

WAR IN THE WEST

EDITOR'S MANUAL



EPILEPSY WARNING

PLEASE READ THIS NOTICE BEFORE PLAYING THIS GAME OR BEFORE ALLOWING YOUR CHILDREN TO PLAY.

Certain individuals may experience epileptic seizures or loss of consciousness when subjected to strong, flashing lights for long periods of time. Such individuals may therefore experience a seizure while operating computer or video games. This can also affect individuals who have no prior medical record of epilepsy or have never previously experienced a seizure.

If you or any family member has ever experienced epilepsy symptoms (seizures or loss of consciousness) after exposure to flashing lights, please consult your doctor before playing this game.

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PRECAUTIONS DURING USE:

- Do not sit too close to the monitor.
- Sit as far as comfortably possible.
- Use as small a monitor as possible.
- Do not play when tired or short on sleep.
- Take care that there is sufficient lighting in the room.
- Be sure to take a break of 10-15 minutes every hour.

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1. INTRODUCTION

1.1. GENERAL

This manual provides an in-depth look at the game editor that is included with *Gary Grigsby's War in the West* (GGWITW). The official scenarios that are included with the game were created using this system.

The document starts with an overview of the editor to help get you started. It then describes how to make the various types of scenarios. There is an in-depth look at the generic data base and the map hex editor provided in the game and finally a look at some of the possibilities for modding the appearance of the game. There are appendices that show the editor hot keys, the lists of attributes that can be modified via the various editor tabs and a list of links to web pages that contain useful historical data for scenario development.

In addition to the information found in this manual the *Gary Grigsby's War in the West* forum at www.matrixgames.com is an excellent source of information and the best place to ask questions about the editor and to share tips and techniques with other scenario designers.

1.2. CONVENTIONS USED IN THIS MANUAL

All mouse clicks described in this manual are left clicks unless stated otherwise in the text. Notes, tips, and reminders are included throughout the manual; they are highlighted in this text.

The term 'slot' refers to a numbered position in one of the data sets.

NOTE

When using quotation marks in the game editor, use single quotes (') instead of double quotes ("). For example, use 'Grossdeutschland' instead of "Grossdeutschland".

1.3. PLAY THE GAME – THEN DESIGN

Understanding the GGWITW game system is very important. A thorough knowledge of game play will make it much easier to understand how to design a scenario. It is highly recommended that you learn how to play the game before you dive into the game editor as a strong foundation in game play will save you lots of time and energy when it comes to designing new scenarios.

2. THE EDITOR

2.1. CAUTION—BACK-UP YOUR FILES! ALWAYS!

IMPORTANT NOTE

When using the editor it is very easy to make mistakes and there is no undo function. Always back up the stock GGWITW scenario and generic data files before making any changes to them.

2.2. LAUNCHING THE GAME EDITOR

To access the editor, launch GGWITW. When the main game menu screen appears, click on the Editor Button in the lower right-hand corner. The Editor menu screen is shown below:

Load Scenario: Selecting the Load Scenario tab will take you to the standard scenario list screen used for playing the game. Select the scenario you wish to view in the editor and then click on the load button.



Save Scenario: The Save Scenario tab is activated once you open a scenario. Use this tab to save any changes you have made to the scenario file. Failure to do so will result in the loss of all changes you have made since the last save. There is no 'Save As' function so activating a save will overwrite the loaded file.

Load Generic Data: Selecting the Load Generic Data tab will cause the generic data files to be loaded into the editor.

Save Generic Data: The Save Generic Data tab is activated once you load the generic data files. Use this tab to save any changes you have made to the generic data. Failure to do so will result in the loss of all changes you have made since the last save.

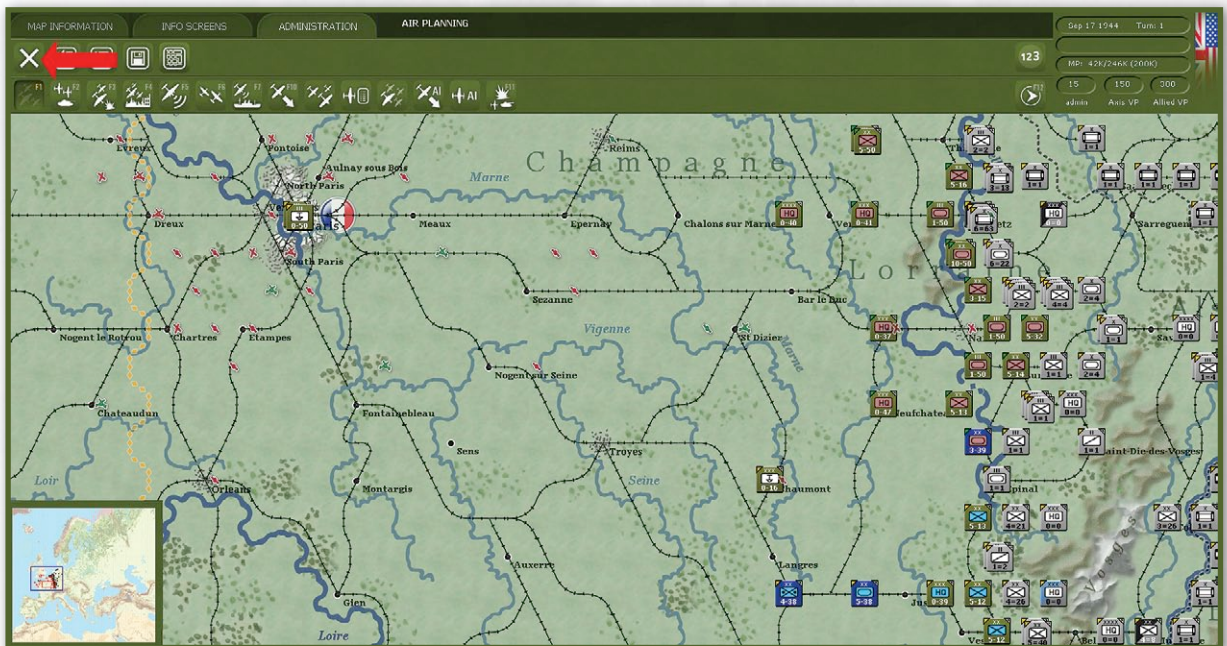
Go To The Map: The Go To The Map tab is activated once you load either a scenario or the generic data. Clicking on the tab will take you to the game map a number of editing functions are accessed via the map.

Close: The Close tab is activated once you load either a scenario or the generic data. Use this tab to close any open files without exiting the editor program. Closing the editor without saving will result in the loss of any changes.

2.3. EDITOR TABS

Open the editor and load a scenario. Once the scenario has loaded, left click on the X in the upper left corner of the game screen to look at the tabs in the editor.

Editor Tab Overview: The GGWITW Editor has eleven tabs: Main, Units, Air Groups, Locations, Leaders, TOE(OB), Ground Elem, Aircraft, Device, Nat/Weather and CSV. The important tabs used in building a small map scenario are the Main, Units & Air Groups tabs and



Main

Units

Air Groups

Locations

Leaders

TOE(OB)

Ground Elem

Aircraft

Device

Nat/Weather

CSV

possibly the Locations tab if you are adding or removing Air Bases, Depots and Temporary Ports. The other tabs are typically only used if you need to create something that currently doesn't exist in the data base, or for some reason, you decide to modify an item that already exists in the game. In essence, each of these tabs is a mini-editor for a specific data set.

Main Tab: The Main tab is used to define the conditions for a scenario. It is here that the scenario designer establishes the following:

- Scenario Name (this is by default the scenario filename)
- Start date and scenario length
- Map dimensions for the playable area
- Admin points available at start and per turn
- Score modifications for each side
- Victory conditions
- Unit rebuild capability
- AI Attack Stance
- Number of disabled men available for each side at start
- Pilot Quality
- Pilot Pools
- Production percentages for each side
- Amphibious and Airborne preparation
- Available MULBERRY Harbours
- Designate surrendered countries

The data entered and saved in the Main tab is scenario specific; Main tab data only affects the scenario for which it was entered.

Units Tab: This tab is used to create the specific land units (HQs of all types, corps, divisions, brigades, regiments, battalions, air bases, etc.) that will be present in your scenario. In the Units tab you can create a unit by naming it, assigning it a TOE(OB), and defining its strength and logistical status. In addition, you can place the unit on the game map or assign it a turn and location to appear as reinforcement or withdraw. This is a scenario specific data file; changes made here do not affect any other scenario.

Air Groups Tab: This tab is used to build all the air groups that will be present in your scenario. An air group can be any one of the following organizations: Gruppe, Staffel, Schwarm, Group, Squadron, Flight,

Section, Air Army, Air Corps, Air Division, Air Regiment, or Air Battalion. This is a scenario specific data file. This is a scenario specific data file; changes made here do not affect any other scenario.

Locations Tab: This tab lists all the cities and towns that are represented in the game. Each city or town can be assigned Factories, Air Bases and their details; Depots and their details; Supplies, Fuel, Oil, Resources, and linked antiaircraft units. This is a scenario specific data file; changes made here do not affect any other scenario.

Leaders Tab: This tab lists all the leaders that are represented in the game. The list of available leaders is quite extensive but if you find someone is missing, this is the place to add them in. This is a generic data file. There are two ways to edit this file. If you want the changes to be implemented in every scenario then load the generic data files, make your additions/changes/deletions, then save the generic data files. If you want the changes to only affect a single scenario, then open that scenario, make your additions/changes/deletions, set the Lock Generic Data function to YES, and then save the scenario file.

TOE(OB) Tab: This tab lists all the tables of organization (orders of battle) that are available in the game. A TOE(OB) is a list of all the ground elements that exist within a given organization. Examples of organizations are Air and Land HQs, Corps, divisions, brigades, regiments, battalions, and air bases. Using this tab you can modify existing TOE(OB)s or create your own. If you want the changes to be implemented in every scenario then load the generic data files, make your additions/changes/deletions, then save the generic data files. If you want the changes to only affect a single scenario, then open that scenario, make your additions/changes/deletions, set the Lock Generic Data function to YES, and then save the scenario file.

Ground Elem Tab: This tab lists all the ground elements in the game. Ground elements represent individual weapons, vehicles, and squads. These are the basic building blocks for TOE(OB)s. If you want the changes to be implemented in every scenario then load the generic data files, make your additions/changes/deletions, then save the generic data files. If you want

the changes to only affect a single scenario, then open that scenario, make your additions/changes/deletions, set the Lock Generic Data function to YES, and then save the scenario file.

Aircraft Tab: This tab lists all the aircraft that are represented in the game. The list of available aircraft is quite extensive but if you find a type is missing, use the aircraft tab to add them in. If you want the changes to be implemented in every scenario then load the generic data files, make your additions/changes/deletions, then save the generic data files. If you want the changes to only affect a single scenario, then open that scenario, make your additions/changes/deletions, set the Lock Generic Data function to YES, and then save the scenario file.

Device Tab: This tab lists all the devices that are represented in the game. A device is an individual weapon, piece of equipment, aircraft part, etc. Devices are the basic building blocks for making a ground element or aircraft. If you want the changes to be implemented in every scenario then load the generic data files, make your additions/changes/deletions, then save the generic data files. If you want the changes to only affect a single scenario, then open that scenario, make your additions/changes/deletions, set the Lock Generic Data function to YES, and then save the scenario file.

Nat/Weather Tab: This is a toggleable tab that switches between the list of the national morale levels of the nations that are represented in the game or provides access to modify weather settings. You toggle within the tab by clicking on EDIT WEATHER EFFECTS or EDIT NATIONS. If you want the changes to only affect a single scenario, then open that scenario, make your additions/changes/deletions, set the Lock Generic Data function to YES, and then save the scenario file.

CSV Tab: There are nine .csv files that can be modified by the scenario designer. These files contain a large amount of information that is not displayed in tabs listed above. Using the CSV tab, you can export the .csv files from a specific scenario, manipulate them, and then import them back into the scenario. The nine modifiable .csv files are as follows:

- Units
- OB Types
- Cities
- Leaders
- Air Groups
- Aircraft
- Ground Elements
- Devices
- MAP Text

3. USING THE EDITOR AND SCENARIO DESIGN

You don't need any programming knowledge to use the GGWITW Editor. Many people start using the Editor simply to amend or adjust data in an existing scenario. In addition the Editor provides a good tool for looking at the data within a scenario from a different perspective. For many people tinkering with an existing scenario is just a step on the journey to designing your own scenario.

3.1. TYPES OF SCENARIOS

There are three ways to categorize the types of scenarios you can create with the editor; by subject matter, size of the map, and/or the amount of data

required to be inputted. By subject matter they can be either historically-based or "What if?" scenarios; e.g. what if the Allies had invaded at the Pas de Calais? Deciding on the subject matter helps you to make the necessary decisions about whether to build a campaign game or a smaller non-campaign scenario. From this decision you can then decide on the size of the map, the number of turns to play, and the amount of data that will be required for input.

3.1.1. NON-CAMPAIGN SCENARIOS

Non-campaign scenarios are designed for fast action and quick play. They typically deal with either a single

battle (e.g. Operation Husky), or a small set of connected battles that have been extracted from a larger campaign (e.g. Battleground Italy). These scenarios have a limited scope, a limited number of turns, and generally use only a small portion of the game map. In this type of scenario, manpower and production will have a smaller impact on the outcome given the shorter time limits. Importantly they have editable victory conditions.

3.1.2. CAMPAIGN SCENARIOS

Campaign scenarios are designed to provide the player the maximum amount of operational control over an extended period of time. Campaign scenarios usually include a large portion—if not all—of the game map and will use 100% of Manpower and Production in the game. The victory conditions for campaigns are hard coded and cannot be changed in the editor.

3.2. HISTORICAL RESEARCH CHECKLIST

Whilst amending existing scenarios is the easiest way to start when you choose to create a scenario from scratch it is well worth investing in a little research before starting.

- What area of the game map is to be used?
- Given the chosen map area, what is the list of units that will be involved in the scenario?
- What is the approximate strength and disposition of ground forces?
- What is the approximate strength and disposition of air forces?

REMEMBER

All the data you need isn't going to be available. In some instances you are going to have to make some intelligent guesses in order to complete your historical data set. You are also going to have to make decisions where the time and space of the game does not coincide with history. For example when units arrive 3 1/2 days apart and are less than 10 miles distance do you have them arriving in the same hex at the same time or on sequential turns in different hexes? The change on the scenario can be quite significant.

- Who are the leaders?
- What units arrive during the game as reinforcements? Where do they arrive and when?
- What are the weather conditions?
- Which player side should go first? Axis or Allied?
- Who won the battle/campaign and why?

See Appendix J: Web Links for a list of excellent on-line historical resources that will help you in the search of data for your scenario.

3.3. SCENARIO MAP SIZE

GGWITW uses a proportion of an extensive map that encompasses Europe and N Africa and was created with a view to future game releases. The GGWITW Editor is only able to use hexes NW 51,115 to SE is 208,345 or a smaller portion within those limits. Selecting the map area all depends on what you are trying to achieve with your scenario. When using a portion of the map it is best to keep a few questions in mind when deciding on the exact dimensions. Where are the rail lines? Will the on-map rail system allow supplies and reinforcements to flow to the front lines historically? Where are the towns and cities that are important to your scenario?

3.4. SCENARIO LENGTH

A scenario can last one week or multiple years. If you are designing a small historical scenario, consider adding an additional week or two to the total length of the scenario. The mere act of playing your scenario can create situations where the player(s) may want that little extra time to see how things play out. Adding an additional turn or two can enhance the player's understanding of a battle or campaign with regards to the complexities of time and space.

3.5. SCENARIO VICTORY CONDITIONS

Victory conditions for non-campaign scenarios are based on control of victory locations, usually specific town, city or urban hexes for each side, and cumulative losses in men, guns, AFVs and aircraft. Victory points for control of victory locations are awarded each player-

turn and there is also a separate victory point award for controlling victory locations at the end of the scenario. Victory locations can be applicable to both sides or be specific to one side only.

Victory point locations can be displayed by selecting the Toggle Victory Locations button in the map information menu tab. Red flags are Allied VP locations, Grey flags are Axis VP locations, and grey and red flags are VP locations for both sides. Losses are based on the number of men, guns, AFV or aircraft that must be destroyed for the opposing side to gain one victory point. This base number for losses can be further modified for each side by a certain percentage. For example, the scenario may be set up so that each player will “earn” 1 VP for each 1,000 men lost by the other player, but if the

Allied player has a twenty percent modifier, the Axis will not gain a victory point until 5,000 men have been lost. Victory levels for non-campaign scenarios are based on the ratio of the side with the most points to the side with the least points. This ratio is shown on the screen along with either an Axis or Allied VP Advantage and the number (to one decimal place) or “No significant VP advantage” if the ratio is less than 1.1.

Victory levels are as follows:

- Decisive Victory – ratio greater than or equal to 5.0
- Major Victory – ratio less than 5.0 but greater than or equal to 2.0
- Minor Victory – ratio less than 2.0 but greater than or equal to 1.1
- Draw – ratio less than 1.1

4. CREATING A NEW SCENARIO

4.1. CREATING THE SCENARIO DESCRIPTION

The scenario description is the text that appears on the right hand side of the load scenario screen. It provides the introduction. It is created outside of the editor using a text editing program like Microsoft Notepad. The scen.txt file is size limited so the best way to create it is to open an existing description file and modify it accordingly. If you take up too much space then no text will appear. Though you are free to use any format you choose, this is the one currently used in the GGWITW stock scenarios:

- Scenario Name and dates the scenario begins and ends
- Historical Overview (3-4 lines of text)
- Scenario Overview (6-10 lines of text)
- Scenario Length
- Axis Admin Points per turn
- Allied Admin Point per turn

Optional entries for user-created scenarios include the following:

- Author:
- Version:
- Date:

To create this file for your scenario, it is probably best to open an existing scenario description file. Save it using your new scenario name, and then edit it to suit your needs.

NOTES

1: When you save the scenario description (.txt) file, it must have exactly the same name as your scenario (.scn) file.

2: Your scenario will still load even if you do not have a scenario text file.

3: Scenarios that have the generic data locked will automatically be posted with the phrase, “Scenario is using internal Generic Data”, added to the bottom of the scenario text file.

Here’s what the symbols mean in the .txt file. The double slashes // on the first line are there for any commenting you wish to make about the file. These comments are for you; they are not used—nor required—by the computer. To enter your scenario description text, you must use the following command:

ScenarioText(0,"")

Everything in your scenario description must be added in between the two quotation marks. Your text is wrapped automatically when the file is loaded so no need to worry about that. Use the ~ symbol to start a new line (carriage return). You can use several carriage return symbols in a row if you want more lines between the sections of your text.

4.2. CREATING A NEW SCENARIO FROM SCRATCH

To create a new scenario we start with an existing scenario. We are going to rename it, save it, then change or clear out any data we don't want. Here's how to start.

1. Launch GGWITW and then select the Editor Button.
2. Once the editor loads the Main tab, open any existing scenario file—it does not matter which one. After the scenario load, close the map view by clicking on the 'X' located at the far left of the Administration button toolbar.
3. Now click on the scenario name (e.g. Westwall) which is located in the vicinity of the upper left hand corner of the Main tab screen. Once you've clicked on the name, a pop-up menu will appear. Enter the name that you have decided upon for your new scenario (keep in mind that only the first 30 characters will appear on the Select Scenario list). To accept your new scenario name, click on the check mark on the right side of the pop-up window or press the Enter key on the computer keyboard. The new scenario name should appear in the display field.

NOTE

Remember this scenario name; you will use the exact same name when you create your scenario description .txt file (see Section 4.1. Creating the Scenario Description).

4. Save the scenario.
5. Select the REMOVE UNITS function. This will clear the map of all units so you can start fresh. This occurs in three stages – first on map units, then units attached to cities and finally air groups attached to air bases.

The following sections are presented in a sequence that will produce a new scenario. As you gain experience with the editor and scenario design you will probably develop your own best way of doing things. If it works for you—then feel free to follow your own path for GGWITW scenario development.

4.3. MAIN TAB SETTINGS

Starting Date: Enter the start date of the scenario (month/day/year). Enter the year as using four digits (e.g. 1944 not 44). There are various routines that run on game load, and most of them are based on the date. By setting the wrong date, you can affect these processes. The editor will not accept dates before June 1943 or after December 1945.

NOTE

The way the game engine works is for the Germans to go first. So if the Allies go first, it means the German turn for the first turn of the game will be skipped.

End at Start of Turn: Enter the turn number for the turn you want your scenario to end. The scenario will end at the beginning of this turn.

Main	Units	Air Groups	Locations
Scenario Name: Westwall			
Starting Date:		17 Sep 1944	
End at Start of Turn:		13 (10 Dec 1944)	
Map NW Limit:		51,157	
Map SE Limit:		131,214	
Admin Points:		Axis 3 W Allies 15	
Admin per Turn:		Axis 8 W Allies 8	
Score Mods:		Axis 100 W Allies 120	
Victory Condition:		Short Scenario	
No Unit Rebuild:		No	
Axis Attack:		turns 0 Area 0,0,0	
Allied Attack:		turns 2 Area 105,176,108,182	
Axis Men Disabled:		300000	
W Allies Men Disabled:		U 125000 - O 125000	
Axis Pilot Quality:		65	
W Allies Pilot Quality:		75	
Start amph/para prep:		50	
Mulberries Built:		2	
Lock Generic Data:		No	

Map NW Limit: Enter the x,y coordinates for the hexagon you want to represent the upper left hand (northwest) corner of the playable area of your scenario map. The permitted limit for the NW is 51,115 coordinates since the first column is reserved for off map cities.

Map SE Limit: Enter the x,y coordinates for the hexagon you want to represent the lower right hand (southeast) corner of the playable area of your scenario map. The permitted limit for the SE is 208,345, but the actual play area is one less than the number entered for both the x and y coordinates.

NOTE

When determining the dimensions of your map, consider what rail lines, cities and towns might be important to include in your scenario. Try to centre the map on the area of action.

Admin Points: Enter the number of admin points that each side will start the scenario with.

Admin per Turn: Enter the number of admin points that each side will receive at the start of every turn.

Assigning APs to a small scenario "depends on the situation". For starters, take a look at the stock campaign games to get an idea of what APs are set at. There are several approaches you can take to solving the problem. One is the "fair share" approach and the other the "Managing Scarce Resources" approach. Either approach could be the correct approach--depending on the situation.

DO NOT FORGET

German per turn APs are doubled once there is an Allied controlled hex in German Occupied Europe north of row 215.

In the "fair share" approach, you take whatever the weekly allocation is for each side using a campaign scenario that begins in the same year as your small scenario. For example, if you were doing a scenario covering Op Dragoon during the summer of 1944, look at the 1944 Campaign's starting APs. Determine the

percentage of the campaign scenario front line that your scenario occupies. If your scenario is about 50% of the front then you could allocate to your scenario about 50% of the APs available in the campaign game.

One off-shoot of the fair share approach is the idea of the main effort versus supporting effort. If it can be determined from the historical record that the "only show in town" happened to be in the area represented by your scenario then it is logical to assume that the sector represented in your scenario should/would/could receive more than its "fair share". Likewise, if the sector represented by your scenario was a backwater to other areas, then maybe it should receive less than its "fair share" of APs.

In the "Managing Scarce Resources" approach, maybe you don't even get close to a "fair share". Maybe you get some number of APs—way less than optimal, way less than the "fair share"—that forces the player to make some hard decisions about the use of a small number of APs during the scenario. Keeping the starting APs low prevents a player from dumping all of his lower rated leaders and replacing them. It will also prevent a player from making massive adjustments to support units in the first turn. If you want the player to do this, then you need a higher amount of APs. Another consideration is if you have a large portion of the frontline that is in static mode. Do you want the players to be able to re-activate those fronts quickly or over time? A final consideration is a high number of APs for the Allied, can allow him to form-up many Corps sized units.

