



PANZER COMMAND™

OPERATION WINTERSTORM



KOIOS
W O R K S





**PANZER
COMMAND**

OPERATION WINTERSTORM

GAME MANUAL

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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.

Parental guidance is always suggested when children are using a computer and video games. Should you or your child experience dizziness, poor eyesight, eye or muscle twitching, loss of consciousness, feelings of disorientation or any type of involuntary movements or cramps while playing this game, turn it off immediately and consult your doctor before playing again.

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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1.0 Panzer Command: Operation Winter Storm

Thank you for purchasing *Panzer Command: Operation Winter Storm*. You have purchased the first of a new series of tactical 3D wargames aimed at recreating some of the most intense and gripping historical battles of World War II.

The *Panzer Command* series is, at heart, a combination of fast, fun gameplay and realistic tactics. The German and Soviet campaigns, as well as individual set battles included in this game, simulate the German counteroffensive that attempted to relieve Stalingrad in December of 1942. The fighting here was characterized by the usual brutal and bloody clash of men and machines, but also of maneuver and surgical precision. This particular campaign, however, afforded the Germans with little chance to be precise; they had to charge head-on into a flaming cauldron of determined Soviet resistance, who were winning their first real victory on the Eastern Front in and around the ruined city of Stalingrad.

This game will give the player an excellent understanding of the war on the Eastern Front during brutal winter conditions and characterized by two bitter enemies that neither gave nor expected quarter. The player will find that tanks from both sides are as prevalent as they were historically, while infantry is in a largely supporting role. In the historical battle, infantry did not play as strong a role as the game simulates, but they are presented here in an effort to give you a balanced feel for the game's progression; you will have complete control over your force's makeup as a result.

1.1 Installation

Please ensure your system meets the minimum requirements listed below. To install the game, insert the *Operation Winter Storm* CD into your CD-ROM drive. If you have disabled the Autorun function on your CD-ROM or if you are installing from a digital download, double-click on the installation archive file, then double click on the file that is shown inside the archive. Follow all on-screen prompts to complete installation.

Minimum System Requirements

OS:	Windows 98, ME, 2000, XP
Processor:	Pentium III 1.2 GHz, AMD 2200+
RAM:	256 MB (512 MB for XP)
Video Card:	DirectX 9.0c compatible 64MB (Low texture quality) 128MB (Medium texture quality) 256MB (High texture quality)
Sound Card:	DirectX 9.0c compatible
CD-ROM:	Yes, for boxed version installation
Hard Drive:	550mb
DirectX Version:	9.0c + Managed (June 2005)

Microsoft DirectX 9.0c, Managed Microsoft DirectX 9.0c .Net extension, and Microsoft .Net 1.1 are also required; these items are included as required installations in the game installer.

Uninstalling the Game

Please use the **Add/Remove Programs** option from the Windows Control Panel to uninstall the game.

1.2 Product Updates

In order to maintain product excellence, Matrix Games releases updates containing new features, enhancements, and corrections to any known issues. Keeping up with these updates is made easy and is free by signing up for a Matrix Games Member account. When you're signed up, you can then register your Matrix Games products in order to receive access to these important game-related materials. Doing so is a simple two step process:

- **Sign Up for a Matrix Games Member account** – THIS IS A ONE TIME PROCEDURE; once you have signed up for a Matrix account, you are in the system and will not need to sign up again. Go to www.matrixgames.com and click the Members hyperlink at the top. In the new window, select **Register NOW** and follow the on-screen instructions. When you're finished, click the **Please Create My New Account** button, and a confirmation e-mail will be sent to your specified e-mail account.
- **Register a New Game Purchase** – Once you have signed up for a Matrix Games Member account, you can then register any Matrix Games title you own in your new account. To do so, log in to your account on the Matrix Games website (www.matrixgames.com). Click **Register Game** near the top to register your new Matrix Games purchase.

Official game updates can be downloaded through the main program menu; ensure that your system has a current connection to the Internet first and simply click **Latest Downloads**. Your game will scan the Matrix website for any applicable updates.

