows those with Axis favor
  - The olive green color shows those with Allied favor
  - The white color shows those with no favor
  - Grey is used for unselected options
- Fixed a bug where under certain conditions a player who viewed the game options under the statistics window would see the game hijacked by the AI.
- Updated the manpower discount because the current discount seems to be too much. Right now the discount is 40% for air and ground units and 20% for naval units. These updates have been changed to the following values and which are specified in the general.txt file.

MANPOWER_REPAIR_DISCOUNT_GROUND	20 /* 0..100 - % less manpower cost when repairing */
---------------------------------	-------------------------------------------------------



MANPOWER\_REPAIR\_DISCOUNT\_AIR 15 /\* 0..100 - % less manpower cost when repairing \*/  
 MANPOWER\_REPAIR\_DISCOUNT\_NAVAL 10 /\* 0..100 - % less manpower cost when repairing \*/

- The manpower discount values are now not linked to the repair cost discount so they can be tweaked as necessary.
- Corrected a format issue with the message\_rus.txt which affected the Mac version only.

### 15.3.33 GSv2.00z8 (February 6, 2011)

- Fixed a bug where air units weren't able to fly over mountain, swamp and dune hexes. So it was not possible to send German air units to Italy when Vichy France and Yugoslavia were neutral. The contiguous line of mountain hexes in the Alps would block such movement. The intention was to prevent these hexes from being highlighted when rebasing. Now this is fixed.
- Air units can no longer base in mountain, swamp or dune hexes but may fly over them to rebase.

### 15.3.34 GSv2.00z9 (February 6, 2011)

Fixed a scenario bug where Posen was not a German deploy hex because for some reason it was incorrectly flagged as Polish core owner. All scenarios and the map have been updated so that the core owner of Posen is Germany. Also updated the code so that in on-going games Posen will become a deploy city once German controlled.

### 15.3.35 GSv2.00z10 (February 9, 2011)

- Changed the scenarios so no air units are based in mountain hexes. This change won't matter for existing games and will be mute once an affected air unit moves from a mountain hex.
- Critical bug fix. Fixed a bug where when London was captured by the axis a US LL DD squadron would spawn every turn.

### 15.3.36 GSv2.00z11 (February 10, 2011)

- Changed the model for gaining experience to include units from countries at war.
- Units will now get full XP for the primary role of the unit regardless of attack or defense and half XP when they used in a non-primary role. Specifically,

NAVAL\_VS\_NAVAL\_DEFENSE\_XP 6 (increased from 4)  
 GROUND\_VS\_GROUND\_DEFENSE\_XP 6 (increased from 4)

- Units that become adjacent to an enemy unit, when at war, during their turn will get 1 XP up to a maximum of 50 XPs.

**15.3.37 GSv2.00z12 (February 10, 2011)**

Reduced the XP gained for sub from attacking convoys and for ground units attacking partisans.

**15.3.38 GSv2.00z13 (February 13, 2011)**

Fixed an automatic naming bug where newly built mechanized units weren't be named correctly.

**15.3.39 GSv2.00z14 (February 14, 2011)**

- Cap the maximum effectiveness loss on axis troops due to severe winter at 35. This is they experience in the severe winter of 1941. Every year after is 10 point less (i.e., 1942 is 25, '43 is 15, '44 is 5) and prior to this update every year prior was 10 points more (i.e., 1940 was 45 and 1939 was 55!). It didn't seem right that the effectiveness loss in 1939 and 1940 were so high and now the loss for 1939 – 1941 is 35. While this change won't have an impact for most games it would for a Russia first axis strategy where the axis player goes after Russia right after the fall of Poland.
- Made a change so that partisan losses will not be included in UK or German casualty's statistics.

**15.3.40 GSv2.00aa (February 17, 2011)**

Fixed a bug where it wasn't possible to rename SS, Guards or Para units if one of the other criteria kicked in (like not having any capacity left, not being in home country, etc.). This is now fixed so you can always rename a unit if you don't change its status.

**15.3.41 GSv2.00ab change log (February 23, 2011)**

- Add coloring to the oil value to indicate status
  - White: 400+
  - Yellow: 250-399
  - Orange: 100-249
  - Red: < 100
- Updated the manpower so you get red manpower when you're at the worst troop level (below 25% manpower).
- Changed one sea hex north of Hague into land, thus, closing off the IJsselmeer. In addition added a Dutch garrison called Stelling Den Helder north of Hague. This will hold off the Germans a little while if they decide to move there.
- Renamed the Dutch I Legerkorps (corps unit) into I and IV Legerkorps because the Dutch had 4 Legerkorps. The III Legerkorps was south of Hague near Belgium and the II Legerkorps was east of Amsterdam near Utrecht and Arnhem. The I Legerkorps was near Hague and the IV Legerkorps was near Amsterdam. So each Legerkorps is of garrison strength. So it's natural to call the corps unit on the map I and IV Legerkorps because it's

meant to be the sum of 2 garrison sized units. This way all 4 Dutch Legerkorps units are on the map.

- Fixed a minor bug where the info about increased para, SS and Guards limits came one turn late in 1943.
- Fixed a rare but critical bug where allied convoys could actually enter axis controlled ports causing them to be scuttled at the end of the allied turn. Then, during the convoy movement phase during in the next axis turn this missing convoy would cause an indexing error and the game to hang.

### 15.3.42 GSv2.00ad (February 27, 2001)

- Fixed a unit naming bug where not units of that side were present on the map.
- Garrisons now also get auto-naming of units.
- Possibility to use local rail networks if you capture the country capital. For example, Norway, Finland, Spain and other countries had a rail network so it doesn't make sense that you can't rail move units in these countries. So we've changed the game code to the following.
  - Units in supply level 4 and 5 receive supply from a major power capital and can rail move as before if not in enemy ZOC
  - Units in supply level 3 can rail move If within 30 land hexes of a friendly capital and not in enemy ZOC.
  - Capitals can only provide rail supply on the turn AFTER they enter the war if surprised (units lose efficiency from surprise).
  - This means that you can only use rail supply on turn 2 of the invasion of the country. Local rail supply means you can e. g. rail move Spanish units on turn 2 of Operation Isabella. The Allies can e. g. get rail movement when landing in Spain or Portugal after they capture Madrid or Lisbon.
  - Even more interesting is that the Germans get rail supply in England after they capture London. It didn't make sense that you couldn't rail any units in Britain even after taking all hexes there. You also get rail movement inside Finland / Norway. Germany can use rail movement in the Middle East after taking Damascus / Baghdad or Basra.
  - German units can rail move out of eastern Russia once they have taken Moscow and the unit that should be railed is within 30 hexes of Moscow and in supply level 3 or better (no rail movement from mountains or swamp).
  - Coded so no rail movement is possible to/from Libya and Free French / Vichy French hexes in North Africa.
- Changed the weather model in the Med zone.
  - Added that rough hexes in the Med weather zone will get mud weather when there is mud or winter weather in the central weather zone.
  - Mountain hexes in the Med weather zone get the same weather as the central weather zone. This means that fighting in rough hexes on Sicily, Italy, Spain during the bad weather is not a good idea.
- French armistice

- The French Government now offers armistice once Paris is captured or left empty (after June 27th 1940). If the Germans accept then Vichy France is created as normal.
- If the Germans reject then North Africa and Syria will become Free French territory and all French controlled hexes in mainland France / Corsica will turn to UK control. All French units will change to UK and get flagged as Free French. So you can evacuate units to Britain and the Germans must destroy them and capture all hexes in France to get control.
- But with no Vichy France the Germans can get production from southern France immediately and get a broad front line vs Spain making Operation Isabella more likely. The Germans will probably consider rejecting the armistice offer if the French lose too many units before Paris falls. So making suicide attacks from the Maginot line, wasting the French navy etc. only means you might risk Germany controlling all of France from 1940. So we hope to see less a historical French attacks prior to Paris falling.

### 15.3.43 GSv2.00ae (March 6, 2011)

- Oil consumption will now not be lower than half the max consumption (rounded up). So very depleted units will now use at least 50% of max oil.
- SS and Guards mech/armor units have oil consumption increased by 1. This can be set in general.txt.

GUARDS\_MECH\_EXTRA\_OIL\_CONSUMPTION 1 /\* Extra oil used by Russian Guards mech units.

\*/GUARDS\_ARMOR\_EXTRA\_OIL\_CONSUMPTION 1 /\* Extra oil used by Russian Guards armor units.

\*/SS\_MECH\_EXTRA\_OIL\_CONSUMPTION 1 /\* Extra oil used by German SS mech units

\*/ SS\_ARMOR\_EXTRA\_OIL\_CONSUMPTION 1 /\* Extra oil used by German SS armor units \*/

- XP discount is now only given in the repairing unit is in a hex where the core owner is from the same side This can be turned on/off in general.txt.

DISCOUNT\_ONLY\_IN\_CORE\_FRIENDLY\_HEX 1

/\* 0..1. 1 = you get discount only if core hex owner is from same side. 0 = always \*/

- Discount for air units added as well.

AIR\_XP\_LOSS\_TO\_STRENGTH\_LEVEL

8 /\* 0..10. Repairing strengths above this number won't lose XP \*/

- Reduced the XP gained from air attacks from 4 to 3. Also reduced the XP gained from ground attacks from 6 to 4.
- Added code so Axis units (except Finnish units) in a hex with severe winter will recover half efficiency every turn the severe winter is still on in 1940 and 1941.
  - This can be turned on/off in general.txt.

AXIS\_SEVERE\_WINTER\_HALF EFFICIENCY\_GAIN 1 /\* 1= Axis units except Finland gains half efficiency if in severe winter zone in 1940-1941 \*/

- Increased the max number of Soviet guards slightly (mainly from 1943-1945).

MAX\_GUARDS\_1939 0 /\* Max number of Guards units allowed on the map in 1939 \*/  
MAX\_GUARDS\_1940 0 /\* Max number of Guards units allowed on the map in 1940 \*/  
MAX\_GUARDS\_1941 1-> 2 /\* Max number of Guards units allowed on the map in 1941 \*/  
MAX\_GUARDS\_1942 3-> 4 /\* Max number of Guards units allowed on the map in 1942 \*/  
MAX\_GUARDS\_1943 5-> 7 /\* Max number of Guards units allowed on the map in 1943 \*/  
MAX\_GUARDS\_1944 8-> 10 /\* Max number of Guards units allowed on the map in 1944 \*/  
MAX\_GUARDS\_1945 10-> 15 /\*Max number of Guards units allowed on the map in 1945\*/

- Fixed a bug with start XP for Russian units in scenarios. The start XP is defined by the number of years since the year the countries get at war by themselves. We moved this date for Russia from 1941 to 1942 and that would give Russia too little XP in the scenarios. So there is an exception so the Russian start year is 1941 instead of 1942. This should give Russia the same scenario start XP as before.
- Made a change where when you click on an airborne unit that any hex that it cannot reach by normal movement if flagged as a dropped hex. For a cost of 10 PP's you can paradrop anywhere except hexes eligible for land move or ferry crossing. Please note that if you want to rail the unit to the destination hex than can also be paradropped to then you need to click on the rail button to see the rail destination hexes.

### 15.3.44 GSv2.00af (March 6, 2011)

- This update contains a critical bug fix that causes the game to hang if you try to repair naval units. Now you always get discount in a port since the port doesn't have a core owner. The discount is set to 0 in general.txt so it doesn't matter.
- Fixed the bug about landing a garrison near Bremen. The reason was that the unit was a partisan and the code checked the core owner of the hex to find out which image to use. The problem was that there is no core owner of a coastal hex. So if the core owner is not defined then the core of the unit owner becomes the core owner of the partisan.

### 15.3.45 GSv2.00 aj (March 21, 2011)

- Removed Free France from the list of countries that will receive yearly reinforcements. That should prevent units from spawning in the sea.
- Changed code so only fortresses with production (city fortresses) provide supply. That means it's possible to cut off supply to the Maginot line once Strasbourg falls.
- Added code so convoys without a hex will spawn in the northwest corner of the map. That should prevent the hang situation that happened once.
- Added +2 survivability for strategic operation tech 6
- Fixed map error in Russia (river not defined) and Libya (terrain defined as dune instead of desert)
- Added 1 production to Gibraltar to prevent the fortress from being out of supply. Only fortresses with production provide supply.
- Split the Spanish lead mine in 2 and dropped the value from 5 to 3. A new tungsten mine with value 2 is placed close to the Portuguese border.
- The Portuguese mine is moved a bit further south and increased from 1 to 3. Name is

changed from just mine to tungsten. The reason is that the Portuguese tungsten mine was one of the most important mines in the war for Germany. It provided invaluable tungsten (more than the Spanish mine) in exchange for coal. Later in the war Allied pressure caused Portugal to embargo the tungsten to Germany. So it's probably right to not open the trade agreement between Portugal and Germany. The reason is that Germany had to give as much as they received (coal to get tungsten).

- Persia will now join the Allies and the southern lend lease route to Russia will open when an Axis unit is adjacent to an Iraqi city or resource. The Baku oil resource will be reverted back to Russia because the trade agreement with Germany is cancelled. The rule is slightly different because Russia can't control minor powers. All minor powers go to UK or USA.
- Russia will immediately join the Allies if an Axis unit is adjacent to a Persian city or resource. This simulates better that Persia is annexed by Russia so an Axis entry into Persia will be seen as an aggression against Russia. I coded it that you have to be adjacent to a Persian city or resource to prevent Axis movement inside Iraq to accidentally convert hexes in Persia to Axis control. If an Axis unit moves to a city or resource then it's a deliberate move into Persia and Russia will join the Allies
- Turkey will join the Axis if Athens, Bucharest, Sofia, Moscow, Baku and Baghdad are all Axis controlled. It's not enough that a city is neutral. Turkey will join the Allies if Athens, Bucharest, Sofia, Moscow, Baku and Baghdad are all Allies controlled. It's not enough that a city is neutral.
- Spain will join the Axis if the French armistice offer is rejected and Casablanca, Oran, Algiers, Tunis, Rome and Paris are all Axis controlled. It's not enough that a city is neutral. Spain will join the Allies if the French armistice offer is rejected and Casablanca, Oran, Algiers, Tunis, Rome and Paris are all Allied controlled. It's not enough that a city is neutral.
- Spain will make a trade agreement with Germany for the tungsten mine (2 PP's) if the French armistice offer is rejected and Italy is not conquered. Spain is still neutral. Spain will cancel the trade agreement with Germany if Italy is conquered. Spain is still neutral.
- Updated the code slightly so Free French units spawn at Agadir in November 1942 if the French Armistice offer was rejected. It did before, but the code checked if Algiers was Allied and that might not be true if the Germans try to get Spain to their side. Now a new test is used that checks if the armistice offer was rejected.

#### 15.3.46 GSv2.00a1 (April 2, 2011)

- If the French armistice is rejected by the axis then only the hexes under French control at the time of surrender will change side. So Axis controlled hexes will remain Axis. This means that if the axis have captured any cities or hexes in French North Africa before they fall of the axis retain control of those cities or hexes.
- Removed an errant label on the map that showed text for the US LL port.
- Added Stavanger and Kristiansand in Norway.
- Added Joensuu and Kuopio in Finland.
- Added flags for Estonia, Latvia, Lithuania and Egypt.
- Made it possible to DoW Estonia, Latvia and Lithuania. A DoW upon one of these countries will DoW the other 2 and activate the Russia. Russia will get a surprise penalty, though since they weren't prepared for war.
- Linked the events in the east to Russian neutrality. So early DoW upon Russia will

terminate the Ribbentrop / Molotov pact. That means Russia might not get Eastern Poland, Baltic states, Bessarabia or Karelia dependent upon how early you DoW Russia. This means it's maybe a possible strategy for the Germans to DoW Russia in 1940 and storm eastwards from better positions. Germany will then have to DoW the Baltic States to be able to move into the area. The hexes are empty so the Germans gain a lot.

- Increased the Swedish iron ore to 6.
- Added an interdiction possibility of the Swedish iron ore by doing the following:
  - Prerequisite is that Sweden is neutral. If Sweden activates then the resources will go to the country in control of Sweden.
  - Added the conditions that the ore can only be interdicted if the weather in the iron ore hex is not fair and can only begin in March 1940.
  - The game checks if one or more surface naval unit is adjacent to any of the 5 Norwegian cities / ports.
  - For each city / port a side has a surface naval unit adjacent that side gets +1 to the interdict / protect sum. This means it won't help having more than 1 naval unit interdicting at a given city / port. The max possible number of interdiction points is 5 (i.e., equal to total number of coastal cities in Norway).
  - Germany can place surface naval ships in one or more of the 3 ports to gain a protect point for the city / port. That's a safe way to prevent being attacked by Allied ships
  - If interdict - protect  $\geq 2$  then the iron ore value is set to 0.
  - If interdict - protect = 1 then the iron ore value is halved (to 2).
  - If the interdict - protect  $\geq 0$  then the iron ore value is at full value (4).
  - This simple rule is used regardless of Norway being neutral or Axis controlled. By having Norway Axis controlled it's safer to prevent interdiction and it's easier to punish Allied interdictors.
  - It should be possible to interdict the iron ore even when Germany controls Norway because the route was vulnerable at all time. But the Allies won't risk doing it until they can challenge the German presence in Norway. If the Allies take a port city it means that the Germans can't use a safe way by having a surface ship in the port to reduce the differential.
  - Added texts for both conditions above if the Allies have interdictors adjacent to Norwegian cities / ports.
- Fixed a bug regarding country surrender. Now non-core hexes will go to the faction leader and not the capturing country.
- Removed the naval combat value shown in hex info for non coastal city / resource hexes.
- Fixed the oil bug when Italy surrenders.
- Added code so Romania and Bulgaria will join the Allies once Bucharest and Sofia are captured by the Allies. A side effect of this is that the Germans might get a nasty surprise if they use Bulgarian or Romanian units to garrison cities. These will change side when these countries join the Allies. That's especially bad if the units were garrisoning a port hex.
- Added a Finnish corps and a Russian corps in the Karelia area for both sides in all



scenarios except 1944.

- Added code so Finland will sign an armistice with Russia if 2+ cities in Finland / Estonia and <6 Axis units are present in Finland.
  - When the armistice is signed then Finland turns to neutrality and all Finnish units are removed.
  - All Axis and Soviet units in Finland are moved to their respective force pool.
  - Finland will surrender normally if Helsinki is captured. So Russia should avoid taking too many cities or kill too many units if they intend to take Helsinki so they can use the Finnish ports.
  - The armistice basically removes Finland from the active playing area. Finland is neutral with no units and can't be DoW'ed. That is a good way for Russia to disengage from Finland and relocate their units to the main front.
- Added messages for the events regarding Romania, Bulgaria and Finland.
- Added more robust checksum functionality that will now check the general.txt, unit.txt, technology.txt and research\_progress.txt files for any changes. If there are any changes which files have changed and which have not will be identified.
- Leclerc is added as a free Free French general.
- Vichy France in southern France and Corsica will turn to France core owner if the Allies DoW Vichy France so it's possible to get partisans there and the Axis only get half production from these hexes.
- Added Tunis as an Italian surrender city (must be ALLIED controlled to count, neutral Vichy controlled is not enough).
- Vichy garrisons in Toulouse and Lyons are removed if the Allies DoW Vichy. Coastal garrisons kept so it's not possible to just grab Marseilles, Nice and Ajaccio
- Fixed a bug where it was possible to see the rail icon highlighted when units were in Vichy French if there was a land link to Egypt
- Updated the scenarios so control is changed to Germany in southern France in the 1943-1944 scenarios. Core owner is set to France in the code when you start these scenarios.

#### 15.3.47 GSv2.00am (April 4, 2011)

- Made a change such that if London falls to the axis but the UK still controls Liverpool that the British can still place new UK builds in England. Allied supply level will still drop to 3 when London falls but the ability to place new builds means that the British will now have a chance to prolong the battle a bit if Sealion is launched.
- Removed the special code to add the new cities in Norway and Finland so players should wait adding these files until after they've run one turn with GS v2.00al and with the special game.class file added.
- Updated all message files to GS v2.00am.
- Fixed bug so naval combat doesn't show for inland cities if you first select a coastal city.
- NOTE: This incremental update removes the temporary code to add the two new cities in

Norway and two new cities in Finland (see 2 above).

#### 15.3.48 GSv2.00an (April 10, 2011)

- Fixed a checksum error for games played between the MAC and Windows. This error was due to a special character that's at the beginning of the unit.txt and technology.txt files
- Fixed an error where Vichy units railed or moved to German or Italian controlled cities gain controlled of those and could cause the unintentional surrender of Germany or Italy if railed to Berlin & Hamburg or Rome, respectively.
- Fixed a bug where the game would hang when the Russia surrendered and Persian tried to activate again.
- Added checks in several places to check to see if a country is both not at war and not conquered. The fixes a problem where a country's status reverts back to not at war when the country surrenders. So a check was need for both to distinguish between neutral and conquered countries.
- Fix a bug where when Bulgaria change sides it kept showing the message multiple times.
- Add paratrooper images for Commonwealth countries so that if you change an airborne division to Polish, for example, you get a Polish graphic.
- Fixed code so British reinforcements in the Med when Italy joins the Axis will not spawn if the hex is already occupied. This will fix the issue when the Malta fighter would be sent to the force pool if Malta airfield was already occupied
- Changed code so British reinforcements in Malta, Cyprus and Egypt will not spawn if the garrison in the adjacent city has been evacuated
- Changed code so Gibraltar will be annexed by Spain if Gibraltar fortress is evacuated before USA or Russia joins the Allies. A message is shown about this annexation
- Changed code so British land units in France will be evacuated if Vichy France is created. Coastal units will be sent to the force pool and 8 PP's per unit is paid. Non-coastal units will surrender and be removed. A message about evacuation will be shown if any units evacuated. A message about surrender will be shown if any units surrendered. The evacuated and eliminated British units in France will keep hex control so Germany will have to move through the hexes to gain control.
- Fixed bug about Reggio since one place in the code pointed to the surrender city 10, but Reggio hex is stored in a new variable called Reggio city.
- Changed code so Tunis is only counted as an Italian surrender city after USA joins the Allies. This is to discourage a premature Allied invasion of Italy to knock it out in 1939.
- Updated the 1939 and 1940 scenarios to cover every Italian coastal city so an invasion can't take a city to enforce Italian surrender by taking Sicily. The following changes were made:
  - Moved a corps from Venice to Reggio
  - Moved a garrison from Florence to Ancona
  - Moved an armor from Milan to Venice
- Extend the rail range to 50 hexes so now all hexes at supply level 3 can use rail either way except for around Omsk (53 hexes), unless Moscow is captured. This change was made so

that all hexes that can be railed to can be railed from.

#### 15.3.49 GSv2.00ap (April 17, 2011)

- Added the option (and counters) to use the large counters (i.e., Victor's counters).
- Fixed a bug when the game ends it hung if you returned to the map. Now you can only end game.
- Fixed a bug regarding Spain taking Gibraltar when conquered. Now Spain won't.
- Fixed a bug regarding leaders being eliminated if a unit was removed from map when Vichy France created. Now the leader will be sent to the force pool.
- Updated the map so Stettin gets 1 PP and Vienna 2 PP's Also, altered the code when making fortresses so it checks for owning side = Axis instead of owner = Germany, just in case one of them are captured by the Allies and liberated by another country than Germany. Also, the max production for each hex is saved prior to creating the fortress so the max is written back to the fortress. This should fix the bug where Brest when cutoff lost it's ability to supply units.
- Fixed a minor bug where the wrong turn for the start of the Finnish winter war was used. It should start on turn 6 and not turn 4, which is now fixed.

#### 15.3.50 GSv2.00aq-Hotfix (April 17, 2011)

- Fixed a bug regarding units who normally are surprised, but doesn't suffer a surprise loss due to winter. In that case the DoW message wasn't showing. This is fixed and the DOW message now shows.
- Regarding rail movement the rule is that on the surprise turn you can't use rail movement. The point is that if you're attacked during a turn when the DoW'ed country's capital is in mud or winter weather then the country will NOT suffer any surprise loss. That meant that rail movement is not hampered. So if you attack a country during bad weather that country gets rail move immediately on their turn. This is an even bigger reason to not DoW during winter. The only country really affected by this is Yugoslavia. Norway and Sweden needs to be attacked during good weather so you can land the transports. Greece and Spain have their capitals in the Med weather zone.
- Found and fixed a major bug in unit swap, ferry crossing and paradrop where units were not only suffering the movement morale effectiveness loss but were also suffering the remaining (if any) surprise attack morale loss for new units deployed to the map even though these units were on the map and had already suffered this loss. This bug is now fixed so units that use these functions only suffer the intended movement morale loss.
- Fixed a nasty bug where a leader attached to a unit that was swapped would be duplicated in his country's force pool as if he was eliminated. This meant that a leader would be duplicated for free each time a unit that he was attached to was swapped. This is now fixed.
- Fixed a bug about coastal hexes only adjacent to a port were not being counted as coastal hexes. It's a hex near St. Nazaire that's only adjacent to the port and not any open sea hexes. That meant UK units there at the creation of Vichy France were destroyed while they should have been sent to the force pool. This bug is a vanilla game bug, which is now fixed in GS.