Score Mods: Adjusting these entries will change the percent multiplier used to determine the actual number of points awarded for destroying forces from the side in question. For example, if you set Axis to 150 this means the Allied player will receive victory points equal to 150% of the normal scoring system. Increasing or decreasing this value will have the corresponding effect on VPs earned for inflicting losses. At the '100' default setting, a loss of 1,000 men, 100 Guns, 10 AFVs, or 5 Aircraft earns the player that inflicted those casualties a single victory point.

Victory Condition: Set the victory condition by selecting one of three choices:

- Short Scenario
- Campaign
- Air Battle

This setting will determine which victory screen will appear at the end of the scenario. Consult the GGWITW Game Manual for more details about the differences between these two screens.

No Unit Rebuild: NO=False; YES=True. So if you want destroyed units to be rebuilt in your scenario select NO. If YES is selected then any destroyed units in your scenario will *not* get rebuilt.

Axis / Allied Attack: If you want the AI to *start* a scenario by attacking in a specific area then you are able to do so using two variables. The first is the number of turns. The second defines the map area, using the Top (NW) and Bottom (SE) Map Limits, within which the AI Units will attack.

Axis / W Allies Men Disabled: Enter the numbers for Axis and Allied (a number from 0 to 9,000,000+). The Axis have one pool whilst the Allied Disabled Pool is split between the US and Other Allied Nations. The Axis player receives all disabled from Axis Allies. A percentage of disabled men will be returned to units every turn of the game. The Men Disabled pool at the start of your scenario is a representation of casualties from battles that occurred prior to the start of your scenario. A good rule-of-thumb is to look at your starting OOB manpower numbers and use some small percentage of the start strength for each side.

Entering a value for Men Disabled is mainly a feature for long, large map, campaign scenarios. If your scenario involves only a small area of the map (100 x100 miles square) and takes place in a short period of time (10 turn or less) you could quickly enter a value of zero for both the Axis and Allied Men Disabled; it will have very little (miniscule) impact on who wins or loses the scenario.

NOTE

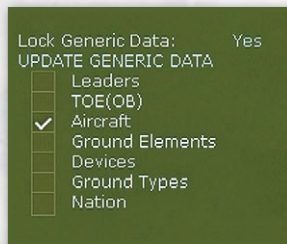
Be aware that victory points will be awarded for the number of men in the disabled pool. This means that a scenario that includes disabled men will start with victory points already awarded to one side or both.

Axis / W Allies Pilot Quality: Enter the number for pilot quality of each side. The higher the number entered, the better the pilot quality. You can assign

whatever numbers you prefer but the best rule-of-thumb is to use the values in the graphs accessed via the Nat/Weather tab.

Amph/para Prep at Start: If you want to allow a player to retarget his amphibious and airborne units at the start of a scenario and retain Prep Pts when doing so then add the number of Prep Pts to retained.

Mulberries Built: The game is hardcoded to allow two Mulberry Harbours to be built. This value will automatically increase if you build a Mulberry Harbour via the City Detail Screen.



Lock Generic Data:

You can change or add to the values contained within the generic data while in scenario design mode. However, in order for these changes and additions to be retained you must lock the generic

data. Additionally, these locked generic data changes will only affect the scenario that they are locked into; they will not influence any other scenario in GGWITW.

IMPORTANT

Generic Data changes that are made inside a scenario file and have the Lock Generic Data function set to YES will only affect that single scenario. If you do not set the Lock Generic Data function to YES then you will lose any changes you made to generic data in that single scenario.

Production Usage: This setting is for non-full map scenarios. It is the percentage of the total manpower and production that will be available to the players in your scenario. Enter the desired percentages for the following three groups:

- Axis
- W Allies

For Production Usage, set a % portion of the full campaign production that is applicable in your scenario. This setting is useful when you are doing smaller-sized scenarios that maybe only deal with a single army group and you don't want an entire theatre's worth of replacements going to a single army group. A rule-of-thumb is to use a percentage

PRODUCTION USAGE

Axis:	40
W Allies:	70

SURRENDER FLAGS

Germany:	No
Finland:	Yes
Italy:	Yes
Rumania:	Yes
Hungary:	No
Slovakia:	No
Bulgaria:	Yes
Soviet Union:	No

main or supporting efforts for either side.

Surrender Flags: Left click on Yes/No to toggle the correct entry. The following is a list of historical surrender dates. If your scenario starts on or after these dates then toggle 'Yes' for the appropriate countries.

- Germany – 8 May 1945
- Finland – 19 Sep 1944
- Italy – 8 Sep 1943
- Rumania – 23 Aug 1944
- Hungary – 1 Apr 1945
- Slovakia – 8 May 1945
- Bulgaria – 16 Sep 1944
- Soviet Union – No surrender

PILOT POOLS

Germany:	70	Czech:	10
Italy:	0	Belgium:	5
Rumania:	0	Netherlands:	5
Hungary:	0	Poland:	20
Slovakia:	0	USA:	420
Bulgaria:	0	Britain:	175
		Greece:	5
		Norway:	5
		Yugoslavia:	5
		Canada:	25
		India:	5
		Australia:	15
		Free French:	10
		South Africa:	5
		WA Italy:	5
		Brazil:	5
		New Zealand:	15
		Morocco:	5
		Denmark:	5

Pilot Pools: Enter the number of pilots for each nation in the game.

4.4. BUILDING THE UNITS LIST

4.4.1. GENERAL

The Units tab allows you to view all of the units in the game. It contains both on-map and off-map units (divisions,

brigades, HQ's, air units), and also includes support units (artillery, construction battalions, etc.). The only units not included are the programmatically generated Allied reinforcements of the first six months (Jul-Dec 1941).

The unit tab allows you to build the ground forces for both sides for your scenario's order of battle. Units are built from ground elements which are built using devices. For example, in the Bulge to the Rhine scenario, the 1st SS Panzer Division is a unit. It occupies 'slot' 0234 and contains 31 ground elements, the first of which is the Motorized Rifle Squad (+). A Motorized Rifle Squad (+) (Ground Element Slot 0096) contains seven devices; the first of which is the 7.92mm Kar 98k Rifle.

To create a new unit, you start on an empty slot and then click on the 'Type' field and this will bring up your OB Screen. This displays all of the OB templates in the game. You then select your template and you come back to this screen. You then rename the unit and are able to complete the other functions as described in Section 4.8.5 below.

In the Unit tab, you can create as many units as you have open slots available--and there are just over 16,000 of them. You could make 500 SS Panzer Divisions if you wanted to and could name them 102nd SS 'Marshall' Panzer Division—or whatever you desire.

4.4.2. HOW TO DESIGN A UNIT LIST

Before we start poking units into slots, let's put some thought into how to design a unit list. The convention used by the developers in GGWITW is to enter the units for Player 1 (Axis side) followed by the units of Player 2 (Allied side) and finally those units in the EF Box. The sides are generally ordered by size of unit, type and name. What you choose is what you find most logical and/or most useful. For example:

- **Technique 1:** Place your HQ units in slots in the sequence they appear in whatever historical reference you are using.

NOTE

The bottom-line is you can enter units in any sequence you want. The method described above is a way to get you started. You will develop your own techniques as you become more familiar with the editor and the .csv files.

- **Technique 2:** Place you HQs in slots from top to bottom as they will appear on the map. In other words, list your Northern most HQ for the Axis side at the top of the unit list and then work your way down to the Southernmost Axis HQ. Repeat the process for the Allied side.

Enter all the units under the first HQ and then the next, and so on. You can always go back later and insert or delete units.

4.4.3. UNITS TAB EDITING FUNCTIONS



Insert: To insert a new slot, click on the location where you want the new slot then click on the INSERT command. All slots (and units) at and below the insertion point will be moved down one slot. All HQ assignments will be automatically updated.

Delete: To delete a unit or slot, click on the slot number to be deleted and then click on the DELETE command. All unit data and the slot will be deleted.

Clear: This function will remove all the unit data but it will not delete the slot.

CAUTION

THERE IS NO UN-DO BUTTON so think twice before you delete or clear a slot and/or the unit it contains.

Cut: This function allows you to cut and paste a unit from one location to another. Use the insert function to open a slot at the unit's new location, then cut and paste it into the empty slot. When you use the CUT function a 'X' will appear between the slot number and the unit name.

Copy: This function allows you to copy and paste the copy of a unit to another slot. Use the insert function first to open a slot for the copied unit's new location, then copy and paste it into the empty slot. When you use the COPY function a 'C' will appear between the slot number and the unit name.

Paste: This function allows you to paste a cut or copied unit into an empty slot.

Prev Unit: This function allows you to cycle backwards through the units list.

Next Unit: This function allows you to cycle forward through the unit list.

Next HQ: This function allows you to jump forward to the next headquarters unit.

Find: This function allows you to find units in the list by searching using a text string.

Next: This function allows you to move on to the next item that matches the text string that you are searching for.

TIP

The FIND / NEXT function combination appears in a number of instances within the Editor. Often when a text string matches then a PICK function appears to allow you to make the selection. If you do not want to select anything then close the window with X in the top right corner.

4.4.4. TEXT COLOUR CODING

The following lists the meanings of the various text colours used on the Unit Tab:

Red: Selected unit.

White: Non-selected unit with zero delay i.e. it is in the scenario. A unit with a *** suffix is on the map, those without the *** are support units.

00022)	14th Army
00023)	5th Panzer Army ***
00024)	6th SS Panzer Army
00025)	1st Fallschirm Army ***
00026)	Ligurian (Zangen) Army ***
00027)	1st Panzer Army

Green: Unit with a delay less than the length of the scenario.

Blue: Unit with a delay more than the length of scenario.

Black: Unit is outside the scenario's playable map area.

Dark Yellow: Unit is in EF Box.

4.4.5. HOW TO CREATE A UNIT

What does it mean to create a unit? What is a unit's strength, experience, morale, levels of supply, location, and special skills? Who are they commanded by? Who are the subordinate units?

Left click on the numbered slot from the PICK UNIT list box.

Click on Unit: and enter the name of the unit in the pop-up window, then close the window.



TIP

It is a good idea to leave at least three to six slots in between corps and/or armies. These slots will be used by the computer if later you decide to break down a division or two into regiments while you are setting up the scenario. If you don't leave slots open (or insert later), the computer will list the regimental breakdowns in the next available slot(s) on the unit list. Though the computer doesn't mind, this lack of slots will "mess up" your nicely organized Unit list.

Unit: Click next to Unit to add the designation of the unit e.g. 1st. The majority of the name is set by the selected TOE(OB) e.g. SS Panzer Division.

HHQ: Click on HHQ to select the HHQ by selecting from the list that filters on the right hand side. If you use the FIND/NEXT functionality when the HHQ you want is selected then click PICK.

TIP

If a HHQ is already selected then clicking on the NAME (not the slot number) or ATTACHED UNITS is an easy way of navigating through the OOB.

TOE(OB): Click on the "0" to the right of TOE(OB); then navigate through the PICK TOE(OB) list box to find the appropriate unit type. Click on the unit type to select it and you will be returned to the Units tab.

TIP

The first thing you should do is create the high command headquarters unit for both sides (normally these are the O.K.W. and SHAEF HQ units) and then place them on the game map. Taking this action will cause the map to centre on the scenario map area when you try to place subordinate units on the map. If you don't place the high command headquarters on the map, then the map will always jump to the upper left hand corner when you attempt to place a unit.

NOTE

You MUST have the O.K.W. and SHAEF HQ units in every scenario. In addition you must also have a Level 1 Air HQ (e.g. OKL) if Air Directives are to function correctly. Be careful changing HQ unit names as they are used by the AI.

MOTORIZED / NON-MOTORIZED: Click on the button that says 'MOTORIZED' or 'NON-MOTORIZED' to change between four different levels of motorization:

- 0 - NOT MOTORIZED - No additional trucks.
- 1 - MOTORIZED - Trucks as standard.
- 2 - MOTORIZED (Temp 1 Turn). Unit has additional trucks but will hand them back to the pool after 1 turn.
- 3 - MOTORIZED (Temp Multiple Turns). Unit has additional trucks and will retain the trucks until de-motorized by a player.

The precise impact of the motorization state that results is dependent on the TOE of the unit. This is because the level of Motorization that a particular OB is able to attain is set in the OB Tab. For example a German Inf Div will only receive additional trucks for supply whilst a British Infantry Div can become Truck mounted. The level of Motorization will affect the supply numbers.

HQ Type: If the unit you are building is a headquarters, click on the "0" to the right of HQ Type: and enter the appropriate number:

- 0 - None
- 1 - HighCom (High Command)
- 2 - AG/Front (Army Group/Front)
- 3 - Army
- 4 - Corps
- 5 - AB (Air Base)
- 6 - Const (Construction)
- 7 - Amphib (Amphibious)

Nation: Click on the "None" to the right of Nation: then navigate through the PICK NATIONALITY list box to find the appropriate nationality for your unit. Click on the nationality to select it and you will be returned to the Units Tab.

Player: Click on the 'None' to the right of Player: and enter the number 1 for Axis or 2 for Allied. Select the check mark to accept your entry or the 'X' to return to the Unit Tab.

Leader: Only HQ units have leaders assigned to them. To assign a leader to an HQ, click on the Leader: label. Scroll through the list of available leaders located in the panel on the right side of the screen. Select the leader by clicking on the name and then clicking on the PICK label.

NOTE

An HQ unit with no leader assigned to it in the scenario data will have a leader automatically assigned to it at the start of the scenario or when the HQ arrives on the game map.

Loc: If a unit is to start the scenario on the game map you can set its starting location by clicking on the '0,0' to the right of the Loc: label. This will take you to the game map. Navigate to the intended starting hex of the unit and left click on it. This will automatically record the x,y coordinates of the hex and return you to the Units tab. Support units should be set to 0,0. They will be attached to the HQ (or ground unit) they report to in the HHQ field. Units may also be moved when using the Go To The Map button. Air Base Units and AA Units can be attached to specific City locations.

NOTES

1: Do not place support units on the game map; assign them directly to a HQ or to combat regiments, brigades, divisions or corps. Multi-Role Units can be set as either on or off map. It is recommended that MRUs arrive as On Map Units.

2: In small scenarios, the high command headquarters can be located outside the playable area. They can be positioned outside of the playable map area and will still function, with support units moving back to them automatically and support units being able to be assigned from them as if they were located in the playable map area.

3: If you go to the game map and don't see the unit you just placed, return to the Unit Tab and make sure the delay setting for the unit equals '0'.

4: If you copy a unit that has already been placed on the map, remember that you are also copying its x,y location. A maximum of five on-map units can be placed in the same arrival hex. Six or more units will cause a displacement of the game map.

Attaching a Unit to a City Location: Air Base Units and some AA Units are linked to Locations. It is important that these are set up correctly. To attach an Air Base or AA Unit to a Location click on the text to the right of the HQ Type: label. This will take you to a list of available locations. Click FIND on the locations tab and enter the name of the location to which you wish to attach the Air Base unit and click the tick box or press return. At the top of the left of the screen will be the message ATTACH 'Air Base Unit Name' to 'Location Name'. Click this text to attach the Air Base Unit to that Location. Setting the size of the Air Base is done on the locations tab and will be covered later.

Delay: If the unit is not available at the start of the scenario, enter the turn it will arrive. If you want a unit on the map at the start of the scenario enter '0'. Any unit with a delay number of 250 or higher means that the unit is inactive and will not appear in the game—not even as a reinforcement. If you set the delay as 2000 then it will appear in the EF Box. A unit with a delay of 2001 will arrive in the EF Box on Turn 1.

Remember, units that are in use at the start are displayed on the Unit list using white text; delayed units are displayed in green text. The currently selected unit is displayed using red text. A unit that is to start on the map but has not yet been placed there is shown in black text.

Arrival: If a unit's entry on to the game map is delayed (see Delay:), then enter the x,y location of the hex where the unit will appear. In addition to the reinforcement entry method described in section Set Reinforcement Entry Points, there is a system where it is possible to designate a hex for the reinforcement to enter the game at. On the game turn of arrival, a check is done as follows:

- The designated hex must be friendly controlled.
- The hex must be at least three hexes away from enemy units.
- The arriving unit cannot violate the stacking limit upon entry.

If one of these conditions is not true then it will search adjacent hexes to try and find a hex that satisfies the conditions. If none of the six adjacent hexes meets the conditions, then the unit will be reallocated in a way that is similar to the current auto-mobilized Allied armies that don't meet their entry criteria.

If arriving hexes are set to zeros in the editor, then the method described in section Set Reinforcement Entry Points, is used for that unit when it enters the game.

The arriving hexes are shown in the reinforcement screen. If the entry hex for some reason is not "good" it will show the hex the unit will come in at (given the current conditions on the map). In the editor, to clear the arriving hex set the delay to '0' and restore it back if required.

Special: Does the unit you are building have any special capabilities? If so, select the appropriate entry from the six provided:

- 0=None
- 1=Guards
- 2=Axis-Elite
- 3=SS-Elite
- 4=SS-Non-elite
- 5=LW (Luftwaffe)
- 6=LW-elite
- 7=AL-Elite

Morale: Enter the Unit Morale level (10-99). You can assign whatever numbers you prefer but the best rule-of-thumb is to use the values in the graphs accessed via the Nat/Weather tab.

Detection Level: Enter the Unit Detect Level (0-10). Here's a rule of thumb. Front line units should always have a minimum of detection level of five. This is the minimum level for units that are adjacent to the enemy; increase the detection level above five if a unit has been on the front line for some time. Air Bases should always be at detection level five. Scale everything behind the front line below five, and as the distance from the front increases, the detection level should obviously decrease. Here are some considerations for setting Detection Levels:

- Proximity to the front line. The closer a unit is to the front lines the higher its detection level.
- Weeks (turns) located in the same position. The longer a unit remains in the same position the higher its detection level should be.
- Air superiority level. The side with air superiority should enjoy lower detection levels than the opposing side.
- Level of partisan activity. The higher the partisan activity level in an area the higher the detection level of the Axis units located there.

Resupply Unit: If you click on anyone of the resupply components (Sup 0%, Ammo 0%, Fuel 0%, or Veh 0%), you will be presented with a sequence of pop-up windows. Enter the percent of supplies, ammunition, fuel, and vehicles you wish the unit to have. When you are done, click on RESUPPLY UNIT. This will populate the Unit/Need display only fields for Supply, Ammo, Fuel, and Vehicles.

IMPORTANT NOTE

The Resupply Unit entries you make for a unit become the new default settings in the editor. In other words, these settings will be used by the next unit you create and resupply. If you want different percentages applied to different units, then you will need to make new resupply percentage entries.

Current TOE%: This is a display field only. The number to the left of the slash in the display is the Build Ready% entry and the number to the right is the Build Size% entry.

Max TOE%: Enter the maximum percent of the TOE(OB) you wish the unit to be built to. The number entered into this field must be between 50 and 100. To set a unit to 100% of its authorized TOE Strength, set the Build Size%: to 100.

To set actual strength of a unit set the Build Ready%: to 100 or to whatever percent strength historical documents indicate.

Now click on the REBUILD UNIT command.

If you set both settings to 100 then your unit might look like this—100% Ready, 0 Damaged:

IMPORTANT NOTE

The build entries you make for a unit become the new default settings in the editor. In other words, these settings will be used for the next unit you use the REBUILD UNIT command—and all others that follow. If you want different percentages for different units, then you will need to make new Build entries.

Build Exp: Enter the Build Exp(erience) rating. The lower the experience rating of the ground elements in a

unit the lower the chance they have of hitting anything during combat. This number is also used to determine the starting morale level of a unit.

Build Size%: This percent is used to determine the maximum potential number of ground elements that will be present and ready in the unit at the start of the scenario. The actual number of present, ready and damaged ground elements is determined by multiplying the Build Size% by the Build Ready%.

Build Ready%: This percent is used to determine the actual number of ready and damaged ground elements in a unit. The percentage entered here cannot be higher than the percent entered in the Build Size% field.

NOTES

1: A unit that has a Current TOE% that is ~25% or less is considered Unready.

2: Don't build too many damaged ground elements as 25% will be added to the production pool during the first logistics phase of a running scenario.

Build Variation%: Enter the Build Variation% level. This number is used to vary the initial Build Exp and Build Size% for each unit it is applied to. The actual number applied is random and ranges between zero and plus or minus the Build Variation%. For example, a unit with a Build Size% of 90 and a Build Variation% of 5 could rebuild a unit with a set of ready ground elements ranging between 85-95% of the Max TOE.

Rebuild Unit: The Rebuild Unit function at the bottom of the screen allows the player to set a fixed experience and morale level (Build Exp) for the unit, and a fixed percentage of TOE (Build Size) for the unit. Set these two numbers and then click on REBUILD UNIT and the unit will update to these numbers (must be greater than 0 to rebuild). These values can also be set individually; this just gives a quick method to alter all the unit values at once.

NOTE

It is good practice to resupply units after you build them.

Withdrawal Turn: Enter the turn number that you wish for the selected unit to be withdrawn from the game. Once you have accepted the turn number (press the enter key or select the check mark on the pop-up window), the date the unit will be withdrawn will be posted next to this WITHDRAWAL LIST label.

WITHDRAWAL LIST							CLEAR ALL WITHDRAWALS	X
UNIT NAME	NATION	ON TURN	YEAR	MONTH	DAY			
KG v Tettau Infantry Regiment	Germany	3	1944	10	8			
KG Walther Infantry Regiment	Germany	3	1944	10	8			
125th Construction Battalion	Germany	10	1944	11	26			
26th Infantry Division	Germany	13	1944	12	17			
246th Infantry Division	Germany	13	1944	12	17			
251st Infantry Division	Germany	13	1944	12	17			
256th Infantry Division	Germany	13	1944	12	17			
741st Jagdpanzer Battalion	Germany	14	1944	12	24			

Withdrawal List: If you click on the WITHDRAWAL LIST label, you will be presented with a pop-up screen that lists all units in the scenario that have been assigned a withdrawal date/turn. You can click on the unit name of any unit on this list and it will take you to the selected units data screen. You can clear all units by clicking on the CLEAR ALL WITHDRAWALS label.

CAUTION

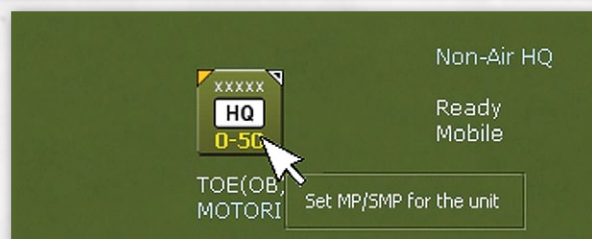
Selecting this command will delete all entries that have been made with regard to the withdrawal of units.

Command Number: Only army group, army, and front HQ are assigned a command number. Command Numbers are assigned and used by the AI. These numbers are hard-coded; do not change them.

Unit Breakdowns/Build-ups: Sometimes a division or corps needs to be broken down into its subordinate parts at the start of a scenario so that it can cover a historical frontage. If you run into this problem, it is best to create the division or corps as a whole and then place it on the map. Once this is done, go to the map, select the unit to be broken down and hit the 'B' key. Your unit is now broken down into three parts that you can place in separate hexes on the map if you wish. More importantly, the unit can be built back up to a division or corps during game play.

Set MP/SMP for the Unit: Normally you should use the Commander's Report to assign movement points

(MP) and strategic movement points (SMP) to large groups of units. However, you can set the MP/SMP for a unit by clicking on the numbers on the unit icon. Two pop-up windows will appear; one for MP and one for SMP. Enter the desired data and hit the Enter key or click on the check mark. About the only time you need



to use this capability is if the unit starts the game frozen; then you will want to set the MP and SMP to zero.

4.5. BUILDING THE AIR GROUPS LIST

4.5.1. GENERAL

The Air Groups tab lists all of the aircraft groups and squadrons that are in the game. This tab allows you to build the air forces for both sides for your scenario's order of battle. There are 4,095 slots available for you to create air groups. Air Groups are built from aircraft which are built using devices.

Pick Air Group: On the right side of the Air Groups tab is the Pick Air Group list. This list includes all the air groups in a scenario. For example, in the Westwall scenario, the I./JG 1 (slot #22) is an air group. It contains 33 ready aircraft (Fw 190A-8s). The Fw 190A-8 with its current loadout is made up of two devices; the first of which is the 20mm Cannon MG151.