Once you've registered your game, when you log in to the Members section you can view your list of registered titles by clicking **My Games**. Each game title is a hyperlink that will take you to an information page on the game (including all the latest news on that title). Also on this list is a **Downloads** hyperlink that takes you to a page that has all the latest downloads, including patches, for that particular title.

Remember, once you have signed up for a Matrix Games Member account, you do not have to sign up again – at that point you are free to register for any Matrix Games product you purchase. Thank you and enjoy your game!



1.4 Game Forums

Our forums are one of the best things about Matrix Games. Every game has its own forum with our designers, developers and the gamers playing the game. If you are experiencing a problem, have a question or just an idea on how to make the game better, post a message there. Go to <http://www.matrixgames.com> and click on the **Forums** hyperlink.

1.5 Technical Support

Should you have a technical problem with the game, the best way to get help is to post a note in the Technical Support sub-forum within the Panzer Command forum at <http://www.matrixgames.com>. You'll then hear back from either Matrix or Koios Works personnel, or from one of the many helpful players of the game. This is usually the fastest way to get help. Alternatively, you can email your problem to support@matrixgames.com. E-mails to this support account will generally be answered within 24 hours, except on weekends.

2.0 Introduction

Oberleutnant Jan Fassbinder stood half-out from the cupola of his Panzer III as eddies of snowflakes danced about his head, some sneaking under his collar and sending shivers down his spine. The Panzer, nicknamed Sofie for his fiancée back home, idled noisily alongside two other Panzer IIIs and one Panzer IV, awaiting a command from their company commander to move out. His frustrated breath bloomed white into the crystalline morning air, and he could almost see the razor-thin cracks in the swirling mist of snow.

He scanned the kilometer-distant treeline nervously, hoping the commander could get a hold of Battalion and lay a good artillery pounding on it. Veteran of two years of near-constant tank warfare, Oberleutnant Fassbinder knew when to trust the feeling in his gut; it had saved his life, and those of his men, on many occasions before

2.1 Main Menu

When Operation Winter Storm begins, the Main Menu will be displayed. From here you can decide to play a Campaign, a single battle, load a saved battle, or set a number of options.

2.1.1 Campaign

Starts a new Campaign, which is comprised of a continuous series of battles. You will maintain a core of units over the Campaign; each one



which will have a chance to gain experience and medals as the battles progress, based on their performance and survival. For more information, refer to section 3.0.

2.1.2 Set Battle

Allows you to select and play a single battle based on one of the many historical engagements fought during Operation Winter Storm. There are also some separate "Skirmish" scenarios for set battle play, which allow more variety in terms of force selection than the campaign battles. For more information, refer to section 4.0.

2.1.3 Load Game

Displays a list of saved games.

Load

Highlight a game from the list and click to start from where you left off.

Delete

Highlight a game from the list and click to delete an existing game.

Back

Click to return to the Main Menu.



2.1.4 Multiplayer

Allows you to start a new Play By E-mail game or to load an existing one.



New Game

Click to start a new Play By E-mail game. You will need to enter a Game Name and if you would like, a Password.

Load

Click to load a turn that you've downloaded.

Delete

Click to delete an existing game.

Back

Click to return to the Main Menu.

2.1.5 Options

Lists several game options, as follows:

Camera Scroll Speed

Sets the speed at which the camera view in-game scrolls. Click the arrow buttons to either side of the display to raise or lower this setting (moving this to the right increases the scroll speed, while moving to the left decreases it).

Camera Rotate Speed

Sets the speed at which the camera view in-game rotates. Click the arrow buttons to either side of the display to raise or lower this setting.

Music Volume

Sets the level of volume for in-game music. Click the arrow buttons to either side of the display to raise or lower this setting.

Sound Effects Volume

Sets the level of volume for in-game sound effects. Click the arrow buttons to either side of the display to raise or lower this setting.



Display Tool Tips (On/Off)

If set to On, hovering your mouse cursor over a menu item in the game will display the name of that item's function. If set to Off, these tool tips will not display.

Display Shadows (On/Off)

If set to On, shadows will be displayed within the game. If your game runs slowly with this setting on, turning it off may increase your game's performance.

Verbose Messages (On/Off)

If set to On, more detailed messages regarding combat results and events will be displayed.