### 15.3.51 GSv2.00aq2-Hotfix (April 18, 2011)

The Balkenkreuz emblem was not showing in the German para and partisan units because they were accidentally left out. They are now included.

### 15.3.52 GSv2.00ar (April 19, 2011)

- Changed code so Allies don't suffer a morale loss if Belgium is Axis controlled when Belgium surrenders. The Canadian units spawn in both situations.
- Changed the code so the values for entrenchments and XPdots in settings.txt will affect all games. Before the valuevselected was stored in gamestate and if you decided to use a different value then you could end up with the gamestate value being used.

### 15.3.53 GSv2.00.04 (Pre Release Hotfix 04) (April 20, 2011)

- An Allied DoW upon Holland or Belgium prior to US entry will anger the US public with the following effects:
  - The USLL destroyer will not spawn if not already spawned
  - Convoys are 25% smaller until USA joins the Allies
  - A message about this will be shown when you make the DoW

### 15.3.54 GSv2.00.06 (Hotfix 06) (April 22, 2011)

- Updated the code so it now generates initial severe winter for the 1940 and 1941 scenarios.
- Changes to para build time from 2 to 5 and increase the yearly build limit to:
  - 1939 (0)
  - 1940 (2 from 1)
  - 1941 (2 from 1)
  - 1942 (2 from 1)
  - 1943 (2 from 1)
  - 1944 (3 from 2)
  - 1945 (3 from 2)
- Changed to severe weather winter chances to:
  - Severe winter chance for October: 0% (was 10%)
  - Severe winter chance for November: 25% (was 33%)
  - Severe winter chance for December: 75% (was 66%)

- Severe winter chance for January: 100% (as before)
- Changed the North / eastern weather probabilities
  - October: 25% mud, 25% winter, 50% fair (was 15% mud, 10% winter, 75% fair)
  - November: 50% mud, 50% winter 0% fair (was 50% mud, 25% winter, 25% fair)
  - April: 50% mud, 35% winter, 15% fair (was 50% mud, 25% winter, 25% fair)

#### 15.3.55 GSv2.00.07 (Hotfix 07) (April 26, 2011)

- Moved the transport loop in the Med so units coming out of the loop can't land in the Port Said port in order to minimize the chance that a unit exiting the loop will enter Port Said on the turn that the UK CV in Med is suppose to spawn; thereby preventing the CV from spawning.
- Made the following major and significant changes to the Russian Siberian reserves:
  - Siberian reserves now spawn on turn 40 (October 20, 1941) so they can be moved on turn 41 (November 9, 1941). This means the Allied player can move the Siberian reserves on November 9th 1941. They can then be in the target area by the end of November. Well, some of them since it takes 2 turns to rail all units without paying for overuse.
  - Changed all Siberian reserve ground units to Guard units, set their initial XP to 35 and their initial efficiency to 80 (which will drop to the max as determined by tech and any leaders).
  - Added Chuikov as a leader on the 1st Siberian Gds Tank Army
  - Changed texts about Siberian reserves and US entry.
  - Increased the max guards per year so it's allowed to get 6 guards units in 1941. New max values are now (0, 0, 6, 8, 10, 12, 15). Since most are Siberian guards it means the number of new guards that can be accumulated isn't so high until you lose some Siberian units or get to 1943+.

#### 15.3.56 GSv2.00.08 (Hotfix 08) (April 27, 2011)

A bugfix to the bug reported by a beta-tester. He was in a situation where a convoy adjacent to the destination hex wouldn't move. Coded a workaround that a convoy adjacent to the destination hex will automatically deliver the cargo since it doesn't really have to move.

## 15.4 GS 2.1 Change Log

### 15.4.1 Master Change Index

1. Updated the map tiles for two hexes southwest of Moscow and west of Tula. The hexes are flagged as forest but the map tiles showed them as clear. The updated map tiles now correctly show these hexes as forest.
2. Fixed a bug where a unit swap or a ferry crossing action would uncover those units in the fog of war when they should have still been hidden to the enemy.
3. Fixed a bug that caused GS to hang when there was an allied DoW upon Yugoslavia after Hungary was conquered. Also, added logic to prevent Romanian reinforcements from spawning if Romania is allied.
4. Also, added logic so that Bulgarian reinforcements won't spawn if Bulgaria is allied and the allies DoW Greece.
5. Fixed a bug where Turkey or Spanish activation as a German minor ally reduced US war effort. The bug was the result of how these allies were activated in the game, which was by an allied DOW. This bug was fixed by removing any impact for an Allied DoW upon Turkey or Spain on US war effort. The same is true for Syria, Vichy France and Yugoslavia as well. It's not likely that the Allies will DoW countries like Spain or Turkey prior to US entry because doing so will give the Axis many extra units and they can rail German units to the area.
6. Added to the large counters Free French subs, which are needed if the axis rejects the French armistice and the allied player is playing with these counters. Also, made cosmetic edits to a handful of other Free French large counters.
7. Fixed a bug where hexes captured by Bulgaria (i.e., outside of the country) AND occupied by axis units would change to allied control when Bulgaria was conquered and changed sides. The Axis will now keep control of those hexes. However; EMPTY hexes outside Bulgaria and captured by Bulgaria WILL still revert to allied control.
8. Fixed a bug where Spain if invaded by the axis and would seize Gibraltar if the UK evacuated there. Now the Spanish will only take Gibraltar if neutral or Axis and neither Russia nor USA are at war.
9. Made a change so that allied and axis units in the hexes that the Free French spawn in will end up in the force pool for immediate placement the following turn.
10. Put in place the following deterrents to mitigate "blob" strategies:
  - ◆ Added +1 oil consumption for mechanized corps at artillery tech 2
  - ◆ Placed supply limits by year on each type of unit, except garrisons and corps, on the number of units of that type that can be supported normally. Minor ally units do NOT count toward this limit. A country that exceeds this unit limit is changed a supply burden cost in OIL and PP's. The supply limit is 3 for 1939, 5 for 1940, 7 for 1941, 9 for 1942, 12 for 1943, 15 for 1944 and 20 for 1945.
  - ◆ The PP cost for buying the next unit of type when the limit for that type has been met or exceed

is:

$(\text{basic cost}) * 1.05 ^ {(\text{number of units above limit after purchase})}$ .

- ◆ The oil consumption for all units of that type is

$(\text{basic oil consumption}) * 1.05 ^ {(\text{number of units above limit})}$


- ◆ This means the penalty increases with the number of units above the limit. For example; for armor the limit is 7 and you have 6 units and basic oil consumption is 4. The first purchase will be 80 PP's and oil consumption will be 4. The second purchase will be  $80 * 1.05 = 84$  PP's and oil consumption will now be  $4 * 1.05 = 4.2$  for ALL armor units. The third purchase will be  $80 * 1.05 * 1.05 = 88.2$  PP's and oil consumption for ALL armor units will now be  $4 * 1.05 * 1.05 = 4.41$ .

11. Fixed a bug that allows paratroop units to use ferry crossing.
12. Changed general.txt so land spotting is now halved for all units during winter and severe winter.
13. Implemented the show units in statistics panel and the tooltip shows the composition. Spread is determined by last digit of techs (different combination for each unit type and country so not a group increases or decreases); 0: -2; 1: -2; 2: -1; 3: -1; 4: 0; 5: 0; 6: 0; 7: +1; 8: +1 and 9: +2.

ADDED TO ENHANCE EXPLANATION OF RULE 13:

The first 2 screen captures below were taken from the start of a game (1939) during the German and Allied turns. The counts shown for the Germans and Italians are exact in the first capture, while the second is exact for Allies. The ones shown for opposing forces are still neutral) are estimates. Note the difference in Axis force estimates of French and UK INK - they are high. Enemy estimates can vary +/-2 for truth, (2) they will never go below 0 and (3) (and this is very important), these estimates are fixed for a given turn; but do change randomly from turn to turn (but NOT within a turn). This means that you can track these numbers and get a pretty good estimate of the enemy forces. How you use this intel is up to you.



Forces				
				
	28	5	5	6
	17	2	2	6
	29	3	2	9
	23	2	1	4
	2	2	2	4
	79	10	4	3

Forces				
				
	28	5	5	6
	17	2	2	6
	25	3	2	9
	19	2	1	4
	2	2	2	4
	79	10	4	3

The following screen cap is from a spreadsheet the developer built to take the raw estimates from each turn and average them out over time. Also, it might be possible using two back to back measurements from two consecutive turns (remember measurements only change turn to turn) to exactly determine a

specific count. For example, maybe you get an estimate of 8 u-boats and then 4 u-boats. Since you know that each estimate has to be within +/- 2 of the truth then you know for use that the German player has exactly 6 u-boats.

Turn	Date	Raw Data																						
		Corps	Gar	Arm	Mech	FR	TAC	SAC	BB	CV	DD	Sub	Corps	Gar	Arm	Mech	FR	TAC	SAC	BB	CV	DD	Sub	
16	June 27, 1940	10	18	4	2	2	4	1	2	0	3	5												
17	July 17, 1940	12	21	5	0	3	2	2	4	2	3	4	11	20	5	1	3	3	2	3	1	3	5	
18	August 6, 1940	12	19	6	2	3	2	1	2	0	2	7	12	20	6	1	3	2	2	3	1	3	6	
19	August 26, 1940	9	21	2	1	6	5	0	3	0	0	7	11	20	4	2	5	4	1	3	0	1	7	
21	October 5, 1940	10	21	5	4	3	1	2	3	0	0	3	10	21	4	3	5	3	1	3	0	0	5	
22	October 25, 1940	10	19	6	2	5	5	2	4	0	3	3	10	20	6	3	4	3	2	4	0	2	3	
23	November 14, 1940	13	19	4	5	5	3	1	4	0	0	7	12	19	5	4	5	4	2	4	0	2	5	

14. Moved data for number of units and casualties for mech to the armor column.
15. Changed tooltip for the forces and casualties so the armor column shows Armor / Mech Corps.
16. Increased the length of the tooltip to 10-seconds for the forces screen and for the tooltips contained in the ribbon across the top.
17. Changed the names of a number for French units for generic names to historical ones.
18. Free French units are now shown with blue color in the mini map. Before they were shown with US (or UK) color.
19. Free French units spawned in cities were tried to be named as French. Removed the "e" in the number because it showed like 6the Garrison. Now it will show 6th Garrison.
20. Found and fixed a naming bug in the 1940.scn where the Amiens garrison was renamed to Ie CA.
21. Fixed a French armistice bug where when Paris was empty after June 27, 1940 caused the French to determine if the armistice offer was accepted or not. Now the check will only be made during the axis player turn and will give the axis player the rightful opportunity to accept or reject it.
22. Fixed the bug with casualties. Now the game will only count steps lost in combat and not losses inflicted in combat. So a 2 step unit receiving 6 hits will increase the unit destroyed by 1 and steps by 2 (not 6).
23. Added support in the options so it's possible to show river names, country names and lake names on the map. These images are placed in a new folder called ..\Grand Strategy Mod\image\backgroundnames
24. Changed the name of the settings file from settings.txt to gs2\_settings.txt. This new settings file contains an extra entry for whether or not river/country/lake names are shown.
25. Fixed a bug where enemy paratroopers occupying an airbase couldn't be attacked by friendly air units. That bug is now fixed so that air units can attack the enemy paratroopers.

26. Fixed a terrain ownership bug in Canada.
27. Changed the Italian General Ambrosia date of death, which was listed incorrectly, from 1944 to 1958.
28. Change the names of major power air units and the way that these names are automatically to reflect more historical names based on GS air unit sizes.
29. Updated some map tiles to remove river name typos.
30. Fixed a bug where severe winter wouldn't spawn in the 1941 scenario because it started in February and already spawning a severe winter on the first turn
31. Bumped the winter (not severe winter) percentage strength for air attack, strategic attack and shock attack from 50 to 60. Added new weather or changed other variables in general.txt  

```
AXIS_WINTER_SUFFER 35 /* Severe winter penalty in 1939. Max efficiency will this value lower
*/
LESS_WINTER_SUFFER_PER_YEAR 5 /* Winter suffer drops by this value per year */
WINTER_SUFFER_OFFSET 5 /* Severe winter efficiency drop to all units will be
Axis_winter_suffer minus this value */
ALLIES_WINTER_SUFFER 0
MAX_WINTER_SUFFER 25 /* Max possible efficiency loss from severe winter */
```
32. Axis winter\_suffer dropped from 55 to 35. Since it drops by 5 instead of 10 each year it means the value is 25 in 1941 and 20 in 1942. Winter suffer offset is a new variable that will be deducted from the max efficiency drop when finding the one time per severe winter efficiency drop. One time drop will be 20 in 1941, 15 in 1942 and so on. The Axis will now lose a lower efficiency on all units present in the severe winter zone. In addition the max efficiency will drop so the units staying in there can't regain efficiency back to the former max. Message about severe winter is updated so it also shows the temporary max efficiency loss. Bumped the efficiency loss percentage from southern Russian hexes from 50 to 75 since the max value is now lower. This is done to let the Axis feel that there is a winter in southern Russia too.
33. Production increase per quarter is increased from 6 to 7
34. Production increase when a major power activates for war is increased from 10 to 20
35. Russia will receive 8 garrison units as their strategic reserve on August 1st 1941
36. Norway is linked to Denmark and Sweden and Denmark to Norway and Sweden. This means that if a country DoW's one of the 3 countries on a prior turn then the other 2 will not be surprised. It also means the units spawning will be at full strength (10 steps). If Norway or Denmark are surprised then each of their units will be spawned at 2 strength. So it's now very lucrative for the Axis to DoW these countries on the same turn
37. Belgium and Holland are also linked. If Holland is DoW'ed on a prior turn then Belgium won't be surprised. If Belgium is DoW'ed on a prior turn then Holland won't be surprised. If Belgium is not surprised then all units will spawn at full strength. Otherwise the unit in Liege will spawn at 10 strength, the corps at 7 strength and the garrisons at 5 strength. The location of the garrison adjacent to Belgium is dependent on which side will DoW Belgium. If Holland is not surprised then all units will spawn at full strength. Otherwise the garrisons will spawn at 5 strength and the corps at 7 strength. The garrison north

of Hague is removed.

38. The French and UK forces in France (and air units in UK) will only suffer a 20 efficiency loss if Belgium surrenders in one turn.

39. The 1939 scenario is updated so the one Dutch garrison is removed and one Belgian garrison is removed so it can spawn dependent upon which side will attack Belgium. It will defend against France if the Allies DoW Belgium and against Germany if the Axis DoW.

40. The 1940 scenario is changed so Denmark and Holland are set to neutral. The German forces are moved out and placed outside these countries

41. The Germans are allowed to build a paratrooper in 1939 so they can have it ready for Case Yellow. Liege can't be changed to a city from a fortress until 1940 because the paratrooper can't be released out of the force pool until the fair weather in 1939 is over.

42. Changed the German synth oil plant productions to the following:

Industry tech 0: 0 production  
Industry tech 1-3: 1 production  
Industry tech 4-5: 2 production  
Industry tech 6: 3 production

43. After some playtesting it was found that the +20 war effort when joining the war actually affects countries already at war as well. This means that Germany, UK and France would start with 10 more war effort than they used to. Well, Germany is at 110 due to tech, but would have been at 120 if industry was higher. In order to compensate for that the at start war effort for Germany was decreased from 100 to 90 so they will start with 110, France was decreased from 30 to 20 so they will start at 40 as before, UK was decreased from 45 to 35 so they start at 55 as before. The countries benefiting from +20 war effort when they join the war will be Italy, USA and Russia as intended. Since Germany will most likely not take Holland and Denmark in 1939 as they used the German start PP's in the 1939 scenario was increased from 20 to 35. This means they can afford 1 lab and also upgrade a garrison to para on the very first turn. The 15 extra PP's is about the same they would gain from having Hague, Arnhem and Copenhagen for some turns in 1939 and some in 1940 before Case Yellow starts.

44. Damaged cities will only provide supply if supply can't be traced from other cities. This way you need to isolate the damaged city to lower the supply in the hex.

45. Persia will spawn garrisons in all cities if Axis units occupy a city / resource in Iraq.

46. Persia will activate when an Axis unit has moved into Iraq instead of when an Axis unit captures an Iraqi resource

47. Free French garrisons will spawn in empty French controlled north Africa city/ fortress hexes when the French armistice offer is rejected. The units spawn at the following strength:  
`FREE_FRENCH_GARRISON_STRENGTH 5 /* 0..10 0 = no spawn.` Strength of the Free French garrisons in Morocco, Algeria and Tunisia after the fall of France \*/

48. Britain is required to have a home guard force in Great Britain / Canada before Russia or USA joins the Allies. Failing to do so will make a loss in max morale of all British units. These parameters control how this is done:

`UK_HOME_GUARD_UNITS_REQUIRED 10 /* Number of land units needed in core UK`

territory prior to USA or Russia joining the Allies \*/  
 UK\_MORALE\_PENALTY\_PER\_MISSING\_HG 5 /\* Max morale of all UK units are lowered by  
 this number for each missing HG unit in UK \*/

49. There are at start 13 UK land units in Great Britain / Canada so it's possible to have a BEF of 3 units without losing any morale loss. Once you fall below 10 units you will lose 5 max morale per unit failing to make the 10 unit limit. This is the message that will be shown every turn the Allied player fails to keep the HG requirement: INDEX-978 | "Too few British Home Guard land units causes fear in Britain. All UK units suffer a max morale loss of"

50. Please notice that if an Axis has entered Great Britain or Canada then the US max morale loss will not apply. The UK morale would get back to normal if the Germans actually landed in England. This way it's not possible to invade Britain and force the morale to get to 0 by killing British units.

51. Added a prerequisite for Spain activating as an Axis ally that USA has to be neutral.

52. Canadian units will now spawn at normal quality and not the reduced quality if the UK manpower level is yellow.

53. Added images for French armor level 6.

54. Changed the 1939 and 1940 scenarios so the numbers of the German units match the OOB for Case White and Case Yellow

Changed German Korps to Armeekorps  
 Changed German Panzer Korps to Panzerkorps  
 Changed German Panzergrenadier to Panzergrenadierkorps  
 Changed German Fallschirmjager Korps to Fallschirmjagerkorps  
 Changed German Fallschirmjager Div. to Fallschirmjagerdivision

55. Reduced the font size of the unit name and country name in the unit panel from 24 to 22 to fit in all text with numbers

56. Changed the owner of the southern convoy from UK to USA when USA joins the Allies.

57. Widened the column range for the southern convoy spawn point from 1-12 to 6-20. Row will always be the bottom of the map.

58. Changed the max values of each convoy to the following:

/\* Max production worth of the 3 different convoys. Max value is modified by the averaged war effort of UK and USA \*/  
 NORTH\_ATLANTIC\_CONVOY\_SIZE 90 /\* Convoys go to Russia after Russia joins the Allies.  
 Before they go to UK \*/  
 MID\_ATLANTIC\_CONVOY\_SIZE 110 /\* Convoys go always to UK \*/  
 SOUTH\_ATLANTIC\_CONVOY\_SIZE 90 /\* Convoys go to USA after USA joins the Allies. Before  
 they go to UK \*/  
 Old values were: North: 100, Mid: 140 and South: 50

- ◆ These changes should give USA a considerable increased income at the expense of primarily UK, but to a lesser degree Russia. The southern convoy will use 3-4 turns to reach the destination port (New York)

59. Changed code so UK will get Iceland on turn 14 or later if Denmark is conquered. So if Denmark is

conquered late then Iceland will be “conquered” by UK later. USA will get Iceland regardless in 1941 because that was not an invasion, but an agreement with the Danish ambassador. Same with Greenland

60. Replaced China as a possible country to select with Norway. This includes the necessary language and flag files.

61. The criteria for unloading and for invading a hex were inconsistent for a transport in clam seas and a target hex in non-fair weather. This has been fixed so the criteria for both unloading and invading are now:

- ◆ Transport hex must be in calm sea
- ◆ Destination hex can't be a mountain hex
- ◆ Exception is that you can unload into friendly hexes from a port regardless of weather
- ◆ This should make it slightly easier to land and it won't matter if the weather in the destination hex is not fair.

62. Removed the Gustav Line fortresses in Italy from all scenarios except the 1944.scenario. Added code that will remove the fortresses in ongoing games that haven't reached July 1943 or had Allied units in Italy. The Gustav Line fortresses will spawn if:

- ◆ Year is 1942 or later and an Allied unit has landed in a core Italian hex
- ◆ Turn is July 1943 or later
- ◆ A message about the spawn will be shown
- ◆ The Gustav Line fortresses can be set in general.txt

63. - Not Used -

64. Changed the font size and placement of some text in the lab window so it's possible to type Level instead of lvl. That was needed that for Norwegian, Spanish and German too.

65. Fixed a bug about the language of the cashed in convoy. This message is generated in country.class and not game.class and was therefore not checked for language. Now the language is to that of the Allied player.

66. Fix a map bug in Canada.

67. Text for unit type using transportation loop was always in English. Now changed to show correct language.

68. Text for unit type onboard transports was always in English. Now changed to show correct language.

69. Fixed a few Norwegian text strings.

- 70. Made sure that fortresses don't respawn if a city is retaken by the side owning the original fortress. This applies mainly to the Gustav line fortresses.
- 71. Added code so the German eastern front fortresses can spawn as early as 1942 if Allied units within core German hexes. Similar to the Gustav line fortress line being spawned if Allied units in Italy.
- 72. Fixed a bug where the allies lost efficiency in severe winter.
- 73. Fixed several typos in message\_nor.txt file.
- 74. Fixed the bug about Allied efficiency loss in severe winter showing same value as Axis.
- 75. Fixed several typos in message\_nor.txt.
- 76. Made Switzerland pro-Axis if Axis AI. This ensures Germany won't waste effort attacking Switzerland
- 77. Divided chance to spawn partisans by 3 in AI games. This should cancel out the increased partisan spawns in AI games so the spawn rate is about the same as in regular games.
- 78. Fixed a bug regarding languages other than English not creating unit names when units are deployed. This was caused by the unit type being stored in local language to show content in transports and transportation loops in the correct language. So that fix created a bug about unit names. No longer does the code compare to English names for the unit types, but to the one in the message file.
- 79. Fixed the bug that Axis units got less efficiency after severe winter begun than they should have. This was caused by a bug in the formula giving the Axis 8 less max efficiency than they should have had.
- 80. Reduced the average number of severe winter turns from 6 to 5.
- 81. Fixed a bug where the Russians were losing efficiency due to severe winter loss. Now their units won't lose anything.
- 82. Fixed a critical bug where in certain rare, but possible cases, the game would hang during the convoy movement phase.
- 83. Fixed a long time and inherited but in the decideWhereToMove method that speeds up AI play significantly.
- 84. Added code so German units will have supply level 4 in most of Russia at the start of January 1942 when the supply penalty distance is increased. Before they only got it after their first January turn because the supply levels are updated at the end of a turn.
- 85. Changed automatic naming of US bombers to Bombardment Wing (M) and Bombardment Wing (H). Updated all scenarios with the new US bomber names.
- 86. Updated the 1942, 1943 and 1944 and replaced 1, 2 and 3 UK units with US units to reflect that USA would get convoys with PP's from the southern convoy instead of UK. This would make USA stronger at the expense of UK and that seems more right.



87. Updated version number in all message files.
88. Added to a fix to a null pointer exception that would under certain conditions cause the game to hang.
89. Allied units can't enter, unload, advance or retreat into core Russian hexes unless Russia has surrendered.
90. A ground unit can't attack if it ends its move adjacent to a previously unspotted unit.
91. Made the following tweaks to Northern Europe weather

```
NORTH_MUD_CHANCE_NOVEMBER 40
NORTH_WINTER_CHANCE_NOVEMBER 50
```

- ◆ Mud is reduced from 50 to 40 to give a 10% chance for fair weather
- ◆ Severe winter chance in November
- i. SEVERE\_WINTER\_CHANCE\_NOVEMBER 10 /\* Percentage change the Russian severe winter will start in November if it didn't start earlier \*/
- ii. Reduced from 25 to 10
- ◆ Severe winter duration

```
/* Variation of severe winter length */
CHANGE_FOR_DURATION 60 /* 0..100. Accumulated chance that length =
WINTER_DURATION. % chance = 60 */
CHANGE_FOR_DURATION_MINUS_1 80 /* 0..100. Accumulated chance that length =
WINTER_DURATION - 1. % chance = 20 */
CHANGE_FOR_DURATION_MINUS_2 90 /* 0..100. Accumulated chance that length =
WINTER_DURATION - 2. % chance = 10 */
CHANGE_FOR_DURATION_PLUS_1 100 /* 0..100. Accumulated chance that length =
WINTER_DURATION + 1. % chance = 10 */
Reduced from 70 to 60 change for duration. Increased from 15 to 20 for duration -1 and increased
from 5 to 10 for duration -2
```

92. Max Russian Guards reduced a bit for these years:

```
MAX_GUARDS_1941 2 /* Max number of Guards units allowed on the map in 1941 */
MAX_GUARDS_1942 7 /* Max number of Guards units allowed on the map in 1942 */
MAX_GUARDS_1943 9 /* Max number of Guards units allowed on the map in 1943 */
```

93. German SS units increased for these years:

```
MAX_SS_1943 5 /* Max number of SS units allowed on the map in 1943 */
MAX_SS_1944 8 /* Max number of SS units allowed on the map in 1944 */
MAX_SS_1945 10 /* Max number of SS units allowed on the map in 1945 */
```

94. Reduced UK HG (home guard) requirement from 10 to 8, but will only count units in Britain and not in Canada:

☒ UK\_HOME\_GUARD\_UNITS\_REQUIRED 8 /\* Number of land units needed in core UK territory \*/

☒ Added a UK max morale loss of 5 per UK land unit less than 8 in Britain (including Scapa Flow and Belfast).