Insert: To insert a new slot, click on the location where you want the new slot then click on the INSERT

Main	Units	Air Groups	Locations	Leaders	TOE(OB)	Ground Elem	Aircraft	Device	Nat/Weather	CSV	
ID: 22	I./JG 1						INSERT	CUT			
Aircraft:	Fw 190A-8						DELETE	COPY			
DEV	QTY	DEVICE NAME	FACE								
0032	4	20mm Cannon MG151	Fwd								
0024	2	13mm MG 131	Fwd								
Weapon Set#-1 AUTO							FIND: NEXT	SHAFF	PASTE		
							PICK AIR GROUP				
							0000)				
							0001) Stab/AufklarGr 123				
							0002)				
							0003) 3.(F)/AufklarGr 123				
							0004) 5.(F)/AufklarGr 123				
							0005) 6.(F)/AufklarGr 123				
							0006) 1.(F)/AufklarGr 123				
							0007)				
							0008)				
							0009)				
							0010)				
							0011)				
							0012) Stab/NAGr 6				
							0013) 1./NAGr 6				
							0014) 2./NAGr 6				
							0015)				
							0016) Stab/NAGr 11				
							0017) 1./NAGr 11				
							0018) 2./NAGr 11				
							0019) 3./NAGr 11				
							0020)				
							0021) Stab/JG 1				
							0022) I./JG 1				
							0023) II./JG 1				
							0024) III./JG 1				
							0025)				
							0026) Stab/JG 2				
							0027) I./JG 2				
							0028) II./JG 2				
							0029) III./JG 2				
							0030)				
							0031) Stab/JG 3				
							0032) I./JG 3				
							0033) II./JG 3				
							0034) III./JG 3				
							0035) IV./JG 3				

		Ready:	33
		Reserve:	0
		Damaged:	0
		Max:	68
	Nation:		Germany
	Player:		Axis
	Experience:		68
	Morale:		70
	Delay:		0
Withdraw:		0	
Night Missions:		Day Only	
Type Missions:		FIGHTER	
Type Training:		FIGHTER	
Naval Only:		NO	
Pilots:		68	
Planes:		33	
BUILD GROUP			

command. All slots (and air groups) at and below the insertion point will be moved down one slot.

Delete: To delete an air group or slot, click on the slot number to be deleted and then click on the DELETE command. All air group data and the slot will be deleted.

Clear: This function will remove all the air group data but it will not delete the slot

CAUTION

THERE IS NO UN-DO BUTTON so think twice before you delete or clear a slot and/or the air group it contains.

Cut: This function allows you to cut and paste an air group from one location to another. Use the insert function to open a slot at the air group's new location, then cut and paste it into the empty slot.

Copy: This function allows you to copy and paste the copy of an air group to another slot. Use the insert function first to open a slot for the copied air group's new location, then copy and paste it into the empty slot.

Paste: This function allows you to paste a cut or copied air group into an empty slot.

ID: To create a new air group, you start by selecting an empty slot and then click on the 'ID' field. Enter the Group Name in the pop-up window and select the check mark or press the Enter key.

Aircraft: Air groups are made up of aircraft. The Air Group tab shows the assigned Aircraft in two places. The top (large) description Aircraft: under the ID will take you to the assigned aircraft tab. To assign an aircraft type to an air group click on the data field to the right of the Aircraft: label listed under the Air Base: text as indicated in the image below:

PICK AIRCRAFT

```

0000)
0001) *** GERMANY (1) ***
0002) He 111H-11
0003) Ar 234B-2
0004) He 111H-16/R1
0005) Bf 109E-3
0006) Bf 109E-4B
0007) Bf 109E-7
0008) Bf 109F-2
0009) Bf 109F-4
0010) Bf 109G-14
0011) Bf 109G-2
0012) Bf 109G-6
0013) Bf 109G-4/R3
0014) Bf 109G-6/N
0015) Bf 109K-4
0016) Bf 109G-8
0017) Bf 110C
0018) Bf 110C-4B
0019) Bf 110C-5
0020) Bf 110D-1/R2
0021) Bf 110E-1/U1
0022) Bf 110E-2
0023) Bf 110F-4
0024) Bf 110G-2
0025) Bf 110G-4
0026) Bf 110G-4/R8
0027) Do 17Z-10
0028) Do 17P
0029) Do 17Z-2
0030) Do 215B-1
0031) Do 215B-5
0032) Do 217E-2
0033) Do 217J
0034) Do 217N
0035) Do 335A
0036) Bf 109G-10
0037) Fi 156C
0038) Fw 190A-5
0039) Fw 189A
0040) Fw 190A-4
    
```

Scroll through the list of aircraft and select the type you want to assign to the air group. In our example, we choose the Bf 109F-2.

Air HQ: For air groups to be able to operate they must be assigned to an Air HQ. To accomplish this, click on the Air HQ: text. A screen will appear that lists all the available air bases. Scroll through the list to find the correct Air HQ then click on its slot number to select it.

Air Base: For air groups to be able to operate they must be assigned to an Air Base. To accomplish this, click on the Air Base: text. A screen will appear that lists all the available air bases. Scroll through the list to find the correct

air base then click on its slot number to select it.

Group Size: Assign the air group size by clicking on the text field to the right of the Group Size: label. Select the appropriate group size from the menu of three that is presented. The group size controls the maximum number of aircraft allowed.

Ready: Enter the number of aircraft that are ready in the air group. This entry represents the number of ready aircraft in the air group that are capable of conducting missions.

Reserve: Enter the number of aircraft that are in reserve in the air group. An aircraft assigned to an air group that is categorized as 'unready' will not participate in air missions. Reserve aircraft are not counted against the maximum number of aircraft allowed in a particular air group.

Damaged: Enter the number of aircraft that are damaged in the air group. Damaged aircraft in an air group are unable to conduct missions until they are repaired.

Max: This is the maximum number of ready aircraft that can exist in the air group (although reserve and

damaged aircraft are not counted against this number the maximum number of pilots cannot exceed this value).

Nation: Click on the Nation: text. A screen will appear that lists all the available nations. Scroll through the list to find the correct nation then click on its slot number to select it.

Player: This is an information field only; it is automatically populated when you assign an air group to a nation.

Experience: This is an information field only; it is automatically populated when you run the BUILD AIR GROUPS function as it is influenced by the assigned pilots. If you wish to change Pilot Experience then this is done via the Commander's Report.

Morale: This field automatically populates when you run the BUILD AIR GROUPS function as it is influenced by the assigned pilots. However unlike Experience you can reset the value after the BUILD AIR GROUPS function has been made.

Delay: Input the number of turns to delay the arrival of the air group into the scenario.

Withdraw: Input the turn number the air group will be withdrawn from the scenario.

Night Mission: Click on Day Only , Night Only or Day & Night to toggle whether or not the air group is capable of flying Night Missions.

Type Mission: This is only visible if the aircraft type is a Fighter Bomber. Click on FIGHTER or BOMBER to toggle whether or not the air group will fly as a Fighter or a Bomber Missions.

Type Training: This is only visible if the aircraft type is a Fighter Bomber. Click on FIGHTER or BOMBER to toggle whether or not the air group is trained as a Fighter or a Bomber with the respective bonuses and penalties.

Naval Only: Toggle between YES and NO to restrict the Air Group to flying only Naval Patrol Air Directives.

Pilots: This is an information field only; it is automatically populated when you run the BUILD GROUP function.

Planes: This is an information field only; it is automatically populated when you run the BUILD GROUP function

BUILD GROUP: This is a function button. Press this to set the Air Group with the correct number of pilots. In doing so the Experience and Morale levels will change as the Pilots are assigned.

4.6. SCENARIO AMENDMENTS IN THE LOCATIONS TAB

4.6.1. GENERAL

In most scenarios there is no need to make changes to the Locations tab however there are three instances when you may wish to do so.

Amending Air Base Attributes: As you have already seen Air Base Units are created using the Units tab. However it is in the Locations tab that the size of Air Base and any damage to the Air Base is set. Air Base Unit shows the Slot# of the attached Air Base unit. If the value is 0 then no Air Base is attached. If you wish to attach an Air Base unit then it is best to do it using the process shown via the Units tab. If you wish to remove

an attached Air Base then set the value to 0. Air Base Size sets the size and dictates the map symbol and stacking limits. The size can either be 1, 2 or 3. Air Base Damage allows you to set damage between 0 and 100.

Adding Depots: The easiest way to add a Depot is using the same way as when playing the Game: via the City Detail Screen. However only Type 1 or 2 Depots can be added in this manner. You can also set the Depot Priority in the City Detail Screen. In scenario design never set the priority below 2 as the AI cannot amend supply priorities. In the Locations tab you can also add any type of Depot by setting Depot Type to 1, 2, 3 or 4. Types 2 or 3 must be in a Port location. After creating the depot you can preload it with supplies. This is done via the Freight and Trucks values. Simply click on the number next to the text and add the required amount.

The screenshot shows the 'Locations' tab for the city of Berlin. The interface is divided into several sections:

- Top Bar:** Navigation tabs for Main, Units, Air Groups, Locations (selected), Leaders, TOE(OB), Ground Elem, Aircraft, Device, Nat/Weather, and CSV.
- Location Info:** ID: 2, Name: Berlin, Type: Heavy-Urban.
- Table:** A table with columns FID, NUM, DAM, DELAY, FACTORY, and TYPE. It lists various units and their attributes.

FID	NUM	DAM	DELAY	FACTORY	TYPE
0000	0	0	0		
0000	0	0	0		
0024	10	0	0	Panther G	
0000	0	0	0		
1489	3	36	0	Armaments Production	
0000	0	0	0		
0000	0	0	0		
1483	2	0	0	Vehicle	
0000	0	0	0		
0031	15	0	0	Stug IIIg	
0-92	12	0	0	Ju 87D-5	
0000	0	0	0		
0000	0	0	0		
1481	8	0	0	Railyard	
1482	39	0	0	Manpower	
1488	3	0	0	Resource Production	
0000	0	0	0		
0000	0	0	0		
0000	0	0	0		
1484	35	4	0	Heavy Industry	
- Player/Nation:** Axis, Germany. Population: 39. Location: 139,172.
- Supplies:** 175248. Fuel: 0. Oil: 0. Resource: 160.
- Air Base Unit:** 8032. **Air Base Size:** 2. **Air Base Damage:** 0.
- Hex City ID:** 2. **Depot Type:** 4. **Freight:** 10000000. **Trucks:** 0.
- On map art:** (checkbox)
- MERGE WITH BUILD TEMP PORT:** (checkbox)
- City List:** A scrollable list of cities and their distances from Berlin.

City	Distance
0000	----
0001	---- *** Germany ***
0002	---- Berlin
0003	---- Leipzig
0004	---- Hamburg
0005	---- Danzig
0006	---- Stettin
0007	---- Hannover
0008	---- Magdeburg
0009	---- Vienna
0010	---- Chemnitz
0011	---- Breslau
0012	---- Nuremberg
0013	---- Tilsit
0014	---- Memel
0015	---- Munich
0016	---- Salzburg
0017	---- Koenigsberg
0018	---- Dresden
0019	---- Pillau
0020	---- Kolberg
0021	---- Liegnitz
0022	---- Cottbus
0023	---- Deutsch Eylau
0024	---- Allenstein
0025	---- Oppeln
0026	---- Reichenberg
0027	---- Linz
0028	---- Graz
0029	---- Kuestrin
0030	---- Frankfurt an der Oder
0031	---- Goerlitz
0032	---- Stolp
0033	---- Belgard
0034	---- Stargard
0035	---- Neustettin
0036	---- Eberswalde
0037	---- Neubrandenburg
0038	---- Rostock
0039	---- Stralsund
0040	---- Luebben

CAUTION

When adding Freight the value inputted must x4 the number of tons you want in the Depot. This is because the Code uses 1/4 T points in its calculations.

Each side must have at least one Level 4 (National Supply Source) Depot as these produce the Freight underpinning the logistic supply system.

BUILD TEMP PORT: If you are creating a scenario which has an amphibious invasion already in progress this function toggles creation of a temporary port and associated airbase. If you wish to convert the temporary port to a MULBERRY harbour you can do this via the City Detail Screen. Remember to have a Amphib HQ adjacent to the hex or on the first logistics phase the temporary port will be removed.

4.7. USING THE COMMANDER'S REPORT AS A UNIT EDITOR

4.7.1. GENERAL

The Commander's Report (CR) is an excellent tool for rapidly changing the values for dozens of units and air groups with just a few mouse clicks. You can make all subordinate units static or make them mobile again (non-static) without having to click on each individual unit via the HQ's CR.

4.7.2. EDITING IN THE CR UNITS TAB

Units are selected on the CR using the Unit Display Filters at the bottom of the screen.

To use the editor functions in the CR, click on the EDITOR FUNCTIONS label at the top of the screen. The following menu will appear:

COMMANDER'S REPORT

Main

Current

Supply

Received

Units

HQs

Air Groups

Leaders

Battles

Locations

Equipment

1032 Units Selected

2,133,391

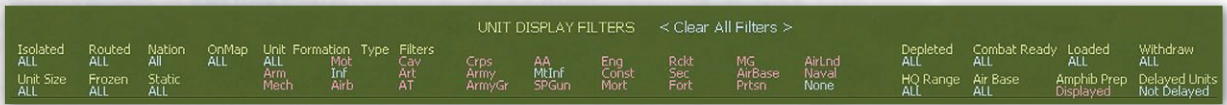
22,603

9,734

6,021

EDITOR FUNCTIONS

Unit Name	Nat	Loc	Type	HHQ	DBHq	Men	Guns	AFV	AC	Mrl	Exp	Fat	CV	%Toe	ToeM	MP	TtOB	Rf/Rs	SPri	Elt	Won	Lost
R/6th US Arm. Div	USA	63,203	Arm	9th US Army	6	2517	5	73	-	69	69	18	2	60	100	32	-	Rdy	-	-	0	0
1/1st PO Armoured Di	Pol	98,181	Arm	II CA Corps	-2	2437	18	56	-	74	74	16	3	42	100	48	2	Rdy	-	-	0	0
1/4th CA Armoured Di	Can	96,181	Arm	II CA Corps	0	4006	29	94	-	75	74	19	4	69	100	50	2	Rdy	-	-	0	0
2/1st PO Armoured Di	Pol	97,181	Arm	II CA Corps	-1	2485	19	57	-	73	73	19	3	45	100	49	2	Rdy	-	-	0	0
2/4th CA Armoured Di	Can	96,181	Arm	II CA Corps	0	3931	29	91	-	74	75	12	4	69	100	49	2	Rdy	-	-	0	0
1st US Inf Div	USA	106,185	Inf	VII US Corps	3	11494	137	0	-	63	66	12	4	70	100	8	-	Rdy	-	-	0	0
1/2nd US Inf Div	USA	58,195	Inf	VIII US Corps	2	3910	47	0	-	65	64	14	2	69	100	13	-	Rdy	-	-	0	0
3rd US Inf Div	USA	108,208	Inf	VI US Corps	4	11285	137	0	-	65	65	16	4	69	100	12	-	Rdy	-	-	0	0
4th US Inf Div	USA	106,189	Inf	V US Corps	3	11504	138	0	-	66	65	17	4	70	100	14	-	Rdy	-	-	0	0
5th US Inf Div	USA	107,199	Inf	XX US Corps	2	11416	136	0	-	66	64	12	4	69	100	15	-	Rdy	-	-	0	0
8th US Inf Div	USA	60,196	Inf	VIII US Corps	4	11371	137	0	-	66	65	16	5	70	100	16	-	Rdy	-	-	0	0
9th US Inf Div	USA	107,186	Inf	VII US Corps	3	11276	136	0	-	66	64	18	4	68	100	14	-	Rdy	-	-	0	0
26th US Inf Div	USA	74,190	Inf	III US Corps	-5	11493	139	0	-	62	64	8	6	71	100	13	-	Rdy	-	-	0	0
28th US Inf Div	USA	106,187	Inf	V US Corps	2	11191	136	0	-	67	65	10	4	71	100	14	-	Rdy	-	-	0	0
29th US Inf Div	USA	59,195	Inf	VIII US Corps	3	11284	132	0	-	64	63	19	5	70	100	14	-	Rdy	-	-	0	0
30th US Inf Div	USA	106,184	Inf	XIX US Corps	4	11409	137	0	-	67	63	13	4	69	100	8	-	Rdy	-	-	0	0
35th US Inf Div	USA	109,202	Inf	XII US Corps	1	11162	137	0	-	67	63	16	4	70	100	14	-	Rdy	-	-	0	0
36th US Inf Div	USA	108,206	Inf	VI US Corps	3	11320	133	0	-	65	64	18	4	69	100	13	-	Rdy	-	-	0	0
2/2nd US Inf Div	USA	58,195	Inf	VIII US Corps	2	3674	42	0	-	65	64	16	2	66	100	13	-	Rdy	-	-	0	0
44th US Inf Div	USA	73,190	Inf	III US Corps	-5	11187	138	0	-	65	64	3	6	70	100	13	-	Rdy	-	-	0	0
45th US Inf Div	USA	108,209	Inf	VI US Corps	3	11154	139	0	-	65	64	9	4	70	100	12	-	Rdy	-	-	0	0
3/1st PO Armoured Di	Pol	99,180	Arm	II CA Corps	-3	2411	17	59	-	74	76	15	3	45	100	49	2	Rdy	-	-	0	0
3/4th CA Armoured Di	Can	96,180	Arm	II CA Corps	0	3947	30	91	-	73	75	14	4	69	100	39	2	Rdy	-	-	0	0
3/2nd US Inf Div	USA	58,196	Inf	VIII US Corps	2	3674	42	0	-	65	64	13	2	66	100	13	-	Rdy	-	-	0	0
79th US Inf Div	USA	107,203	Inf	XV US Corps	3	11079	138	0	-	64	64	5	4	70	100	13	-	Rdy	-	-	0	0
80th US Inf Div	USA	108,200	Inf	XII US Corps	2	11670	135	0	-	64	65	14	4	69	100	15	-	Rdy	-	-	0	0
1/83rd US Inf Div	USA	68,206	Inf	9th US Army	9	3882	51	0	-	63	64	11	2	72	100	15	-	Rdy	-	-	0	0
84th US Inf Div	USA	76,179	Inf	III US Corps	1	11195	137	0	-	65	64	2	6	69	100	14	-	Rdy	-	-	0	0
90th US Inf Div	USA	107,197	Inf	XX US Corps	2	11489	138	0	-	62	65	10	4	68	100	16	-	Rdy	-	-	0	0
1/94th US Inf Div	USA	63,201	Inf	XIII US Corps	1	3820	44	0	-	65	66	18	2	69	100	15	-	Rdy	-	-	0	0
95th US Inf Div	USA	105,196	Inf	XX US Corps	3	11109	140	0	-	66	65	6	4	69	100	15	-	Rdy	-	-	0	0
2/94th US Inf Div	USA	62,201	Inf	XIII US Corps	0	3844	44	0	-	65	65	13	2	66	100	15	-	Rdy	-	-	0	0
102nd US Inf Div	USA	74,190	Inf	III US Corps	-5	11233	134	0	-	66	64	4	6	69	100	14	-	Rdy	-	-	0	0



When using the editor functions of the CR, it is possible to set only the Experience Level, or the Build Size Level, or the Build Ready Level without resetting any other values. Just set whatever values you don't want changed to '0'.

Rebuild Units: The Rebuild Units function allows the player to set the Build Exp, Build Size%, Build Ready%, and Build Variation% for all the units in the CR display. Set these numbers and then click on REBUILD UNITS and all displayed units will updated to these numbers (these values must be greater than 0 to rebuild).

Resupply Units: If you click on anyone of the resupply components (%Supply, %Ammo, %Fuel, %Vehicles, or %Variation), you will be presented with a sequence of pop-up windows. Enter the percent of supplies, ammunition, fuel, and vehicles you wish the unit to have and the percent variation you wish to have

applied. When you're done making these entries, click on RESUPPLY UNIT. This will populate the Unit/Need display fields for Supply, Ammo, Fuel, and Vehicles for all selected units.

Set Unit MP: To set the movement points (MP) for the selected units, click on the motorized label and enter the number. Repeat the process for the non-motorized units. When you're done, click on the SET UNIT MP function label to apply these movement points to the selected units.

Set SMP: To set the strategic movement points (SMP) for the selected units, click on the SET SMP function label and then enter the number of SMPs you want the selected units to have. Units in GGWiTW have a maximum of 200 SMPs

Set Unit DL: To set the detection level (DL) for the selected units, click on the SET UNIT DL function label. Enter the appropriate DL and press enter or select the check mark on the right side of the pop-up window.

Set Unit Max TOE: To set the MAX TOE for the selected units, click on the SET UNIT MAX TOE. Enter a percentage that is between 50 and 100.

Set Unit Fatigue: To set the Fatigue for the selected units, click on the SET UNIT FATIGUE. Enter a percentage that is between 0 and 100 followed by a % variation

Set Static: To set all the selected units as STATIC, click on the SET STATIC function label. Select YES for Set Units Static?

Reactivate: To reactivate all the selected units from STATIC click on the REACTIVATE function label and then selecting YES on the pop-up window.

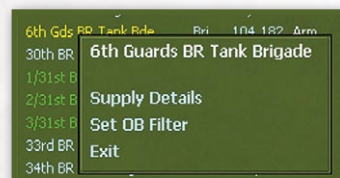
AMPHIBIOUS PREP: This function allows bulk setting of amphibious preparation points for selected units.

OB Filter: The O.B. filter is a sorting function within the CR. If you selected a particular unit and then select the OB filter then all other units sharing that O.B.

slot number will be displayed. This is a useful function if you have amended the TOE generic data of a particular OB.

REMEMBER

It is good practice to resupply units after you build them.



4.7.3. EDITING IN THE CR AIR GROUPS TAB

To use the editor functions in the CR, click on the EDITOR FUNCTIONS label at the top of the screen. The following menu will appear:

EDITOR FUNCTIONS	
REBUILD AIR GROUPS	Pct Ready: 0 Pct Damaged: 0 Pct Reserve: 0
SET (PILOT) EXP	Experience: 0
SET (PILOT) FATIGUE	Fatigue: 0
SET MORALE	Morale: 0
	Variation: 0

When using the editor functions of the CR, it is possible to set only the Experience Level, or the Build Size Level, or the Build Ready Level without resetting any other values. Just set whatever values you don't want changed to '0'.

Rebuild Air Groups: The Rebuild Air Groups function allows the player to set the Pct Ready, Pct Damaged and Pct Reserve for all the Air Groups in the CR display. Set these numbers and then click on REBUILD AIR GROUPS and all displayed units will updated to these numbers (these values must be greater than 0 to rebuild).

Set (PILOT) EXP: To set the experience for the pilots of the selected units, click on the value next to the Experience label and enter the number. Then click on Set (PILOT) EXP to make the change. If you want the values to vary set the Variation level next to the Variation label.

Set (PILOT) FATIGUE: To set the fatigue for the pilots of the selected Air Groups, click on the value next to the fatigue label and enter the number. Then click on Set (PILOT) FATIGUE to make the change. If you want the values to vary set the Variation level next to the Variation label.

Set MORALE: To set the morale of the selected Air Groups, click on the value next to the Morale label and enter the number. Then click on Set MORALE to make the change. If you want the values to vary set the Variation level next to the Variation label.

4.8. 'ON MAP' EDITING FUNCTIONS

4.8.1. GENERAL

There are a number of functions that are made when the map is in view. You access the map by pressing the GO TO MAP button in the data tab area. To return to the data from the map click on the X in the Administration toolbar as if you were closing a normal game.

When you go to the map it will be in Ground Phase Mode To change to Air Phase Mode Press 'F12'. This is good if you wish to set up the starting turn Air Directives using the same procedure as when playing the game normally.

Editing on the map is similar to playing the game i.e. you can only edit the side that is in play. To switch between the sides press 'W'.