Use Inverted Mouse (On/Off)

If set to On, the direction the mouse is moved will cause the camera view to move in the opposite direction.

Limit Infantry (On/Off)

If set to Off, the game will display five men in each infantry squad rather than three for additional visual realism. It is recommended to keep this set to On unless you have a high performance system.

When your selections have been made, click **Back**.

2.1.6 Read Me

Accesses the game's Read Me file.

2.1.7 Credits

Lists the individuals and companies responsible for bringing you *Panzer Command: Operation Winter Storm*.

2.1.8 Exit

Exits the game, returning you to your desktop.

2.2 Camera Controls

- **Scroll the map** – use the **Arrow keys** or **move your mouse cursor to the edge of the screen** to move it in that direction. Alternately, click and drag on the minimap to pan the camera quickly.
- **Zoom in/out** – press the + or – keys on the numeric keypad, or by using the **Mouse Wheel**.
- **Tilting/rotating the camera** – Either press and hold the **Shift** key while moving the mouse up/down or left/right, or click and hold the **Middle Mouse Button** and move the mouse up/down or left/right.
- **Follow a unit** – Select a unit and press the **Tab** key. This will put you directly behind that unit and the camera will follow it until you tell it to look elsewhere. Alternately **double-click on the unit icon** to immediately move the camera to that unit (see 5.1 for an explanation of unit icons).
- **Binocular View** – To view things from a commander's perspective, select a unit to view from and **press the Tab key twice**. You will first switch to follow that unit and then switch to a first-person view from the commander's perspective, at the highest zoom level. To zoom back, roll the middle mouse wheel back; to zoom in again, roll the middle mouse wheel forward. To pan the view, click and hold the middle mouse wheel and move the mouse left or right.
- **Event View - Click on the text** of any event in the event list during play to immediately move to the location of that event.

To reset the camera to the default position, press the Tilde (~) key.

2.3 Mini-Map Controls

- **Click** on the mini-map to center the camera on that spot on the battlefield.
- **Click, hold, and drag** on the mini-map to quickly move the camera.

- **Follow Selected Unit mode** – select a unit to follow (by left clicking on it) and press the Tab key; the camera will then go to an 'over-the-shoulder' view of the unit and follow it. To leave this view, simply manually move the camera view.
- **A kill camera** with a slow-motion 'bullet time' mode will enhance kill shots and automatically move the camera to view a kill shot. The kill camera can be toggled on or off by pressing the 5 key on the numeric keypad or by clicking the camera icon on the HUD.

If your video card supports Pixel Shader 2.0, you will see high resolution unit textures up close. The game uses real line of sight instead of an arbitrary Fog of War. Many factors impact sighting including cover, firing, moving, and so forth and are explained further in the Sighting section.

3.0 Starting a New Campaign

Senior Sergeant Gennadi Zabav hid behind the shield of his 45mm antitank gun, together with the rest of the crew, among hurriedly-stacked branches and other forest flotsam, trying not to breathe lest the condensation give them away to the fascists. He could see them, the Germans in their dark metal beasts, lying like carrion beetles in the snow; General Winter had come once again, trying to storm the fascists out, but still they came on – a cancerous growth on the skin of his country.

They'd wait for the Germans to advance, and would hope for a close-in side shot, if they were lucky, the Germans would not spot them right away. He glanced up at the thick branches above, wondering if they were thick enough to withstand a German bombardment.

Panzer Command: Operation Winter Storm lets you command from either the German or Soviet perspective. When selecting the Campaign option from the Main Menu, you will be given a choice of either controlling German troops attacking to relieve Stalingrad, or Soviet troops counter-attacking to throw back the German advance.

Select either of the following options:

- **Winter Storm, German 57th Panzer Corps, Dec 12-19 1942** to control the Germans, or
- **Winter Storm, Soviet 7th Tank Corps, Dec 20-29 1942** to control the Soviets.