☒ This max morale loss is reduced by 10 for each of Russia joins allies, USA joins the allies and Italy is neutral or conquered

95. The northern convoy is sent to Halifax as a UK convoy instead of a Russian convoy if London and Liverpool are Axis controlled.

96. Allied naval unit presence in the Atlantic is now required at all times and not only when London is allied controlled as before. So the Allies can't afford to lose the RN in Sealion and later.

97. Added Manpower loss per point of railcap captured by enemy:

```
/* Manpower % loss per railcap point captured by enemy. 0 = No loss */
MANPOWER_LOSS_PER_POINT_GERMANY 10
MANPOWER_LOSS_PER_POINT_ITALY 30
MANPOWER_LOSS_PER_POINT_UK 10
MANPOWER_LOSS_PER_POINT_FRANCE 30
MANPOWER_LOSS_PER_POINT_USA 10
MANPOWER_LOSS_PER_POINT_Russia 5
```

- ◆ You don't lose absolute manpower by losing railcar cities. Instead you lose manpower generation. So the percentage will be the same. E. g. Russia generates about 18 manpower per turn. When Moscow falls they will only generate 14 per turn. So you lose about  $4 \times 18 = 76$  manpower per year for not having Moscow. That means almost 8 corps units. The manpower pool is manpower already collected and you don't lose that. We could do it, but then it would be disastrous to lose e. g. Moscow. Then with 1600 manpower you lose 20% from losing Moscow and drop to 1280. That means losing 320 immediately and 76 each year. It will drop the percentage from above 75 to almost 50. That's too severe.

98. Added the following lab build restrictions.

- ◆ To build the first 3rd lab in a research area you need 3 other research areas with at least 1 lab.
- ◆ To build the second 3rd lab in a research area you need 3 other research areas with at least 2 labs or 4 other research areas with at least 1 lab.

99. Removed some obsolete code in unit.class regarding BB's with ground attack 1. The code updated it to 2 changed before GS v2.0).

100. Made the following changes to the Axis AI:

- ◆ Axis supplypoints in North Africa increased by 10

```
EXTRA_AXIS_SUPPLY_IN_AFRICA 10 /* AI Axis units increase the supply points in Africa by this value */
```

- ◆ Extra Axis units in Libya

```
ADD_DAK_IN_LIBYA 1 /* 0 = no spawn. 1 = German armor spawned in Libya near Benghazi */
ADD_FIGHTER_IN_LIBYA 1 /* 0 = no spawn. 1 = German fighter spawned in Libya near Benghazi */
ADD_TAC_BOMBER_IN_LIBYA 1 /* 0 = no spawn. 1 = German tactical bomber spawned in
```

Libya near Benghazi \*/

EXTRA\_GERMAN\_CORPS\_IN\_LIBYA 2 /\* 0 = no spawn. Number of units spawn in Libya near Benghazi \*/

UNITS\_IN\_LIBYA\_SPAWN\_TURN 28 /\* February 22nd 1941 \*/

- ◆ Extra German units in East PRussia from turn 1

ADD\_GERMAN\_FIGHTER\_EAST\_PRussia 1 /\* 0 = no spawn. 1 = one extra fighter will spawn on turn 1 in East PRussia \*/

ADD\_GERMAN\_TAC\_BOMBER\_EAST\_PRussia 1 /\* 0 = no spawn. 1 = one extra tac bomber will spawn on turn 1 in East PRussia \*/

- ◆ Extra German unit near Wilhelmshaven

ADD\_GERMAN\_ARMOUR\_WILHELMSHAVEN 1 /\* 0 = no spawn. 1 = one extra tac bomber will spawn on turn 1 near Wilhelmshaven \*/

ARMOUR\_WILHELMSHAVEN\_SPAWN\_TURN 10 /\* February 28th 1940 \*/

- ◆ Extra German units for Barbarossa

EXTRA\_GERMAN\_MECH\_BARBAROSSA 2 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/

EXTRA\_GERMAN\_CORPS\_BARBAROSSA 4 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/

EXTRA\_GERMAN\_ARMOUR\_BARBAROSSA 1 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/

EXTRA\_GERMAN\_TAC\_BOMBER\_BARBAROSSA 1 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/

EXTRA\_GERMAN\_FIGHTER\_BARBAROSSA 1 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/

BARBAROSSA\_UNITS\_SPAWN\_TURN 31 /\* April 23rd 1941 \*/

- ◆ Automatic DoW upon Norway and Denmark with German garrisons in all cities

AXIS\_AUTOMATIC\_DOW\_NORWAY\_DENMARK 1 /\* 0 = no automatic DoW. 1 = Germany will get garrisons in each Norwegian and Danish city in April 1940 \*/

DOW\_NORWAY\_DENMARK\_TURN 12 /\* April 8th 1940 \*/

- ◆ Reduced on-map strength for some countries. This will make it easier for the Axis AI to get anywhere with the DoW

REDUCED\_STRENGTH\_DUTCH\_FORCES 2 /\* Reduced strength of on-map Dutch forces if Axis AI \*/

REDUCED\_STRENGTH\_BELGIAN\_FORCES 2 /\* Reduced strength of on-map Belgian forces if Axis AI \*/

REDUCED\_STRENGTH\_POLISH\_FORCES 5 /\* Reduced strength of on-map Polish forces if Axis AI \*/

REDUCED\_STRENGTH\_GREEK\_FORCES 4 /\* Reduced strength of on-map Greek land forces if Axis AI \*/

REDUCED\_STRENGTH\_YUGOSLAVIAN\_FORCES 4 /\* Reduced strength of on-map Yugoslavian forces if Axis AI \*/

REDUCED\_STRENGTH\_RussiaN\_GARRISONS 5 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/

REDUCED\_STRENGTH\_RussiaN\_CORPS 3 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/

REDUCED\_STRENGTH\_RussiaN\_MECH 2 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/

REDUCED\_STRENGTH\_FRENCH\_GARRISONS 5 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/  
REDUCED\_STRENGTH\_FRENCH\_CORPS 3 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/  
REDUCED\_STRENGTH\_FRENCH\_MECH 2 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/

- ◆ Fixed an AI bug where it would not DoW Russia early enough. The reason is that we've moved the automatic join time by 7 months to May 1942. The AI will increase the chance for DoW the closer the Axis is to the automatic join date. So 7 months was subtracted from the calculations for Russia.
- ◆ Added code so the AI will not DoW a country if the country has non-fair weather. That prevents the AI from fighting in mud
- ◆ Added code to make it impossible for the AI to DoW Denmark and Norway if they get these countries automatically in April 1940.

101. Fixed a bug regarding the Russian convoy being rerouted to Halifax. It was due to a logic error that has now been corrected.

102. Fixed a bug introduced in GS v2.01.24 regarding deployment of units. Added some code to ensure units being deployed got a generated name, but forgot to remove Convoys from that procedure. Convoys get their names when the convoys spawn.

103. Fixed a typo in the comments field in the AI section about reduced strength of French units.

104. Fixed a bug reported about commanders onboard transports being permanently removed from the map if the transport was sunk. Now they are injured normally.

105. Fixed a bug in the AI play where USA lost 6 industrial effort because Switzerland become pro-Axis to avoid Axis DoW upon Switzerland. Switzerland was removed from the list of countries that the Allied player will get a penalty DoW'ing for games with the Axis AI.

106. Fixed the issue about Liverpool only being a deployment city if London was captured. Not it's a deployment city always

107. Fixed a unit naming bug where units sent to the force pool were renamed, e. g. like British units being evacuated from France when France surrenders.

108. Fixed a few name bugs in the scenarios (mainly Russian Guards Mech Corps that had the name Russian Guards Corps).

109. Changed Fallschirmjager to Fallschirmjaeger when you upgrade to German para units.

110. Added code so partisans are now named with the country they were created in, like Yugoslavian Partisan instead of just Partisan

111. Added code so partisan images check for the partisan country and will therefore keep the images when the partisan unit crosses the border. So a Yugoslavian partisan moving into e. g. Hungary will keep the Yugoslavian image.

112. Updated some scenarios with the name changes mentioned above.
113. Updated all message file version to GS v2.01.27.
114. Fixed a minor bug regarding the left production panel. When you upgraded a unit to elite or para then the PP's left in the left panel wasn't immediately updated. It was only in the top production panel. This has now been fixed so that both panels update when you upgrade a unit.
115. Made change to the highlight hexes when the current unit is a naval unit. Naval units can now move through enemy controlled transport loops; but they can't enter the loop hex. This is intended for ships entering the Red Sea from the Mediterranean. Now they can move from the hex north of the to Mediterranean transport loop to the Persian Gulf or Atlantic transport loops. So naval units str no longer trapped inside a sea area because they're at the wrong side of a transport loop. The loophex itself is not highlighted, but the hexes on the other side of the loophex are.
116. Updates made to the French and Norwegian language files.
117. Fixed a minor bug where elite or para units built at the same turn would get the same name. Now they will only be named when placed on the map. This will ensure that these unit names will be unique.
118. Expiration date (i.e., kill switch) for the PC beta changed to the end of the year.
119. Fixed a bug regarding airbase owner change. Now the code won't change airbase owner if the occupying air unit is from the same side as the airbase owner. That means Azores remains US when a British air unit lands there.
120. Fixed the bug where Russia had supply level 5 in western Germany. The reason was that the shortest path routine just counted hexes to any capital and that means all hexes within 20 hexes from London was flagged as supply level 5, even if they were Russian owned. Now Russia can only get supply from their own capitals plus Basra (for southern Russia). So Russia can no longer trace supply from London or Paris. That means Russian units will drop to supply level 3 if they get almost to the Siegfried line, but I don't see that as a problem. If that happens the Russia has usually captured Berlin and Hamburg.
121. Allied and Russian units can now rail to each other's controlled territory with the following exceptions:
- ◆ No non-Russian units are allowed to be railed to core Russian hexes
  - ◆ No units can rail to/from Russia from/to Egypt, Persia, Syria or Iraq. The reason is that there were no rail lines going through Persia to Russia. The high mountains between Russia and Persia prevents that. You have to sail units from Russia to Persia or move them by foot to be able to rail on the other side.
122. Since rail movement is now allowed between Russian and Allied controlled territory with the exceptions mentioned above, it means that now Russian units can rail when inside allied controlled Romania or Bulgaria. So Russian units won't be stranded anymore inside Romania or Bulgaria when they liberate the capitals of these countries.
123. Hexes captured by Allied Yugoslavian, Bulgarian, Hungarian, Romanian or Finnish units will now be controlled by Russia if outside the home country. Any hexes captured inside the home country will

become controlled by the core owner of the hex unless the core owner is conquered. Then the controlling country will be SSR.

124. Allied Greece will now capture hexes for UK (if not conquered) unless within Greek home territory. Then all hexes captured will become Greek controlled.

125. Added amph ground attack bonuses.

```
AMPH_GROUND_ATT_BONUS_CORPS 0
AMPH_GROUND_ATT_BONUS_MECH 1
AMPH_GROUND_ATT_BONUS_ARMOR 2
```

126. Added amph shock attack bonus.

```
AMPH_SHOCK_BONUS_CORPS 0
AMPH_SHOCK_BONUS_MECH 2
AMPH_SHOCK_BONUS_ARMOR 3
```

127. Added efficiency loss at sea (not in friendly port) for transports and regain if unloading from friendly port

```
EFFICIENCY_LOSS_PER_TURN_AT_SEA 5 /* Efficiency loss per turn for unit aboard a
transport while not in a friendly port */
EFFICIENCY_REGAINED_FROM_PORT 5 /* Efficiency regained if transport is disembarked
from a friendly port */
EFFICIENCY_AT_SEA_THRESHOLD 60 /* Efficiency while at sea can't drop below this value
just from being at sea */
```

128. Added code so you get back PP's paid for the transport if you disembark from a port. The PP's received = port strength / 10 \* transport cost (

129. Changed code so you don't lose 15 efficiency from disembarking from a port into a non-city hex.

130. Newly built Russian mech and tank units are now named Mech Army and Tank Army instead of Mech Corps and Tank Corps. Updated some scenarios to reflect these changes.

131. Progress in air techs slowed a bit and ensure the techs cap out later than they do no. Research difficulty increased by 5 for air techs to:

```
DOG_FIGHT 30
CLOSE_AIR_SUPPORT 25
STRATEGIC_OPERATIONS 25
```

132. Hungarian and Romania reserves are released in July 1942 instead of June 1943 if Yugoslavia is still neutral. Bulgarian reserves are released in July 1942 instead of June 1943 if Greece is still neutral. Changed text when these events happen so they only mention that reserves are released and not that they're intended to be used against Russia. This means text can be used even if Bulgaria and Romania change side early.

133. Pressing the ESC key will now open the options dialog box.

134. Replaced the game option for game ending in 1945 with halved partisan spawn rate if option not selected. Option is called Normal chance for new partisans. If checked (default) then no chance from now. If unchecked then spawn rate is halved.

135. Automatic naming of units will now check existing names for units onboard transports. Before it

was possible to get the same name as used on a unit on a transport when deploying a unit.

136. If you press the key e (for elite) or p (for para) you will get the dialog box showing the currently number of elite and para units and the max numbers as well. This is the same message you get at the start of each year. Now you can trigger it when you want just to check the values.

137. Messages about new partisans are combined into one message showing the info like this: New partisans in France: 2. Russia: 1. Yugoslavia: 2

138. Added tooltip for unitpanel so the number showing the Effectiveness will show the manpower % and manpower for the country that owns the unit. That means you can check a minor power unit to get the manpower % and absolute manpower. That can be handy if you're getting close to 75% and don't want to drop below.

139. Added keys for the following commands:

a: (for airborne): Will upgrade to a para unit if eligible

b: (for buy): Will open the purchase units dialog box.

d: (for deploy): Will open the force pool panel dialog box

e: (for elite): Will show the elite and para limits for that side

g: (for guards): Will upgrade to an elite unit if eligible

i: (for info): Will open the statistics dialog box

l: (for load): Will allow the unit to load or unload if eligible

o: (for operate): Will allow the unit to move by rail if eligible

p: (for purchase): Will open the purchase units dialog box

r: (for repair): Will enable the repair icon so you can click on units that can be repaired

s: (for sentry): Will toggle the unit sentry mode on/off

t: (for tech): Will open the research panel

u: (for upgrade): Will enable the upgrade icon so you can click of units that can be upgraded

w: (for war): Will open the Declare war dialog box

z: (for zzz): Will toggle the unit sentry mode on/off

140. Added the Dutch city of Groningen

141. Changed the border between Germany and Holland so the hex Groningen was placed in became



Dutch

- 142. Changed the hex Wilhelmshaven was in into a sea hex and added a port there. Wilhelmshaven is now a port.
- 143. Added a city 1x south of Wilhelmshaven with the name Bremen. Moved the production of 1 from Wilhelmshaven to Bremen. Bremen is a big German city and now it is on the map. Wilhelmshaven was a town only and its main purpose was a port where warships were constructed.
- 144. Moved the to Baltic Sea transport loop 1xSW so it covers the entrance to the Kiel canal. This change makes it harder to invade many hexes along the German North Sea coast.
- 145. Updated all scenarios with the map changes and made some minor unit moves to fit the new port location at Wilhelmshaven and Groningen becomes occupied in the 1944 scenario. Also moved units in the 1942 and 1943 scenarios to occupy the Russian city of Kherson and the Russian resource Krivoy Rog. Before this change partisans could often spawn here before the Germans managed to move garrisons there.
- 146. Updated the spawn location of the extra armor for Axis AI from Wilhelmshaven hex to Bremen hex.
- 147. Updated ww2\_city\*.txt files with the new names.
- 148. Modified scorched earth in Russia so that it only applies on the second turn and later of Barbarossa. That is, it does not apply on the first turn.
- 149. Russian strategic reserve units will now get unique names when placed.
- 150. Fix a bug where the ownership of a Yugoslavia port when natural was given to Russia. Now, port ownership is given to the owner of the controlling land-city hex.
- 151. Fixed a bug where naval units destroyed in port were not being added to the casualties list. They are now.
- 152. Made several map and scenario changes; especially in Poland, Russia and North Africa.
- 153. Fixed a minor bug where it was possible to rail units to a swamp, mountain or dune hex. Now you can't rail from such terrain types and now you can't rail to either.
- 154. Added to general.txt the spawn turn for the Russian Siberian reserves. Turn moved from 40 to 41.  
SIBERIAN\_RESERVE\_SPAWN\_TURN 41 /\* November 9th 1941 \*/
- 155. Changed the Siberian reserve leader from Chuikov to Meretskov. SIBERIAN\_RESERVE\_LEADER 559 /\* Meretskov \*/
- 156. Changed attack across river in winter from 70% to 50% ATTACK\_ACROSS\_RIVER\_WINTER 50 /\* Attack efficiency percentage when attacking across river in winter weather \*/
- 157. Changed research so a country that's not at war or mobilized cannot put focus on any tech within a research area.

158. Changed research so you only spend a focus put by setting a focus. If you revert research back to balanced then you don't spend a focus point.

159. Mulberry supply for the Allies will now only be provided from 1944 if London is still Allied controlled and the naval unit providing mulberry supply is within the following hexes of London:

MULBERRY\_MAX\_DISTANCE\_FROM\_LONDON 10 /\* BB, DD or CV max distance from London to provide Mulberry supply \*/

160. Oil and PP production will now be using the controlling major power of the minor power owning the production hex.

161. The most important impact for this change will be the Romanian and Hungarian oilfields which will now production using German war effort instead of local war effort.

162. Vichy French garrisons in Syria and French North Africa will now have 5 steps instead of 10 steps.

163. Free French garrisons in French North Africa will have a variable strength according to the number of French ground unit steps in supply.

/\* Used if French armistice offer is rejected \*/  
 FREE\_FRENCH\_GARRISON\_STRENGTH 5 /\* 0..10 0 = no spawn. Strength of the Free French garrisons in French North Africa after the fall of France \*/  
 /\* Free French garrison strength = # French land unit steps in French controlled hexes / free\_french\_strength\_step\_ratio. \*/  
 FREE\_FRENCH\_STRENGTH\_STEP\_RATIO 10 /\* 0 = disabled and free\_french\_garrison\_strength is used. \*/  
 CORPS\_STEPS\_COUNTED\_AS 3 /\* 1..3. Each corps or mech step is counted as this number of garrison steps \*/

164. Finnish units inside core Finnish hexes will have their strengths modified like this:

/\* Bonus to Finnish units inside core Finnish hexes \*/  
 FINNISH\_INCREASE\_GROUND\_ATTACK 0  
 FINNISH\_INCREASE\_GROUND\_DEFENSE 1  
 FINNISH\_INCREASE\_SHOCK\_ATTACK 0  
 FINNISH\_INCREASE\_QUALITY 1  
 FINNISH\_INCREASE\_SURVIVABILITY 1

165. This is done to simulate that Finnish units defended very well within their own territory (including the ceded Karelia). They were less effective when moved outside Finland. I decided to not increase the Finnish attack values because then they could attack Leningrad directly from Karelia with increased values. Finland was actually very reluctant to attack Leningrad in the real war.

166. Transport overuse will now increase per overuse instead of every second overuse

TRANSPORT\_OVER\_GROUP 1

167. Minimum Allied naval requirement in the Atlantic is increased from 10 to 12

ALLIED\_ESCORTS\_NEEDED\_IN\_ATLANTIC 12 /\* This number of escorts needed for no negative impact on convoy size \*/

168. USA and Russia will now accumulate focus points every July (not in January) when not at war.

That should give them slightly more focus points when they enter the war.

169. Added separate graphics for the following units:

Slovak garrison will have Slovak emblem and special German colors (grey and red)  
Standarte NW will have Dutch emblem and colors  
Spanish Blue division will have Spanish colors and emblem  
1st Croatian will have Croatian emblem and unit colors similar to Yugoslavia  
SS Wiking and Nordland will have Norwegian colors and SS emblem  
Charlemagne is upgraded to SS Charlemagne and corps. Will have French colors and SS emblem

170. Fixed bug where UK built destroyers were named Sqn instead of Flotilla. Now they will be named Destroyer Flotilla

171. Changed the unit costs for the following units

- ◆ Submarine from 60 to 50
- ◆ Destroyer from 60 to 50
- ◆ Mech from 50 to 55
- ◆ Armor from 80 to 85
- ◆ Fighter from 100 to 90
- ◆ Tactical bomber from 110 to 100
- ◆ Strategic bomber from 95 to 110

172. Changed some unit techs

- ◆ Fighter will no longer get tactical operations tech 2 and lose +1 naval attack and +1 antitank
- ◆ Strategic bombers will now get tactical operations tech 3 and get +1 shock attack and +1 antitank
- ◆ Dogfight tech 2 (+1 air attack) now includes TAC in addition to STR and FTR
- ◆ Strategic operations tech 4 will get +2 strategic attack instead of +1 (will affect TAC, STR)
- ◆ Strategic operations tech 5 will get +1 strategic attack instead of +1 (will affect TAC, STR, FTR, CV)
- ◆ ASW tech 3 (+1 sub attack) will no longer affect FTR and TAC
- ◆ TAC will start with air attack 1 instead of 2
- ◆ STR will start with air attack 2 instead of 1

173. Changed country start techs

- ◆ USA:
  - Sub tech 2 instead of 1
  - Artillery tech 0 instead of 1
  - Blitzkrieg tech 0 instead of 1
- ◆ Russia
  - Antitank tech 0 instead of 1
  - Blitzkrieg tech 0 instead of 1

174. Altered all scenarios so they use the new tech levels

175. Iraq rebellion added: /\* Iraq rebellion \*/

IRAQ\_REBELLION\_TURN 30 /\* April 3rd 1941. 0 = no rebellion \*/  
 IRAQ\_AXIS\_PARTISAN\_SPAWN\_CHANCE 5 /\* Percentage chance in each empty Iraqi hex \*/  
 IRAQ\_AXIS\_PARTISAN\_CITY\_MULTIPLIER 10 /\* Spawn chance multiplied by this number in empty cities or resources \*/  
 IRAQ\_AXIS\_PARTISAN\_MAX\_BASE\_SIZE 4 /\* Max partisan size = number + 2\*Axis controlled cities in Egypt, Syria and Iraq \*/

Iraqi rebel units will be German, but look like Iraqi.

176. The 3 starting units in Iraq are now changed to UK ownership instead of Iraqi. This means these units will remain as UK controlled when the rebellion starts.

177. Damage upon convoys are now dependent upon tech in surface ships for BB, CV and DD and tech in submarine for Sub

- ◆ Formula is: damage to convoy = rolled casualty \* (1 + random(tech level / 3))
- ◆ So with tech level 1 then the damage can be from 100-133% of the rolled damage, tech 2 100-167% and so on. Rolled damage is between 0-14.

178. Supply range is set back to 20/40 for 1939-1941 instead of 15/30

179. Canadian fighter will now spawn in Halifax instead of Liverpool at 10 steps instead of 8.

180. Research difficulty for subs increased from 15 to 20

181. Altered research progress for scenarios other than 1939 to indicate the increased research difficulty for air techs and sub tech.

182. Update and improved the look of the large counters.

183. Fixed a bug where the PBEM password was inadvertently disabled in GSv2.01.33.
184. Added a game.class build check that will ensure games turns are played with the same beta version and not with an older version of the game.class file. For example, GSv2.01.33 which was the one where the PBEM password was accidentally disabled.
185. Streamline the checksum messages such that when there is a failed checksum only messages for the items that failed will be displayed. Those items that pass won't be. The checksum checks that the general.txt, unit.txt, technology.txt, research\_progress.txt and Game.class files that you're using against those used by your opponent for the turn that was saved.
186. Fix a minor bug regarding the location of the strategic bomber numbers for large counters, increased the font size from 10 to 12 and make several tweaks to a number of other large counters.
187. It's now only possible to invade an occupied hex if within 10 hexes of a friendly port.
188. Made some cosmetic changes to the display of number using large counters.
189. Fixed reported bug about Allied units in Vichy French territory being destroyed instead of evacuated. Now all UK units in Vichy France will be evacuated if at the coast line if the armistice offer is accepted
190. Set the date of game.class to 2011November14
191. Made several updates to the large counters that significantly improves their appearance and the information displayed on them.
192. Fixed a minor bug with the message\_nor.txt file.
193. Added the following cities to Russia: Vladimir, Ryazan, Lipetsk, Izhevsk, Syktyvkar, Nizhniy Tagil, Saransk, Uralsk, Sterlitamak and Makhachkala with a port. None of the cities have any production and are added to give the allied player more locations east of Moscow for troop deployments and rail disembarkations.
194. Changed from 10 to 20 the following value: UK\_LESS\_MORALE\_PENALTY\_USA\_ALLIED 20 /\*  
Reduces max morale penalty of all UK units by this number if USA is activated \*/
195. Added +2 to DD survivability if fighting submarines DD\_SURVIVABILITY\_BONUS\_VS\_SUB 2 /\*  
This number is added to the DD survivability when fighting submarines \*/
196. Changed starting sub attack value for DD's from 4 to 5 and removed the +1 sub attack bonus for DD's at ASW tech 1. So this extra sub attack for DD's will only be usable until ASW tech 1
197. Fixed a bug where it was possible to rename add para to an SS unit and then remove SS to transfer it from SS to para.
198. Updated the date of in the game.class file to 2011December07.