NOTE

You will be unable to switch sides if the counters are toggled off.

4.8.2. SET HEX OWNERSHIP

On the map you need to ensure that the ownership of hexes corresponds to the correct sides. To do this select the player who you want to own the hex and press the 'U' key to designate control of the selected hex to that Player. It helps to have the show enemy hexes function on (press the 'E' key). If you want to change the hex ownership of a large number of hexes then this is best done through the Map Editor.

4.8.3. SET REINFORCEMENT ENTRY POINTS

In small map scenarios, you can set up a reinforcement arrival point by creating a city with a population of zero. It must be given the nationality of the country that is going to use that hex to bring in units. So if you have Italian units you want to bring in, you have to have a point that is Hungarian nationality. You should name these "cities" something like "German Reinforcement Arrival Zone 1". For the Axis, the computer always picks the north-western most city that is the same nationality as the reinforcing unit, and then goes down the column and then moves back to the next most eastern column at

the top. For the Allied it goes to the north-eastern most city and then down the column and then moves west.

4.8.4. FORTIFICATION LEVELS

You can set the fortification level in a hex using the “;” (semicolon) key. To do so select the hex, press the ; key and then enter between 1-5 the level of fort required.

4.8.5. DAMAGE RAIL

When you assign control of a hex to either the Axis or Allied Player this assignment automatically sets the rail line for that hex to operational/repaired. If you wish to damage the rail in a hex make sure you have the view rail damage button on the Map Information tab toggled ON (Hotkey-R) then click on the hex containing rail line that you wish to damage and then press the ‘D’ key. If you do not toggle the view damage information ON then the ‘D’ key will only activate the Air Doctrine screen.

4.8.6. SET PRODUCTION POOLS

Go To The Map and press the ‘P’ key to bring up the Production screen. Here you can enter the starting amounts of aircraft, ground elements, and special production pools that are available to provide replacements to units.

4.8.7. USING THE UNIT DETAIL DISPLAY AS A UNIT EDITOR

1st Allied Airborne US Army - 1526

Lewis H. Brereton

XXXX

HQ

0-50

ALLIED AIRBORNE

1

Formation Role: NONE

Formation Supply Level

Freeze Formation

Rebuild Formation

SUPPLY PRIORITY (2)

SHOW SUBORDINATES (CR)

RELOCATE UNIT

Elements

Assigned (1)

Air Support

EXP	RDY	DAM	GROUND ELEMENT	FAT
70	1500	0	Support	4

Support Level ++ LOCKED --

Total Support 2885

Organic Support 1792

Total Support Need 2718

TOE	100 / 100
MAX TOE	100
HHQ	SHAEF
Morale	70
Nation	USA
Supply/Need	528 / 600
Fuel/Need	202 / 225
Ammo/Need	0 / 0
Support/Need	1120 / 57
Transport Cost	7368
Vehicles/Need	1155 / 1500
	MOTORIZED
Supply status	In Supply

The Unit Detail Display can be used to change the values of certain attributes for a formation of units (a HQ plus its subordinates). You can also use this display to go directly to the Units tab. Let’s take a look at the Unit Detail Display for a HQ.

The Unit Detail Display heading lists the HQ (or unit name) and the Unit tab slot #. If you click on the name this will take you to the units slot on the Units tab. Click on the Go To The Map button to return to the Unit Detail Display.

Below the heading is a list of the ground elements contained within the selected unit and their status.

MAX: You can set the MAX TOE percent by clicking on the MAX text label.

HHQ: You can change the higher headquarters assignment by clicking on the HHQ text label. Select the new HHQ assignment from the list on the pop-up menu.

Formation Role: The role set for a formation helps the AI better place its attached units in relation to each other to better perform the formations assigned role.

- 0=none
- 1=Security
- 2=Defence
- 3=Attack

Formation Supply Level: To resupply a formation:

- Enter Formation Percent Level
- Enter Formation Percent Ammo Level
- Enter Formation Percent Fuel Level
- Enter Formation Percent Vehicles Level

Freeze Formation/Unit: To freeze a formation or a unit, enter the number of turns it is frozen. The freezing of units occurs during the logistics phase. If you want to freeze a unit at the start of a scenario you must also zero out its movement points (MP). If you don’t, then the unit isn’t truly frozen—it still has movement points available. Zeroing out MPs only has to be done for the first player in the scenario; the movement points for the second player’s frozen unit’s will be zeroed-out during the first logistics phase preceding the second player’s turn.

Rebuild Formation: To rebuild a formation click on the Rebuild Formation label and enter the new Formation Percent Strength Level and Formation Morale/Exp Level.

SUPPLY PRIORITY: Click on this label to change the supply priority (0 - 4) for the selected HQ and all its subordinate units.

NOTE

If you wish to have units of opposing sides 'unfreeze' on the same turn, then you need to set the number of frozen turns for the first player one turn less than that of the second player. This is due to the fact that the turn counter for the first player is not set until the first logistics phase of the scenario--which occurs after the first player has played his turn.

For example, if both sides have forces that are frozen for four turns and the Axis is the first player, the Allied player will unfreeze on turn 4 and the Axis player would unfreeze on turn 5. The following illustrates how this happens:

- Turn 1: Axis 4, Allied 3
- Turn 2: Axis 3, Allied 2
- Turn 3: Axis 2, Allied 1
- Turn 4: Axis 1, Allied unfreeze

To fix this, freeze the Axis units for three turns.

SHOW SUBORDINATES (CR): Click on this label and the program will display the Commander's Report for the selected HQ and its subordinate units.

RELOCATE UNIT: Click on this label to relocate the selected unit.

4.8.8. SET VICTORY CITIES

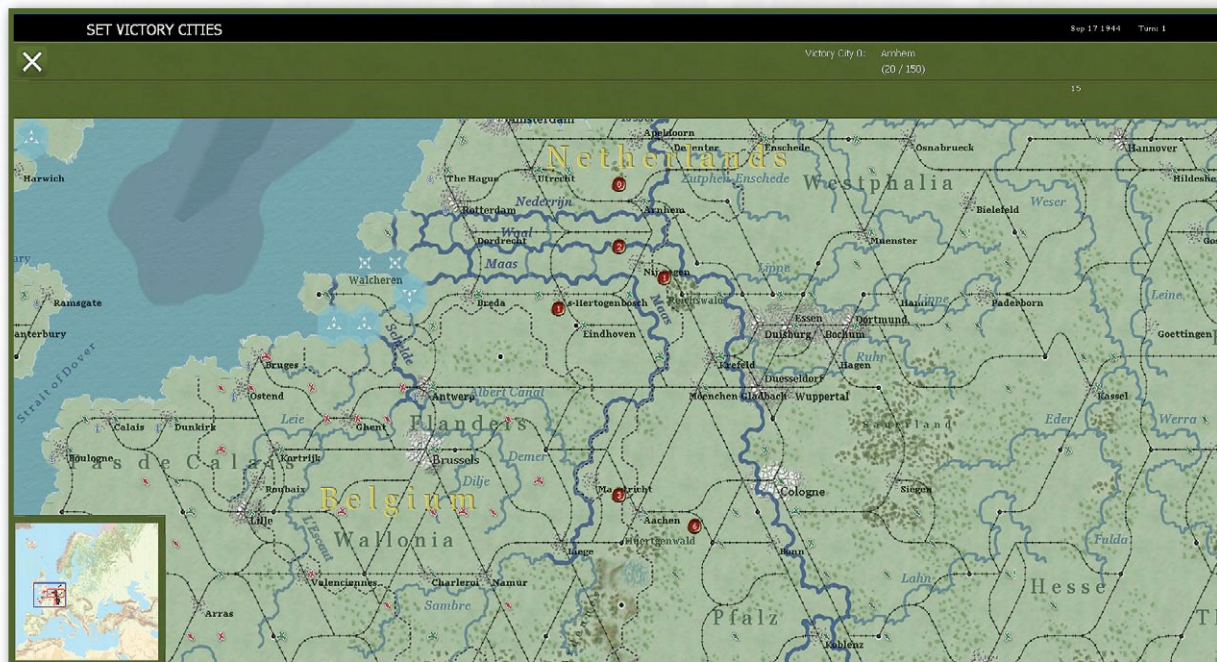
An AI victory objective must be a town or city hex. To set victory objectives for a scenario press shift-V. Click on a victory objective hex (a town or city hex) and a pop-up window will appear. Enter the number of points that the selected side will receive for each turn that it retains possession of the victory objective hex. Enter the number of points the selected side will receive if it owns the hex at the end of the scenario. Switch the currently selected side (Axis or Allied) by pressing the "W" key; now enter victory points for the opposite side.

It is recommended that you hide your on-map units so you can read town and city names clearly. You can do this by selecting the Toggle Units on Map button under the MAP INFORMATION tab.

Select the Toggle Victory Locations On/Off under the MAP INFORMATION tab.

This selection will bring up the SET VICTORY CITIES screen and allows you to set ten victory city or town locations per side. You can only edit the currently selected side when you are in this mode.

This mode will default to the first victory city for the selected side as 'Victory City 0'. Victory Cities are numbered from 0 to 9 with 0 being the first city. This is important because this is the order in which cities



will be displayed when the player selects the SHOW VICTORY SCREEN. To set a victory city, simply click on the hex containing a city or town and the editor will prompt you to Input Victory Points per Turn and Input Victory Points at End. You cannot select a hex that does not contain a city or town. Continue to press the 0-9 keys to cycle through the different victory city locations and set their values.

Once you have entered your data for a particular number key (0-9), the Set Victory Objectives bar will update to show the results of your input. For example, it will look something like this: 'Victory City 0: Kolomak' with (100 / 300) shown underneath the city name. A grey circle with a white number '0' will be generated on the hex you chose as this victory location. This will allow you to quickly see the hexes you have chosen as victory locations.

Once you have set all ten of objectives for a side, exit out of the Set Victory Objectives mode by pressing the 'Esc' key. Press the 'W' key to switch sides and proceed to step 5 to edit that side's victory objectives.

NOTE

Selecting the 'X' button will send you back to the Scenario Editor screen—but it will not exit from the Set Victory Objectives mode. You must use the Esc key to exit this mode.

When you have finished entering victory objectives you can check your work by going to the INFO SCREENS tab and selecting the Show Victory Screen.

Don't forget to reset the side that goes first by pressing the 'W' key.

4.8.9. SCRIPTING THE AI

Scenario designers can employ AI scripts in their scenarios that will tell the computer-controlled units where to move or make offensive thrusts. You record them by playing your scenario in human-versus-human mode. Here's how to do it. Open up your scenario as a human versus human game and then play the first side's turn like you would want the AI to do it. The game will automatically track your moves and attacks as a script. Once the turn is ended, select the end turn button and save the game. The game saves the scripting information in its own file (scriptRec.dat) in the Dat folder of the

GGWITW game directory. Now exit out of your game, open up the editor and load your scenario. Go to the MAIN tab and select 'Load Recorded Script'. The editor will automatically load the script that you just generated.

IMPORTANT NOTE

GGWITW only saves the scriptRec.dat file for the latest turn you've played; you need to immediately go into the editor to input the script file. If you don't, the scriptRec.dat file will get overwritten the next time you save a game turn.

Save the scenario in the editor and then run the scenario as a game and see if the AI script works out to your satisfaction. If it does not, note what you want to improve and then play the scenario again as a game to correct the deficiencies. Repeat this process until you are satisfied with the performance of the AI in your scenario.

Air Directive Scripting: Strictly speaking you do not AI Script Air Directives. However you can set up ADs in the Editor for each side in exactly the same way as setting ADs when playing the game normally. The AI will not change any ADs on the first turn of the scenario.

4.9. MAIN TAB FUNCTIONS

FUNCTIONS
INITIALIZE AIR UNITS
REDUCE REINFORCEMENT DELAYS
INIT RAIL/PORT VALUES - W Allies (0)
UPDATE ALL UNIT OBS
RESET ALL CITY CONTROL
SET ALL CITY SUPPLY REQUIREMENTS
UPGRADE ALL FACTORIES
DAMAGE OFF-MAP RAIL
REPAIR ALL RAIL
REMOVE UNITS
REMOVE 'OFFMAP' UNITS
REMOVE ALL PORTS
SET WEATHER
LOAD RECORDED SCRIPT
CLEAR RECORDED SCRIPT
DISABLE RECORDED SCRIPT
RESET UNIT SUPPORT VALUES
DUMP DAT FILES
SCENARIO CHECK UTILITY

General. The main tab functions provide a number of important actions that the scenario designer may need to use. All functions when run reset both players except Init Rail/Port Values. The Init Rail/Port Values function only sets these values for the first player. The second player's rail and port values will be calculated during the first logistics phase of a running scenario.

INITIALIZE AIR UNITS: This function rebuilds all air groups. If you run this function after you have completed any changes

to the Air Groups tab then it is likely to change the experience and morale settings.

REDUCE REINFORCEMENTS DELAYS: Reduce delay for all reinforcement units by the specified amount of turns. Enter number of weeks (1-200).

INIT RAIL/PORT VALUES: This function initializes port values of the water regions and rail capacity for the currently active player. You should run this function if you switch the starting player for a scenario, and/or change the port/rail yard values of a city, and/or change ownership of a port/rail yard city.

UPDATE ALL UNIT OBS: Updates all units on the map so that their ground elements have weapons that are current as of the start date of the scenario. All units with delays should already have good OBs.

RESET ALL CITY CONTROL: Resets the control of cities based on which side owns the hex. See Setting Hex Ownership. City Control can also be set using the Map Editor.

SET ALL CITY SUPPLY REQUIREMENTS: This function sets all requirements based on the existing industry and production percentage. It also supplies cities to support first production turn.

UPGRADE ALL FACTORIES: Select Yes or No. This function brings all factory production up to date by using upgrade paths to weapons. The upgrade of all factories is based on the scenario start date. Selecting 'Yes' will cause the PRODUCTION USAGE setting for the Allied player to change to 100%. This does not increase the sizes of the factories to account for natural growth to the max production values. This must be done manually in the city edit menu.

DAMAGE OFF-MAP RAIL: This function will damage all rail hexes outside of the active (playable) map area (in the case of small map scenarios). Click on the function name to run. If you wish to restore all rail hexes to a repaired status, click on the REPAIR ALL RAIL function.

REPAIR ALL RAIL: Clicking on this function will repair all rail hexes on the entire map.

REMOVE UNITS: This function provides the ability to firstly removes all units, then units attached to cities and finally air groups from air bases across the entire map.

REMOVE 'OFFMAP' UNITS: This function removes all units from the map that are not located in the active map area of a scenario.

REMOVE ALL FORTS: This function clears all forts from the entire map.

LOAD RECORDED SCRIPT: This function will load the AI script .dat file. Here's how it works – you start the game and play your scenario head-to-head (i.e. set the play side controls to human/human). All your moves and attacks will be recorded as a .dat file called scriptRec and is located in the /Dat folder of the GGWITW game directory. Once this has been accomplished, save and exit your scenario. Immediately import the recorded .dat file into your scenario by opening your scenario in the editor and clicking on the LOAD RECORDED SCRIPT function. Now save the scenario and you are done. The next time you start the scenario, the AI will use your previously recorded moves and attacks.

NOTE

Failure to immediately load your recorded script (scriptRec.dat) may cause it to be overwritten with new data the next time you play a scenario. To prevent the script file from being overwritten, either move it to another folder or rename the file (e.g. Westwall_scriptRec). If you wish to use this script file again, either move it back to the Dat folder or rename the file scriptRec.

CLEAR RECORDED SCRIPT: This function clears (erases) any recorded AI moves and attacks from a scenario. Prior to recording a script, it is recommended that you load the scenario file in the editor and the press the CLEAR RECORDED SCRIPT function, and then resave the scenario files. This will ensure there are no unwanted script commands in the scenario file.

DISABLE RECORDED SCRIPT: This function disables a recorded script that was previously loaded into the scenario.

TIP

It's usually a good idea to hold-off scripting moves and attacks until you have a sound, well-established scenario (i.e. all units and air groups inputted and placed on the map, headquarters assignment complete, etc.). Significant changes can cause your pre-recorded script to fail.

RESET UNIT SUPPORT VALUES: Running this function sets the correct support levels required to match the TOE% and Supply levels for your units. You should run this function if you have changed any unit settings.

DUMP DAT FILES: GGWITW's Generic Data is stored in *.dat Files. This function is used to generate updated *.dat files if the generic data is changed. There is no need to use this function unless you wish to share new generic data files.

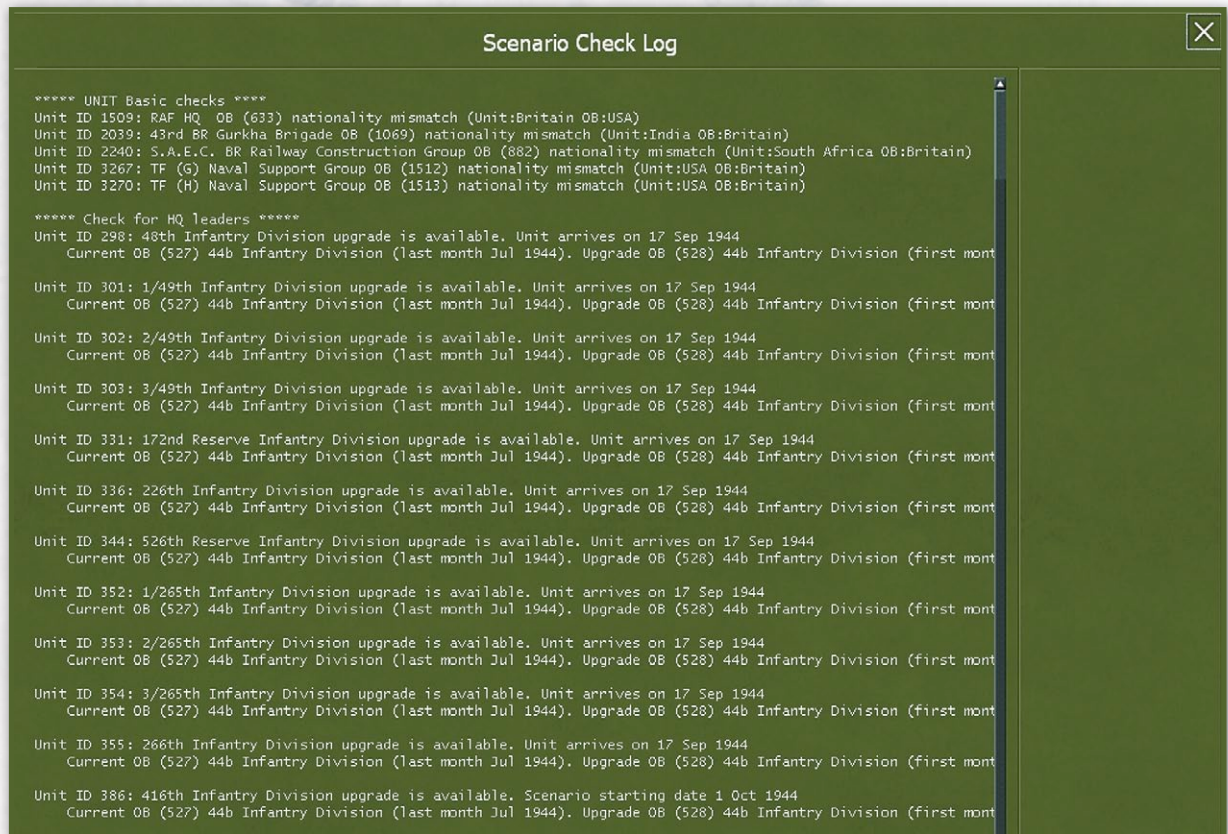
SCENARIO CHECK UTILITY: To help you catch possible errors in your scenario, it is suggested you run this utility. This utility checks the following.

Unit Basic Checks: This section makes several different checks for potential errors. These are as follows:

- **Check for OB Assignment Errors:** This section lists all the units in your scenario that have an OB upgrade available (if any) based on the scenario start date. It will also list the slot number for the potential upgrade OB. Use your knowledge

of the historical situation to decide whether or not you should go ahead and implement the recommended upgrades or leave the OBs as they are. In addition, this section will list units where you have assigned OBs that are not yet available based on the start date of your scenario. This is a strong indicator that you have assigned the wrong OB to a unit; but again, let history be your guide before you make any changes.

- **Check for Player Assignment Errors.** This check lets you know if there are any units in your scenario that have not been assigned to a player.
- **Check for Nationality Mismatch Errors.** This check lets you know if you have assigned the wrong nationality to a unit.
- **Check for Special Status Assignment Errors.** This check lists units that you may have failed to assign a special status (Guards, Axis-Elite, SS-Elite, etc.).



Check for HQ Leaders: This section lists any potential errors that might exist in your scenario with regard to your Leader assignments. These are as follows:

- **No Valid Leader Assignment Errors.** HQs without a leader will have one assigned during game play's first logistics phase of the scenario.
- **Multiple Assignment Errors.** A leader that has been assigned to multiple HQs will generate an alert.
- **Surrendered Nation Assignment Errors.** A leader that belongs to a nation that has surrendered and has been assigned to an HQ will generate an alert.

Check for Unit Arrival Errors. This section makes several different checks for potential errors regarding unit arrivals during the scenario. These are as follows:

- **Overstack Errors.** This check will provide list of units and slot number for any hex that has more than three units assigned to arrive on the same turn.
- **Off-Map Arrival Errors.** This check indicates all units (and their slot numbers) that have been assigned an entry hex that is outside the playable map area of your scenario. The error text will show the x,y coordinates of the inactive map area where the unit has been set to.

Check for HQ Links. This section lists any potential errors that may exist in your scenario with regards to unit assignments to HQ units. These are as follows:

- **Air Base Assignment Errors.** Only reconnaissance aircraft can fly missions from an Air Base that is assigned to a non-Air HQ unit so make sure your combat and air transport Air Bases are assigned to Air HQs.
- **Construction HQ Assignment Errors.** Non-construction units cannot be assigned to a Construction type HQs.
- **Bad HQ Errors.** If a unit is not assigned to an HQ it will trigger a bad HQ error.

Check for Air Bases. This section checks the linkage between the Location's tab Air Base Unit details and the corresponding slot in the Unit's tab.

Check for Unit Name Duplication. This section checks the units and air groups lists for duplicate unit and air group names. It will list the slot numbers and the unit/air group names for the duplicated names.

Scenario Check. This section will list any Surrender Flags that have been set for the scenario.

4.10. CREATING A NEW SCENARIO FROM AN EXISTING SCENARIO

To edit an existing scenario, click on the Load Scenario text at the bottom of the editor screen. Select a scenario in the same manner as in the game. This will take you to the Editor version of the game screen for that scenario. Note that there are some editor specific hotkeys that are at the bottom of the hotkey screen (use shift-h to display this screen). Units can be moved around the map area by selecting the unit and then right clicking in the destination hex. In addition, if you go to the unit detail screen, units can be frozen.

NOTE

If you try to move a unit and it won't move, check your Fog of War settings; these should be set to off for both sides while you are in the process of creating a new scenario.

Using the X button in the Admin tab will take you to the editor Main tab for that scenario. The tabs at the top of the main menu allow you to change the data for the current scenario. When you are ready to save your changes, click on the save scenario text and the scenario will be saved under the scenario name at the top left of the screen (be sure to change this name before you save the scenario if you don't want to overwrite an existing scenario). Scenarios will be saved in the Matrix Games\Gary Grigsby's War in the West\Dat\Scen folder.

5. EDITING GENERIC DATA

5.1. GENERAL

Some game data is generic; it is used by all scenarios. There are fifteen generic data files:

- Leaders
- TOE(OB)
- Aircraft
- Ground Elements
- Devices
- Units (this is a list of all stock units for scenario designers)
- Air Groups
- Cities
- Hexes
- Ctrl
- Nation Attributes
- Ground Types
- Weather
- Hex Art
- Map Text

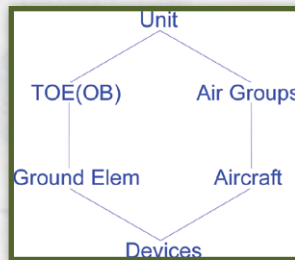
Generic data can be changed for a single scenario; or it can be changed for all scenarios. To change the generic data for a single scenario, open the editor and load the specific scenario. Select YES for Lock Generic Data on the Main tab. Make whatever changes you wish to the generic data files and they will only affect the scenario you are working in. To change the generic data for all scenarios, open the editor and click on the Load Generic Data text.