**Also, a temporary patch has been uploaded that will allow players to add the new Russian cities to existing games.** The temporary patch is named, ADD-CITIES-TO-ON-GOING-GAMES.zip and contains one file (game.class). All you need to do is to apply this patch after you've updated to the Release

Candidate and play one or more turns. After one turn you can revert back to the game.class in your release candidate or continue to play with the patch game.class file. The game.class files in the patch has the date 2011December06.

199. Altered unit.class so only Finnish ground units get a bonus from being in home territory. Note: That is, the air units do not get the bonus that was previously put in place to allow Finnish ground units to fight as well as German units when in Finland but revert to Axis Minor Power fighting ability when out of Finland.

200. Back sometime this fall we made it so PP and oil inside of axis minors would be multiplied by the German war effort and not the axis minor war effort. Since the German war effort early on is 120% versus the axis minor which could be much lower this resulted in a significant increase of oil and PP's from these countries when they activated. However; I think we over did as illustrated in the post <http://www.slitherine.com/forum/viewtopic.php?p=283341#283341>

So we reverted back to the original where oil and PP are multiplied by the war effort of the axis minor. In effect, we undid the change and went back to the way it's been handled since the vanilla game.

201. Changed the date in the game.class file to 2011December11.

**Also, a temporary patch that includes the latest RC1 changes has been uploaded that will allow players to add the new Russian cities to existing games.** The temporary patch is named, ADD-RussiaN-CITIES-RC2.zip. This update includes a modified game.class (2011December10) that will add the new Russian cities (change item 193) to existing games. After you've played on turn with the file you can apply the game.class file (2011December11) **from RC2** to get back to the current release intended for GSv2.10.

202. Changed maximum entrenchment so capitals, cities and fortresses have a max entrenchment = max production +3 (but max possible value = 8 ). The formula is:

```
Math.min( 8, pResource.getMaxProduction() + 3)
```

**Also, a temporary patch that includes the latest RC1 changes has been uploaded that will allow players to add the new Russian cities to existing games.** The temporary patch is named, ADD-RussiaN-CITIES-RC2.zip. This update includes a modified game.class (2011December10) that will add the new Russian cities (change item 193) to existing games. After you've played on turn with the file you can apply the game.class file (2011December11) **from RC3** to get back to the current release intended for GSv2.10.

203. Fixed a bug were units exiting a transport loop could enter a neutral port; e. g. Basra while Iraq is neutral. One consequence is that the UK BB spawning in Basra would not spawn when Egypt and Iraq join the Allies. Now units can only exit transport loops in empty sea hexes or friendly ports. A port is only friendly if the owning country is at war and on the same side.

204. Amphibious range is now equal to 6 + surface ships tech instead of a fixed range of 10.

205. The Frisian Islands hexes in Holland are converted into swamp to make it harder to move towards Hague from the north.

206. The UK fighter in Egypt is removed from the at start forces and will spawn when Italy activates at 5 steps.

207. A new UK fighter called Polish Air Unit will spawn near Liverpool on August 6th 1940. Strength = 1 + number of minor owner countries conquered by the Axis. A message about this will be shown.

208. All scenarios are updated to implement the map changes and the removed at start UK fighter in Egypt.
209. Updated the 1941.scn to 1944.scn so the Polish Air Force replaced a UK fighter. In the 1941 added a fighter, but removed a DD instead. Also replaced a German strategic bomber with a tactical bomber in those scenarios too. Most players don't build extra Strategic bombers.
210. Added the Polish fighter image for the large counters.
211. Date in game.class changed to 2011December22 and version updated in message\_\*.txt to GS v2.10RC5
212. Fixed the bug about getting the SS text if when the allied click on a hidden or enemy unit. It was a bug even for the Para button. Added a test that the unit clicked on must be on the same side as the active player for the SS or para to activate. This was a problem from having double function on these 2 buttons.
213. Updated version to GSv2.10RC6.
214. Fixed a bug where Bulgaria weren't getting their 2 extra corps units if Greece was DoW'ed in 1943 or later. Now they do.
215. Updated the game version to GSv2.10RC6.
216. Fixed a bug where UK units in Vichy French territory in North Africa weren't being sent back to the force pool. The reason for the bug was that Vichy France and Syria were created before the British evacuation and the creation code removed all units in the country. This bug is now fixed and UK will be returned to their force pool instead of being eliminated.
217. Increased Russia's starting oil from 100 to 200 points.
218. Changed the rail cost in North American to a fixed 1 per unit regardless of type.
219. Added color to unit values in the unit panel to visually show when the unit is affected by bad weather. The colors are: Brown (Mud), Light Blue (Winter) and Grey (Severe winter).
220. Change the attack range in the unit panel for para units so it shows the paradrop range instead of the fixed 1 for the attack range after landing. That should make it easier to see how far a para unit can paradrop (including enemy para units).
221. Changed the Italian surrender rules where 5 or more surrender cities are now required or the conquest of Rome. The Italian surrender cities are now all Italian cities (including Cagliari, Reggio and Tirana), Tripoli (indicating loss of Libya) and Tunis (indicating Allied control of Tunisia).
222. Fixed the bug where it was possible in a hotseat game to build an SS unit as the Axis if the Allied player finished the turn with a German unit selected.
223. Reduced the transport survivability for garrison units by 2 unless the garrison is an elite or para unit. This value can be changed in general.txt
224. Altered the tech levels slightly so USA get Sherman tanks instead of Grant tanks in the 1944



scenario.

225. Changed the infantry symbol on garrisons for large counters to an empty box to be consistent with the NATO counters. Also, this makes telling the difference between garrisons and infantry corps much easier visually.

226. For GS on the PC (windows) changed the folder for where user settings, scenario data and game turns are saved to \*\\My Documents\\CEAW Grand Strategy 2.10\\

227. The name of the GS settings.txt file has changed from gs2\_settings.txt to GS210\_settings.txt. Also, added a recovery feature if the copy of this file stored in the user's data area (i.e.; \*\\My Documents\\CEAW Grand Strategy 2.10\\GS210\_settings.txt) becomes corrupted. This recovery features will delete a corrupted file and shut GS down. When GS is restarted the user will be prompted for language and RAM configuration and a new file generated on exit. No longer will a user have to manually delete a bad settings file. This recovery feature will automatically do that.

228. A bad user generated or modified scenario will no longer force GS to exit suddenly. GS will now skip over any scenario it has trouble compiling.

229. Changed the build date in the game.class file to 2012January15 and updated the version to GSv2.10RC8.

230. Increased the war effort of axis minors for the following minor and under the following conditions as applicable:

- a. Finland will use the German war effort.
- b. Bulgaria will use the German war effort instead of Bulgarian war effort if Athens is Axis controlled.
- c. Hungary and Romania will use the German war effort instead of the local war effort if Belgrade is Axis controlled.
- d. This means that the Axis minor powers will have slightly better production. Finland always (because Finland wanted to reclaim Karelia from Russia). Hungary and Romania will become more actively involved in the Axis if Yugoslavia is pacified.
- e. Bulgaria will become more actively involved in the Axis if Greece is pacified.
- f. The change is minor, but you will notice a slightly higher oil production for the Germans.

231. Fixed a bug where Finnish ports were not returning to neutral when Finland did. Now they do.

232. **MAJOR CHANGE:** Units can now only rail to and from hexes in or adjacent to resources (i.e., cities, ports, mines and oil fields).

233. Fixed a bug where the icons from French partisans weren't showing up under certain conditions.

234. Implemented a supply model for 2 sets of rail heads based on the Russian broad gauge and German standard gauge. After Russia enters the war, the standard gauge will move eastwards 2 hexes per turn in fair weather and 1 hex per turn in mud/winter, but not further than the easternmost core

Russian city/resource that's Axis controlled. The limit will be the column of the city plus 1. The broad gauge will move westwards 2 hexes per turn in fair weather and one hex per turn in mud/winter, but not further than the westernmost city/resource that's Russia controlled. The limit will be the column of the city minus 1.

235. This model of the rail heads based on the two different rail gauges are an approximation based on a vertical front line and no 2 rail heads, one that benefit each side the most. Usually the front line will straighten itself because it's easier to defend, but some times you get a breakthrough in one section like 1942 Case Blue. With this system we don't need rules for Russia paying to send units to the west. Now they need instead convert their captured / liberated cities to broad gauge.

236. Russian captured cities are checked everywhere and not in core Russian territory. The reason is that everywhere except Russia had standard gauge so the Russians needed to convert the rail lines there. Germany didn't need to change the rail lines in captured hexes outside Russia.

237. For Germany only core Russian hexes are checked because those were the ones with broad gauge. It's very unlikely that Russia will manage to push the Germans into Poland / Germany and then the Germans push the Russians back into Russia. This is so unlikely as to not be worth the complexity of code and risks of bugs needed to handle this special case. Therefore, all German and Polish cities will be available for the Germans the turn after conquest for this very rare case.

238. Russian units can only rail within broad gauge and Axis units only within standard gauge. Allied units can use both because some Allied minors can move in Russian territory (like liberated Romania and Bulgaria).

239. For each hex an image is drawn in the hexinfo showing the rail gauge for that hex. This way players can click on hexes on the map to find where the rail heads are. For applicable hexes, the corresponding hexinfo panel will show either a broad or standard gauge rail symbol.

240. Units can only rail to / from a hex with the same rail gauge as the side. Axis = standard, Russian = broad, Allies = standard. Note that not every hex shown with a rail symbol can be railed to; only those hexes in or adjacent to a resource can be. The rail hex symbol in this case is used to show which hexes will have "normal" supply and which will have to be supplied by truck.

241. Another rule implemented is to flag hexes with a truck image (in the hexinfo panel) for hexes that are not within the same rail gauge as the current side and show a supply image for those hexes that are close to a rail head. Units within this range can have supply level 4 or 5. Units outside the range can max have supply level 3. This would simulate trucks supplying units between rail heads and the front line. The truck range can be 10 (set in general.txt). When you get above 40 hexes from a major capital the supply would drop to 3 anyway because of the long distance to send supplies. So the rule would simulate that e. g. the Axis army would rely upon trucks to get supply until the rail heads get nearby. The same for the Russians when they advance westwards. Truck supply would only be used where you are in a hex with a different rail gauge than what your side can use. Once you're within the same side rail gauge you get rail supply instead.

242. For truck supply the range is 6 for fair weather, and it's possible to extend this range with industry tech. The range is 2 for mud and 4 for winter. For severe winter the range is still 4 for Russia; but is 0 for the Axis. In mud terrain the roads were very difficult to drive on. In winter the roads were good, but the engines suffered a bit. In severe winter the engines suffered a lot for the Axis, but not so much for the Russians. So Russians can treat severe winter as winter while the Germans struggle with no truck range at all.

243. Players can see both the rail and truck status for each hex in the hexinfo panel and also the unit panel.
244. Added a functionality so the supply level 4 for the Axis is extended 10 hexes in Russia if Moscow is Axis controlled. That should make Moscow even more important and definitely worth defending. Moscow was a major rail hub and would make it easier for the Axis to send supply if captured.
245. Fixed a bug where Polish railheads extended into Russia. Changed the code so railheads can't be extended into neutral territory.
246. Added code to reset rail gauge in Russia to Russian while Russia is still neutral. This will fix games already started so a restart is not necessary.
247. Air units are no longer allowed to rebase to supply level 0 hexes unless the hex is an island.
248. Added a new terrain type called Tundra and changed all forest hexes north and east of Archangel to Tundra. Tundra is the same as forest except the supply is 2 instead of 4.
249. Added a new resource type called rail depot, which replaces a number of 0-production cities for rail purposes. Also, added a number of rail depots across the map.
250. Added Foggia and Trieste to the list of Italian surrender cities. This way all cities and rail depots count against the surrender value. This seems more logical and it's not likely Trieste or Foggia will be captured as the first mainland Italian city. Adding these cities mean that the Axis player can rail units to the Yugoslavian border and also to the river line south east of Rome.
251. Added Nottingham in England to cover a hole near the English eastern coast line. Inverness was added in Scotland because it was an important rail terminus during WW2. It won't be used much unless Sealion is launched.
252. Tartu was added in Estonia to function as a rail depot for the Axis advance northwards. It's the second largest city in Estonia. Also added Iasi in Romania, Plovdiv in Bulgaria and Banja Luka in Yugoslavia to function as staging points in case there is an action in the area. Iasi in Romania is particularly important before Barbarossa.
253. Added rail depots in French North Africa. This way the Allies can e. g. land units from USA in Casablanca or Agadir and rail them to Tunis once the path is cleared and Algiers is Allied controlled.
254. The specific map changes made are as follows:

New cities:

Switzerland: Zurich

Ireland: Cork

Moved cities:

Morocco: Casablanca

Algeria: Oran

Hungary: Debrecen

Russia: Vinnitsa

New rail depots:

Canada:

◆ Moncton

◆ Edmundston

Morocco:

◆ Marrakech

◆ Fez

◆ Oujda

Algeria: Bone

Tunisia: Kasserine

Italy:

◆ Foggia

◆ Trieste

Britain:

◆ Nottingham

◆ Inverness

France: Limoges

◆ Germany:

◆ Rostock

◆ Erfurt

Austria:

◆ Graz

◆ Linz

◆ Innsbruck

Czechoslovakia:

◆ Brno

◆ Kosice

Poland: Lublin

Greece: Larissa

Yugoslavia: Banja Luka

Bulgaria: Plovdiv

Romania:

◆ Cernauti

◆ Iasi

Syria:

◆ Aleppo

◆ Homs

Iraq:

◆ Kut

◆ Fallujah

◆ Najaf

◆ Nasiriyah

Persia:

◆ Kermanshah

◆ Qom

Trans-Jordan:

◆ Amman

◆ Ma'an

Egypt:

◆ Mersa Matruh

◆ Suez

Turkey:

◆ Adapazari

◆ Sivas

Denmark: Esbjerg

Norway: Lillehammer

Sweden:

- ◆ Karlstad
- ◆ Borlange
- ◆ Norrkoping
- ◆ Gavle

Finland: Oulu

Estonia: Tartu

Russia:

- ◆ Rzhev
- ◆ Velikiye Luki
- ◆ Cherepovets
- ◆ Kaluga
- ◆ Zhitomir
- ◆ Chernigov
- ◆ Cherkasy
- ◆ Sumy
- ◆ Mogilev

Converted from city to rail depot:

Russia:

- ◆ Sterlitamak
- ◆ Saransk
- ◆ Lipetsk
- ◆ Vladimir
- ◆ Kotlas
- ◆ Syktyvkar
- ◆ Nizhniy Tagil
- ◆ Uralsk
- ◆ Makhachskala

France:

- ◆ Dijon
- ◆ Orleans

Sweden:

- ◆ Karlskrona
- ◆ Ostersund

Norway:

- ◆ Kristiansand
- ◆ Stavanger

Denmark: Aalborg

Finland:

- ◆ Vaasa
- ◆ Kuopio
- ◆ Joensuu

Netherlands: Groningen

Turkey:

- ◆ Canakkale
- ◆ Erzurum

Persia: Rasht

### Changed resource:

Russia:

- Split the 2 PP manganese near Stalino into 1 PP manganese south of Dnepropetrovsk and 1 PP Donbass near Stalino.

256. Fixed the bug regarding Plovdiv so it's now core owner Bulgaria instead of Yugoslavia. Updated the map and scenario files so new games can start with the correct core owner for Plovdiv.

257. Fixed the font size for hexinfo terrain type so it's reduced from 20 to 18. This way it won't clip the name of rail depot in some languages.

258. Placed the number of turns Russia can't convert rail gauge after DoW from hardcoded 3 to a value stored in general.txt.

Russia\_UNABLE\_TO\_CONVERT\_TURNS 3 /\* Number of turns Russia can't convert rail gauge after they join the war. Simulates paralysis during the first turns \*/

259. Fixed the drop in US war effort if Spain joins the Axis due to French North Africa being captured by the Axis. Now the Allies must DoW Spain to lose US war effort.

260. Changed functionality so air units holding resource or city hexes in a country that has conquered will lose control of the hex if rebasing out of the hex unless a friendly ground unit is adjacent or the supply in the hex is 4 or better. This should take care of situations in Norway / France where UK air units fly to port cities to keep control. Now they keep control only as long as the air unit remains there. The hex control is changed to the owner of the surrendered country's capital owner (Germany in the above cases). If a ground unit is adjacent to the airunit then you keep control when the air unit rebases. This simulates the ground unit taking over control of the hex. This code was added to avoid situations where you fly in air units to e. g. France in 1944 before the Allies have got a complete foothold there. Also added code that if the hex has supply level 4 or better then this won't happen. This is done to ensure that if the Allies land in France and Italy they won't risk having the ownership changed to the capital owner just because they rebased an air unit stationed in a resource hex.

261. Added code to prevent convoys from entering the Mediterranean via Gibraltar.

262. Fixed map bugs regarding wrong core owner in Rennes, Dijon and a hex in Canada. Updated the map file, all scenarios and also added code to fix the existing map.

263. Air units aboard a transport would not be able to land in a city after the change made to counter the Norway and France air control at conquest exploit. The reason for the bug was that the code tried to check for the core hex owner and there are no core hex owner in a water hex. Changed the code so it tests if the hex is a land hex or not. If it's a water hex it will not make the test. That's the situation with an air unit aboard a transport being in a port or at sea.

264. Made the change so the change of hex owner when an air unit leaves a city or resource only applies prior to USA entering the war. That is simple and ensures we don't get any late game nasty surprises.

265. Changed the map and scenarios with 2 hexes in Canada flagged as forest when they should have been rough.

266. Moved the spawn area for the Russian Siberian reserves to Nizhniy Tagil (air and armor units) and Syktyvkar (shock units). This was done to ensure they spawn around rail depots so they can be railed to the west.

267. Updated message\_\*.txt to RC16.

268. Fixed a minor bug regarding rail movement where it was possible to rail to tundra and desert (having supply level 2), but it was not possible to rail from these hexes. These hexes were flagged with rail images so they should have been possible to rail to. Made a change so that supply limit for being able to rail is now 2 instead of 3 as is used to. The limit of 3 since was used when it was possible to rail from anywhere on the map. Now units can only rail from and to hexes adjacent to cities. It's still not possible to rail to/from swamp, mountain or dune hexes.

269. Fixed a bug where Russian swamp, dune and mountain hexes were flagged as rail capable while Russia was neutral.

270. Moved the earliest activation time for Romania from after turn 16 to after turn 19 (same as Hungary and Bulgaria). So now, the earliest possible activation for Rumania, Hungary and Bulgaria is turn 20 (September 15, 1940) and will only happen this early if Yugoslavia (for Rumania and Hungary) or Greece (for Bulgaria) is invaded.

271. Fixed the bug where units could not rail FROM desert hexes, but could rail to. Now units can rail in any hex with supply level 2 or better, access to a minor or major power capital and not being in dune, swamp or a mountain hex.

272. Disabled temporary routines for adding the Konigsberg port, Plovdiv core owner and Rennes/Dijon core owner. These were routines added to fix ongoing games started with RC11 and should no longer be needed.

273. Fixed an obscure bug about naming of the spawned BB's and CV that will arrive for the major powers. If the Axis player didn't use English as language then these units will get a generic name in the Axis player's language like Slagskip in Norwegian instead of a unique name. This is fixed by naming the units Battleship and Carrier on turn 1. That means when they're placed they will be flagged as generic and will get a unique name.

274. Also fixed a comments typo about spawn turn for the US CV in general.txt. This fix will cause a checksum error on the general.txt file.

275. Found a "feature" where new British naval units could be deployed Gibraltar, Malta, Cyprus and Northern Ireland. This "feature" resulted from a change that made Liverpool a supply source for UK to enable deployment if Liverpool is controlled even if London is captured. This "feature" was removed so new British naval units can only be deployed to British ports in England or Canada.

276. Fixed a bug where the Axis were unable to get rail in North Africa even though they held all the cities and ports. The reason for the bug was that if Spain joins the Axis then Morocco is changed to Spanish core owner. The test checked for Vichy French or Free French territory and now Spain south of hex row 56. That is the Tangiers area and possibly Morocco.

277. Updated message\_\*.txt to RC17.

278. Fixed a minor bug which made it possible to unload transported air units into mountain, swamp or dune hexes. The bugfix now makes this impossible.

279. Changed the game.class date to 2012March20 and changed all message files to show GS v2.1 (without any RC).



280. Changed the release of the Siberian reserves from turn 41 to 40.
281. Changed the rate of recovery in the invasion surprise (effectiveness) reduction for from 8 per turn to 9 per turn. Reduced Russian surprise effectiveness loss from 30 to 27, i. e. 3 turns with reduced efficiency regain and no change for France).
282. Changed Russian severe winter duration chances to: 20% duration -1, 60% duration, 20% duration +1 (votes 6 for and 2 + 4 for other options)
283. Changed North April weather chance from 15% to 5% for fair weather in north weather in April (vote 5 for and 5 + 2 for other options).
284. Russian tech changed back to previous values which means that antitank weapons increased from 0 to 1 and close air support increased from 0 to 1.
285. Made a few minor map changes near Leningrad and Vitebsk, mainly some clear hexes being changed into forests. The changes are very minor so you don't have to restart any ongoing games. Existing games won't be affected except that the map will show forest while the hexinfo will show clear.
286. Changed the map and scenario files to allow rail gauge changes to happen in the Caucasus.
287. Fixed a bug where standard gauge rail hexes in Russia were altered to broad gauge when Russia surrendered.
288. Updated translation for message\_spa.txt.
289. Improved odds calculator for ground combat.
290. Fixed bug concerns odds calculation for naval battle.
291. Fixed code concerning para-drops.
292. Fixed code concerning very powerful units toward the end of the game.
293. Odds calculator will now show proper values when tactical bombers or fighters make strategic bombardment
294. Fixed a bug where mech units could move 2 hexes while armor and corps units could only move 1 hex in severe winter if the supply level in the hex was 3 or less. Now mech units in severe winter will move 2 hexes as armor and corps if supply level is 4 or 5 and only 1 hex as armor and corps if supply level is 3 or less.
295. Fixed a vanilla game bug where strategic bombardment against resources with units showed the unit attack odds and not the strategic attack odds. Strategic odds were only correct against empty or unspotted hexes.
296. Fixed bug regarding Malta port where capture of the airfield could change side of the port to the airfield owner. This was an old bug introduced due to the fact that the Malta port is adjacent to both the fortress and airfield. Added code to detach the attached code for the Malta airfield similar to the Malmo and Reggio hexes. Control hexes for the latter 2 are Copenhagen and Messina.

297. Fixed a bug where air units rebasing to airfields used the airfield movement cost instead of just 1 cost. In mud or winter weather the airfield movement cost was 2 and that meant an air unit just within the limit could not rebase to the airfield.

298. Changed the code so para units adjacent to rail depots are also eligible for paradrops. Rail depots are usually smaller cities that often had an airfield nearby.

299. Altered the code so it's now not possible to paradrop to or bomb the Swedish iron ore, Baku oil or Spanish tungsten mine if Sweden is neutral, Russia is neutral or Spain is neutral. That means you can't bombard a neutral country to harm traded resources. If Sweden, USSR or Spain become activated then the hexes can be bombarded normally.

300. Fixed the bug regarding Bristol / Cardiff. Discovered that the coal mine adjacent to the Cardiff port controlled the owner of the port and not Bristol. This is now fixed.

301. General.txt had the wrong hex number for the Cardiff port (convoy port 2).

302. Ferry crossing and unit swap will use the old odds calculation.

303. Fixed the bug regarding the Swedish iron interdiction where Allied control of one or more of the Norwegian cities and rail depots didn't affect the interdiction. Added code so in addition to count naval units adjacent to Norwegian ports we also count the Number of Norwegian cities / rail depots under Allied control. This means that the Allies can conquer Norway to stop the Swedish iron ore during winter turns without having naval ships adjacent to Norwegian ports.