You can elect to save changes to any of these files. Those files that are checked will be saved when you click on the Save Generic Data text. Any changes to these files will impact all scenarios. For example if you wanted to increase the durability of a particular aircraft, you could uncheck all but the Aircraft file on the Main menu, go to the Aircraft tab, click on an aircraft in the list on the right side of the screen, click on the durability number and enter a new number, and then click on Save Generic Data. The generic data files can be found in the Matrix Games\Gary Grigsby's War in the West\Dat folder.

If you are going to add a new device, aircraft, ground element, TOE(OB), or leader to the generic data base, it is better not to use the two bottom slots or the '0' slot

in these files. These slots are used by the game code. To be safe, leave the ten lowest slots on the list empty just in case.

5.2. DATA FILE BUILD HIERARCHY



If you understand the relationships between the various data files then you will have a keen understanding of how to change things in the game to suit your need. Everything flows from devices through

two levels of generic groupings to a specific unit in the game. The diagram below shows this hierarchy and how the construction of ground and air forces take separate paths to the same destination—the Unit.

Devices: These are the basic building blocks of the game. A device can be a machine gun, mortar, a bomb, etc. Though the list of devices is predominantly weapons, if you scroll through it you will see that there are also non-weapon devices. There are devices that are drop tanks, RADAR detectors, and ELINT (electronic intelligence). There are other devices that are factories for aircraft engines, parts and assemblies. Each device has attributes that the scenario designer can adjust if he wishes, or he can create entirely new devices to use in the game. There are 2,043 slots available for creating devices. Changes and/or additions can be saved within the generic files or within a single scenario.

Ground Elements and Aircraft: Ground elements and aircraft are built using one or more devices; they are in effect—"packages" of devices. In addition, ground elements and aircraft have their own attributes that can also be modified and saved within the generic files or within a single scenario.

TOE(OB) and Air Groups: These are built using one or more ground elements or aircraft—once again,

these are “packages” of ground elements and aircraft. And once again, addition, TOE(OB) and air groups can have their own attributes that are modifiable and, once again, can be saved within the generic files or locked within a single scenario.

Units: Units are the representations of specific, historical units that you create for your scenario and employ during game play. A unit can have ground forces assigned to it, attached to it, and/or in support of it. An Air Base unit can have ground forces assigned to it (anti-aircraft, support squads, etc.) and air groups attached to it.

Now let's take a brief look at each of the generic data tabs in the editor.

5.2.1. DEVICE TAB

The Device tab lists all the various devices that make up the ground elements and aircraft used in the game. You should not have to add to this list or adjust the device values for most scenarios.

See Appendix G for more details about the Device Tab.

The screenshot shows the 'Device' tab in the game editor. The interface is divided into two main panes. The left pane displays the properties for the selected device, '.303 Vickers 'K' MG'. The right pane shows a scrollable list of all available devices, with the same device selected.

Left Pane (Device Properties):

- Device: 1
- Type: 0
- Load: 50
- Effect: 1
- Range: 3000
- Accuracy: 30
- Max Ceiling: 0
- Eff Ceiling: 0
- Rate of Fire: 23
- Blast: 0
- Anti-Air: 40
- Anti-Soft: 3
- Anti-Armor: 4
- Penetration: 1
- HEAT Pen: 0
- HVAP Pen: 0

Right Pane (Device List):

INSERT
DELETE COPY

FIND: SHAEF
NEXT

PICK DEVICE

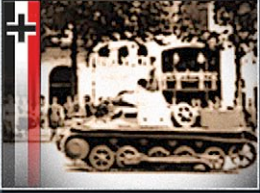
- 0000) ----
- 0001) ---- **.303 Vickers 'K' MG**
- 0002) ---- .303 Vickers V MG
- 0003) ---- .303 Vickers I MG
- 0004) ---- .303 Lewis MG
- 0005) ---- .303 Browning MG
- 0006) ---- 7.5mm MAC-M39 MG
- 0007) ---- 7.7mm SAFAT MG
- 0008) ---- 7.92mm FN MG
- 0009) ---- 7.92mm MG 17
- 0010) ---- 7.92mm MG 15
- 0011) ---- 7.92mm MG 81
- 0012) ---- 7.62mm PV-1 MG
- 0013) ---- 7.62mm DA-1 MG
- 0014) ---- 7.92mm Gebauer MG
- 0015) ---- 7.7mm KM.Wz MG
- 0016) ---- 7.62mm ShkAS MG
- 0017) ---- 7.7mm Type 89 MG
- 0018) ---- 7.7mm Type 97 MG
- 0019) ---- 7.7mm Type 92 MG
- 0020) ---- 7.92mm Type 98 MG
- 0021) ---- 13.2mm FN MG
- 0022) ---- 12.7mm SAFAT MG
- 0023) ---- .50 Browning MG
- 0024) ---- 13mm MG 131
- 0025) ---- 12.7mm BS MG
- 0026) ---- 12.7mm UBS MG
- 0027) ---- 12.7mm UBT MG
- 0028) ---- 12.7mm Type 1 MG
- 0029) ---- 12.7mm Ho-103 MG
- 0030) ---- 15mm Cannon MG151
- 0031) ---- 20mm HS404 Cannon
- 0032) ---- 20mm Cannon MG151
- 0033) ---- 20mm Cannon MG FF
- 0034) ---- 20mm Hispano Cannon
- 0035) ---- 20mm Oerlikon Cannon
- 0036) ---- 20mm Solothurn Cannon
- 0037) ---- 20mm ShvAK Cannon
- 0038) ---- 23mm VYa Cannon
- 0039) ---- 20mm B-20 Cannon
- 0040) ---- 20mm Type 99 Cannon

5.2.2. GROUND ELEM TAB

The Ground Elem tab lists all of the ground elements that make up a ground unit (tanks, squads, and guns) and also basic production items (Oil, Resource, Manpower, etc.). If the End at Start of Turn value on the Main tab is set below 200, then you may enter a

“number in pool” (starting value) for each ground type in the Production edit menu. These pool values are probably the only thing you need to change in this menu when making a short scenario.

See Appendix E for more details about the Ground Elem Tab.

Main	Units	Air Groups	Locations	Leaders	TOE(OB)	Ground Elem	Aircraft	Device	Nat/Weather	CSV																																																																																				
ID: 1 Upgrade: 0 <table border="1"> <thead> <tr> <th>DEV</th> <th>QTY</th> <th>DEVICE NAME</th> <th>FACE</th> <th>ROF</th> <th>ACC</th> <th>AMMO</th> </tr> </thead> <tbody> <tr> <td>0261</td> <td>1</td> <td>7.92mm Twin MG34 TMG</td> <td>Turret</td> <td>0</td> <td>0</td> <td>2250</td> </tr> <tr><td>0000</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>0000</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>0000</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>0000</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>0000</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>0000</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>0000</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>0000</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>0000</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>0000</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>						DEV	QTY	DEVICE NAME	FACE	ROF	ACC	AMMO	0261	1	7.92mm Twin MG34 TMG	Turret	0	0	2250	0000	0						0000	0						0000	0						0000	0						0000	0						0000	0						0000	0						0000	0						0000	0						0000	0						INSERT DELETE COPY FIND: SHAEF NEXT: PICK GROUND ELEMENT				
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 Type: Light Tank (12) Nation: Germany First Year: 1935 First Month: 8 Last Year: 1937 (scrap 1942) Last Month: 6 Load Cost: 27 Fuel Use: 26 Ammo Use: 68 Reliability: 58 Build Cost: 72 Build Limit: 0 Expansion Rate: 0 Number In Pool: 0 Weeks in Production: 206 Factory Sites: 0						0000) ----- 0001) Panzer Ib (Ger 8/35) 0002) Panzer IIC (Ger 3/37) 0003) Panzer IIf (Ger 3/41) 0004) Panzer IIL Lynx (Ger 9/43) 0005) Flammpanzer II (Ger 1/40) 0006) Panzer IIIe (Ger 12/38) 0007) Panzer IIIg (Ger 4/40) 0008) Panzer IIIh (Ger 10/40) 0009) Panzer IIIj L/60 (Ger 12/41) 0010) Panzer IIIim (Ger 7/42) 0011) Panzer IIIin (Ger 6/42) 0012) Flamm Panzer III (Ger 2/43) 0013) Panzer 35(t) (Ger 1/35) 0014) Panzer 38(t) (Ger 5/38) 0015) Panzer 38(t)E (Ger 11/40) 0016) Panzer IVc (Ger 4/38) 0017) Panzer IVe (Ger 9/40) 0018) Panzer IVf (Ger 4/41) 0019) Panzer IVf2 (Ger 3/42) 0020) Panzer IVg L/43 (Ger 5/42) 0021) Panzer IVh (Ger 5/43) 0022) Panther D (Ger 2/43) 0023) Panther A (Ger 9/43) 0024) Panther G (Ger 5/44) 0025) Tiger (Ger 7/42) 0026) King Tiger (Ger 2/44) 0027) Sturmpanzer IV (Ger 11/43) 0028) Stug IIIb (Ger 1/40) 0029) StuH42 (Ger 12/42) 0030) Stug IIIf (Ger 3/42) 0031) Stug IIIg (Ger 6/42) 0032) Jagdpanzer IV (Ger 1/44) 0033) Panzerjaeger I (Ger 3/40) 0034) Marder II (Sdkfz-132) (Ger 4/42) 0035) Marder II (Sdkfz-131) (Ger 6/42) 0036) Marder III (Ger 4/43) 0037) Panzerjaeger 38(t) (Ger 4/42) 0038) Nashorn (Ger 3/43) 0039) Jagdpanzer 38(t) Hetzer (Ger 5/44) 0040) Flammpanzer 38(t) (Ger 12/44)																																																																																								
Men: 2 Speed: 25 Size: 3 Front Armor: 15 Side Armor: 14 Top Armor: 7 Maximum Imports: 0 Import From ID: 0 (-) Use Photo ID: 0 (-) Use Symbol ID: 0 (-)						EDIT GROUND TYPES																																																																																								

5.2.3. AIRCRAFT TAB

The Aircraft tab lists all of the various aircraft. You should not have to adjust any of these values for a scenario.

See Appendix F for more details about the Aircraft Tab.

Main

Units

Air Groups

Locations

Leaders

TOE(OB)

Ground Elem

Aircraft

Device

Nat/Weather

CSV

ID: 2

Upgrade: 4

DEV QTY

DEVICE NAME

FACE

ACC

#0033 1

20mm Cannon MG FF

Fwd

0

#0024 1

13mm MG 131

TR

0

#0011 2

7.92mm MG 81

BR

0

#0011 2

7.92mm MG 81

Side

0

#0000 0

WPN SET #1

#0064 8

250kg SC Bomb

Int

0

#0000 0

WPN SET #2

#0066 1

500kg SC Bomb

Ext

0

#0064 4

250kg SC Bomb

Fwd

0

#0732 1

834 L Auxiliary Tank

Int

0

#0000 0

WPN SET #3

#0068 2

1000kg SC Bomb

Ext

0

#0000 0

WPN SET #4

....

H (ft)

40K

30K

20K

10K

0

200

400

600

V (mph)

Max Speed: 270 mph

Max Speed Alt: 18047 ft

Zero Alt Speed: 230 mph

Max Alt Speed: 221 mph

Climb: 1000 ft/min

Max Altitude: 27890 ft

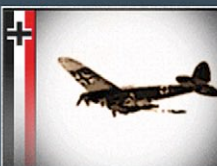
IMPERIAL UNITS

EDIT AIR PROFILES

He 111

H-11

LB



EDIT WEAPON SETS

Radius: 354 / 472 mi

Range: 1418 mi

Max Load: 5514 lbs

Endurance: 370 min

Cruise Speed: 230 mph

of Engines: 2

Type: Level Bomber

Profile: GE Medium Bomber (5)

Nation: Germany

Armor: 1

Durability: 40

Maneuver: 9

Reliability: 15

First Year: 1942

First Month: 6

Last Year: 1942

Last Month: 11

Sortie Ammo: 160

Sortie Fuel: 5704

Crew: 5

Build Cost: 1044

Build Limit: 26

Expansion Rate: 1

Number In Pool: 0

Maximum Imports: 0

Imports From ID: 0 (-)

Photo From ID: 0

Symbol From ID: 0

INSERT

DELETE

CLEAR

COPY

FIND: SHAEF

NEXT

PICK AIRCRAFT TYPE

0000) ----

0001) ---- *** GERMANY (1) ***

0002) ---- He 111H-11

0003) ---- Ar 234B-2

0004) ---- He 111H-16/R1

0005) ---- Bf 109E-3

0006) ---- Bf 109E-4B

0007) ---- Bf 109E-7

0008) ---- Bf 109F-2

0009) ---- Bf 109F-4

0010) ---- Bf 109G-14

0011) ---- Bf 109G-2

0012) ---- Bf 109G-6

0013) ---- Bf 109G-4/R3

0014) ---- Bf 109G-6/N

0015) ---- Bf 109K-4

0016) ---- Bf 109G-8

0017) ---- Bf 110C

0018) ---- Bf 110C-4B

0019) ---- Bf 110C-5

0020) ---- Bf 110D-1/R2

0021) ---- Bf 110E-1/U1

0022) ---- Bf 110E-2

0023) ---- Bf 110F-4

0024) ---- Bf 110G-2

0025) ---- Bf 110G-4

0026) ---- Bf 110G-4/R8

0027) ---- Do 17Z-10

0028) ---- Do 17P

0029) ---- Do 17Z-2

0030) ---- Do 215B-1

0031) ---- Do 215B-5

0032) ---- Do 217E-2

0033) ---- Do 217J

0034) ---- Do 217N

0035) ---- Do 335A

0036) ---- Bf 109G-10

0037) ---- Fi 156C

0038) ---- Fw 190A-5

0039) ---- Fw 189A

0040) ---- Fw 190A-4

5.2.4. TOE(OB) TAB

The TOE(OB) tab lists all of the basic tables of organization (TOEs) that the units try to conform to. This is a generic data file. It is quite extensive and comprehensive. As a general rule, you should not have

to create any TOE(OB)s or have to adjust the type or number of ground elements to support your scenario.

See Appendix D for more details about the TOE(OB) Tab.

Main	Units	Air Groups	Locations	Leaders	TOE(OB)	Ground Elem	Aircraft	Device	Nat/Weather	CSV
OB: 1278 43b US Armored Division Upgrade: 1280 44j US Armored Division						INSERT DELETE CLEAR COPY				
Men: 14480 WID QTY GROUND ELEMENT CHANGE SUFFIX						FIND: SHAEF NEXT PICK OB TYPE				
2576 30 Armored Rifle Squad (+) 2577 54 Armored Rifle Squad 2605 19 Scout Section 2598 36 Armored Engineer Squad 2552 27 M4A1 Mortar Carrier 2556 27 57mm Anti-tank Gun 2536 54 M7 105mm HMC 2548 72 M8 Greyhound Armored Car 2534 23 M8 75mm HMC 2503 119 M3A3 Stuart 2514 103 M4A1 Sherman 2513 76 M4 Sherman 2516 37 M4A3 Sherman 2564 27 60mm Mortar 2568 54 .30in Machine Gun 2569 21 .30in Heavy Machine Gun 2570 21 .50in Heavy Machine Gun 2603 39 Bazooka 1520 463 Support						Class: Combat Type: Armor Size: 0 - default Nation: USA First Year: 1943 First Month: 10 Last Year: 1944 Last Month: 1 Motorization: All				
						1269) ----- 1270) 43a US Tank Battalion (USA 7/43) 1271) 44a US Tank Battalion (USA 2/44) 1272) 44c US Tank Battalion (USA 5/44) 1273) 44e US Tank Battalion (USA 8/44) 1274) 44g US Tank Battalion (USA 11/44) 1275) 45a US Tank Battalion (USA 2/45) 1276) 45c US Tank Battalion (USA 5/45) 1277) ----- 1278) 43b US Armored Division (USA 10/43) 1279) 43d US Armored Division (USA 10/43) 1280) 44j US Armored Division (USA 2/44) 1281) 44k US Armored Division (USA 2/44) 1282) 44m US Armored Division (USA 5/44) 1283) 44h US Armored Division (USA 5/44) 1284) 44p US Armored Division (USA 8/44) 1285) 44q US Armored Division (USA 8/44) 1286) 44r US Armored Division (USA 11/44) 1287) 44s US Armored Division (USA 11/44) 1288) 45e US Armored Division (USA 2/45) 1289) 45f US Armored Division (USA 2/45) 1290) 45g US Armored Division (USA 5/45) 1291) 45h US Armored Division (USA 5/45) 1292) ----- 1293) 43 US Armored Infantry Battalion (USA 10/43) 1294) ----- 1295) Military Railway Service (USA 7/43) 1296) ----- 1297) 43 US Fortified Zone (USA 7/43) 1298) 43 US Engineer GS Regiment (USA 7/43) 1299) 45 US Engineer GS Regiment (USA 6/45) 1300) ----- 1301) 43 US Construction Battalion (USA 7/43) 1302) 44 US Construction Battalion (USA 6/44) 1303) 45 US Construction Battalion (USA 6/45) 1304) ----- 1305) 43 US Railroad Operating Battalion (USA 7/43) 1306) 45 US Railroad Operating Battalion (USA 6/45) 1307) ----- 1308) 43a US Airborne Division (USA 7/43) 1309) 44a US Airborne Division (USA 6/44) 1310) 45 US Airborne Division (USA 2/45)				

5.2.5. LEADERS TAB

The Leaders tab lists all of the significant commanders who served during the period covered by the game. The list is quite extensive so you should not have to add

any leaders. Adjustments to any a leader values is a subjective call for the scenario designer to make.

See Appendix C for more details about the Leaders Tab.

Main
Units
Air Groups
Locations
Leaders
TOE(OB)
Ground Elem
Aircraft
Device
Nat/Weather
CSV

Leader ID: 2
Last Name: Abraham
First Name: Erich
Nation: Germany
Rank: Generalmajor (1)
Unit 0:
Political: 6
Morale: 6
Initiative: 6
Admin: 5
Infantry: 6
Mech: 3
Air: 1
Naval: 1
Restriction: Ground Only
Max Command: Corps/Army
Available Year: 1943
Available Month: 10
Last Year: 1945
Last Month: 9



PROMOTION
1
2
3

YEAR
1944
1945
0

MONTH
4
1
0

DAY
1
3
0

RANK
Generalleutnant (2)

INSERT
DELETE

FIND: SHAEF
NEXT

PICK LEADER

0000) ----,
0001) ---- *** GERMAN ***,
0002) ---- Abraham, Erich
0003) ---- Allmendinger, Karl
0004) ---- de Angelis, Maximilian
0005) ---- Auleb, Helge
0006) ---- Bader, Paul
0007) ---- Balck, Hermann
0008) ---- Behlendorf, Hans
0009) ---- Berlin, Wilhelm
0010) ---- Beyer, Franz
0011) ---- Bieler, Bruno
0012) ---- Bittrich, Wilhelm
0013) ---- Block, Johannes
0014) ---- von Bockmann, Herbert
0015) ---- Boege, Ehrenfried
0016) ---- Boehme, Franz
0017) ---- Brandenberger, Erich
0018) ---- Breith, Hermann
0019) ---- Bulowius, Alfred
0020) ---- von Buenau, Rudolf
0021) ---- Busch, Ernst
0022) ---- Buschenhagen, Erich
0023) ---- Busse, Theodore
0024) ---- von der Chevalerie, Kurt
0025) ---- Clossner, Heinrich
0026) ---- Decker, Karl
0027) ---- Deichmann, Paul
0028) ---- Deisenhofer, Eduard
0029) ---- Demelhuber, Karl-Maria
0030) ---- Dessloch, Otto
0031) ---- Dietrich, Sepp
0032) ---- Dostler, Anton
0033) ---- Eberbach, Heinrich
0034) ---- Eglseer, Karl
0035) ---- Eibl, Karl
0036) ---- Fahrmbacher, Wilhelm
0037) ---- von Falkenstein, Hans
0038) ---- Fehn, Gustav
0039) ---- Felber, Hans-Gustav
0040) ---- Floerke, Hermann

5.2.6. LOCATIONS TAB

The Locations tab lists all cities and the various production sites at the city and the starting levels of supplies, fuel, oil, resources and population. You can edit any city you want and adjust/add/subtract any production you want to include vehicles, aircraft, supplies, fuel, oil, armaments, rail yard, port, etc.

Population should never be changed as it represents the starting war population that determines urban

density. Manpower and factory levels should be adjusted to account for changes during the war (migration of population and factories, growth of factories).

You should be careful when altering city information as it may involve changes to the map graphics, which is not possible to implement in many cases.

See Appendix B for more details about the Locations Tab.

Main
Units
Air Groups
Locations
Leaders
TOE(OB)
Ground Elem
Aircraft
Device
Nat/Weather
CSV

ID: 2
Berlin
Heavy-Urban

FID	NUM	DAM	DELAY	FACTORY	TYPE
0000	0	0	0		
0000	0	0	0		
0022	4	0	0	Panther D	
0000	0	0	0		
1489	7	0	0	Armaments Production	
0-64	6	0	0	Hs 129B	
0000	0	0	0		
1483	2	8	0	Vehicle	
0-92	12	0	0	Ju 87D-5	
0031	15	0	0	Stug IIIg	
0-74	11	0	0	Ju 88A-4	
0035	1	0	0	Marder II (SdKfz-131)	
0000	0	0	0		
1481	9	0	0	Railyard	
1482	39	0	0	Manpower	
1488	3	0	0	Resource Production	
0000	0	0	0		
0000	0	0	0		
0000	0	0	0		
1484	35	10	0	Heavy Industry	

Player: Axis
Nation: Germany
Population: 39
Location: 139,172
Supplies: 250000
Fuel: 25000
Oil: 0
Resource: 0
Air Base Unit: 3575
Air Base Size: 2
Air Base Damage: 0
Hex City ID: 2
Depot Type: 4
Freight: 500000
Trucks: 0
On map art
MERGE WITH
BUILD TEMP PORT

CLEAR

FIND: SHAEF
NEXT

PICK CITY

0000) ---
0001) --- *** Germany ***
0002) --- Berlin
0003) --- Leipzig
0004) --- Hamburg
0005) --- Danzig
0006) --- Stettin
0007) --- Hannover
0008) --- Magdeburg
0009) --- Vienna
0010) --- Chemnitz
0011) --- Breslau
0012) --- Nuremberg
0013) --- Tilsit
0014) --- Memel
0015) --- Munich
0016) --- Salzburg
0017) --- Koenigsberg
0018) --- Dresden
0019) --- Pillau
0020) --- Kolberg
0021) --- Liegnitz
0022) --- Cottbus
0023) --- Deutsch Eylau
0024) --- Allenstein
0025) --- Oppeln
0026) --- Reichenberg
0027) --- Linz
0028) --- Graz
0029) --- Kuestrin
0030) --- Frankfurt an der Oder
0031) --- Goerlitz
0032) --- Stolp
0033) --- Belgard
0034) --- Stargard
0035) --- Neustettin
0036) --- Eberswalde
0037) --- Neubrandenburg
0038) --- Rostock
0039) --- Stralsund
0040) --- Luebben

ATTACHED UNITS
22nd Flak Regiment
126th Heavy Flak Battalion
525th RR Flak Battalion
I/S. Berlin Heimat Light Flak Battalion
II/S. Berlin Heimat Light Flak Battalion
Berlin Air Base

5.2.7. NAT/WEATHER TAB

The Nat/Weather Tab is toggleable and covers both National Attributes and Weather Effects. Toggle between the screens using EDIT WEATHER EFFECTS or EDIT NATIONS.

National Attributes enables you to adjust the morale levels of the Nations represented in the game.

This tab also allows you to modify the weather model but such an action is not recommended.

See Appendix N for more details about the Nat/Weather Tab.



WEATHER EFFECTS	RIVER COSTS			WEATHER FRONTS			EDIT NATIONS											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
Climate Zone	I II III	I II III	I II III	I II III	I II III	I II III	I II III	I II III	I II III	I II III	I II III	I II III	I II III	I II III	I II III	I II III	I II III	I II III
Polar	Sf Sf Sf	Sf Sf Sf	Sf Sf Sf	Sf Sf Sf	Co Co R	R R R	R R R	R R R	R R R	Co Co	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf
Humid Cold	Sf Sf Sf	Sf Sf Sf	Sf Sf Sf	Sf Sf Sf	Co Co R	R R R	R R R	R R R	R R R	Co Co	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf
Humid	Sf Sf Sf	Sf Sf Sf	Sf Sf Sf	Sf Sf Sf	Co Co R	R R R	R R R	R R R	R R R	Co Co	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf
Humid Warm	Sf Sf Sf	Sf Sf Sf	Sf Sf Sf	Sf Sf Sf	Co Co R	R R R	R R R	R R R	R R R	Co Co	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf
Temperate Humid	Sf Sf Sf	Sf Sf Sf	Sf Sf Sf	Sf Sf Sf	Co Co R	R R R	R R R	R R R	R R R	Co Co	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf	Sf Sf
Temperate Dry	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R
Arid Steppes	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R
Arid Desert	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R	R R R

	GOOD Road System			AVERAGE Road System			POOR Road System		
	MP Cost / Hex		Attack CV Adjustment	MP Cost / Hex		Attack CV Adjustment	MP Cost / Hex		Attack CV Adjustment
	Motorized	Non-Motorized		Motorized	Non-Motorized		Motorized	Non-Motorized	
Light Mud	+1	-	.900	+1	+1	.800	+1	+1	.750
Heavy Mud	+2	+1	.500	+4	+2	.250	+6	+3	.125
Light Snow	-	-	-	+1	+1	-	+1	+1	-
Snow	+2	+1	.900	+2	+1	.800	+2	+1	.750
Heavy Snow	+2	+2	.900	+3	+2	.800	+3	+2	.750

5.2.8. CSV TAB: EXPORTING AND IMPORTING GAME DATA

The CSV tab allows you to export and import either scenario or generic data to .csv spreadsheet files. These

files will be saved in the Matrix Games\Gary Grigsby's War in the West\Dat\CSV folder. By clicking on the different files on the CSV screen, you can limit which .csv files you wish to create.



NOTE

Make sure all .csv files for a scenario are closed before you attempt to use the Import From CSV function. Failure to do so will result in a FAILED flag next to whichever .csv file is still open on your computer.

6. THE MAP HEX AND CITY EDITOR

6.1. GENERAL

CITY	NAT	TILE	TEXT	CTRL
SEA	WTH	SCEN		

MAP HEX AND CITY EDIT MODE

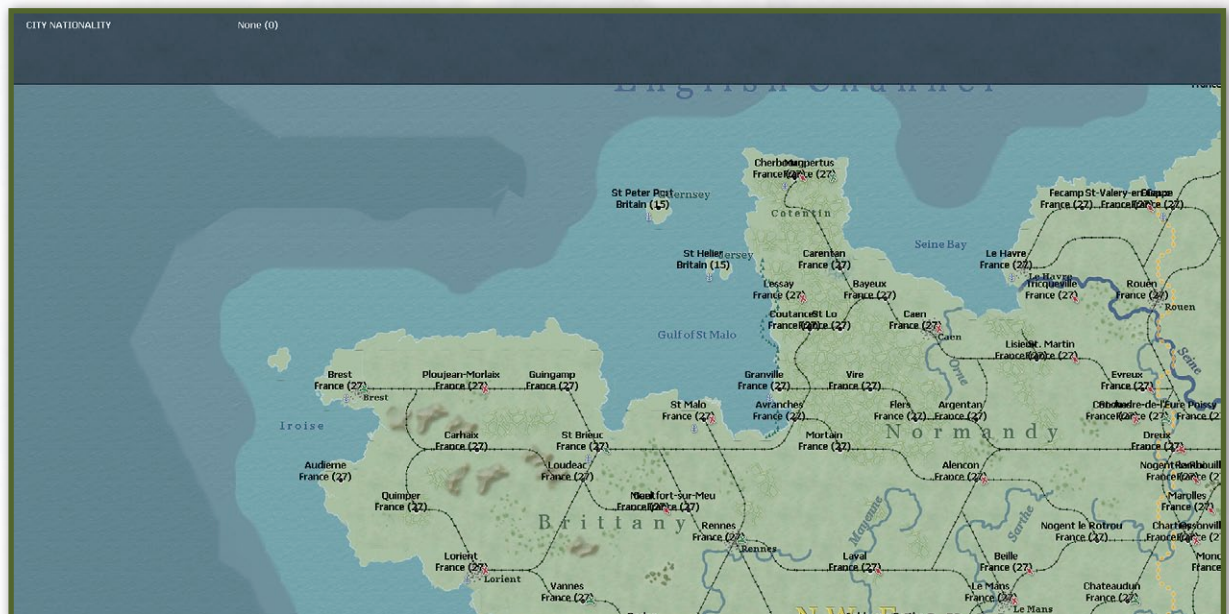
GGWITW has been developed with a tile-based map. Each hex has not only its own attributes but also its own art assigned. Map Text is added separately. There is no single graphics file that can be seen as a map in a standard graphics editing program. This approach uses much less memory, is faster on older computers and allows much more flexibility and modularity for the development team when editing the map or creating new maps. The GGWITW Editor has an inbuilt Map Hex Editor. You can access the Map Editor by pressing ` (~ / tilde) key when viewing the map. The Map Editor has eight functional areas which can be selected via the box in the top left corner.

CITY NATIONALITY (CITY). This allows easy changing of the nationality of Cities. First select the nationality by clicking on the None Text. To change the nationality right click on a city hex.

HEX NATIONALITY (NAT). This allows easy changing of the nationality of hexes. First select the nationality by clicking on the None Text. When a nationality is selected the map will be coloured by nation. You can then change nationality of a hex to the selected nationality either individually, by line or square. Individually selecting a hex and then right click will make the change. If Set by Line is chosen then selecting either end of the horizontal line by right clicking on the two hexes will convert those hexes and all those in between. Set by Square performs the same action both horizontally and vertically.

SCENARIO OFF MAP HEXES (SCEN). This allows the setting of a hex within the playable square of a scenario as off map - i.e. it is not available for use in

6.2. MAP HEX AND CITY EDITOR FUNCTIONS

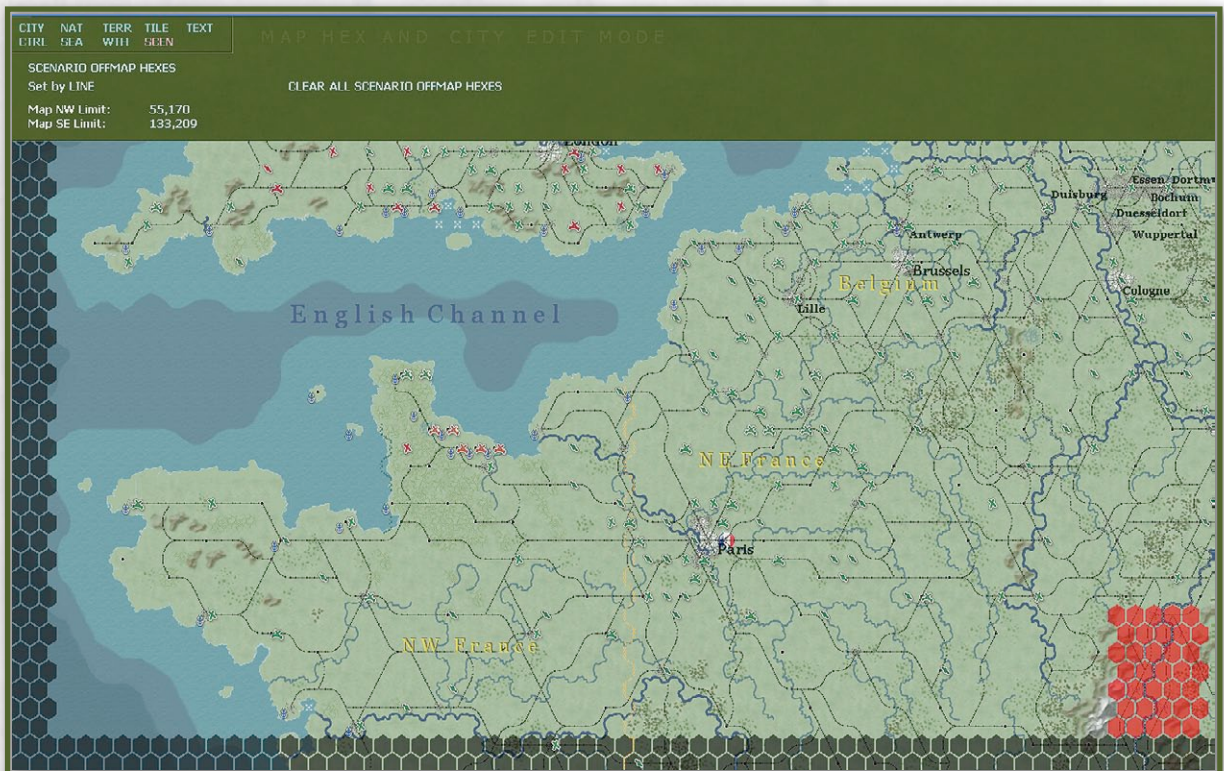




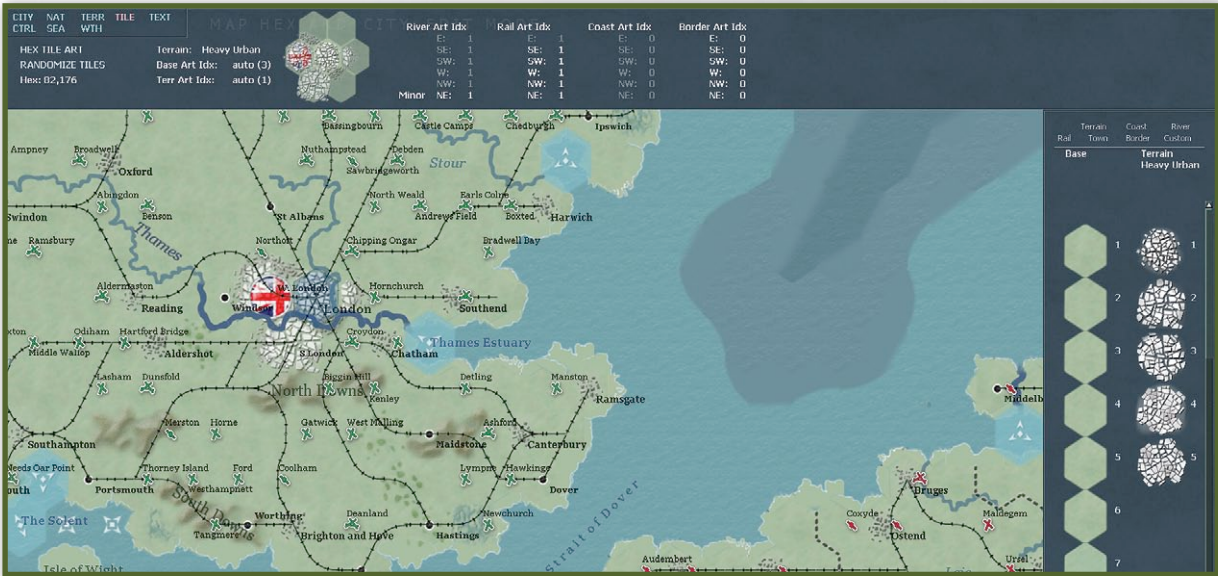
hexes will convert those hexes and all those in between. Set by Square performs the same action both horizontally and vertically. Off map hexes are shaded red. This mode also allows you to change the scenario's map playable area as you would in the Main tab and there is also a function to clear any off map hexes set.

scenario. It is only visible when a scenario is loaded and not in generic data. You can set a hex as off map either individually, by line or square. Individually selecting a hex and then right click will make the change. If Set by Line is chosen then selecting either end of the horizontal line by right clicking on the two

HEX TILE ART (TILE). This allows changing of the art applicable to a hex and is used to create the mosaic map. When you right click to select a hex the available choices of art appear on the right hand side and can be chosen as desired by clicking on the respective number.

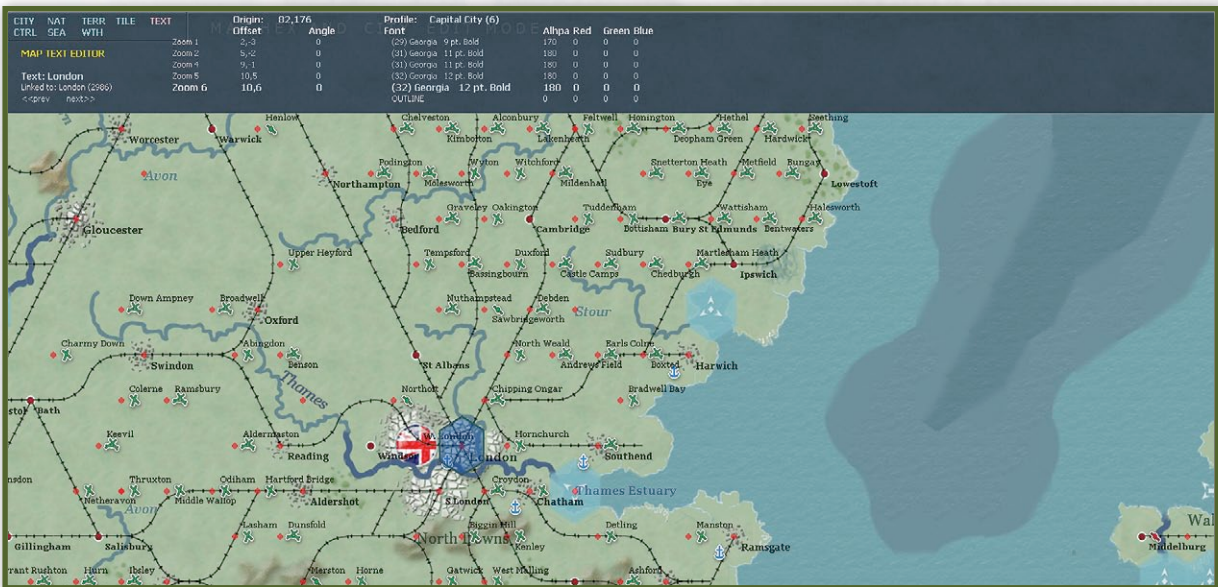


GARY GRIGSBY'S WAR IN THE WEST



MAP TEXT EDITOR (TEXT). The map text editor places the text on the map. In essence the text floats over the tiles. Each element of text is assigned to a Profile. The Profile defines at which zoom level the font appears and the specific font, size, and colour at those zoom levels. The font type and size is defined in the WitwFontconfigtext.txt file (See Modding). Entering the Font ID against each zoom level sets what appears when. The colour of the text is defined by the saturation of the alpha [sic] mask and the RGB value of the

text. In addition there is the possibility of setting a matching outline in a similar manner to the main colour. Whilst text strings assigned to a profile will all appear the same each they can be positioned individually. Firstly the origin sets the hex against which the text is allocated, then at each zoom level the precise position on the map can be adjusted by setting the x,y offset and angle of the text as required. Map Text can be exported to CSV if bulk adjustment of the offsets is required following a font change.

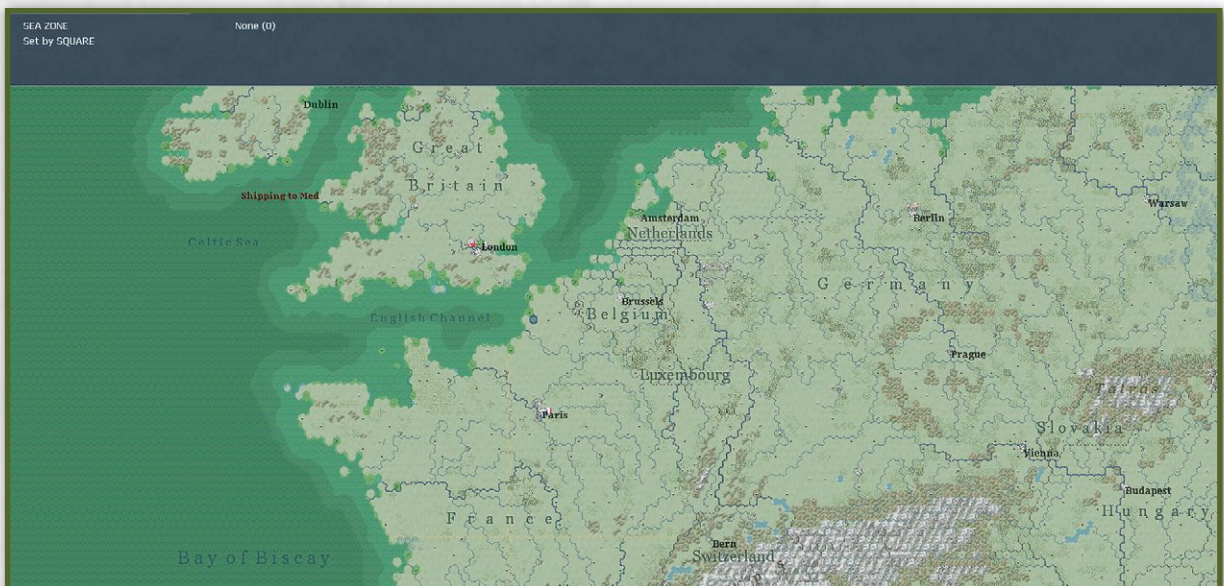




HEX CONTROL (CTRL). This allows easy changing of the control of hexes. First select the side by clicking on the None Text. When a side is selected the map will be coloured by side (Green- Allied, Blue - Axis & Grey- None). You can then change ownership of a hex to the selected side either individually, by line or square. Individually selecting a hex and then right click will make the change. If Set by Line is chosen then selecting either end of the horizontal line by right clicking on the two hexes will convert those

hexes and all those in between. Set by Square performs the same action both horizontally and vertically.

SEA CONTROL (SEA). This allows changing of the control of sea hexes. First select the sea area by clicking on the None Text. You can then change ownership of a hex to the selected sea area either either individually, by line or square. Individually selecting a hex and then right click will make the change. If Set by Line is chosen then selecting either end of the horizontal line by right



clicking on the two hexes will convert those hexes and all those in between. Set by Square performs the same action both horizontally and vertically.

WEATHER_ZONE (WTH). This allows changing of the hex weather zone. First select the weather zone by left clicking on the None Text. You can then change ownership of a hex to the selected weather zone

either either individually, by line or square. Individually selecting a hex and then right click will make the change. If Set by Line is chosen then selecting either end of the horizontal line by right clicking on the two hexes will convert those hexes and all those in between. Set by Square performs the same action both horizontally and vertically.



7. MODDING

7.1. GENERAL

In the context of this Manual 'Modding' refers to amending elements of the GGWITW GUI.

NOTE

The GUI will not display pure white i.e. RGB 255,255,255. It is recommended that white is displayed as RGB 253, 253, 253.

7.2. CHANGING GAME FONTS

WitW Font Config File. GGWITW allows the player to change every font used in the game; this includes the font type, size, and whether it appears as normal, bold or italic. This is accomplished by modifying the WitwFontConfig.txt file in the \dat folder of the game directory using a text editor like Notepad. The format for changing fonts is quite simple. Each Font ID has a different use. Against the ID is listed the font type, size and attribute. So in the WitwFontConfig.txt file 1,Tahoma,14,0 means that ID 1 will use 14 Pt Tahoma. The details are all included in the file but for ease of reference the stock file is reproduced here.

NOTE

Commented lines begin with '//'; this means they will not be read by the program.

```
//Font id,Name,Size,0-normal/1-bold/2-italic/3-bold
italic
//*****
//Fonts 1-10 are GUI Text, Fonts 11-40 are Map Text
Fonts, Max of 63 fonts supported
//
//Default Fonts
//1,Tahoma,14,0 - Common Header Font
//2,Tahoma,10,0 - Common Game Font
//3,Tahoma,18,0 - End Game Screen
//4,Verdana,7,0 - Top Right Menu date/turn
//5,Tahoma,9,1 - Unit Counters High Zoom and small
bold header
//6,Tahoma,8,0 - Small Font in Commander's Report
//7,Georgia,18,0 - Weather Report
//8,Verdana,7,1 - Unit Counters Med Zoom and
Commander's Report
//9,Verdana,9,0 - Editor
//10,Lucida Console,9,0 - Log Screen
//11 - SPARE
//12-26 - Maptext for Large Areas: Sea / Sea Areas /
Countries / Regions / Islands / Features
//27-32 - Maptext for Small Areas: Towns / Cities /
Lakes / Small Islands
//33-40 - Maptext for Terrain / Rivers
//
1,Tahoma,14,0
2,Tahoma,10,0
3,Tahoma,18,0
4,Verdana,7,0
5,Tahoma,9,1
6,Tahoma,8,0
7,Georgia,18,0
8,Verdana,7,1
9,Verdana,9,0
10,Lucida Console,9,0
11
12,Georgia,9,1
13,Georgia,13,0
14,Georgia,14,0
15,Georgia,16,0
```

```
16,Georgia,18,0
17,Georgia,20,0
18,Georgia,24,0
19,Georgia,28,0
20,Georgia,30,0
21,Georgia,32,0
22,Georgia,36,0
23,Georgia,40,0
24,Georgia,48,0
25,Georgia,52,0
26,Georgia,60,0
27,Georgia,8,0
28,Georgia,8,1
29,Georgia,9,1
30,Georgia,10,1
31,Georgia,11,1
32,Georgia,12,1
33,Georgia,12,3
34,Georgia,13,2
35,Georgia,14,2
36,Georgia,16,2
37,Georgia,18,2
38,Georgia,20,2
39,Georgia,24,2
40,Georgia,11,3
```

NOTE

All alignment is done using the default fonts and with normal (96dpi) system font size. So before reporting any text alignment problems please run it with default fonts.

7.3. UNIT INSIGNIA

GGWITW includes a feature which allows the unit insignia of ground units to be displayed as part of the Unit Detail Screen. These can be easily modified.

The graphic needs to be *.tga file no bigger than 100 x 100 Pixels in size. If it is smaller than 100 x 100 then it will be auto enlarged to 100 x 100. To appear the file must have an embedded alpha mask. The name of the file must match the name of the unit. The files are stored by nation in the Dat/Art/Sym Folder. The nation codes are:

Germany	"GE"
Finland	"FI"
Italy	"IT"
Rumania	"RU"
Hungary	"HU"
Slovakia	"SL"
Bulgaria	"BG"
Czech	"CZ"
Belgium	"BE"
Netherlands	"NL"
Poland	"PO"
Soviet Union	"SU"
USA	"US"
USA Marines	"UM"
Britain	"BR"
Greece	"GR"
Norway	"NW"
Yugoslavia	"YU"
Canada	"CA"
India	"IN"
Australia	"AS"
Free French	"FF"
South Africa	"SA"
Italy	"IT"
Brazil	"BZ"
Commonwealth	"CW"
France	"FR"
New Zealand	"NZ"
Morocco	"MO"
Denmark	"DE"
Vichy France	"VC"
America	"AM"

7.4. GROUND ELEMENT AND AIRCRAFT ICONS

Each GGWITW Ground Element and Aircraft has an Icon which appears when the Show Ground Element/Aircraft Icons Preference is enabled. If you add additional Ground Elements or Aircraft then you will need to create a suitable icon.

The Icon Graphic is a *.tga file 60 x 30 Pixels with an embedded alpha mask. The file name for Ground Elements is GXXXX.tga and Aircraft AXXXX.tga; where XXXX is the slot number in either the Ground Element or Aircraft Tab. The files are located in the Dat/Art/Units Folder.