- ◆ If Narvik had been on the map and Allied controlled then it would have been impossible for the Axis to ship the iron ore out from Narvik. Allied control of the Norwegian cities means that the Norwegian coastal batteries would fire at ships sailing from Narvik to Germany with iron ore if Narvik was still Axis. The iron ore ships would have been stopped even without the Royal Navy present. Each city controlled is worth 1 so you need 2 cities to stop the iron ore unless the Axis player has naval units in any of the Norwegian cities.
- ◆ E. g. If Germany controls Trondheim and Oslo, but not Bergen then the Germans reduce the number by 2. Let's say the Allies control Bergen, Stavanger and Kristiansand. That's 3. So the effective number is 1 unless Allied naval units are adjacent to any of the Norwegian ports.
- ◆ That means the iron ore is halved.

305. Changed date in the Game.class file to 2012June01.

306. Disabled an obsolete low oil check and message. This significantly speeds up how fast units move; especially in the late game.

307. Added code so Airfields won't change ownership if an air unit leaves the airfield if the core owner is conquered. This should take care of the situation with Keflavik that was reported.

308. Changed Fortress or Garrison in unit name for UK garrison units to HG.

309. Changed Fortress unit name for Italian garrison units to Piazzaforte di.

310. These changes means they can be upgraded to Para and won't be considered to be SS units due to

unit name fortress.

311. Altered the values slightly in Labs\_bought.txt for some countries. E. g. Germany would get 2 naval labs + 2 general labs instead of 1 naval lab and 3 general labs in the latest scenarios. This was done because we earlier increased the research cost for subs.

312. Altered values slightly in Research\_progress.txt so the 1944 progress level was more consistent with what it was in 1943. This was for the 3 air research areas.

313. Players got a message about Allied aggression when the Axis attacked Holland if the Allies had earlier attacked Belgium. Now they won't get this message.

314. Canadian reinforcements used to spawn when Belgium was conquered. This was intended for the Axis attack on Belgium, but forgot the situation where the Allies attack Belgium in September 1939. Then the Canadian reinforcements would arrive early and not when the Allies are on the run in Belgium. This is now fixed so the Canadian reinforcements will only arrive at the end of the Axis March 19, 1940 turn if the Allies attacked Belgium first. If the Axis attack Belgium first the Canadian reinforcements will arrive when Belgium surrenders as before.

315. The game would show a chance for Italian early activation if Belgium was attacked, but not conquered. This Now this message will only show if there aren't enough Allied naval units in the Mediterranean and Belgium is conquered.

316. Rail gauge conversion could happen between friendly countries like Persian standard gauge rail being converted into Russia. This is now fixed so Allied controlled standard gauge rail heads can't convert rail into Russian controlled broad gauge hexes and vice versa unless Russia is conquered.

317. Updated game.class check date from 2012June01 to 2012November25 so people know who are running with the bugfixes or not.

318. Added graphics images for the Slovak corps. It's needed for some of the later scenarios. It was omitted in the PC version. These files should be added to the folder ....\Grand Strategy Mod\image\unit\corps

319. France surrenders if Paris is vacated after June 1940. This could cause the Allied AI to lose France prematurely. Changed code so the check is only made if the Allied player is not AI.

320. Fixed a bug regarding Russian rail head movement. Bug was introduced in v2.11.

321. Increased the number of rail depots / cities needed in Finland / Estonia from 2 to 3 so Finland would never ask for armistice unless Russian troops have captured at least one city / rail depot in core Finland.

322. Let the UK southern lend lease route be stopped if London is Axis controlled. Then the 15 PP's will be kept by the UK and not sent to UK. UK would not be in a position to support other major powers with lend lease if have barely enough PP's to stay above 0 (without convoys).

323. Make sure that Free French forces won't be placed on the map as units that can't move if Vichy France is DoW'ed when USA is still neutral (controlling power of the Free French). Instead these Free French units go to the US force pool so they can be safely placed once USA join the war.

324. Fixed a vanilla game bug regarding supply level 5 flowing through the Gibraltar port into Africa. Other rules prevented supply level 4-5 in French North Africa and Libya, but not Egypt. So Germany could suddenly get rail supply in Egypt if they had a contiguous like from Egypt to Gibraltar.

#### 15.4.2 GSv2.01.01 - May 22, 2011

- ◆ Updated the map tiles for two hexes southwest of Moscow and west of Tula. The hexes are flagged as forest but the map tiles showed them as clear. The updated map tiles now correctly show these hexes as forest.
- ◆ Fixed a bug where a unit swap or a ferry crossing action would uncover those units in the fog of war when they should have still been hidden to the enemy.

#### 15.4.3 GSv2.01.02 - May 25, 2011

- ◆ Fixed a bug that caused GS to hang when there was an allied DoW upon Yugoslavia after Hungary was conquered. Also, added logic to prevent Romanian reinforcements from spawning if Romania is allied.
- ◆ Also, added logic so that Bulgarian reinforcements won't spawn if Bulgaria is allied and the allies DoW Greece.
- ◆ Fixed a bug where Turkey or Spanish activation as a German minor ally reduced US war effort. The bug was the result of how these allies were activated in the game, which was by an allied DOW. This bug was fixed by removing any impact for an Allied DoW upon Turkey or Spain on US war effort. The same is true for Syria, Vichy France and Yugoslavia as well. It's not likely that the Allies will DoW countries like Spain or Turkey prior to US entry because doing so will give the Axis many extra units and they can rail German units to the area.
- ◆ Added to the large counters Free French subs, which are needed if the axis rejects the French armistice and the allied player is playing with these counters. Also, made cosmetic edits to a handful of other Free French large counters.

#### 15.4.4 GSv2.01.03 - May 28, 2011

- ◆ Fixed a bug where hexes captured by Bulgaria (i.e., outside of the country) AND occupied by axis units would change to allied control when Bulgaria was conquered and changed sides. The Axis will now keep control of those hexes. However; EMPTY hexes outside Bulgaria and captured by Bulgaria WILL still revert to allied control.
- ◆ Fixed a bug where Spain if invaded by the axis and would seize Gibraltar if the UK evacuated there. Now the Spanish will only take Gibraltar if neutral or Axis and neither Russia nor USA are at war.
- ◆ Made a change so that allied and axis units in the hexes that the Free French spawn in will end up in the force pool for immediate placement the following turn.

#### 15.4.5 GSv2.01.04 - June 14, 2011

- Put in place the following deterrents to mitigate "blob" strategies:
  - Added +1 oil consumption for mechanized corps at artillery tech 2
  - Placed supply limits by year on each type of unit, except garrisons and corps, on the number of units of that type that can be supported normally.

#### 15.4.6 GSv2.01.05 - June 18, 2011

- Updated from last release --
  - Placed supply limits by year on each type of unit, except garrisons and corps, on the number of units of that type that can be supported normally. Minor ally units do NOT count toward this limit. A country that exceeds this unit limit is changed a supply burden cost in OIL and PP's. The supply limit is 3 for 1939, 5 for 1940, 7 for 1941, 9 for 1942, 12 for 1943, 15 for 1944 and 20 for 1945.
  - The PP cost for buying the next unit of type when the limit for that type has been met or exceed is:

$$(\text{basic cost}) * 1.05 ^ {(\text{number of units above limit after purchase})}.$$

- The oil consumption for all units of that type is











$$(\text{basic oil consumption}) * 1.05 ^ {(\text{number of units above limit})}$$

- This means the penalty increases with the number of units above the limit. For example; for armor the limit is 7 and you have 6 units and basic oil consumption is 4. The first purchase will be 80 PP's and oil consumption will be 4. The second purchase will be  $80 * 1.05 = 84$  PP's and oil consumption will now be  $4 * 1.05 = 4.2$  for ALL armor units. The third purchase will be  $80 * 1.05 * 1.05 = 88.2$  PP's and oil consumption for ALL armor units will now be  $4 * 1.05 * 1.05 = 4.41$ .
- Fixed a bug that allows paratroop units to use ferry crossing.
- Changed general.txt so land spotting is now halved for all units during winter and severe winter.
- Implemented the show units in statistics panel and the tooltip shows the composition. Spread is determined by last digit of techs (different combination for each unit type and country so not a group increases or decreases); 0: -2; 1: -2; 2: -1; 3: -1; 4: 0; 5: 0; 6: 0; 7: +1; 8: +1 and 9: +2

Implemented the show units in statistics panel and the tooltip shows the composition. Spread is determined by last digit of techs (different combination for each unit type and country so not a group increases or decreases); 0: -2; 1: -2; 2: -1; 3: -1; 4: 0; 5: 0; 6: 0; 7: +1; 8: +1 and 9: +2.

ADDED TO ENHANCE EXPLANATION OF RULE 13:

The first 2 screen captures below were taken from the start of a game (1939) during the German and Allied turns. The counts shown for the Germans and Italians are exact in the first capture, while the second is exact for Allies. The ones shown for opposing forces are still neutral) are estimates. Note the difference in Axis force estimates of French and UK INK - they are high. Enemy estimates can vary +/-2 for truth, (2) they will never go below 0 and (3) (and this is very important), these estimates are fixed for a given turn; but do change randomly from turn to turn (but NOT within a turn). This means that you can track these numbers and get a pretty good estimate of the enemy forces. How you use this intel is up to you.

				
	28	5	5	6
	17	2	2	6
	29	3	2	9
	23	2	1	4
	2	2	2	4
	79	10	4	3

				
	28	5	5	6
	17	2	2	6
	25	3	2	9
	19	2	1	4
	2	2	2	4
	79	10	4	3

The following screen cap is from a spreadsheet the developer built to take the raw estimates from each turn and average them out over time. Also, it might be possible using two back to back measurements from two consecutive turns (remember measurements only change turn to turn) to exactly determine a

specific count. For example, maybe you get an estimate of 8 u-boats and then 4 u-boats. Since you know that each estimate has to be within +/- 2 of the truth then you know for use that the German player has exactly 6 u-boats.

		Raw Data																						
Turn	Date	Corps	Gar	Arm	Mech	FR	TAC	SAC	BB	CV	DD	Sub	Corps	Gar	Arm	Mech	FR	TAC	SAC	BB	CV	DD	Sub	
16	June 27, 1940	10	18	4	2	2	4	1	2	0	3	5												
17	July 17, 1940	12	21	5	0	3	2	2	4	2	3	4	11	20	5	1	3	3	2	3	1	3	5	
18	August 6, 1940	12	19	6	2	3	2	1	2	0	2	7	12	20	6	1	3	2	2	3	1	3	6	
19	August 26, 1940	9	21	2	1	6	5	0	3	0	0	7	11	20	4	2	5	4	1	3	0	1	7	
21	October 5, 1940	10	21	5	4	3	1	2	3	0	0	3	10	21	4	3	5	3	1	3	0	0	5	
22	October 25, 1940	10	19	6	2	5	5	2	4	0	3	3	10	20	6	3	4	3	2	4	0	2	3	
23	November 14, 1940	13	19	4	5	5	3	1	4	0	0	7	12	19	5	4	5	4	2	4	0	2	5	

- Moved data for number of units and casualties for mech to the armor column.
  - Changed tooltip for the forces and casualties so the armor column shows Armor / Mech Corps.
  - Increased the length of the tooltip to 10-seconds for the forces screen and for the tooltips contained in the ribbon across the top.

#### 15.4.7 GSv2.01.06 - June 20, 2011

Changed the names of a number for French units for generic names to historical ones.

#### 15.4.8 GSv2.01.07 - July 7, 2011

- ◆ Free French units are now shown with blue color in the mini map. Before they were shown with US (or UK) color.
- ◆ Free French units spawned in cities were tried to be named as French. Removed the “e” in the number because it showed like 6th Garrison. Now it will show 6th Garrison.
- ◆ Found and fixed a naming bug in the 1940.scn where the Amiens garrison was renamed to Ie CA.
- ◆ Fixed a French armistice bug where when Paris was empty after June 27, 1940 caused the French to determine if the armistice offer was accepted or not. Now the check will only be made during the axis player turn and will give the axis player the rightful opportunity to accept or reject it.
- ◆ Fixed the bug with casualties. Now the game will only count steps lost in combat and not losses inflicted in combat. So a 2 step unit receiving 6 hits will increase the unit destroyed by 1 and steps by 2 (not 6).
- ◆ Added support in the options so it's possible to show river names, country names and lake names on the map. These images are placed in a new folder called ..\Grand Strategy Mod\image\backgroundnames
- ◆ Changed the name of the settings file from settings.txt to gs2\_settings.txt. This new settings file contains an extra entry for whether or not river/country/lake names are shown.
- ◆ Fixed a bug where enemy paratroopers occupying an airbase couldn't be attacked by friendly air units. That bug is now fixed so that air units can attack the enemy paratroopers.

#### 15.4.9 GSv2.01.08 - July 9, 2011

- ◆ Fixed a terrain ownership bug in Canada.
- ◆ Changed the Italian General Ambrosia date of death, which was listed incorrectly, from 1944 to 1958.

#### 15.4.10 GSv2.01.09 - Not Used

Not used.



### 15.4.11 GSv2.01.10 - July 22, 2011

- ◆ Change the names of major power air units and the way that these names are automatically to reflect more historical names based on GS air unit sizes.
- ◆ Updated some map tiles to remove river name typos.
- ◆ Fixed a bug where severe winter wouldn't spawn in the 1941 scenario because it started in February and already spawning a severe winter on the first turn
- ◆ Bumped the winter (not severe winter) percentage strength for air attack, strategic attack and shock attack from 50 to 60. Added new weather or changed other variables in general.txt  
 AXIS\_WINTER\_SUFFER 35 /\* Severe winter penalty in 1939. Max efficiency will this value lower \*/  
 LESS\_WINTER\_SUFFER\_PER\_YEAR 5 /\* Winter suffer drops by this value per year \*/  
 WINTER\_SUFFER\_OFFSET 5 /\* Severe winter efficiency drop to all units will be  
 Axis\_winter\_suffer minus this value \*/  
 ALLIES\_WINTER\_SUFFER 0  
 MAX\_WINTER\_SUFFER 25 /\* Max possible efficiency loss from severe winter \*/
- ◆ Axis winter\_suffer dropped from 55 to 35. Since it drops by 5 instead of 10 each year it means the value is 25 in 1941 and 20 in 1942. Winter suffer offset is a new variable that will be deducted from the max efficiency drop when finding the one time per severe winter efficiency drop. One time drop will be 20 in 1941, 15 in 1942 and so on. The Axis will now lose a lower efficiency on all units present in the severe winter zone. In addition the max efficiency will drop so the units staying in there can't regain efficiency back to the former max. Message about severe winter is updated so it also shows the temporary max efficiency loss. Bumped the efficiency loss percentage from southern Russian hexes from 50 to 75 since the max value is now lower. This is done to let the Axis feel that there is a winter in southern Russia too.
- ◆ Production increase per quarter is increased from 6 to 7
- ◆ Production increase when a major power activates for war is increased from 10 to 20
- ◆ Russia will receive 8 garrison units as their strategic reserve on August 1st 1941
- ◆ Norway is linked to Denmark and Sweden and Denmark to Norway and Sweden. This means that if a country DoW's one of the 3 countries on a prior turn then the other 2 will not be surprised. It also means the units spawning will be at full strength (10 steps). If Norway or Denmark are surprised then each of their units will be spawned at 2 strength. So it's now very lucrative for the Axis to Dow these countries on the same turn
- ◆ Belgium and Holland are also linked. If Holland is DoW'ed on a prior turn then Belgium won't be surprised. If Belgium is DoW'ed on a prior turn then Holland won't be surprised. If Belgium is not surprised then all units will spawn at full strength. Otherwise the unit in Liege will spawn at 10 strength, the corps at 7 strength and the garrisons at 5 strength. The location of the garrison adjacent to Belgium is dependent on which side will DoW Belgium. If Holland is not surprised then all units will spawn at full strength. Otherwise the garrisons will spawn at 5 strength and the corps at 7 strength. The garrison north of Hague is removed.
- ◆ The French and UK forces in France (and air units in UK) will only suffer a 20 efficiency loss if Belgium surrenders in one turn.
- ◆ The 1939 scenario is updated so the one Dutch garrison is removed and one Belgian garrison is removed so it can spawn dependent upon which side will attack Belgium. It will defend against France if the Allies DoW Belgium and against Germany if the Axis DoW.
- ◆ The 1940 scenario is changed so Denmark and Holland are set to neutral. The German forces are moved out and placed outside these countries
- ◆ The Germans are allowed to build a paratrooper in 1939 so they can have it ready for Case Yellow Liege can't be changed to a city from a fortress until 1940 because the paratrooper can't be released out of the force pool until the fair weather in 1939 is over.
- ◆ Changed the German synth oil plant productions to the following:
  - Industry tech 0: 0 production

- Industry tech 1-3: 1 production
- Industry tech 4-5: 2 production
- Industry tech 6: 3 production

#### 15.4.12 GSv2.01.11 - July 23, 2011

After some play testing it was found that the +20 war effort when joining the war actually affects countries already at war as well. This means that Germany, UK and France would start with 10 more war effort than they used to. Well, Germany is at 110 due to tech, but would have been at 120 if industry was higher. In order to compensate for that the at start war effort for Germany was decreased from 100 to 90 so they will start with 110, France was decreased from 30 to 20 so they will start at 40 as before, UK was decreased from 45 to 35 so they start at 55 as before. The countries benefiting from +20 war effort when they join the war will be Italy, USA and Russia as intended. Since Germany will most likely not take Holland and Denmark in 1939 as they used the German start PP's in the 1939 scenario was increased from 20 to 35. This means they can afford 1 lab and also upgrade a garrison to para on the very first turn. The 15 extra PP's is about the same they would gain from having Hague, Arnhem and Copenhagen for some turns in 1939 and some in 1940 before Case Yellow starts.

#### 15.4.13 GSv2.01.12 - July 25, 2011

- ◆ Damaged cities will only provide supply if supply can't be traced from other cities. This way you need to isolate the damaged city to lower the supply in the hex.
- ◆ Persia will spawn garrisons in all cities if Axis units occupy a city / resource in Iraq.

#### 15.4.14 GSv2.01.13 - July 25, 2011

- ◆ Persia will spawn garrisons in all cities if Axis units occupy a city / resource in Iraq.
- ◆ Persia will activate when an Axis unit has moved into Iraq instead of when an Axis unit captures an Iraqi resource
- ◆ Free French garrisons will spawn in empty French controlled north Africa city/ fortress hexes when the French armistice offer is rejected. The units spawn at the following strength: `FREE_FRENCH_GARRISON_STRENGTH 5 /* 0..10 0 = no spawn. Strength of the Free French garrisons in Morocco, Algeria and Tunisia after the fall of France */`
- ◆ Britain is required to have a home guard force in Great Britain / Canada before Russia or USA joins the Allies. Failing to do so will make a loss in max morale of all British units. These parameters control how this is done:  
`UK_HOME_GUARD_UNITS_REQUIRED 10 /* Number of land units needed in core UK territory prior to USA or Russia joining the Allies */`  
`UK_MORALE_PENALTY_PER_MISSING_HG 5 /* Max morale of all UK units are lowered by this number for each missing HG unit in UK */`
- ◆ There are at start 13 UK land units in Great Britain / Canada so it's possible to have a BEF of 3 units without losing any morale loss. Once you fall below 10 units you will lose 5 max morale per unit failing to make the 10 unit limit. This is the message that will be shown every turn the Allied player fails to keep the HG requirement: INDEX-978 | "Too few British Home Guard land units causes fear in Britain. All UK units suffer a max morale loss of"
- ◆ Please notice that if an Axis has entered Great Britain or Canada then the US max morale loss will not apply. The UK morale would get back to normal if the Germans actually landed in England. This way it's not possible to invade Britain and force the morale to get to 0 by killing British units.

#### 15.4.15 GSv2.01.14 - July 26, 2011

- ◆ Added a prerequisite for Spain activating as an Axis ally that USA has to be neutral.

#### 15.4.16 GSv2.01.15 - July 31, 2011

Canadian units will now spawn at normal quality and not the reduced quality if the UK manpower level

is yellow.

Added images for French armor level 6.

#### 15.4.17 GSv2.01.17 - August 5, 2011

- ◆ Changed the 1939 and 1940 scenarios so the numbers of the German units match the OOB for Case White and Case Yellow
  - Changed German Korps to Armeekorps
  - Changed German Panzer Korps to Panzerkorps
  - Changed German Panzergrenadier to Panzergrenadierkorps
  - Changed German Fallschirmjager Korps to Fallschirmjagerkorps
  - Changed German Fallschirmjager Div. to Fallschirmjagerdivision
- ◆ Reduced the font size of the unit name and country name in the unit panel from 24 to 22 to fit in all text with numbers
- ◆ Changed the owner of the southern convoy from UK to USA when USA joins the Allies.
- ◆ Widened the column range for the southern convoy spawn point from 1-12 to 6-20. Row will always be the bottom of the map.
- ◆ Changed the max values of each convoy to the following:

```
/* Max production worth of the 3 different convoys. Max value is modified by the averaged war effort of UK and USA */  
NORTH_ATLANTIC_CONVOY_SIZE 90 /* Convoys go to Russia after Russia joins the Allies. Before they go to UK */  
MID_ATLANTIC_CONVOY_SIZE 110 /* Convoys go always to UK */  
SOUTH_ATLANTIC_CONVOY_SIZE 90 /* Convoys go to USA after USA joins the Allies. Before they go to UK */
```

- Old values were: North: 100, Mid: 140 and South: 50
- These changes should give USA a considerable increased income at the expense of primarily UK, but to a lesser degree Russia. The southern convoy will use 3-4 turns to reach the destination port (New York)
- ◆ Changed code so UK will get Iceland on turn 14 or later if Denmark is conquered. So if Denmark is conquered late then Iceland will be “conquered” by UK later. USA will get Iceland regardless in 1941 because that was not an invasion, but an agreement with the Danish ambassador. = with Greenland
- ◆ Replaced China as a possible country to select with Norway. This includes the necessary

language and flag files.

- ◆ The criteria for unloading and for invading a hex were inconsistent for a transport in calm seas and a target hex in non-fair weather. This has been fixed so the criteria for both unloading and invading are now:
  - Transport hex must be in calm sea
- ◆ The criteria for unloading and for invading a hex were inconsistent for a transport in calm seas and a target hex in non-fair weather. This has been fixed so the criteria for both unloading and invading are now:
  - Transport hex must be in calm sea
  - Destination hex can't be a mountain hex
  - Exception is that you can unload into friendly hexes from a port regardless of weather
  - This should make it slightly easier to land and it won't matter if the weather in the destination hex is not fair.

#### 15.4.18 GSv2.01.18 - August 6, 2011

Removed the Gustav Line fortresses in Italy from all scenarios except the 1944.scenario. Added code that will remove the fortresses in ongoing games that haven't reached July 1943 or had Allied units in Italy. The Gustav Line fortresses will spawn if:

- ◆ Year is 1942 or later and an Allied unit has landed in a core Italian hex
- ◆ Turn is July 1943 or later
- ◆ A message about the spawn will be shown
- ◆ The Gustav Line fortresses can be set in general.txt

#### 15.4.19 GSv2.01.19 - August 15, 2011

- ◆ Changed the font size and placement of some text in the lab window so it's possible to type Level instead of lvl. That was needed that for Norwegian, Spanish and German too.
- ◆ Fixed a bug about the language of the cashed in convoy. This message is generated in country.class and not game.class and was therefore not checked for language. Now the language is to that of the Allied player.

- ◆ Fix a map bug in Canada.
- ◆ Text for unit type using transportation loop was always in English. Now changed to show correct language.
- ◆ Text for unit type on board transports was always in English. Now changed to show correct language.
- ◆ Fixed a few Norwegian text strings.
- ◆ Made sure that fortresses don't respawn if a city is retaken by the side owning the original fortress. This applies mainly to the Gustav line fortresses.
- ◆ Added code so the German eastern front fortresses can spawn as early as 1942 if Allied units within core German hexes. Similar to the Gustav line fortress line being spawned if Allied units in Italy.

### 15.4.20 GSv2.01.20 - August 18, 2011

- ◆ Fixed a bug where the allies lost efficiency in severe winter.
- ◆ Fixed several typos in message\_nor.txt file.
- ◆ Fixed the bug about Allied efficiency loss in severe winter showing same value as Axis.
- ◆ Fixed several typos in message\_nor.txt.
- ◆ Made Switzerland pro-Axis if Axis AI. This ensures Germany won't waste effort attacking Switzerland
- ◆ Divided chance to spawn partisans by 3 in AI games. This should cancel out the increased partisan spawns in AI games so the spawn rate is about the same as in regular games.
- ◆ Fixed a bug regarding languages other than English not creating unit names when units are deployed. This was caused by the unit type being stored in local language to show content in transports and transportation loops in the correct language. So that fix created a bug about unit names. No longer does the code compare to English names for the unit types, but to the one in the message file.
- ◆ Fixed the bug that Axis units got less efficiency after severe winter begun than they should have. This was caused by a bug in the formula giving the Axis 8 less max efficiency than they should have had.
- ◆ Reduced the average number of severe winter turns from 6 to 5.