7.5. GROUND ELEMENT AND AIRCRAFT PICTURES

Each GGWITW Ground Element and Aircraft has a Picture which appears in the Equipment Detail Screen. If you add additional Ground Elements or Aircraft then you will need to create a suitable picture.

The Picture Graphic is a *.bmp file 221 x 166 Pixels. The file name for Ground Elements is GPXXXX.bmp and Aircraft AXXXX.bmp; where XXXX is the slot number in either the Ground Element or Aircraft Tab. The files are located in the Dat/Art/photo Folder.

7.6. LEADER PICTURES

Each GGWITW Leader has a Picture which appears in the Leader Detail Screen. If you add additional Leaders then you will need to create a suitable picture.

The Picture Graphic is a *.bmp file 156 x 222 Pixels. The file name for Leaders is LdXXXX.bmp; where XXXX is the slot number in either the Leader Tab. The files are located in the Dat/Art/photo Folder.

7.7. ON MAP GRAPHICS

It is possible to mod the On Map graphics in GGWITW such as Unit Counters. The files are located in the Dat/Art/Units Folder. The files are easy to locate if you have a thumbnail viewer capable of showing *.tga files. Should you wish to attempt to mod these files then be aware that there are different files for each zoom level and that the files need to have alpha masks embedded corresponding to the visible areas in game.

7.8. MAP TILES

It is possible to mod the Map Tile graphics in GGWITW. The files are located in the Dat/Art/Tiles Folder. The files are located in folders that correspond to the terrain type. Each terrain type has a number of files and in each file a number of tiles which match the differing weather conditions that can be displayed.

8. APPENDICES

8.1. APPENDIX A: UNDERSTANDING THE DATA STRUCTURE FOR GGWITW

By Jim Wirth

Before one can go beyond simple scenario design to editing the underlying data bases themselves it is important to understand how they were built and how they work together to produce the units you manoeuvre on the map. The game system used in War in the West utilizes four interrelated data bases to depict the combat units you see on the map. The first is the Device data base which consist primarily of the weapons themselves; then there are the aircraft and ground element data bases containing the various aircraft and ground combat units (e.g. squads, tanks, etc.) modelled in the game; finally there is the TOE (Table of Organization & Equipment) data base that defines the actual units players can manipulate on the map. In short there is a lot more going on “under the hood” than first meets the eye.

8.1.8.1. AIRCRAFT AND GROUND ELEMENT DATA BASES

Let us start at the very core of the game with the Device data base. The various weapons modelled in the device file usually represent a multiple use weapon such as a rifle or a type of tank gun but a device can also be a round of ammunition such as an aerial bomb or a hand grenade and even a non-weapon such as an aircraft drop tank. The data parameters of each device define the strengths and weaknesses of each weapon. For example, when combat is occurring at close range, the high rate of fire of machine guns and other automatic weapons will cause significant casualties but the same weapons are virtually useless at greater ranges. The inclusion of an area effect modifier (blast radius) better differentiates the power of artillery over other weapons and an anti-armour rating for non-AP rounds allows better modelling of the penetration effects of conventional artillery warheads versus “thin skinned”

warheads like mortar rounds and rockets. The overall intent has been to increase the “granularity” of combat resolution to give a more tactical feel to the operational level combat being depicted.

8.1.8.2. AIRCRAFT AND GROUND ELEMENT DATA BASES

Created almost simultaneously with the device data base were the aircraft and ground data bases containing the planes, tanks, squads, guns, etc. that utilize the weapons. The aircraft data base contains most of the aircraft types employed by the Allied and Axis air forces in the ETO (European Theatre of Operations). Each aircraft is detailed as to its weapons load out, performance characteristics, air crew size, logistical requirements and production information (cost to produce, date it entered service, weeks in production, & maximum production per factory). In WitW it is possible to change the default weapons load out to carry different types of bombs and/or drop or auxiliary fuel tanks. The ground data base provides a large array of armoured fighting vehicles (AFVs), guns, and squads (rifle, cavalry, engineer, panzer grenadier, etc.). In addition to their unique weapons, AFVs are rated for armour protection (front, side & top), size, speed, mechanical reliability and survivability. Crew served weapons are detailed from two man anti-tank teams to massive siege howitzers. Multiple versions are presented of almost every squad type to show their evolution over the course of the War. Like aircraft, all grounds units have specified logistic requirements, production costs, dates of service, and, with respect to AFVs and certain artillery weapons, production limits.

8.1.8.3. UNIT DATA BASES

After completion of the aircraft and ground element data bases the next step was to assign these formations to units that would be deployed on the map to conduct the actual combat operations in the game. At this point a major divergence occurs between the manner in which air units are created and regulated and that of ground units.

8.1.8.4. AIR UNITS

Air units consist of two elements: an air group unit listed in the air group data base showing the type and number of aircraft the group initially has, and an air base that appears on the map and is comprised of a variable number of air groups. Although air bases begin a scenario with the air group units historically assigned to them there is no restriction on mixing air groups. The aircraft which actually make up these air groups are upgraded over time by the production system or, when set to Manual Upgrade, by the player. If an air group is set to Auto Upgrade when a particular type of aircraft goes out of production and is replaced with a more advanced or different aircraft type, the production system will attempt to upgrade air groups using the now defunct aircraft type with the newer type or, if there is no upgrade, a similar type still in production (fighter replaces fighter, etc.). If no similar type is available in some cases a related type can be substituted (fighter-bomber replaces fighter). Regardless of the changes in the aircraft composing the air groups, the air groups themselves are fixed in size for the duration of the game; ground combat formations don't work that way.

8.1.8.5. GROUND UNITS

The type and number of ground elements comprising a ground combat unit are specified in the Table of Organization & Equipment (TOE) for that unit. There are HUNDREDS of TOEs specifying the composition of everything from a self-propelled infantry gun company to an SS Panzer Division. Most major combat units have multiple TOEs to reflect changes in the number and/or type of ground elements composing the formation. The TOEs have a two tier structure: first they specify the general class of ground element required such as medium tank, and then they specify the specific type of that class such as Sherman III. The specific type of ground element can be thought of as the default type. When a ground combat unit takes replacements the production system it will first try to give the unit the default ground element type. If none of the default type is available then the production system will look for a substitute of the same class (e.g. another medium tank). If making substitutions, the production system will always prefer a unit in production to one out of

production even if a large number of the unit out of production has accumulated in the production pool. If no units of the same class are available as replacements the production system is programmed to substitute units of a different class based on a defined priority in the Ground Type data base (accessible from within the Ground data base). For example, an Assault Gun would substitute for a Tank Destroyer.

The actual historical ground combat units detailed in each scenario are associated with the appropriate TOE for that unit type and time of the War but the units themselves are customized per the historical situation. For example, the German panzer divisions in France awaiting the Allied invasion in June, 1944 varied significantly in the number and type of AFVs they contained compared to the "theoretical" organization shown in their TOE for 1944. As the game progresses and the panzer divisions suffer losses and take replacements the program will attempt to bring the divisions into correspondence with their prescribed TOE. Since losses can exceed production it can be sometime before the panzer divisions start to look like their TOE and that assumes they get there before the TOE changes.

TOE changes are both dramatic and dynamic in shaping how the game plays. When its TOE changes the combat unit will return to the pool any class of ground element not in the new TOE. It will not return outdated ground elements if the new TOE still requires that class of ground element; nor will it immediately return any surplus of a class over what is required in the new TOE. Outdated ground elements are removed only when the production system has sufficient production to replace them with new ground elements. A surplus of any class of ground element is retained until either losses bring it down to the level required in the TOE or (if over 125% of requirement) the surplus is gradually returned to the pool. The various TOEs are closely tied to production and practically every ground element produced in the game appears in one or more TOEs at some time.

8.1.8.6. PRODUCTION

There are three types of equipment production in the game: historical production for aircraft, AFV/Combat vehicles and certain artillery weapons (including anti-tank and anti-aircraft guns) based on a fixed amount

each turn; demand based production for non-AFV/Combat vehicle/artillery ground elements and generic vehicles based on the difference between the non-AFV/Combat vehicle/artillery TOE strength of a unit and its actual strength, and non-demand based production of non-AFV/Combat vehicle/artillery equipment to allow for the realistic production of armaments ahead of time, that often end up never being used, instead of having a perfect just-in-time production system. Production on demand is governed by two factors: need and availability. Need comes from a comparison of the current strength of a combat unit and the full strength required by the particular unit's TOE. This comparison is calculated for every unit in play and summarized to determine the total amount of men and equipment needed at that moment. The production system will try to create the amount of non-AFV/Combat vehicle/artillery ground elements needed to fill this need. Availability determines what can be produced. Ground elements that are not currently in production cannot be produced. In rare cases, a TOE will call for a ground element not yet in production in which case the production system will substitute an equivalent that is available to be produced.

It is important to remember that production on demand is self-adjusting to what's happening on the battlefield. If a player suffers less than historical losses, non-AFV/Combat vehicle/artillery ground elements will not build up in the pools with the exception of some non-demand based production.

Aircraft, AFVs, non-armoured combat vehicles and certain artillery are produced using historical (fixed) production. Historical production means the production system will produce approximately the same number of aircraft or AFVs as was produced historically (less equipment included in reinforcements) over the historical time period the said aircraft or AFV was in production. Historical production is flat on a per factory basis meaning a factory point produces the same amount of a unit each week over the entire span of its production. Flat production can cause new equipment to accumulate in the pool before sufficient demand has built up for it (from TOE changes) while at the other extreme combat units can run short of ground elements containing equipment nearing the end of its production.

When equipment reaches the end of its production period its associated factory can "upgrade" to different equipment. This new equipment is usually either a more advanced version of previous equipment or a new utilization of components of the previous equipment. For example, a B-17F upgrades to a B-17G or a Panzer IVh upgrades to a Panzer IVj. In the WitW production system, the term upgrade refers to a factory changing what it is producing not the product of that production. In the data base when a plane, tank, etc. is coded to upgrade to another plane, tank, etc. it just means that the factory producing that particular equipment will on a particular turn (first turn of a month) stop producing that particular equipment and start producing the equipment it "upgrades" to. Except for the restriction that aircraft can only upgrade to other aircraft and AFVs to other AFVs there doesn't have to be a technological relationship between one type of equipment and the equipment it upgrades to.

A fixed production equipment type can be in one of five different states: out of production & out of service, out of production & in service, in production & in service, in production & not yet in service, and not yet in production & not yet in service. Equipment that is both out of production and out of service are in reserve in the pool. If losses become excessive this "obsolete" equipment can be drawn back into service; otherwise they will eventually be scrapped and disappear from the pool.

Equipment that is out of production but in service will remain in service until newer equipment of that class is available to replace them or they are lost in combat. For example, the Allied player starts the 1943 Campaign game with large numbers of out of production M3 Stuart light tanks. Over time these tanks will be replaced by in production M5 Stuart light tanks. On the other hand, the out of production SIG33 self-propelled infantry guns that are available to the Axis player at the start of the game have no counterpart in production and will remain in service until they are most likely eliminated through attrition.

Equipment that is in production and in service will remain in service as long as it remains in production and will be the default ground element type of a particular unit. Equipment that is production but not yet in service will accumulate in the pool until sufficient

quantities accumulate to replace in service but out of production equipment of the same class. Equipment that is not yet in production is listed in the production display for informational purposes only.

8.1.8.7. PRODUCTION AND THE GAME EDITOR

Since the game system was never designed for player intervention in production, using the editor to alter what is produced and in what quantity will definitely affect play balance and should only be done so with great caution. For example if a player decided he wanted to change a Marder III factory to a Panther D factory in the 1943 Campaign then the Marder III factory would not be available to upgrade to a Jagdpanzer 38(t) Hetzer factory in 1944. The result would be more Panthers for the relatively few panzer divisions but fewer Hetzers for the scores of infantry divisions.

Not only does changing what is produced affect the future production of other units in WitW but also about how overall production since such a change is not automatically accounted for. If a player wants the same amount of production resources to be devoted to the Panther example above, he has to manually edit the factory size and build limit as well. To illustrate, a Marder III has a production cost of 113 and there is 1 factory producing 11 of them per week for a total cost of 1,243. The Panther D has a production cost of 512 so to be as initially "cost neutral" as possible the factory size would have to be reduced to 2. Since the size a factory can expand to (build limit) is set in the Ground Element data base and not in the City data base containing the factory, the factory will start expanding until it reaches the Panther D build limit of 4. The diversion of additional production resources to the extra Panther Ds will mean less production resources available to meet the needs of demand production (less of everything that isn't an aircraft, AFV or artillery). In short there is no "free lunch" and no easy way around a production scheme that is designed to produce a specific result.

If these production complexities weren't difficult enough, they must all be considered BEFORE you begin a game. Once you begin a scenario, the data bases are loaded in and any further changes you make would require you to restart the scenario. Regardless how daunting these issues are there are many of you who

will still want to try your hand at editing the data bases. We wish you luck but remind you that it took years of development and thousands of hours of testing to deliver you a playable game. Have fun.

8.2. APPENDIX B: LOCATIONS TAB ATTRIBUTES

ID: Select slot for new location.

FID: Factory type identification number.

NUM: Input Factory Capacity.

DAM: Input percentage of damage currently sustained by that type of factory.

FACTORY TYPE: This is a name describing the type of factory. Click on the factory name to move a particular factory to another location.

Player: Enter the Player side for the location:

- 1=Axis
- 2=Allied
- 3=Neutral

Nation: Select the nation of Location (the following list is the standard GGWITW nation list used throughout the editor).

- 0=None
- 1=Germany
- 2=Finland
- 3=Italy
- 4=Rumania
- 5=Hungary
- 6=Slovakia
- 7=Bulgaria
- 8=Czech
- 9=Belgium
- 10=Netherlands
- 11=Poland
- 12=Allied Union
- 13=US Army
- 14=USMC
- 15=Britain
- 16=Greece
- 17=Norway
- 18=Yugoslavia
- 19=Canada
- 20=India
- 21=Australia

22=Free French
 23=South Africa
 24=WA Italy
 25=Brazil
 26=Commonwealth
 27=France
 28=New Zealand
 29=Morocco
 30=Portugal
 31=Sweden
 32=Denmark
 33=Turkey
 34=Switzerland
 35=Spain
 36=Iraq
 37=Vichy France
 38=America
 41=Sweden
 42=Ireland
 43=Iceland
 44=Luxembourg
 45=Switzerland
 46=Andorra
 47=Albania
 48=Turkey
 49=Portugal
 50=Spain
 51=Iraq
 52=Algeria
 53=Tunisia
 54=Libya
 55=Egypt
 56=Syria
 57=Lebanon
 58=Transjordan
 59=Palestine
 60=Saudi Arabia
 61=Kuwait
 62=Iran
 63=Cyprus

Population: Input population points. Each point is equal to 50,000 people.

Location: Enter the x,y coordinates for the location on the map.

Supplies: Enter the number of tons of supply stored at the location.

Fuel: Enter the number of tons of fuel stored at the location.

Oil: Enter the number of tons of oil stored at the location.

Resource: Enter the number of tons of resources stored at the location.

Air Base Unit: Shows the Slot# of the attached Air Base unit. If the value is 0 then no Air Base is attached. If you wish to attach an Air Base unit then it is best to do it using the process shown via the Units tab.

Air Base Size: Enter the size of the Air Base. It can either be 1, 2 or 3.

Air Base Damage: Enter the damage of the Air Base between 0 and 100.

Hex City ID: This is the slot number of the City.

Depot Type: Enter the Depot Type if one is present. The value can be either 1, 2, 3 or 4. Types 2 or 3 must be in a Port location.

Freight: Enter the amount of Freight at the Depot. Value must be Tons x 4.

Trucks: Enter the amount of Freight at the Depot.

On Map Art: Dev Only

MERGE WITH: Allows the merging of two locations if required.

BUILD TEMP PORT / REMOVE TEMP PORT: Toggles creation of a temporary port and associated airbase if you are creating a scenario which has an amphibious invasion already in progress.

ATTACHED UNITS: This is a list of units attached to a location.

8.3. APPENDIX C: LEADERS TAB ATTRIBUTES

The following is a list of the slot numbers and associated ranks used in the editor.

Leader ID: Select slot for new leader.

Last Name: Enter last name of the leader.

First Name: Enter first name of the leader.

Nation: Select nation from the standard GGWITW nation list.

Rank: Select Leader Rank from 1- 5 star. Precise rank is Nation dependent.

Unit:

Political: Enter number 0-9; higher is better.

Morale: Enter number 0-9; higher is better.

Initiative: Enter number 0-9; higher is better.

Admin: Enter number 0-9; higher is better.

Infantry: Enter number 0-9; higher is better.

Mech: Enter number 0-9; higher is better.

Air: Enter number 1 thru 10; higher is better.

Naval: Enter number 0-9; higher is better.

Restriction: [special] Enter number 0-3.

0=Ground only

1=SS*

2=Air and Ground

3=Air Only

NOTE

*SS HQs must have an SS leader. SS leaders cannot be in non-SS HQs.

Max Command: Enter number 0-2 for maximum command level for leader.

0=Corps/Army

1=Army Group

2=High Command

NOTE

A leader may not be put in charge of a HQ that is higher than his Max Command allows.

Available Year: Enter number for first year leader is available (use four digits).

Available Month: Enter number for month leader is available.

Last Year: Enter number for last year leader is available.

Last Month: Enter number for last month leader is available.

Promotion 1 thru 4: List promotion ranks and dates for leader.

NOTE

An arriving HQ with no leader attached in the scenario data will get a leader automatically assigned to it when it arrives. Any leader attached to an arriving unit in the scenario database is unavailable for reassignment until that unit arrives on the map.

8.4. APPENDIX D: TOE(OB) TAB ATTRIBUTES

The following is the list of TOE(OB) attributes and their potential assignments:

OB: Select slot for new TOE(OB).

Upgrade: Select OB slot number to upgrade to.

Men: Information field that displays total number of men in an OB.

WID: Select the ground element ID to add to an OB.

QTY: Input the number of ground elements available in an OB.

GROUND ELEMENT: This is a particular ground element's name/label. Click on the name/label to go to the ground element's tab to view its data.

CHANGE SUFFIX: This function allows you to change the OB Name Suffix (e.g. 'Tank Division', 'Hun Cavalry Brigade', etc.).

Class: Select one of the following:

0=None

1=Combat

2=HQ

3=Support

4=Partisan

5=Multirole

Type: Select one of the following:

0=None

1=Armour

2=Mechanized

3=Motorized Infantry

4=Infantry

5=Parachute

6=Cavalry

7=Artillery

8=Anti-tank

9=Corps HQ

10=Army HQ

11=Army Group HQ

12=Anti-Aircraft

13=Mountain Infantry

14=SP Artillery

15=Engineer

16=Construction

17=Mortar

18=Rocket

19=Security

- 20=Fort
- 21=Machinegun
- 22=Aviation
- 23=Partisan
- 24=Air Landing
- 25=Naval

Size: This allows you differentiate between the name of the unit and the size symbol that appears as the default settings are hardcoded. A good example is a British Artillery Regiment. If you leave the size as 0 - default then the regimental symbol of 'III' will appear. However a Regiment in the British Army is historically Battalion sized so a 2 should be entered to ensure the correct symbol is displayed.

Nation: Select nation from the standard GGWITW nation list.

First Year: Input first year TOE(OB) is available (use four digits).

First Month: Input first month TOE(OB) is available (1-12).

Last Year: Input last year TOE(OB) is available (use four digits).

Last Month: Input last month TOE(OB) is available (1-12).

Motorization: Input the appropriate permitted level of motorization:

- 0=None - No motorization is possible.
- 1=Supply Only - The supply elements can be motorized e.g. German Inf Div
- 2=Non Infantry - All the non Infantry elements can be motorized e.g. British Infantry Division
- 3=All - Fully motorized e.g. Panzer Division
- 4=Rail - Can be moved by rail.

8.5. APPENDIX E: GROUND ELEMENTS TAB ATTRIBUTES

The following is a list of attributes and associated values used on the Ground Elem tab in the editor.

NOTE

You should place your Ground Elements in a slot before 1480.

ID: Select slot for new ground element.

Upgrade: Select ground element slot number to upgrade to.

DEV: Select the device ID to add to a ground element.

QTY: Input the number of devices available in a ground element.

DEVICE NAME: This is a particular device's name/label. Click on the name/label to go to the device's tab to view its data.

FACE: Select the device facing:

- 0=Fwd (forward)
- 1=Side
- 2=Rear
- 3=Turret (turret/top turret)
- 4=BT (ball/bottom turret)
- 5=TR (top-rear)
- 6=BR (bottom-rear)
- 7=SM (swivel mount)
- 8-10=Slots Not Used
- 11=Int (Internal bomb load)
- 12=Ext (external bomb load)

ROF: Input rate of fire. Rate of Fire (ROF) is not used in the conventional military sense. It indicates how many times a device will be allowed to fire during the combat phase. The higher the number entered the better the ROF.

ACC: Input accuracy rating.

AMMO: Input number of rounds of ammo available for the device.

Men: Input the number of men that crew the ground element.

Speed: Input the speed of the device in miles per hour (mph).

Size: Input the size of the device:

- 1=Infantry, MGs, mortars, light & medium artillery, antitank & anti-aircraft guns, etc.
- 2=Heavy artillery, antitank & anti-aircraft guns, etc.
- 3=Light tanks, armoured cars, assault guns, heavy artillery, etc.
- 4=Medium tanks, heavy artillery, etc.
- 5-10=Heavy & super heavy tanks, heavy artillery, siege guns & mortars, etc.

Front Armour: Input front armour thickness in millimetres.

Side Armour: Input side armour thickness in millimetres.

Top Armour: Input top armour thickness in millimetres.

Maximum Imports: Input the maximum number of the ground element that can be imported.

Import From ID: Enter the ground element slot ID number you wish to import.

Use Photo ID: Enter the ground element slot ID number you wish to use the photo image .bmp file.

Use Symbol ID: Enter the ground element slot ID number you wish to use the icon image .tga file.

Type: Select type from the following list:

- 1=Rifle Squad
- 2=Infantry-AT
- 3=Cavalry Squad
- 4=Machinegun
- 5=Mortar
- 6=AT Gun
- 7=Mech-Inf Squad
- 8=Medium Flak
- 9=Artillery
- 10=Naval Gun
- 11=Armoured Car
- 12=Light Tank
- 13=Medium Tank
- 14=Heavy Tank
- 15=CS Tank
- 16=Motor-Inf Squad
- 17=Flame Tank
- 18=Assault Gun
- 19=Mech-Engr Squad
- 20=Engineer Squad
- 21=SP Artillery
- 22=SP Flak
- 23=HT AT-Gun
- 24=HT MG/Mor
- 25=HT CS-Mortar
- 26=Special Forces
- 27=Marine Commando
- 28=Heavy Truck
- 29=SP AAMG
- 30=AAMG
- 31=Rocket
- 32=Heavy Artillery
- 33=Light Flak
- 34=Heavy Flak
- 35=DD Tank
- 36=MSW Tank [minesweeper tank]
- 37=Engineer Tank
- 38=Airborne Squad
- 39=SP Inf-Gun
- 40=SMG Squad
- 41=Barge
- 42=Air Landing Section
- 43=Heavy AT Gun
- 44=Light AT Gun
- 45=Heavy Infantry Gun
- 46=Light Artillery
- 47=Airborne Tank
- 48=Recon Jeep
- 49=Motorcycle Squad
- 50=Ski Squad
- 51=Security Squad
- 52=Partisan Squad
- 53=Naval Rifle Squad
- 54=Labour Squad
- 55=HQ Troops
- 56=Ammo Truck
- 57=Light Armour
- 58=Heavy Mortar
- 59=SP AT Gun
- 60=Tank Destroyer
- 61=Hvy Tank Destroyer
- 62=Infantry Gun
- 63=Infantry Tank
- 64=Cavalry Tank
- 65=Hvy Cavalry Tank
- 66=Hvy Assault Tank
- 67=Lt Tank Destroyer
- 68=CS Cavalry Tank
- 69=CS Infantry Tank
- 70=Light Armoured Car
- 71=Naval Artillery
- 72=CDL Tank
- 73=Recon Halftrack
- 74=Flamethrower
- 75=Assault Tank
- 76=Foreign Medium Tank
- 77=Foreign Light Tank
- 78=Foreign Flame Tank
- 79=Foreign Light TD
- 80=Foreign Tank Destroyer
- 81=Foreign Assault Gun
- 82=Foreign SP Artillery
- 83=Foreign Armoured Car
- 84=Foreign SP Rocket
- 85-93=BLANK

94=Troop Ship
 95=Cargo Ship
 96=Vehicle Repair
 97=Supply Dump
 98=Fuel Dump
 99=Support
 100=BLANK
 101=Manpower
 102=Heavy Industry
 103=Oil
 104=Fuel
 105=Synthetic Fuel
 106=Resource
 107=Artillery
 108=Vehicle
 109=Rail yard
 110=Port

111=V-Weapons Factory
 112= V-Weapons Launcher
 113=U-boat Factory
 114=U-boat Pen
 115-119=BLANK

Nation: Select from the standard GGWITW nation list.