### 15.4.21 GSv2.01.21 - August 19, 2011

Fixed a bug where the Russia lost efficiency in severe winter. (very persistent bug)

#### 15.4.22 GSv2.01.22 - August 23, 2011

- ◆ Fixed a long time and inhered but in the decideWhereToMove method that speeds up AI play significantly.
- ◆ Added code so German units will have supply level 4 in most of Russia at the start of January 1942 when the supply penalty distance is increased. Before they only got it after their first January turn because the supply levels are updated at the end of a turn.
- ◆ Changed automatic naming of US bombers to Bombardment Wing (M) and Bombardment Wing (H). Updated all scenarios with the new US bomber names.
- ◆ Updated the 1942, 1943 and 1944 and replaced 1, 2 and 3 UK units with US units to reflect that USA would get convoys with ,PP's from the southern convoy instead of UK. This would make USA stronger at the expense of UK and that seems more right.
- ◆ Updated version number in all message files.

#### 15.4.23 NOTE: GSv2.01.23 & GSv2.01.24 were dev only versions

NOTE: GSv2.01.23 & GSv2.01.24 were dev only versions and were not released to the beta group. This update includes a large number of significant changes.

#### 15.4.24 GSv2.01.25 - September 8, 2011

- ◆ Added a fix to a null pointer exception that would under certain conditions cause the game to hang.
- ◆ Allied units can't enter, unload, advance or retreat into core Russian hexes unless Russia has surrendered.
- ◆ A ground unit can't attack if it ends its move adjacent to a previously unspotted unit.
- ◆ Made the following tweaks to Northern Europe weather  
NORTH\_MUD\_CHANCE\_NOVEMBER 40  
NORTH\_WINTER\_CHANCE\_NOVEMBER 50
  - Mud is reduced from 50 to 40 to give a 10% chance for fair weather
  - Severe winter chance in November

SEVERE\_WINTER\_CHANCE\_NOVEMBER 10 /\* Percentage change the Russian severe winter will start in November if it didn't start earlier \*/

- Reduced from 25 to 10

- Severe winter duration

/\* Variation of severe winter length \*/

CHANGE\_FOR\_DURATION 60 /\* 0..100. Accumulated chance that length =

WINTER\_DURATION. % chance = 60 \*/

CHANCE\_FOR\_DURATION\_MINUS\_1 80 /\* 0..100. Accumulated chance that length =

WINTER\_DURATION - 1. % chance = 20 \*/

CHANCE\_FOR\_DURATION\_MINUS\_2 90 /\* 0..100. Accumulated chance that length =

WINTER\_DURATION - 2. % chance = 10 \*/

CHANCE\_FOR\_DURATION\_PLUS\_1 100 /\* 0..100. Accumulated chance that length =

WINTER\_DURATION + 1. % chance = 10 \*/

- Reduced from 70 to 60 change for duration. Increased from 15 to 20 for duration -1 and increased from 5 to 10 for duration -2

- ◆ Max Russian Guards reduced a bit for these years:

MAX\_GUARDS\_1941 2 /\* Max number of Guards units allowed on the map in 1941 \*/

MAX\_GUARDS\_1942 7 /\* Max number of Guards units allowed on the map in 1942 \*/

MAX\_GUARDS\_1943 9 /\* Max number of Guards units allowed on the map in 1943 \*/

- ◆ German SS units increased for these years:

MAX\_SS\_1943 5 /\* Max number of SS units allowed on the map in 1943 \*/

MAX\_SS\_1944 8 /\* Max number of SS units allowed on the map in 1944 \*/

MAX\_SS\_1945 10 /\* Max number of SS units allowed on the map in 1945 \*/

- ◆ Reduced UK HG (home guard) requirement from 10 to 8, but will only count units in Britain and not in Canada:

UK\_HOME\_GUARD\_UNITS\_REQUIRED 8 /\* Number of land units needed in core UK territory \*/

- ◆ Added a UK max morale loss of 5 per UK land unit less than 8 in Britain (including Scapa Flow and Belfast).
- ◆ This max morale loss is reduced by 10 for each of Russia joins allies, USA joins the allies and Italy is neutral or conquered
- ◆ The northern convoy is sent to Halifax as a UK convoy instead of a Russian convoy if London and Liverpool are Axis controlled.
- ◆ Allied naval unit presence in the Atlantic is now required at all times and not only when London is allied controlled as before. So the Allies can't afford to lose the RN in Sealion and later.
- ◆ Added Manpower loss per point of railcap captured by enemy:

/\* Manpower % loss per railcap point captured by enemy. 0 = No loss \*/

MANPOWER\_LOSS\_PER\_POINT\_GERMANY 10

MANPOWER\_LOSS\_PER\_POINT\_ITALY 30

MANPOWER\_LOSS\_PER\_POINT\_UK 10



MANPOWER\_LOSS\_PER\_POINT\_FRANCE 30

MANPOWER\_LOSS\_PER\_POINT\_USA 10

MANPOWER\_LOSS\_PER\_POINT\_Russia 5

- You don't lose absolute manpower by losing railcar cities. Instead you lose manpower generation. So the percentage will be the same. E. g. Russia generates about 18 manpower per turn. When Moscow falls they will only generate 14 per turn. So you lose about  $4 \times 18 = 76$  manpower per year for not having Moscow. That means almost 8 corps units. The manpower pool is manpower already collected and you don't lose that. We could do it, but then it would be disastrous to lose e. g. Moscow. Then with 1600 manpower you lose 20% from losing Moscow and drop to 1280. That means losing 320 immediately and 76 each year. It will drop the percentage from above 75 to almost 50. That's too severe
- ◆ Added the following lab build restrictions.
  - To build the first 3rd lab in a research area you need 3 other research areas with at least 1 lab.
  - To build the second 3rd lab in a research area you need 3 other research areas with at least 2 labs or 4 other research areas with at least 1 lab.
- ◆ Removed some obsolete code in unit.class regarding BB's with ground attack 1. The code updated it to 2 changed before GS v2.0).
- ◆ Made the following changes to the Axis AI:
  - Axis supply points in North Africa increased by 10
  - EXTRA\_AXIS\_SUPPLY\_IN\_AFRICA 10 /\* AI Axis units increase the supply points in Africa by this value \*/
  - Extra Axis units in Libya
    - ADD\_DAK\_IN\_LIBYA 1 /\* 0 = no spawn. 1 = German armor spawned in Libya near Benghazi \*/
    - ADD\_FIGHTER\_IN\_LIBYA 1 /\* 0 = no spawn. 1 = German fighter spawned in Libya near Benghazi \*/
    - ADD\_TAC\_BOMBER\_IN\_LIBYA 1 /\* 0 = no spawn. 1 = German tactical bomber spawned in Libya near Benghazi \*/
    - EXTRA\_GERMAN\_CORPS\_IN\_LIBYA 2 /\* 0 = no spawn. Number of units spawn in Libya near Benghazi \*/
    - UNITS\_IN\_LIBYA\_SPAWN\_TURN 28 /\* February 22nd 1941 \*/
  - Extra German units in East PRussia from turn 1
    - ADD\_GERMAN\_FIGHTER\_EAST\_PRussia 1 /\* 0 = no spawn. 1 = one extra fighter will spawn on turn 1 in East PRussia \*/
    - ADD\_GERMAN\_TAC\_BOMBER\_EAST\_PRussia 1 /\* 0 = no spawn. 1 = one extra tac bomber will spawn on turn 1 in East PRussia \*/
  - Extra German unit near Wilhelmshaven

- ADD\_GERMAN\_ARMOUR\_WILHELMSHAVEN 1 /\* 0 = no spawn. 1 = one extra tac bomber will spawn on turn 1 near Wilhelmshaven \*/
- ARMOUR\_WILHELMSHAVEN\_SPAWN\_TURN 10 /\* February 28th 1940 \*/

- Extra German units for Barbarossa

EXTRA\_GERMAN\_MECH\_BARBAROSSA 2 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/  
 EXTRA\_GERMAN\_CORPS\_BARBAROSSA 4 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/  
 EXTRA\_GERMAN\_ARMOUR\_BARBAROSSA 1 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/  
 EXTRA\_GERMAN\_TAC\_BOMBER\_BARBAROSSA 1 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/  
 EXTRA\_GERMAN\_FIGHTER\_BARBAROSSA 1 /\* 0 = no spawn. Number of units spawn in Poland when Russia is DoWed \*/  
 BARBAROSSA\_UNITS\_SPAWN\_TURN 31 /\* April 23rd 1941 \*/

- Automatic DoW upon Norway and Denmark with German garrisons in all cities
- AXIS\_AUTOMATIC\_DOW\_NORWAY\_DENMARK 1 /\* 0 = no automatic DoW. 1 = Germany will get garrisons in each Norwegian and Danish city in April 1940 \*/
- DOW\_NORWAY\_DENMARK\_TURN 12 /\* April 8th 1940 \*/
- Reduced on-map strength for some countries. This will make it easier for the Axis AI to get anywhere with the DoW

REDUCED\_STRENGTH\_DUTCH\_FORCES 2 /\* Reduced strength of on-map Dutch forces if Axis AI \*/  
 REDUCED\_STRENGTH\_BELGIAN\_FORCES 2 /\* Reduced strength of on-map Belgian forces if Axis AI \*/  
 REDUCED\_STRENGTH\_POLISH\_FORCES 5 /\* Reduced strength of on-map Polish forces if Axis AI \*/  
 REDUCED\_STRENGTH\_GREEK\_FORCES 4 /\* Reduced strength of on-map Greek land forces if Axis AI \*/  
 REDUCED\_STRENGTH\_YUGOSLAVIAN\_FORCES 4 /\* Reduced strength of on-map Yugoslavian forces if Axis AI \*/  
 REDUCED\_STRENGTH\_RussiaN\_GARRISONS 5 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/  
 REDUCED\_STRENGTH\_RussiaN\_CORPS 3 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/  
 REDUCED\_STRENGTH\_RussiaN\_MECH 2 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/  
 REDUCED\_STRENGTH\_FRENCH\_GARRISONS 5 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/  
 REDUCED\_STRENGTH\_FRENCH\_CORPS 3 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/  
 REDUCED\_STRENGTH\_FRENCH\_MECH 2 /\* Reduced strength of on-map Russian garrisons if Axis AI \*/

- ◆ Fixed an AI bug where it would not DoW Russia early enough. The reason is that we've moved the automatic join time by 7 months to May 1942. The AI will increase the chance for DoW the

closer the Axis is to the automatic join date. So 7 months was subtracted from the calculations for Russia.

- ◆ Added code so the AI will not DoW a country if the country has non-fair weather. That prevents the AI from fighting in mud
- ◆ Added code to make it impossible for the AI to DoW Denmark and Norway if they get these countries automatically in April 1940.

### 15.4.25 GSv2.01.26 - September 9, 2011

- ◆ Fixed a bug regarding the Russian convoy being rerouted to Halifax. It was due to a logic error that has now been corrected.
- ◆ Fixed a bug introduced in GS v2.01.24 regarding deployment of units. Added some code to ensure units being deployed got a generated name, but forgot to remove Convoys from that procedure. Convoys get their names when the convoys spawn.
- ◆ Fixed a typo in the comments field in the AI section about reduced strength of French units.
- ◆ Fixed a bug reported about commanders onboard transports being permanently removed from the map if the transport was sunk. Now they are injured normally.

### 15.4.26 GSv2.01.27 - September 18, 2011

- ◆ Fixed a bug in the AI play where USA lost 6 industrial effort because Switzerland become pro-Axis to avoid Axis DoW upon Switzerland. Switzerland was removed from the list of countries that the Allied player will get a penalty DoW'ing for games with the Axis AI.
- ◆ Fixed the issue about Liverpool only being a deployment city if London was captured. Not it's a deployment city always
- ◆ Fixed a unit naming bug where units sent to the force pool were renamed, e. g. like British units being evacuated from France when France surrenders.
- ◆ Fixed a few name bugs in the scenarios (mainly Russian Guards Mech Corps that had the name Russian Guards Corps).
- ◆ Changed Fallschirmjager to Fallschirmjaeger when you upgrade to German para units.
- ◆ Added code so partisans are now named with the country they were created in, like Yugoslavian Partisan instead of just Partisan
- ◆ Added code so partisan images check for the partisan country and will therefore keep the images when the partisan unit crosses the border. So a Yugoslavian partisan moving into e. g. Hungary will keep the Yugoslavian image.

- ◆ Updated some scenarios with the name changes mentioned above.
- ◆ Updated all message file version to GS v2.01.27.
- ◆ Fixed a minor bug regarding the left production panel. When you upgraded a unit to elite or para then the PP's left in the left panel wasn't immediately updated. It was only in the top production panel. This has now been fixed so that both panels update when you upgrade a unit.
- ◆ Made change to the highlight hexes when the current unit is a naval unit. Naval units can now move through enemy controlled transport loops; but they can't enter the loop hex. This is intended for ships entering the Red Sea from the Mediterranean. Now they can move from the hex north of the to Mediterranean transport loop to the Persian Gulf or Atlantic transport loops. So naval units str no longer trapped inside a sea area because they're at the wrong side of a transport loop. The loophex itself is not highlighted, but the hexes on the other side of the loophex are.

### 15.4.27 GSv2.01.28 - October 2, 2011

- ◆ Updates made to the French and Norwegian language files.
- ◆ Fixed a minor bug where elite or para units built at the same turn would get the same name. Now they will only be named when placed on the map. This will ensure that these unit names will be unique.
- ◆ Expiration date (i.e., kill switch) for the PC beta changed to the end of the year.
- ◆ Fixed a bug regarding airbase owner change. Now the code won't change airbase owner if the occupying air unit is from the same side as the airbase owner. That means Azores remains US when a British air unit lands there.
- ◆ Fixed the bug where Russia had supply level 5 in western Germany. The reason was that the shortest path routine just counted hexes to any capital and that means all hexes within 20 hexes from London was flagged as supply level 5, even if they were Russian owned. Now Russia can only get supply from their own capitals plus Basra (for southern Russia). So Russia can no longer trace supply from London or Paris. That means Russian units will drop to supply level 3 if they get almost to the Siegfried line, but I don't see that as a problem. If that happens the Russia has usually captured Berlin and Hamburg.
- ◆ Allied and Russian units can now rail to each other's controlled territory with the following exceptions:
  - No non-Russian units are allowed to be railed to core Russian hexes
  - No units can rail to/from Russia from/to Egypt, Persia, Syria or Iraq. The reason is that there were no rail lines going through Persia to Russia. The high mountains between Russia and Persia prevents that. You have to sail units from Russia to Persia or move them by foot to be able to rail on the other side.
- ◆ Since rail movement is now allowed between Russian and Allied controlled territory with the

exceptions mentioned above, it means that now Russian units can rail when inside allied controlled Romania or Bulgaria. So Russian units won't be stranded anymore inside Romania or Bulgaria when they liberate the capitals of these countries.

- ◆ Hexes captured by Allied Yugoslavian, Bulgarian, Hungarian, Romanian or Finnish units will now be controlled by Russia if outside the home country. Any hexes captured inside the home country will become controlled by the core owner of the hex unless the core owner is conquered. Then the controlling country will be SSR.
- ◆ Allied Greece will now capture hexes for UK (if not conquered) unless within Greek home territory. Then all hexes captured will become Greek controlled.

## 15.4.28 GSv2.01.29 - October 9, 2011

- ◆ Added amph ground attack bonuses:

AMPH\_GROUND\_ATT\_BONUS\_CORPS 0  
AMPH\_GROUND\_ATT\_BONUS\_MECH 1  
AMPH\_GROUND\_ATT\_BONUS\_ARMOR 2

- ◆ Added amph shock attack bonus.

AMPH\_SHOCK\_BONUS\_CORPS 0  
AMPH\_SHOCK\_BONUS\_MECH 2  
AMPH\_SHOCK\_BONUS\_ARMOR 3

- ◆ Added efficiency loss at sea (not in friendly port) for transports and regain if unloading from friendly port

EFFICIENCY\_LOSS\_PER\_TURN\_AT\_SEA 5 /\* Efficiency loss per turn for unit aboard a transport while not in a friendly port \*/  
EFFICIENCY\_REGAINED\_FROM\_PORT 5 /\* Efficiency regained if transport is disembarked from a friendly port \*/  
EFFICIENCY\_AT\_SEA\_THRESHOLD 60 /\* Efficiency while at sea can't drop below this value just from being at sea \*/

- ◆ Added code so you get back PP's paid for the transport if you disembark from a port. The PP's received = port strength / 10 \* transport cost ( 8 )
- ◆ Changed code so you don't lose 15 efficiency from disembarking from a port into a non-city hex.
- ◆ Newly built Russian mech and tank units are now named Mech Army and Tank Army instead of Mech Corps and Tank Corps. Updated some scenarios to reflect these changes.
- ◆ Progress in air techs slowed a bit and ensure the techs cap out later than they do no. Research difficulty increased by 5 for air techs to:

DOG\_FIGHT 30  
CLOSE\_AIR\_SUPPORT 25  
STRATEGIC\_OPERATIONS 25

- ◆ Hungarian and Romania reserves are released in July 1942 instead of June 1943 if Yugoslavia is still neutral. Bulgarian reserves are released in July 1942 instead of June 1943 if Greece is still neutral. Changed text when these events happen so they only mention that reserves are released

and not that they're intended to be used against Russia. This means text can be used even if Bulgaria and Romania change side early.

- ◆ Pressing the ESC key will now open the options dialog box.
- ◆ Replaced the game option for game ending in 1945 with halved partisan spawn rate if option not selected. Option is called Normal chance for new partisans. If checked (default) then no chance from now. If unchecked then spawn rate is halved.
- ◆ Automatic naming of units will now check existing names for units onboard transports. Before it was possible to get the same name as used on a unit on a transport when deploying a unit.

#### 15.4.29 GSv2.01.30 - October 9, 2011

- ◆ Automatic naming of units will now check existing names for units onboard transports. Before it was possible to get the same name as used on a unit on a transport when deploying a unit.
- ◆ If you press the key e (for elite) or p (for para) you will get the dialog box showing the currently number of elite and para units and the max numbers as well. This is the same message you get at the start of each year. Now you can trigger it when you want just to check the values.
- ◆ Messages about new partisans are combined into one message showing the info like this:

New partisans in France: 2. Russia: 1. Yugoslavia: 2

#### 15.4.30 GSv2.01.31 - October 18, 2011

GSv2.01.31) - October 18, 2011

- ◆ Added tooltip for unitpanel so the number showing the Effectiveness will show the manpower % and manpower for the country that owns the unit. That means you can check a minor power unit to get the manpower % and absolute manpower. That can be handy if you're getting close to 75% and don't want to drop below.
- ◆ Added keys for the following commands:
  - ◆ a: (for airborne): Will upgrade to a para unit if eligible
  - ◆ b: (for buy): Will open the purchase units dialog box.
  - ◆ d: (for deploy): Will open the force pool panel dialog box
  - ◆ e: (for elite): Will show the elite and para limits for that side
  - ◆ g: (for guards): Will upgrade to an elite unit if eligible
  - ◆ i: (for info): Will open the statistics dialog box
  - ◆ l: (for load): Will allow the unit to load or unload if eligible

- ◆ o: (for operate): Will allow the unit to move by rail if eligible
- ◆ p: (for purchase): Will open the purchase units dialog box
- ◆ r: (for repair): Will enable the repair icon so you can click on units that can be repaired
- ◆ s: (for sentry): Will toggle the unit sentry mode on/off
- ◆ t: (for tech): Will open the research panel
- ◆ u: (for upgrade): Will enable the upgrade icon so you can click of units that can be upgraded
- ◆ w: (for war): Will open the Declare war dialog box
- ◆ z: (for zzz): Will toggle the unit sentry mode on/off
- ◆ Added the Dutch city of Groningen
- ◆ Changed the border between Germany and Holland so the hex Groningen was placed in became Dutch
- ◆ Changed the hex Wilhelmshaven was in into a sea hex and added a port there. Wilhelmshaven is now a port
- ◆ Added a city 1x south of Wilhelmshaven with the name Bremen. Moved the production of 1 from Wilhelmshaven to Bremen
- ◆ Bremen is a big German city and now it is on the map. Wilhelmshaven was a town only and its main purpose was a port where warships were constructed.
- ◆ Moved the to Baltic Sea transport loop 1xSW so it covers the entrance to the Kiel canal. This change makes it harder to invade many hexes along the German North Sea coast.
- ◆ Updated all scenarios with the map changes and made some minor unit moves to fit the new port location at Wilhelmshaven and Groningen becomes occupied in the 1944 scenario. Also moved units in the 1942 and 1943 scenarios to occupy the Russian city of Kherson and the Russian resource Krivoy Rog. Before this change partisans could often spawn here before the Germans managed to move garrisons there.
- ◆ Updat
- ◆ ed the spawn location of the extra armor for Axis AI from Wilhelmshaven hex to Bremen hex.
- ◆ Updated ww2\_city\*.txt files with the new names.
- ◆ Modified scorched earth in Russia so that it only applies on the second turn and later of Barbarossa. That is, it does not apply on the first turn.



- ◆ Russian strategic reserve units will now get unique names when placed.
- ◆ Fix a bug where the ownership of a Yugoslavia port when natural was given to Russia. Now, port ownership is given to the owner of the controlling land-city hex.
- ◆ Fixed a bug where naval units destroyed in port were not being added to the casualties list. They are now.
- ◆ Made several map and scenario changes; especially in Poland, Russia and North Africa.

### 15.4.31 GSv2.01.32 - October 23, 2011

- ◆ Fixed a minor bug where it was possible to rail units to a swamp, mountain or dune hex. Now you can't rail from such terrain types and now you can't rail to either.
- ◆ Added to general.txt the spawn turn for the Russian Siberian reserves. Turn moved from 40 to 41.  
`SIBERIAN_RESERVE_SPAWN_TURN 41 /* November 9th 1941 */`
- ◆ Changed the Siberian reserve leader from Chuikov to Meretskov.  
`SIBERIAN_RESERVE_LEADER 559 /* Meretskov */`
- ◆ Changed attack across river in winter from 70% to 50%  
`ATTACK_ACROSS_RIVER_WINTER 50 /* Attack efficiency percentage when attacking across river in winter weather */`
- ◆ Changed research so a country that's not at war or mobilized cannot put focus on any tech within a research area.
- ◆ Changed research so you only spend a focus put by setting a focus. If you revert research back to balanced then you don't spend a focus point.

### 15.4.32 GSv2.01.33 - October 30, 2011

159. Mulberry supply for the Allies will now only be provided from 1944 if London is still Allied controlled and the naval unit providing mulberry supply is within the following hexes of London:  
`MULBERRY_MAX_DISTANCE_FROM_LONDON 10 /* BB, DD or CV max distance from London to provide Mulberry supply */`

160. Oil and PP production will now be using the controlling major power of the minor power owning the production hex.

161. The most important impact for this change will be the Romanian and Hungarian oilfields which will now production using German war effort instead of local war effort.

162. Vichy French garrisons in Syria and French North Africa will now have 5 steps instead of 10 steps.

163. Free French garrisons in French North Africa will have a variable strength according to the number

of French ground unit steps in supply.

/\* Used if French armistice offer is rejected \*/

```
FREE_FRENCH_GARRISON_STRENGTH 5 /* 0..10 0 = no spawn. Strength of the Free French
garrisons in French North Africa after the fall of France */
/* Free French garrison strength = # French land unit steps in French controlled hexes /
free_french_strength_step_ratio. */
FREE_FRENCH_STRENGTH_STEP_RATIO 10 /* 0 = disabled and
free_french_garrison_strength is used. */
CORPS_STEPS_COUNTED_AS 3 /* 1..3. Each corps or mech step is counted as this number of
garrison steps */
```

164. Finnish units inside core finnish hexes will have their strengths modified like this:

```
/* Bonus to Finnish units inside core Finnish hexes */
FINNISH_INCREASE_GROUND_ATTACK 0
FINNISH_INCREASE_GROUND_DEFENSE 1
FINNISH_INCREASE_SHOCK_ATTACK 0
FINNISH_INCREASE_QUALITY 1
FINNISH_INCREASE_SURVIVABILITY 1
```

165. This is done to simulate that Finnish units defended very well within their own territory (including the ceded Karelia). They were less effective when moved outside Finland. I decided to not increase the Finnish attack values because then they could attack Leningrad directly from Karelia with increased values. Finland was actually very reluctant to attack Leningrad in the real war.

166. Transport overuse will now increase per overuse instead of every second overuse

```
TRANSPORT_OVER_GROUP 1
```

167. Minimum Allied naval requirement in the Atlantic is increased from 10 to 12

```
ALLIED_ESCORTS_NEEDED_IN_ATLANTIC 12 /* This number of escorts needed for no
negative impact on convoy size */
```

168. USA and Russia will now accumulate focus points every July (not in January) when not at war. That should give them slightly more focus points when they enter the war.