First Year: Enter number for first year ground element is available (use four digits).

First Month: Enter number for month ground element is available.

Last Year: Enter number for last year ground element is available (use four digits).

Last Month: Enter number for last month ground element is available.

Load Cost: Enter the ground element strategic and air transport load cost.

Fuel Use: Enter fuel usage for supply purposes.

Main	Units	Air Groups	Locations	Leaders	TOE(OB)	Ground Elem	Aircraft	Device	Nat/Weather	CSV
ID: 1						Rifle Squad				
Class:		Infantry (1) Infantry		Ground Elements of 'Rifle Squad' type		PICK GROUND ELEMENT TYPE				
Combat Value:		3		(0081) Rifle Squad (Ger 1/39) (0082) Rifle Squad (Ger 7/43) (0151) Rifle Squad (Fin 6/44) (0152) Rifle Squad (Fin 1/39) (0199) Rifle Squad (Ita 1/39) (0253) Rifle Squad (Rum 1/44) (0254) Rifle Squad (Rum 1/42) (0255) Rifle Squad (Rum 1/39) (0298) Rifle Squad (Hun 1/44) (0299) Rifle Squad (Hun 1/39) (0315) Rifle Squad (Slo 7/43) (0316) Rifle Squad (Slo 1/39) (0361) Rifle Squad (Ita 12/43) (0732) Partisan Squad (SU 6/41) (0793) Rifle Squad (SU 4/41) (0794) Rifle Squad (-) (SU 8/41) (0795) Rifle Squad (SU 7/42) (0796) Rifle Squad (+) (SU 4/42) (0797) Rifle Squad (SU 9/43) (2073) Rifle Section (CW 1/39) (2074) Rifle Section (CW 7/40) (2075) Rifle Section (CW 7/41) (2076) Rifle Section (CW 5/42) (2077) Rifle Section (CW 6/43) (2572) Rifle Squad (Ame 7/43) (2573) Rifle Squad (+) (Ame 10/44)		0000) 0001) Rifle Squad 0002) Infantry-AT 0003) Cavalry Squad 0004) Machinegun 0005) Mortar 0006) AT Gun 0007) Mech-Inf Squad 0008) Medium Flak 0009) Artillery 0010) Naval Gun 0011) Armored Car 0012) Light Tank 0013) Medium Tank 0014) Heavy Tank 0015) CS Tank 0016) Motor-Inf Squad 0017) Flame Tank 0018) Assault Gun 0019) Mech-Engr Squad 0020) Engineer Squad 0021) SP Artillery 0022) SP Flak 0023) HT AT-Gun 0024) HT MG/Mor 0025) HT CS-Howitzer 0026) Special Forces 0027) Marine Commando 0028) Airborne Engineer 0029) SP AAMG 0030) AAMG 0031) Rocket 0032) Heavy Artillery 0033) Light Flak 0034) Heavy Flak 0035) DD Tank 0036) MSW Tank 0037) Engineer Tank 0038) Airborne Squad 0039) SP Inf-Gun 0040) SMG Squad				
Support Need:		4								
Ammo Type:		1								
Produced by:		Armaments (1)								
Target Type:		Inf								
Substitutions:		#1: <Set Substitution>								
				SET AS FILTER						
				EDIT GROUND ELEMENTS						

Ammo Use: Enter ammo usage for supply purposes.

Reliability: Enter reliability factor for the ground element.

Build Cost: Enter amount of supplies required to produce the ground element.

Build Limit: Enter the factory build limit for the ground element.

Expansion Rate: Enter the factory expansion rate.

Number In Pool: Enter the number of ground elements in the production pool.

Weeks in Production: Information field that shows how many weeks the ground element is in production.

Factory Sites: Information field that shows how many factory sites are producing the ground element.

EDIT GROUND TYPES: This toggles to a screen that allows you to filter ground elements by their ground

type. Of importance in this view is the ability to set substitutions. This sets the ground types that might be allocated to a unit if the primary type is not available.

8.6. APPENDIX F: AIRCRAFT TAB ATTRIBUTES

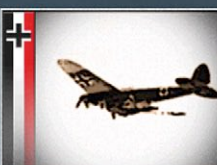
ID: Select slot for new aircraft.

Upgrade: Select aircraft slot number to upgrade to.

EDIT WEAPON SETS: Select this text to toggle the screen which allows you to create weapon loadout configurations by choosing and configuring devices.

DEV: Input the device ID required.

QTY: Input the number of devices available in an aircraft.

Main	Units	Air Groups	Locations	Leaders	TOE(OB)	Ground Elem	Aircraft	Device	Nat/Weather	CSV
ID: 2 Upgrade: 4	He 111H-11 He 111H-16/R1						EDIT AIR PROFILES   HIDE WEAPON SETS	INSERT DELETE CLEAR COPY		
DEV	QTY	DEVICE NAME	FACE	ACC						
#0033	1	20mm Cannon MG FF	Fwd	0						
#0024	1	13mm MG 131	TR	0						
#0011	2	7.92mm MG 81	BR	0						
#0011	2	7.92mm MG 81	Side	0						
#0000	0									
#0000	0									
#0000	0									
#0000	0									
#0000	0									
#0000	0									
#0000	0									
WPN SET #1										
#0064	8	250kg SC Bomb	Int	0						
#0000	0									
#0000	0									
#0000	0									
#0000	0									
#0000	0									
WPN SET #2										
#0066	1	500kg SC Bomb	Ext	0						
#0064	4	250kg SC Bomb	Fwd	0						
#0732	1	834 L Auxiliary Tank	Int	0						
#0000	0									
#0000	0									
WPN SET #3										
#0068	2	1000kg SC Bomb	Ext	0						
#0000	0									
#0000	0									
#0000	0									
#0000	0									
#0000	0									
WPN SET #4										
#1176	2	450mm FSW Torpedo	Ext	0						
#0000	0									
#0000	0									
#0000	0									
#0000	0									
#0000	0									
WPN SET #5										
#0732	1	834 L Auxiliary Tank	Int	0						
#0000	0									
#0000	0									
#0000	0									
#0000	0									
#0000	0									
								FIND: SHAEF NEXT PICK AIRCRAFT TYPE		
								0000) ---- 0001) ---- *** GERMANY (1) *** 0002) ---- He 111H-11 0003) ---- Ar 234B-2 0004) ---- He 111H-16/R1 0005) ---- Bf 109E-3 0006) ---- Bf 109E-4B 0007) ---- Bf 109E-7 0008) ---- Bf 109F-2 0009) ---- Bf 109F-4 0010) ---- Bf 109G-14 0011) ---- Bf 109G-2 0012) ---- Bf 109G-6 0013) ---- Bf 109G-4/R3 0014) ---- Bf 109G-6/N 0015) ---- Bf 109K-4 0016) ---- Bf 109G-8 0017) ---- Bf 110C 0018) ---- Bf 110C-4B 0019) ---- Bf 110C-5 0020) ---- Bf 110D-1/R2 0021) ---- Bf 110E-1/U1 0022) ---- Bf 110E-2 0023) ---- Bf 110F-4 0024) ---- Bf 110G-2 0025) ---- Bf 110G-4 0026) ---- Bf 110G-4/R8 0027) ---- Do 17Z-10 0028) ---- Do 17P 0029) ---- Do 17Z-2 0030) ---- Do 215B-1 0031) ---- Do 215B-5 0032) ---- Do 217E-2 0033) ---- Do 217J 0034) ---- Do 217N 0035) ---- Do 335A 0036) ---- Bf 109G-10 0037) ---- Fi 156C 0038) ---- Fw 190A-5 0039) ---- Fw 189A 0040) ---- Fw 190A-4		

DEVICE NAME: This is a particular device's name/label. Click on the name/label to go to the device's tab to view its data.

FACE: Select the device facing:

- 0=Fwd (forward)
- 1=Side
- 2=Rear
- 3=Turret (turret/top turret)
- 4=BT (ball/bottom turret)
- 5=TR (top rear)
- 6=BR (bottom rear)
- 7=SM (swivel mount)
- 8-10=Slots Not Used
- 11=Int (Internal bomb load)
- 12=Ext (external bomb load)

Max Speed: Input maximum speed in miles/kilometres per hour.

Max Speed Altitude: Input the optimum altitude to achieve Max Speed.

Zero Alt Speed Altitude: Input the Max Speed at Sea level.

Max Alt Speed Altitude: Input the Max Speed at highest altitude.

Climb: Input climb rate in ft/meters per minute.

Max Altitude: Input maximum altitude in feet/metres.

Radius: Information field that displays aircraft radius in miles/kilometres based on endurance input.

Range: Information field that displays aircraft range in miles/kilometres based on endurance input.

Max Load: Input maximum load of aircraft in pounds/kilograms.

Endurance: Input aircraft endurance in minutes.

Armour: Input the armour rating for the aircraft.

Cruise: Input the Cruise Speed at Sea.

Type: Select one of the following:

- 0=Fighter
- 1=Fighter Bomber
- 2=Night Fighter
- 3=Tactical bomber
- 4=Level Bomber
- 5=Recon
- 6=Jet Fighter
- 7=EW
- 8=Transport
- 9=Patrol
- 10=Float Plane

11=Float Fighter

12=Torpedo Bomber

Nation: Select from the standard GGWITW nation list.

Armor: Input Armor level.

Durability: Input the durability rating for the aircraft.

Manoeuvre: Input the manoeuvre rating for the aircraft.

Reliability: Input the reliability rating for the aircraft.

First Year: Enter number for first year aircraft is available (use four digits).

First Month: Enter number for month aircraft is available.

Last Year: Enter number for last year aircraft is available (use four digits).

Last Month: Enter number for last month aircraft is available.

Sortie Ammo: Enter the amount of ammo expended each aircraft sortie.

Sortie Fuel: Enter the amount of fuel expended each aircraft sortie.

Crew: Enter the number of air crew on the aircraft.

Build Cost: Enter amount of supplies required to produce the aircraft.

Build Limit: Enter the factory build limit for the aircraft.

Expansion Rate: Enter the factory expansion rate.

Number In Pool: Enter the number of aircraft in the production pool.

Weeks in Production: Information field that shows how many weeks the aircraft is in production.

Factory Sites: Information field that shows how many factory sites are producing the ground element.

Maximum Imports: Input the maximum number of the aircraft that can be imported.

Imports From ID: Enter the aircraft slot ID number you wish to import.

Photo From ID: Enter the aircraft slot ID number that you wish to use the photo image .bmp file.

Symbol From ID: Enter the aircraft slot ID number you wish to use the icon image .tga file from.

IMPERIAL UNITS/METRIC UNITS. Switch between imperial or metric units of measurement.

EDIT AIR PROFILES: This toggles to a screen that allows you to filter aircraft by their profile. Of importance in this view is the ability to set substitutions. This sets the ground types that might be allocated to a unit if the primary type is not available.



8.7. APPENDIX G: DEVICE TAB ATTRIBUTES

Devices represent weapons, equipment, and/or capabilities. There can be up to 2,047 devices defined in the game. Leave the 0000 line empty. The following is the list of Device attributes and their potential assignments:

ID#: Input sequential identification number

Type: Select one of the following:

- 0=aircraft cannon
- 1=man weapon
- 2=squad weapon
- 3=heavy squad weapon
- 4=AA weapon
- 5=light gun
- 6=medium gun
- 7=heavy gun

- 8=flame
- 9=AA Rocket
- 10=naval gun
- 11=air-to-air rocket
- 12=incendiary bomb
- 13=GP bomb/rocket
- 14=factory
- 15=drop tank
- 16=RADAR detector
- 17=RADAR jammer
- 18=air navigation
- 19=air RADAR
- 20=ground RADAR
- 21=ELINT
- 22=balloon
- 23=Flak
- 24=Torpedo
- 25=DP Gun

26=ASW

27=Mine

28=Camera

29=naval RADAR

Load: Enter the number of pounds the device weighs.

Effect: Input Effect (#)

Range: Enter the number of meters for the maximum effective range of the device.

Accuracy: Input Accuracy (#)

Ceiling: Enter the number of feet for how high the weapon can fire (i.e. to what altitude can the weapon fire?).

Rate of Fire: Input Rate of Fire (# rounds the device will fire in combat phase)

Blast: Input blast radius

Anti-Air: Input Anti-Air (#)

Anti-Soft: Input Anti-Soft (#)

Anti-Armour: Input Anti-Armour (#)

Penetration: Enter number of millimetres of armour plate the weapon can penetrate at x range.

HEAT Pen: Enter number of millimetres of armour plate the HEAT weapon can penetrate at x range.

HVAP Pen: Enter number of millimetres of armour plate the HVAP weapon can penetrate at x range.

8.8. APPENDIX H: NAT/WEATHER

The Nat/Weather Tab is toggleable and covers both National Attributes and Weather Effects. Toggle between the screens using EDIT WEATHER EFFECTS or EDIT NATIONS

8.8.8.1. NATIONAL ATTRIBUTES

National Attributes allows you to set the following attributes for each nation.

Road System: Enter the qualitative value of the nation's road system. This provides a difference in MP cost between similar hex types (e.g. clear).

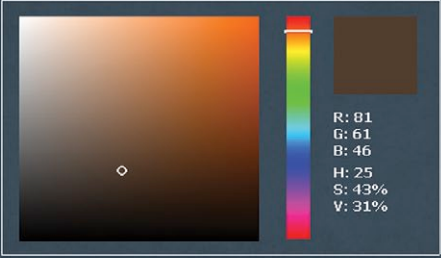


Germany
Road System: Good (2)

NATION MORALE

NATION COLOR

EDIT WEATHER EFFECTS



Red: 112
Green 112
Blue 112

SET COLOR

PICK NATION

- 0000) None
- 0001) Germany
- 0002) Finland
- 0003) Italy
- 0004) Rumania
- 0005) Hungary
- 0006) Slovakia
- 0007) Bulgaria
- 0008) Czech
- 0009) Belgium
- 0010) Netherlands
- 0011) Poland
- 0012) Soviet Union
- 0013) USA
- 0015) Britain
- 0016) Greece
- 0017) Norway
- 0018) Yugoslavia
- 0019) Canada
- 0020) India
- 0021) Australia
- 0022) Free French
- 0023) South Africa
- 0024) WA Italy
- 0025) Brazil
- 0026) Commonwealth
- 0027) France
- 0028) New Zealand
- 0029) Morocco
- 0032) Denmark
- 0037) Vichy France
- 0038) America
- 0041) Sweden
- 0042) Ireland
- 0043) Iceland
- 0044) Luxembourg
- 0045) Switzerland
- 0046) Andorra
- 0047) Albania
- 0048) Turkey

Ground Unit Morale: Click on the graph at a specific month and then input the national morale level from 0-100 for the nation at that time.

Air Unit Morale: Click on the graph at a specific month and then input the national morale level from 0-100 for the nation at that time.

Naval Unit Morale: Click on the graph at a specific month and then input the national morale level from 0-100 for the nation at that time.

Nation Colour: Click to select the colour visible when viewing Hex Nationality in the Map Editor.

8.8.8.2. WEATHER

The Weather Tab has three toggleable areas and four areas where data can be manipulated. The weather model is highly complex. Changing the weather data is not recommended.

Weather Effects: This table sets the prevailing weather condition by geographic area against time:

- 0=Cold
- 1=Rain
- 2=Heavy Rain
- 3=Snow
- 4=Heavy Snow
- 5=Blizzard

Road System Costs: This tables allows you to change the relative impact of movement and combat based upon the nation's road system quality.

River Costs: This tables allows you to change the relative cost of crossing a hex side based upon the ice level.

Weather Fronts: This screen allows you to edit the attributes of the five weather fronts.

WEATHER EFFECTS		RIVER COSTS		WEATHER FRONTS		EDIT NATIONS					
Movement	Ice Level										
	0	1	2	3	4	5	6	7	8	9	10
Minor River / Non-Motorized	1	1	1	2	2	0	0	0	0	0	0
Minor River / Non-Motorized / EZOC	2	2	2	3	3	0	0	0	0	0	0
Major River / Non-Motorized	2	2	2	4	4	6	6	6	0	0	0
Major River / Non-Motorized / EZOC	5	5	5	9	9	13	13	13	1	1	1
Impassable / Non-Motorized	-	-	-	-	-	-	-	-	0	0	0
Impassable / Non-Motorized / EZOC	-	-	-	-	-	-	-	-	1	1	1
Minor River / Motorized	2	2	2	3	3	0	0	0	0	0	0
Minor River / Motorized / EZOC	6	6	6	7	7	1	1	1	1	1	1
Major River / Motorized	4	4	4	6	6	8	8	8	1	1	1
Major River / Motorized / EZOC	18	18	18	22	22	26	26	26	4	4	4
Impassable / Motorized	-	-	-	-	-	-	-	-	1	1	1
Impassable / Motorized / EZOC	-	-	-	-	-	-	-	-	4	4	4

WEATHER EFFECTS	RIVER COSTS	WEATHER FRONTS				EDIT NATIONS			
Weather Front	Polar Maritime (mP)	Tropical Maritime (mT)	Arctic Maritime (mA)	Polar Continental (cP)	Tropical Continental (cT)				
Origin	5,20 - 25,70	5,272 - 25,322	160,5 - 210,25	268,20 - 368,40	100,323 - 180,343				
Target	100,170 - 160,230	150,240 - 200,280	109,157 - 189,197	129,177 - 189,217	102,250 - 192,300				
Radius +/- delta	80 +/- 20	55 +/- 15	60 +/- 20	80 +/- 20	60 +/- 20				
Frequency	0	1	1	2	4				
Air weather shift		Edit Shifts	Edit Shifts	Edit Shifts	Edit Shifts				

	Polar Maritime (mP)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Clear >>	Rain	Rain	Rain	Rain	Rain	Rain	Rain	Rain	Rain	Rain	Rain	Rain
Rain >>	Snowfall	Heavy Ra	Heavy Ra	Heavy Ra	Rain	Rain	Rain	Rain	Rain	Heavy Ra	Heavy Ra	Heavy Ra
Heavy Rain >>	Snowfall	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra
Cold >>	Snowfall	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Heavy Ra	Snowfall
Snowfall >>	Snowfall	Snowfall	Snowfall	Snowfall	Snowfall	Snowfall	Snowfall	Snowfall	Snowfall	Snowfall	Snowfall	Snowfall
Blizzard >>	Blizzard	Blizzard	Blizzard	Blizzard	Snowfall	Snowfall	Snowfall	Snowfall	Snowfall	Blizzard	Blizzard	Blizzard

8.9. APPENDIX I: EDITOR HOTKEYS

F12	Toggle between Air Planning and Ground Movement Phases	x	be toggled ON. If units are not toggled on, pressing the w key will not change sides).
' (-)	Access Map Editor from Map	+	Toggle GS on/off
b	Build-up/breakdown units on controlling side	-	Zoom Map In
c	Show Commander's Screen	Esc	Zoom Map Out
d	Damage/Repair rail hex	Tab	Exit Current Display
e	Toggle enemy hexes on/off	;	Not used
f	Toggle fort levels on/off	,	Enter fort level in hex
g	Auto assign unit(s) to nearest applicable HQ	.	Go forward through OB
h	Show help locate hex/city/unit/air group	Shift-C	Go backward through OB
i	Show Reinforcement/Withdrawal schedule	Shift-D	Centre map on selected hex
j	Selected unit(s) to reserve mode	Shift-E	Toggle weather graphics on/off
l	Show Losses screen	Shift-F	Toggle enemy hexes on/off
o	Show Order of Battle screen	Shift-H	Toggle fort levels on/off
p	Show Production screen	Shift-I	Show Hotkey List
q	Quick save	Shift-J	Toggle identify army/front by colour on/off
r	Toggle rail damage info on/off	Shift-K	Toggle jump map on/off
u	Set hex ownership to current player.	Shift-L	Not used
v	Show Victory screen	Shift-O	Show Losses screen
w	Switch sides; toggles the current player between Axis and Allied (Note: Units must	Shift-P	Toggle Flak values
		Shift-Q	Show Preferences screen
		Shift-T	Quit Map and exit to Editor Main screen
		Shift-V	Selected units set to Static mode
		Shift-W	Set Victory Cities
			Switch sides; toggles the current player between Axis and Allied

Shift-X Toggle GS on/off
Shift-< Cycle forward through OB
Shift-> Cycle backward through OB

8.10. APPENDIX J: WEB LINKS

The following is a list of internet links that are useful in the search of data for your scenarios.

8.10.8.1. LEXIKON DER WEHRMACHT

<http://www.lexikon-der-wehrmacht.de/inhaltsverzeichnis1.htm>

This is one of the best sites on the web for researching German units. You will want to go to the Truppenteile/ Einheiten/Gliederungen sections. The Armee and Korps listings will often include support units by certain months but there are also glaring holes between months.

8.10.8.2. PANZERKEIL

<http://www.ordersofbattle.darkscape.net/site/sturmvmogel/Panzerkeil.html>

An excellent site to research support units but it is not comprehensive. Start here, then go to Lexikon der Wehrmacht to double check and perhaps get a few more units that Panzerkeil doesn't list.

8.10.8.3. THE LUFTWAFFE, 1933-45

<http://www.ww2.dk/>

This is a very useful site for Luftwaffe research. You can find squadron reports of on-hand aircraft, aircraft deliveries, aircraft lost to enemy action, and repairable aircraft by squadron. The reports are in German but the rest of the site is English.

8.10.8.4. FELDGRAU

<http://www.feldgrau.net/forum/index.php>

The Feldgrau forums are active and the best place to ask questions when researching German units.

8.10.8.5. AXIS HISTORY

This site has some orders of battle for major campaigns and its forums are very active.

<http://www.axishistory.com/index.php?id=6470>

8.10.8.6. MAPS

<http://www.wwii-photos-maps.com>

This is a great site for historical situation maps.

8.10.8.7. THE NAFZIGER COLLECTION OF ORDERS OF BATTLE

The Nafziger Collection contains orders of battle from 1600 to 1945 with over 7,000 individual .pdf files. Sources range from published works to actual archival documents, which represent the largest single source.

<http://www.cgsc.edu/carl/nafziger.htm>

8.10.8.8. OTHER USEFUL LINKS

<http://www.rafcommands.com/>

<http://www.asisbiz.com/Luftwaffe-Units.html>

<http://www.britishmilitaryhistory.co.uk/>

<http://www.wwiidaybyday.com/>

<http://www.ibiblio.org/hyperwar/USA/index.html>

<http://www.diedeutschewehrmacht.de/>

<http://www.worldwar2.ro/>

<http://www.jaegerplatoon.net/MAIN.html>

<http://www.wlb-stuttgart.de/seekrieg/chronik.htm#Z>

<http://www.gutenberg-e.org/esk01/frames/feskmmap.html>

<http://www.armchairgeneral.com/rkkaww2/> - maps in English

9. CREDITS

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