169. Added separate graphics for the following units:

```
Slovak garrison will have Slovak emblem and special German colors (grey and red)
Standarte NW will have Dutch emblem and colors
Spanish Blue division will have Spanish colors and emblem
1st Croatian will have Croatian emblem and unit colors similar to Yugoslavia
SS Wiking and Nordland will have Norwegian colors and SS emblem
Charlemagne is upgraded to SS Charlemagne and corps. Will have French colors and SS emblem
```

170. Fixed bug where UK built destroyers were named Sqn instead of Flotilla. Now they will be named Destroyer Flotilla

171. Changed the unit costs for the following units

- ◆ Submarine from 60 to 50
- ◆ Destroyer from 60 to 50

- ◆ Mech from 50 to 55
- ◆ Armor from 80 to 85
- ◆ Fighter from 100 to 90
- ◆ Tactical bomber from 110 to 100
- ◆ Strategic bomber from 95 to 110

172. Changed some unit techs

- ◆ Fighter will no longer get tactical operations tech 2 and lose +1 naval attack and +1 antitank
- ◆ Strategic bombers will now get tactical operations tech 3 and get +1 shock attack and +1 antitank
- ◆ Dogfight tech 2 (+1 air attack) now includes TAC in addition to STR and FTR
- ◆ Strategic operations tech 4 will get +2 strategic attack instead of +1 (will affect TAC, STR)
- ◆ Strategic operations tech 5 will get +1 strategic attack instead of +1 (will affect TAC, STR, FTR, CV)
- ◆ ASW tech 3 (+1 sub attack) will no longer affect FTR and TAC
- ◆ TAC will start with air attack 1 instead of 2
- ◆ STR will start with air attack 2 instead of 1

173. Changed country start techs

- ◆ USA:
  - Sub tech 2 instead of 1
  - Artillery tech 0 instead of 1
  - Blitzkrieg tech 0 instead of 1
- ◆ Russia
  - Antitank tech 0 instead of 1
  - Blitzkrieg tech 0 instead of 1

174. Altered all scenarios so they use the new tech levels

175. Iraq rebellion added: /\* Iraq rebellion \*/

```
IRAQ_REBELLION_TURN 30 /* April 3rd 1941. 0 = no rebellion */  
IRAQ_AXIS_PARTISAN_SPAWN_CHANCE 5 /* Percentage chance in each empty Iraqi hex */  
IRAQ_AXIS_PARTISAN_CITY_MULTIPLIER 10 /* Spawn chance multiplied by this number in  
empty cities or resources */  
IRAQ_AXIS_PARTISAN_MAX_BASE_SIZE 4 /* Max partisan size = number + 2*Axis  
controlled cities in Egypt, Syria and Iraq */
```

Iraqi rebel units will be German, but look like Iraqi.

176. The 3 starting units in Iraq are now changed to UK ownership instead of Iraqi. This means these units will remain as UK controlled when the rebellion starts.

177. Damage upon convoys are now dependent upon tech in surface ships for BB, CV and DD and tech in submarine for Sub

- ◆ Formula is: damage to convoy = rolled casualty \* (1 + random(tech level / 3))
- ◆ So with tech level 1 then the damage can be from 100-133% of the rolled damage, tech 2 100-167% and so on. Rolled damage is between 0-14.

178. Supply range is set back to 20/40 for 1939-1941 instead of 15/30

179. Canadian fighter will now spawn in Halifax instead of Liverpool at 10 steps instead of 8.

180. Research difficulty for subs increased from 15 to 20

181. Altered research progress for scenarios other than 1939 to indicate the increased research difficulty for air techs and sub tech.

182. Update and improved the look of the large counters.

### 15.4.33 GSv2.01.34 - November, 2011

183. Fixed a bug where the PBEM password was inadvertently disabled in GSv2.01.33.

184. Added a game.class build check that will ensure games turns are played with the same beta version and not with an older version of the game.class file. For example, GSv2.01.33 which was the one where the PBEM password was accidentally disabled.

185. Streamline the checksum messages such that when there is a failed checksum only messages for the items that failed will be displayed. Those items that pass won't be. The checksum checks that the general.txt, unit.txt, technology.txt, research\_progress.txt and Game.class files that you're using against those used by your opponent for the turn that was saved.

### 15.4.34 GSv2.01.35 - November 14, 2011

186. Fix a minor bug regarding the location of the strategic bomber numbers for large counters, increased

the font size from 10 to 12 and make several tweaks to a number of other large counters.

187. It's now only possible to invade an occupied hex if within 10 hexes of a friendly port.

188. Made some cosmetic changes to the display of number using large counters.

189. Fixed reported bug about Allied units in Vichy French territory being destroyed instead of evacuated. Now all UK units in Vichy France will be evacuated if at the coast line if the armistice offer is accepted

190. Set the date of game.class to 2011November14

191. Made several updates to the large counters that significantly improves their appearance and the information displayed on them.

#### 15.4.35 GSv2.10RC1 - December 7, 2011

192. Fixed a minor bug with the message\_nor.txt file.

193. Added the following cities to Russia: Vladimir, Ryazan, Lipetsk, Izhevsk, Syktyvkar, Nizhniy Tagil, Saransk, Uralsk, Sterlitamak and Makhachkala with a port. None of the cities have any production and are added to give the allied player more locations east of Moscow for troop deployments and rail disembarkations.

194. Changed from 10 to 20 the following value: UK\_LESS\_MORALE\_PENALTY\_USA\_ALLIED 20 /\*  
Reduces max morale penalty of all UK units by this number if USA is activated \*/

195. Added +2 to DD survivability if fighting submarines DD\_SURVIVABILITY\_BONUS\_VS\_SUB 2 /\*  
This number is added to the DD survivability when fighting submarines \*/

196. Changed starting sub attack value for DD's from 4 to 5 and removed the +1 sub attack bonus for DD's at ASW tech 1. So this extra sub attack for DD's will only be usable until ASW tech 1

197. Fixed a bug where it was possible to rename add para to an SS unit and then remove SS to transfer it from SS to para.

198. Updated the date of in the game.class file to 2011December07.

**Also, a temporary patch has been uploaded that will allow players to add the new Russian cities to existing games.** The temporary patch is named, ADD-CITIES-TO-ON-GOING-GAMES.zip and contains one file (game.class). All you need to do is to apply this patch after you've updated to the Release Candidate and play one or more turns. After one turn you can revert back to the game.class in your release candidate or continue to play with the patch game.class file. The game.class files in the patch has the date 2011December06.

#### 15.4.36 GSv2.10RC2 - December 11, 2011

199. Altered unit.class so only Finnish ground units get a bonus from being in home territory. Note: That is, the air units do not get the bonus that was previously put in place to allow Finnish ground units to

fight as well as German units when in Finland but revert to Axis Minor Power fighting ability when out of Finland.

200. Back sometime this fall we made it so PP and oil inside of axis minors would be multiplied by the German war effort and not the axis minor war effort. Since the German war effort early on is 120% versus the axis minor which could be much lower this resulted in a significant increase of oil and PP's from these countries when they activated. However; I think we over did as illustrated in the post <http://www.slitherine.com/forum/viewtopic.php?p=283341#283341>

So we reverted back to the original where oil and PP are multiplied by the war effort of the axis minor. In effect, we undid the change and went back to the way it's been handled since the vanilla game.

201. Changed the date in the game.class file to 2011December11.

**Also, a temporary patch that includes the latest RC1 changes has been uploaded that will allow players to add the new Russian cities to existing games.** The temporary patch is named, ADD-RussiaN-CITIES-RC2.zip. This update includes a modified game.class (2011December10) that will add the new Russian cities (change item 193) to existing games. After you've played on turn with the file you can apply the game.class file (2011December11) **from RC2** to get back to the current release intended for GSv2.10.

#### 15.4.37 GSv2.10RC3 - December 11, 2011

202. Changed maximum entrenchment so capitals, cities and fortresses have a max entrenchment = max production +3 (but max possible value = 8 ). The formula is:

`Math.min( 8, pResource.getMaxProduction() + 3)`

**Also, a temporary patch that includes the latest RC1 changes has been uploaded that will allow players to add the new Russian cities to existing games.** The temporary patch is named, ADD-RussiaN-CITIES-RC2.zip. This update includes a modified game.class (2011December10) that will add the new Russian cities (change item 193) to existing games. After you've played on turn with the file you can apply the game.class file (2011December11) **from RC3** to get back to the current release intended for GSv2.10.

#### 15.4.38 GSv2.10RC4 - December 12, 2011

203. Fixed a bug were units exiting a transport loop could enter a neutral port; e. g. Basra while Iraq is neutral. One consequence is that the UK BB spawning in Basra would not spawn when Egypt and Iraq join the Allies. Now units can only exit transport loops in empty sea hexes or friendly ports. A port is only friendly if the owning country is at war and on the same side.

#### 15.4.39 GSv2.10RC5 - December 22, 2011

204. Amphibious range is now equal to 6 + surface ships tech instead of a fixed range of 10.

205. The Frisian Islands hexes in Holland are converted into swamp to make it harder to move towards Hague from the north.

206. The UK fighter in Egypt is removed from the at start forces and will spawn when Italy activates at 5 steps.

207. A new UK fighter called Polish Air Unit will spawn near Liverpool on August 6th 1940. Strength = 1 + number of minor owner countries conquered by the Axis. A message about this will be shown.

208. All scenarios are updated to implement the map changes and the removed at start UK fighter in Egypt.

209. Updated the 1941.scn to 1944.scn so the Polish Air Force replaced a UK fighter. In the 1941 added a fighter, but removed a DD instead. Also replaced a German strategic bomber with a tactical bomber in those scenarios too. Most players don't build extra Strategic bombers.

210. Added the Polish fighter image for the large counters.

211. Date in game.class changed to 2011December22 and version updated in message\_\*.txt to GS v2.10RC5

### 15.4.40 GSv2.10RC6 - December 27, 2011

212. Fixed the bug about getting the SS text if when the allied click on a hidden or enemy unit. It was a bug even for the Para button. Added a test that the unit clicked on must be on the same side as the active player for the SS or para to activate. This was a problem from having double function on these 2 buttons.

213. Updated version to GSv2.10RC6.

### 15.4.41 GSv2.10RC7 - December 31, 2011

214. Fixed a bug where Bulgaria weren't getting their 2 extra corps units if Greece was DoW'ed in 1943 or later. Now they do.

215. Updated the game version to GSv2.10RC6.

### 15.4.42 GSv2.10RC8 - January 15, 2012

216. Fixed a bug where UK units in Vichy French territory in North Africa weren't being sent back to the force pool. The reason for the bug was that Vichy France and Syria were created before the British evacuation and the creation code removed all units in the country. This bug is now fixed and UK will be returned to their force pool instead of being eliminated.

217. Increased Russia's starting oil from 100 to 200 points.

218. Changed the rail cost in North American to a fixed 1 per unit regardless of type.

219. Added color to unit values in the unit panel to visually show when the unit is affected by bad weather. The colors are: Brown (Mud), Light Blue (Winter) and Grey (Severe winter).

220. Change the attack range in the unit panel for para units so it shows the paratroop range instead of the fixed 1 for the attack range after landing. That should make it easier to see how far a para unit can paratroop (including enemy para units).

221. Changed the Italian surrender rules where 5 or more surrender cities are now required or the



conquest of Rome. The Italian surrender cities are now all Italian cities (including Cagliari, Reggio and Tirana), Tripoli (indicating loss of Libya) and Tunis (indicating Allied control of Tunisia).

222. Fixed the bug where it was possible in a hotseat game to build an SS unit as the Axis if the Allied player finished the turn with a German unit selected.

223. Reduced the transport survivability for garrison units by 2 unless the garrison is an elite or para unit. This value can be changed in general.txt

224. Altered the tech levels slightly so USA get Sherman tanks instead of Grant tanks in the 1944 scenario.

225. Changed the infantry symbol on garrisons for large counters to an empty box to be consistent with the NATO counters. Also, this makes telling the difference between garrisons and infantry corps much easier visually.

226. For GS on the PC (windows) changed the folder for where user settings, scenario data and game turns are saved to \*\\My Documents\\CEAW Grand Strategy 2.10\\

227. The name of the GS settings.txt file has changed from gs2\_settings.txt to GS210\_settings.txt. Also, added a recovery feature if the copy of this file stored in the user's data area (i.e.; \*\\My Documents \\CEAW Grand Strategy 2.10\\GS210\_settings.txt) becomes corrupted. This recovery features will delete a corrupted file and shut GS down. When GS is restarted the user will be prompted for language and RAM configuration and a new file generated on exit. No longer will a user have to manually delete a bad settings file. This recovery feature will automatically do that.

228. A bad user generated or modified scenario will no longer force GS to exit suddenly. GS will now skip over any scenario it has trouble compiling.

229. Changed the build date in the game.class file to 2012January15 and updated the version to GSv2.10RC8.

#### 15.4.43 GSv2.10RC9 - February 3, 2012

230. Increased the war effort of axis minors for the following minor and under the following conditions as applicable:

- a. Finland will use the German war effort.
- b. Bulgaria will use the German war effort instead of Bulgarian war effort if Athens is Axis controlled.
- c. Hungary and Romania will use the German war effort instead of the local war effort if Belgrade is Axis controlled.
- d. This means that the Axis minor powers will have slightly better production. Finland always (because Finland wanted to reclaim Karelia from Russia). Hungary and Romania will become more actively involved in the Axis if Yugoslavia is pacified.

- e. Bulgaria will become more actively involved in the Axis if Greece is pacified.
  - f. The change is minor, but you will notice a slightly higher oil production for the Germans.
231. Fixed a bug where Finnish ports were not returning to neutral when Finland did. Now they do.
232. **MAJOR CHANGE:** Units can now only rail to and from hexes in or adjacent to resources (i.e., cities, ports, mines and oil fields).
233. Fixed a bug where the icons from French partisans weren't showing up under certain conditions.
234. Implemented a supply model for 2 sets of rail heads based on the Russian broad gauge and German standard gauge. After Russia enters the war, the standard gauge will move eastwards 2 hexes per turn in fair weather and 1 hex per turn in mud/winter, but not further than the easternmost core Russian city/resource that's Axis controlled. The limit will be the column of the city plus 1. The broad gauge will move westwards 2 hexes per turn in fair weather and one hex per turn in mud/winter, but not further than the westernmost city/resource that's Russia controlled. The limit will be the column of the city minus 1.
235. This model of the rail heads based on the two different rail gauges are a approximation based on a vertical front line and no 2 rail heads, one that benefit each side the most. Usually the front line will straighten itself because it's easier to defend, but some times you get a breakthrough in one section like 1942 Case Blue. With this system we don't need rules for Russia paying to send units to the west. Now they need instead convert their captured / liberated cities to broad gauge.
236. Russian captured cities are checked everywhere and not in core Russian territory. The reason is that everywhere except Russia had standard gauge so the Russians needed to convert the rail lines there. Germany didn't need to change the rail lines in captured hexes outside Russia.
237. For Germany only core Russian hexes are checked because those were the ones with broad gauge. It's very unlikely that Russia will manage to push the Germans into Poland / Germany and then the Germans push the Russians back into Russia. This is so unlikely as to not be worth the complexity of code and risks of bugs needed to handle this special case. Therefore, all German and Polish cities will be available for the Germans the turn after conquest for this very rare case.
238. Russian units can only rail within broad gauge and Axis units only within standard gauge. Allied units can use both because some Allied minors can move in Russian territory (like liberated Romania and Bulgaria).
239. For each hex an image is drawn in the hexinfo showing the rail gauge for that hex. This way players can click on hexes on the map to find where the rail heads are. For applicable hexes, the corresponding hexinfo panel will show either a broad or standard gauge rail symbol.
240. Units can only rail to / from a hex with the same rail gauge as the side. Axis = standard, Russian = broad, Allies = standard. Note that not ever hex shown with a rail symbol can be railed to; only those hexes in or adjacent to a resource can be. The rail hex symbol in this case is used to show which hexes will have "normal" supply and which will have to be supplied by truck.
241. Another rule implemented is to flag hexes with a truck image (in the hexinfo panel) for hexes that are not within the same rail gauge as the current side and show a supply image for those hexes that are close to a rail head. Units within this range can have supply level 4 or 5. Units outside the range can max have supply level 3. This would simulate trucks supplying units between rail heads and the front line.

The truck range can be 10 (set in general.txt). When you get above 40 hexes from a major capital the supply would drop to 3 anyway because of the long distance to send supplies. So the rule would simulate that e. g. the Axis army would rely upon trucks to get supply until the rail heads get nearby. The same for the Russians when they advance westwards. Truck supply would only be used where you are in a hex with a different rail gauge than what your side can use. Once you're within the same side rail gauge you get rail supply instead.

242. For truck supply the ranges is 6 for fair weather, and it's possible to extend this range with industry tech. The range is 2 for mud and 4 for winter. For severe winter the range is still 4 for Russia; but is 0 for the axis. In mud terrain the roads were very difficult to drive on. In winter the roads were good, but the engines suffered a bit. In severe winter the engines suffered a lot for the Axis, but not so much for the Russians. So Russians can treat severe winter as winter while the Germans struggle with no truck range at all.

243. Players can see both the rail and truck status for each hex in the hexinfo panel and also the unit panel.

244. Added a functionality so the supply level 4 for the Axis is extended 10 hexes in Russia if Moscow is Axis controlled. That should make Moscow even more important and definitely worth defending. Moscow was a major rail hub and would make it easier for the Axis to send supply if captured.

#### 15.4.44 GSv2.10RC10 - February 5, 2012

245. Fixed a bug where Polish railheads extended into Russia. Changed the code so railheads can't be extended into neutral territory.

246. Added code to reset rail gauge in Russia to Russian while Russia is still neutral. This will fix games already started so a restart is not necessary.

#### 15.4.45 GSv2.10RC11 - February 11, 2012

247. Air units are no longer allowed to rebase to supply level 0 hexes unless the hex is an island.

248. Added a new terrain type called Tundra and changed all forest hexes north and east of Archangel to Tundra. Tundra is the same as forest except the supply is 2 instead of 4.

249. Added a new resource type called rail depot, which replaces a number of 0-production cities for rail purposes. Also, added a number of rail depots across the map.

250. Added Foggia and Trieste to the list of Italian surrender cities. This way all cities and rail depots count against the surrender value. This seems more logical and it's not likely Trieste or Foggia will be captured as the first mainland Italian city. Adding these cities mean that the Axis player can rail units to the Yugoslavian border and also to the river line south east of Rome.

251. Added Nottingham in England to cover a hole near the English eastern coast line. Inverness was added in Scotland because it was an important rail terminus during WW2. It won't be used much unless Sealion is launched.

252. Tartu was added in Estonia to function as a rail depot for the Axis advance northwards. It's the

second largest city in Estonia. Also added Iasi in Romania, Plovdiv in Bulgaria and Banja Luka in Yugoslavia to function as staging points in case there is an action in the area. Iasi in Romania is particularly important before Barbarossa.

253. Added rail depots in French North Africa. This way the Allies can e. g. land units from USA in Casablanca or Agadir and rail them to Tunis once the path is cleared and Algiers is Allied controlled.

254. The specific map changes made are as follows:

New cities:

Switzerland: Zurich

Ireland: Cork

Moved cities:

Morocco: Casablanca

Algeria: Oran

Hungary: Debrecen

Russia: Vinnitsa

New rail depots:

Canada:

◆ Moncton

◆ Edmundston

Morocco:

◆ Marrakech

◆ Fez

◆ Oujda

Algeria: Bone

Tunisia: Kasserine

Italy:

◆ Foggia

◆ Trieste

Britain:

◆ Nottingham

◆ Inverness

France: Limoges

◆ Germany:

◆ Rostock

◆ Erfurt

Austria:

◆ Graz

◆ Linz

◆ Innsbruck

Czechoslovakia:

◆ Brno

◆ Kosice

Poland: Lublin

Greece: Larissa

Yugoslavia: Banja Luka

Bulgaria: Plovdiv

Romania:

◆ Cernauti

◆ Iasi

Syria:

- ◆ Aleppo
- ◆ Homs

Iraq:

- ◆ Kut
- ◆ Fallujah
- ◆ Najaf
- ◆ Nasiriyah

Persia:

- ◆ Kermanshah
- ◆ Qom

Trans-Jordan:

- ◆ Amman
- ◆ Ma'an

Egypt:

- ◆ Mersa Matruh
- ◆ Suez

Turkey:

- ◆ Adapazari
- ◆ Sivas

Denmark: Esbjerg

Norway: Lillehammer

Sweden:

- ◆ Karlstad
- ◆ Borlange
- ◆ Norrkoping
- ◆ Gavle

Finland: Oulu

Estonia: Tartu

Russia:

- ◆ Rzhev
- ◆ Velikiye Luki
- ◆ Cherepovets
- ◆ Kaluga
- ◆ Zhitomir
- ◆ Chernigov
- ◆ Cherkasy
- ◆ Sumy
- ◆ Mogilev

Converted from city to rail depot:

Russia:

- ◆ Sterlitamak
- ◆ Saransk
- ◆ Lipetsk
- ◆ Vladimir
- ◆ Kotlas
- ◆ Syktyvkar
- ◆ Nizhniy Tagil
- ◆ Uralsk
- ◆ Makhachskala

France:

- ◆ Dijon
- ◆ Orleans

Sweden:

- ◆ Karlskrona
- ◆ Ostersund

Norway:

- ◆ Kristiansand
- ◆ Stavanger

Denmark: Aalborg

Finland:

- ◆ Vaasa
- ◆ Kuopio
- ◆ Joensuu

Netherlands: Groningen

Turkey:

- ◆ Canakkale
- ◆ Erzurum

Persia: Rasht

**Changed resource:**

Russia:

- Split the 2 PP manganese near Stalino into 1 PP manganese south of Dnepropetrovsk and 1 PP Donbass near Stalino.

#### 15.4.46 GSv2.10RC12 (Incremental) - February 13, 2012

255. Königsberg port was accidentally left out of RC11. The editor is a bear to work with so it probably disappeared when rail depots were being added in RC11. Changed the map and scenario files so they now contain the port. Also updated game.class so the port will be added at the end of a turn in existing games if the port is not there. This code is temporary and will be removed it again when we make RC13 (if necessary) or the final release (if not).

#### 15.4.47 GSv2.10RC13 (Incremental) - February 15, 2012

256. Fixed the bug regarding Plovdiv so it's now core owner Bulgaria instead of Yugoslavia. Updated the map and scenario files so new games can start with the correct core owner for Plovdiv.

257. Fixed the font size for hexinfo terrain type so it's reduced from 20 to 18. This way it won't clip the name of rail depot in some languages.

258. Placed the number of turns Russia can't convert rail gauge after DoW from hardcoded 3 to a value stored in general.txt.

```
Russia_UNABLE_TO_CONVERT_TURNS 3 /* Number of turns Russia can't convert rail gauge
after they join the war. Simulates paralysis during the first turns */
```

#### 15.4.48 GSv2.10RC14 (Incremental) - February 17, 2012

259. Fixed the drop in US war effort if Spain joins the Axis due to French North Africa being captured by the Axis. Now the Allies must DoW Spain to lose US war effort.

260. Changed functionality so air units holding resource or city hexes in a country that has conquered will lose control of the hex if rebasing out of the hex unless a friendly ground unit is adjacent or the

supply in the hex is 4 or better. This should take care of situations in Norway / France where UK air units fly to port cities to keep control. Now they keep control only as long as the air unit remains there. The hex control is changed to the owner of the surrendered country's capital owner (Germany in the above cases). If a ground unit is adjacent to the airunit then you keep control when the air unit rebases. This simulates the ground unit taking over control of the hex. This code was added to avoid situations where you fly in air units to e. g. France in 1944 before the Allies have got a complete foothold there. Also added code that if the hex has supply level 4 or better then this won't happen. This is done to ensure that if the Allies land in France and Italy they won't risk having the ownership changed to the capital owner just because they rebased an air unit stationed in a resource hex.

261. Added code to prevent convoys from entering the Mediterranean via Gibraltar.

262. Fixed map bugs regarding wrong core owner in Rennes, Dijon and a hex in Canada. Updated the map file, all scenarios and also added code to fix the existing map.

#### 15.4.49 GSv2.10RC15 (Incremental) - February 18, 2012

263. Air units aboard a transport would not be able to land in a city after the change made to counter the Norway and France air control at conquest exploit. The reason for the bug was that the code tried to check for the core hex owner and there are no core hex owner in a water hex. Changed the code so it tests if the hex is a land hex or not. If it's a water hex it will not make the test. That's the situation with an air unit aboard a transport being in a port or at sea.

264. Made the change so the change of hex owner when an air unit leaves a city or resource only applies prior to USA entering the war. That is simple and ensures we don't get any late game nasty surprises.

#### 15.4.50 GSv2.10RC16 (Incremental) - February 19, 2012

265. Changed the map and scenarios with 2 hexes in Canada flagged as forest when they should have been rough.

266. Moved the spawn area for the Russian Siberian reserves to Nizhniy Tagil (air and armor units) and Syktyvkar (shock units). This was done to ensure they spawn around rail depots so they can be railed to the west.

267. Updated message\_\*.txt to RC16.

#### 15.4.51 GSv2.10RC17 (Incremental) - March 2, 2012

268. Fixed a minor bug regarding rail movement where it was possible to rail to tundra and desert (having supply level 2), but it was not possible to rail from these hexes. These hexes were flagged with rail images so they should have been possible to rail to. Made a change so that supply limit for being able to rail is now 2 instead of 3 as is used to. The limit of 3 since was used when it was possible to rail from anywhere on the map. Now units can only rail from and to hexes adjacent to cities. It's still not possible to rail to/from swamp, mountain or dune hexes.

269. Fixed a bug where Russian swamp, dune and mountain hexes were flagged as rail capable while



Russia was neutral.

270. Moved the earliest activation time for Romania from after turn 16 to after turn 19 (same as Hungary and Bulgaria). So now, the earliest possible activation for Romania, Hungary and Bulgaria is turn 20 (September 15, 1940) and will only happen this early if Yugoslavia (for Rumania and Hungary) or Greece (for Bulgaria) is invaded.

271. Fixed the bug where units could not rail FROM desert hexes, but could rail to. Now units can rail in any hex with supply level 2 or better, access to a minor or major power capital and not being in dune, swamp or a mountain hex.

272. Disabled temporary routines for adding the Konigsberg port, Plovdiv core owner and Rennes/Dijon core owner. These were routines added to fix ongoing games started with RC11 and should no longer be needed.

273. Fixed an obscure bug about naming of the spawned BB's and CV that will arrive for the major powers. If the Axis player didn't use English as language then these units will get a generic name in the Axis player's language like Slagskip in Norwegian instead of a unique name. This is fixed by naming the units Battleship and Carrier on turn 1. That means when they're placed they will be flagged as generic and will get a unique name.

274. Also fixed a comments typo about spawn turn for the US CV in general.txt. This fix will cause a checksum error on the general.txt file.

275. Found a "feature" where new British naval units could be deployed Gibraltar, Malta, Cyprus and Northern Ireland. This "feature" resulted from a change that made Liverpool a supply source for UK to enable deployment if Liverpool is controlled even if London is captured. This "feature" was removed so new British naval units can only be deployed to British ports in England or Canada.

276. Fixed a bug where the Axis were unable to get rail in North Africa even though they held all the cities and ports. The reason for the bug was that if Spain joins the Axis then Morocco is changed to Spanish core owner. The test checked for Vichy French or Free French territory and now Spain south of hex row 56. That is the Tangiers area and possibly Morocco.

277. Updated message\_\*.txt to RC17.

GSv2.10RC17 (Incremental) - March 2, 2012

#### **15.4.52 GSv2.10 Pre-Installer Full File Set - March 18, 2012**

278. Fixed a minor bug which made it possible to unload transported air units into mountain, swamp or dune hexes. The bugfix now makes this impossible.

279. Changed the game.class date to 2012March20 and changed all message files to show GS v2.1 (without any RC).

280. Changed the release of the Siberian reserves from turn 41 to 40.

281. Changed the rate of recovery in the invasion surprise (effectiveness) reduction for from 8 per turn to 9 per turn. Reduced Russian surprise effectiveness loss from 30 to 27, i. e. 3 turns with reduced

efficiency regain and no change for France).

282. Changed Russian severe winter duration chances to: 20% duration -1, 60% duration, 20% duration +1 (votes 6 for and 2 + 4 for other options)

283. Changed North April weather chance from 15% to 5% for fair weather in north weather in April (vote 5 for and 5 + 2 for other options).

284. Russian tech changed back to previous values which means that antitank weapons increased from 0 to 1 and close air support increased from 0 to 1.

285. Made a few minor map changes near Leningrad and Vitebsk, mainly some clear hexes being changed into forests. The changes are very minor so you don't have to restart any ongoing games. Existing games won't be affected except that the map will show forest while the hexinfo will show clear.

#### **15.4.53 GSv2.10 Pre-Installer Full File Set - March 21, 2012**

286. Changed the map and scenario files to allow rail gauge changes to happen in the Caucasuses.

287. Fixed a bug where standard gauge rail hexes in Russia were altered to broad gauge when Russia surrendered.

#### **15.4.54 GSv2.10 Pre-Installer Full File Set - April 01, 2012**

This is NOT an April Fools joke...

288. Updated translation for message\_spa.txt.

289. Improved odds calculator for ground combat

#### **15.4.55 GSv2.10 Pre-Installer patch - April 02, 2012**

290. Fixed bug concerns odds calculation for naval battle.

#### **15.4.56 GSv2.10 Pre-Installer patch - April 03, 2012**

291. Fixed code concerning para-drops.

#### **15.4.57 GSv2.10 Pre-Installer patch - April 04, 2012**

292. Fixed code concerning very powerful units toward the end of the game.

#### **15.4.58 GSv2.10 Pre-Installer patch - April 09, 2012**

293. Odds calculator will now show proper values when tactical bombers or fighters make strategic bombardment

294. Fixed a bug where mech units could move 2 hexes while armor and corps units could only move 1 hex in severe winter if the supply level in the hex was 3 or less. Now mech units in severe winter will move 2 hexes as armor and corps if supply level is 4 or 5 and only 1 hex as armor and corps if supply level is 3 or less.

295. Fixed a vanilla game bug where strategic bombardment against resources with units showed the unit attack odds and not the strategic attack odds. Strategic odds were only correct against empty or unspotted hexes.

296. Fixed bug regarding Malta port where capture of the airfield could change side of the port to the airfield owner. This was an old bug introduced due to the fact that the Malta port is adjacent to both the fortress and airfield. Added code to detach the attached code for the Malta airfield similar to the Malmo and Reggio hexes. Control hexes for the latter 2 are Copenhagen and Messina.

297. Fixed a bug where air units rebasing to airfields used the airfield movement cost instead of just 1 cost. In mud or winter weather the airfield movement cost was 2 and that meant an air unit just within the limit could not rebase to the airfield.

298. Changed the code so para units adjacent to rail depots are also eligible for paratroops. Rail depots are usually smaller cities that often had an airfield nearby.

#### **15.4.59 GSv2.10 Pre-Installer patch #2 - April 09, 2012**

299. Altered the code so it's now not possible to paratroop to or bomb the Swedish iron ore, Baku oil or Spanish tungsten mine if Sweden is neutral, Russia is neutral or Spain is neutral. That means you can't bombard a neutral country to harm traded resources. If Sweden, USSR or Spain become activated then the hexes can be bombarded normally.

300. Fixed the bug regarding Bristol / Cardiff. Discovered that the coal mine adjacent to the Cardiff port controlled the owner of the port and not Bristol. This is now fixed.

301. General.txt had the wrong hex number for the Cardiff port (convoy port 2).

#### **15.4.60 GSv2.10 Pre-Installer patch - April 15, 2012**

GSv2.10 Pre-Installer patch - April 15, 2012

302. Ferry crossing and unit swap will use the old odds calculation.

303. Fixed the bug regarding the Swedish iron interdiction where Allied control of one or more of the Norwegian cities and rail depots didn't affect the interdiction. Added code so in addition to count naval units adjacent to Norwegian ports we also count the Number of Norwegian cities / rail depots under Allied control. This means that the Allies can conquer Norway to stop the Swedish iron ore during winter turns without having naval ships adjacent to Norwegian ports.

If Narvik had been on the map and Allied controlled then it would have been impossible for the Axis to

ship the iron ore out from Narvik. Allied control of the Norwegian cities means that the Norwegian coastal batteries would fire at ships sailing from Narvik to Germany with iron ore if Narvik was still Axis. The iron ore ships would have been stopped even without the Royal Navy present. Each city controlled is worth 1 so you need 2 cities to stop the iron ore unless the Axis player has naval units in any of the Norwegian cities.

E. g. If Germany controls Trondheim and Oslo, but not Bergen then the Germans reduce the number by 2. Let's say the Allies control Bergen, Stavanger and Kristiansand. That's 3. So the effective number is 1 unless Allied naval units are adjacent to any of the Norwegian ports.

That means the iron ore is halved.

#### 15.4.61 GSv2.10 Pre-Installer Full File Set - May 30, 2012

305. Changed date in the Game.class file to 2012June01.

306. Disabled an obsolete low oil check and message. This significantly speeds up how fast units move; especially in the late game.

307. Added code so Airfields won't change ownership if an air unit leaves the airfield if the core owner is conquered. This should take care of the situation with Keflavik that was reported.

308. Changed Fortress or Garrison in unit name for UK garrison units to HG.

309. Changed Fortress unit name for Italian garrison units to Piazzaforte di.

310. These changes means they can be upgraded to Para and won't be considered to be SS units due to unit name fortress.

311. Altered the values slightly in Labs\_bought.txt for some countries. E. g. Germany would get 2 naval labs + 2 general labs instead of 1 naval lab and 3 general labs in the latest scenarios. This was done because we earlier increased the research cost for subs.

312. Altered values slightly in Research\_progress.txt so the 1944 progress level was more consistent with what it was in 1943. This was for the 3 air research areas.

#### 15.4.62 GSv2.11 - December 2012

313. Players got a message about Allied aggression when the Axis attacked Holland if the Allies had earlier attacked Belgium. Now they won't get this message.

314. Canadian reinforcements used to spawn when Belgium was conquered. This was intended for the Axis attack on Belgium, but forgot the situation where the Allies attack Belgium in September 1939. Then the Canadian reinforcements would arrive early and not when the Allies are on the run in Belgium. This is now fixed so the Canadian reinforcements will only arrive at the end of the Axis March 19, 1940 turn if the Allies attacked Belgium first. If the Axis attack Belgium first the Canadian reinforcements will arrive when Belgium surrenders as before.

315. The game would show a chance for Italian early activation if Belgium was attacked, but not conquered. This Now this message will only show if there aren't enough Allied naval units in the

Mediterranean and Belgium is conquered.

316. Rail gauge conversion could happen between friendly countries like Persian standard gauge rail being converted into Russia. This is now fixed so Allied controlled standard gauge rail heads can't convert rail into Russian controlled broad gauge hexes and vice versa unless Russia is conquered.

317. Updated game.class check date from 2012June01 to 2012November25 so people know who are running with the bugfixes or not.

318. Added graphics images for the Slovak corps. It's needed for some of the later scenarios. It was omitted in the PC version. These files should be added to the folder ....\Grand Strategy Mod\image\unit\corps

319. France surrenders if Paris is vacated after June 1940. This could cause the Allied AI to lose France prematurely. Changed code so the check is only made if the Allied player is not AI.

### 15.4.63 GSv2.12 - December 2012

320. Fixed a bug regarding Russian rail head movement. Bug was introduced in v2.11.

### 15.4.64 GSv2.13 - February 1013

321. Increased the number of rail depots / cities needed in Finland / Estonia from 2 to 3 so Finland would never ask for armistice unless Russian troops have captured at least one city / rail depot in core Finland.

322. Let the UK southern lend lease route be stopped if London is Axis controlled. Then the 15 PP's will be kept by the UK and not sent to UK. UK would not be in a position to support other major powers with lend lease if have barely enough PP's to stay above 0 (without convoys).

323. Make sure that Free French forces won't be placed on the map as units that can't move if Vichy France is DoW'ed when USA is still neutral (controlling power of the Free French). Instead these Free French units go to the US force pool so they can be safely placed once USA join the war.

324. Fixed a vanilla game bug regarding supply level 5 flowing through the Gibraltar port into Africa. Other rules prevented supply level 4-5 in French North Africa and Libya, but not Egypt. So Germany could suddenly get rail supply in Egypt if they had a contiguous like from Egypt to Gibraltar.

## 15.5 GS 3.0 Change Log

### 15.5.1 Master Change Index

1. Added graphics images for the Slovak corps. It is also needed for some of the later scenarios. It was omitted in the PC version.
2. France surrenders if Paris is vacated after June 1940. This could cause the Allied AI to lose France prematurely. Changed code so the check is only made if the Allied player is not AI.
3. Players got a message about Allied aggression when the Axis attacked Holland if the Allies had earlier attacked Belgium. Now they won't get this message.
4. Canadian reinforcements used to spawn when Belgium was conquered. This was intended for the Axis attack on Belgium, but forgot the situation where the Allies attack Belgium in September 1939. Then the Canadian reinforcements would arrive early and not when the Allies are on the run in Belgium. This is now fixed so the Canadian reinforcements will only arrive at the end of the Axis March 19th 1940 turn if the Allies attacked Belgium first. If the Axis attack Belgium first the Canadian reinforcements will arrive when Belgium surrenders as before.
5. The game would show a chance for Italian early activation if Belgium was attacked, but not conquered. This message will only show if there are not enough Allied naval units in the

- Mediterranean and Belgium is conquered.
6. Rail gauge conversion could happen between friendly countries like Persian standard gauge rail being converted into Russia. This is now fixed so Allied controlled standard gauge rail heads can't convert rail into Russian controlled broad gauge hexes and vice versa unless Russia is conquered.
7. Fixed a bug regarding Russian rail head movement.
8. Increased the number of rail depots / cities needed in Finland / Estonia from 2 to 3 so Finland would never ask for armistice unless Russian troops have captured at least one city / rail depot in core Finland. Change is done because rail depot of Tartu in Estonia was added before and number of cities was not increased because of the addition. This is now fixed.
9. Let the UK southern lend lease route be stopped if London is Axis controlled. Then the 15 PP's will be kept by the UK and not sent to Russia. UK would not be in a position to support other major powers with lend lease if they have barely enough PP's to stay above 0 (without convoys).
10. Make sure that Free French forces won't be placed on the map as units that can't move if Vichy France is DoW'ed when USA is still neutral (controlling power of the Free French). Instead these Free French units go to the US force pool so they can be safely placed once USA join the war.
11. Fixed a vanilla game bug regarding supply level 5 flowing through the Gibraltar port into Africa. Other rules prevented supply level 4-5 in French North Africa and Libya, but not Egypt. Germany could suddenly get rail supply in Egypt if they had a contiguous like from Egypt to Gibraltar.
12. Changed terrain around Tobruk and Mareth to allow better movement around those hexes.
13. Changed terrain in Iran, Iraq, and Turkey. Moved border lines between Persia, Iraq, Russia, and Turkey to correct some deficiencies. Added river Karun in Persia. Yerevan was added as a Rail Depot in Russia on border with Turkey and Persia.
14. Altered terrain in UK. Added forest and clear hexes. Glasgow was moved 1 hex. Clydebank was added as name for the Glasgow port. Devonport was added as name for the Plymouth port. These were 2 of the main naval bases in UK during ww2.
15. Map was altered concerning the congested nature of the Red Sea and Persian Gulf. Northern coastline of Egypt was altered to better reflect the terrain of the Nile Delta. The two branches of the Nile were added. Cairo and Alexandria moved 1 hex North. The Suez Canal moved 1 hex North and 1 hex East. The port of Suez was added to improve movement through The Red Sea. Loops in the Red Sea area were moved to reduce blocking of movement. Basra was moved 1 hex North to simulate the location along the Euphrates river. The protectorate of Kuwait was added, this includes Kuwait City with port. Kuwait will activate when Egypt and Trans-Jordan does. The loops in the Gulf were moved to allow units coming through the loops could appear in the port. The Persian Gulf was widened to add Sea hexes for playability.
16. Belgium, Holland and Germany terrain changed adding Forest hexes. Changed some hexes to clear. Moved Antwerp and port inland, Added the Albert Canal, moved the Maas river to the East of Liege. Shorten the Schelde river to West side of Brussels.
17. Island of Sardinia the shape was altered with added Rough and Forest hexes. The port was moved South of The City of Cagliari.
18. In the event of Sealion, UK forces in Egypt, Iraq will fully activate to be available for the defense of Britain. Italy will also activate. If Sealion occurs in 1939 or 1940, once Axis forces land anywhere in Britain, 2 GAR will form in the forcepool. If Sealion occurs in 1941 4 GARs will be available for defense of Britain.
19. When German forces land in Libya, UK forces in Egypt and Iraq will activate.
20. Added rail depot in France called Calais. This will later become a fortress as one of the Atlantic wall fortresses.
21. Updated message system at start of turn to provide historical images from the war and more space to explain the various events from Combat operations, Political events, and Surrender of nations.
22. Updated the begin turn weather information dialog box to show the weather zones and how they affect land and Sea areas.
23. Added weather overlay that can be displayed over the map in game. Can be toggled on or off by

- pressing the letter 'w'. Default can be set in game options.
24. Changed retreat rules. Air units will always retreat from most resource hexes. Naval units may now retreat during combat. Subs and convoys start with 0, BB's, CV's start with 10, DD's with 20, Transports with 30. For each step loss below 10 on the defender the chance goes up by 5, the retreat chance may go down by 5 for each step loss below 10 on the attacker. Defenders will not retreat from ports.
    - Battle example. A UK 9 step BB attacks an 8 step Italian DD. Combat result is 3:1 so the BB has 8 steps and the DD 5 steps after battle. Base retreat chance is 20% (destroyer). Modifier for defender =  $5 \times (10 - 5) = 25\%$ . Modifier for attacker is  $5 \times (10 - 8) = 10\%$ . So end change =  $20\% + 25\% - 10\% = 35\%$
    - Convoys will not retreat.
  25. Naval movement change
    - Transport will not block movement by any surface unit. A sub that becomes visible by attacking a naval unit, ran into by a naval unit (ambush), or revealed by ASW sweep will block movement like any other naval unit unit. Because it is a sub it may only be ! attacked by up to two (2) air units that have not moved or attacked a unit, and by any adjacent naval units that have not moved or attacked.
  26. Naval combat expanded.
  27. New ASW rules.
    - Surface vessels after movement may perform an ASW sweep to look for hidden subs. b) ASW sweeps that are successful will attack the first sub revealed and reveal any other hexes that were swept.
    - The hex clicked on has 2x base probability depending on unit performing the sweep.
    - Base Probability - Convoys and subs is 0 (ie can not sweep), Transports 15, BB's 40, ! DD's 55, and CV's 50. Sweep chance is raised by 8 (ASW) and 6 (Radar) for each level. Sweep chance is lowered by 10 by Rough Seas and by 8 for each enemy sub tech level.
    - Player may press 'm' to have units remain in hex and perform sweep instead of moving or attacking. Once 'm' is pressed you are committed to perform a sweep or not. You can not change your decision.
    - If a surface unit stops movement on top of an enemy sub on Sentry ('Zzz') the enemy sub will be moved to the nearest empty hex. The surface unit may then perform an ASW sweep.
  28. New Sub rules.
    - Subs that are hidden will stop and attack (ambush) any enemy vessel that runs into the enemy sub hex.
    - Subs that attempt to move into an opposing sub hex will be bounced as before. This behavior is the same as earlier versions of CEAW-GS.
    - Subs may be placed on Sentry ('Zzz') by pressing the letter 'z' or 's' or by Right-clicking the sub.
    - Subs on Sentry ('Zzz') will allow any surface vessels to travel over the hex. Enemy ships will not be stopped or attacked.
    - Subs that are revealed by ASW sweep / attack and or attacked may evade the attack with no losses. A sub that becomes visible by attacking a naval unit, ran into by a naval unit (ambush), or revealed by ASW sweep will block movement like any other naval unit unit. Because it is a sub it may only be attacked by up to two (2) air units that have not moved or attacked a unit, and by any adjacent naval units that have not moved or attacked.
    - Sub evade base probability - BB's - 60, DD's - 40 FTR's - 65, TAC's - 50, CV's, SB's - 45. Evade chance is raised by 10 for Rough Seas. Each sub tech level the evade chance is raised by 8. Evade chance is lowered by 8 for each enemy ASW and 6 for each radar tech level.
    - Subs that use the swap function will be invisible after the swap.
  29. Air Units railed can be placed on sentry 'Zzz' by using Right-click at the end of their movement.



30. When Turkey is invaded by Axis forces, Russia will go on a war footing once an Axis unit enters Turkey.
31. Added some changes to technology for naval units. Subs get +1 anti aircraft at submarine tech 2 and 6 and DD, BB + transport get +1 anti aircraft at surface ships tech 5. CV's and BB's receive +1 Survivability against sub attacks.
32. Italy will receive extra production while neutral or Port Said is captured by Axis.
  - The extra production is set to 4 PP's and is modified by war effort. Italians will receive a +5 Max Morale boost if Athens is Axis controlled. Italy will receive a +5 Max morale boost if Port Said is Axis controlled.
33. Calais will convert to a fortress in 1943 as part of the Atlantic Wall. The fortress captured by Allied forces will revert back to a rail depot.
34. 1944 scenario was updated so that the Combat Operations event named Bagration is now controlled through hex locations instead of automatically trigger at the start of 1944 scenario.
35. Unit setup was changed for Libya, Sardinia, Egypt, Holland and Belgium for 1939 and 1940 scenarios. The changes for Sardinia required unit relocation for later scenarios.
36. The Sea transportation loops in the South Atlantic were moved North from the bottom edge of the map.
37. Starting in 1943 and beyond, the first time Allied forces enter a Germany core hex, 6 German Volkstrum GAR's will be placed in the forcepool.
38. Destroyer build time reduced to 5 turns.
39. Expanded spawn area of Northern convoy. Northern convoy Max raised to 100. Central convoy Max lowered to 100.
40. Air units that use rail can be placed on Sentry ('Zzz') using Right-click.
41. Raised research cost for ASW tech and Submarines tech to 25. Raised research cost for Dog Fight to 35, Close Air Support to 30 Dogfight Tech changed. Swapped level 2 and 3 so +1 SURV comes tech 2, +1 Air Combat tech 3. Moved 1 Air Combat from level 5 to level 6. Added Tactical Bombers to Close Air Support to level 6.
42. Sub units cost raised to 55 PP's.
43. Spotting range is updated at beginning of the turn when weather impacts changes to the spotting range.
44. Set up simple player handicap system.
  - Active when playing: HotSeat, PBEM, or TCP/IP games.
  - The advantage buttons on the main menu selection screen will allow one player to receive a handicap of ! additional PP's per turn while the opponent plays at the 'Even' at game values.
  - The PP's can be ! increased due to War Effort. Each side can receive extra PP's per turn depending upon the level ! selected. Minor will receive 4 PP's, Moderate will receive 8 PP's, and Large will receive 16 PP's.
  - The amount is divided amongst the Major powers on the side given the handicap.
    - **Minor bonus** of 4, Germany bonus 3, Italy bonus 1. Allies given handicap, UK Bonus 1, France / USA bonus 1, USSR bonus 2.
    - **Moderate bonus** of 8, Germany 6, Italy 2, Allies handicap bonus UK 2, France / USA 2, USSR 4.
    - **Large bonus** of 16, Germany 12, Italy 4, Allies handicap bonus UK 4, France / USA 4, USSR 8.
  - The level of handicap can be checked in Statistics.
45. Fixed the bug with the missing spotting of enemy units that attacked. Spotting now works so you see the BEST at the start of this turn and learn of as turn spotting.
46. Fixed weather overlay so you can't see the upcoming weather. Overlay is temporarily turned off just before the weather for next turn is calculated.
47. Added rail depot value for Italian surrender cities. Current value is 2. That means 2 rail depots is equal to 1 city. Value of 1 is like it was before. Value of 4+ means rail depots won't count.
48. Allies now suffer morale loss if Belgium is taken in 2 turns. If value is set to 0 then you don't get a

bonus for a two turn conquest.

- MORALE\_LOSS\_TWO\_TURN\_BELGIUM 10 /\* Morale loss to Allied units in France if Belgium falls on the turn after Belgium was attacked \*/
- 47. Rail depots, oilfields and mines now provide supply level 1 if not bombarded below 2 steps. These hexes usually had quite a bit of supplies due to their value. Now it also makes some sense bombarding them because you can deprive them of supply capability by dropping the damage down to red level.
- 49. German III Panzergrenadierkorps and Grenzschutz Kommando 2 swapped in the 1939 scenario. This makes it possible to rail a mech to the west on turn 1. That makes turn 2 blitz easier to accomplish.
- 50. Set the evasion values to the following
  - SUB\_EVADE\_CHANCE\_BATTLESHIP 65 /\* Base percent chance the sub can evade attacks from a battleship unit \*/
  - SUB\_EVADE\_CHANCE\_CARRIER 50 /\* Base percent chance the sub can evade attacks from a carrier unit \*/
  - SUB\_EVADE\_CHANCE\_DESTROYER 45 /\* Base percent chance the sub can evade attacks from a destroyer unit \*/
  - SUB\_EVADE\_CHANCE\_FIGHTER 65 /\* Base percent chance the sub can evade attacks from a fighter unit \*/
  - SUB\_EVADE\_CHANCE\_TAC\_BOMBER 55 /\* Base percent chance the sub can evade attacks from a tactical bomber unit \*/
  - SUB\_EVADE\_CHANCE\_STRAT\_BOMBER 50 /\* Base percent chance the sub can evade attacks from a strategic bomber unit \*/
- 51. Set the evasion and sweep tech adjustments for radar to the following
  - SUB\_EVADE\_CHANCE\_REDUCTION\_RADAR 5 /\* Reduced percent chance per Radar tech level \*/
  - SWEEP\_CHANCE\_INCREASE\_RADAR 5 /\* Increased percent chance per Radar tech level \*/
- 52. Added unit XP when sub evades a battle
  - NAVAL\_VS\_SUB\_EVASION\_ATTACK\_XP 3
  - SUB\_EVASION\_VS\_NAVAL\_DEFENSE\_XP 3
  - AIR\_VS\_SUB\_EVASION\_ATTACK\_XP 2