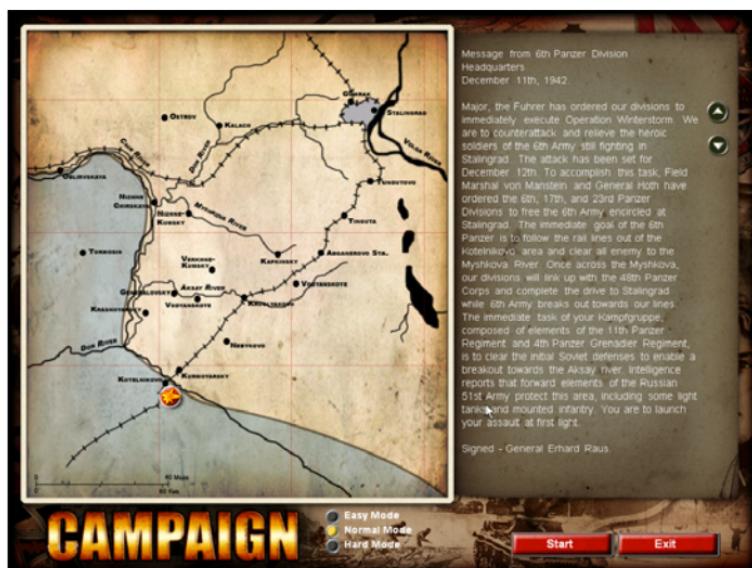
When your selection is made, click **Load** to begin. To return to the main menu, click **Back**.

A briefing will then be displayed, based on the side you've selected. Read the description to get a feel for the current situation.



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At the bottom of this screen, you will note the **Easy**, **Normal**, and **Hard Mode** options. The Mode you select will determine how large of a force you and your opponent can



build. At the Easy level, your opponent will receive fewer points in each scenario to purchase units for his battle group. At the Normal level, the default points are left unchanged. At the Hard level, you will have fewer points to spend.

When you have selected a Difficulty mode, click **Start** to begin your campaign. If you don't want to begin yet, or change your mind about the side you're playing, click **Exit** and you'll return to the Main Menu. Section 5.0, below, explains what happens next.

4.0 Starting a New Set Battle

The command came down over the wireless: *Schnell. Calm and cool, just like the steel of Fassbinder's tank*. A few clipped commands issued by Fassbinder, and his Panzer platoon was crunching through the frozen snow, less than a foot deep for now, towards the distant treeline. They were flanked by Panzergrenadiers huddled within icebox-like halftracks. He didn't envy those men having to pile out of their protective shells and crash into the woods in a deadly pheasant hunt.

His mind wandered to Stalingrad. He knew the Russians might get caught off guard, but didn't think they'd really be seeing von Paulus or any of the men trapped inside, about 40 kilometers north. The Reds would come after them with a vengeance of desperation mixed with a

total disregard for casualties. It would be a slaughter, but Fassbinder had to be careful that this term wasn't applied to him and his men.

Panzer Command: Operation Winter Storm has a number of scenarios that can be played; ten of them are a small portion of the larger campaign game. In addition, there are a few "skirmish" scenarios. Each scenario offers the full force mix available, without the restrictions on historical "core" units applied during the campaign.

The "Variety Skirmish Early 1943" offers one platoon of each unit type in the game to each side on a non-campaign map that is intended for a balanced meeting engagement skirmish. Some units included on this map, for example the Soviet SU-76 and the German PzKfw VI Tiger, are not available in the historical campaign.

The "Infantry Skirmish Late 1942" offers an example of a battle that is almost entirely infantry-based, pitting elements of a Soviet infantry battalion against an attacking reinforced German PanzerGrenadier company.



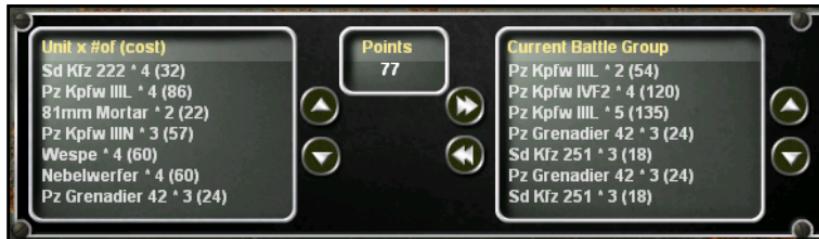
The scenarios are displayed at left; selecting one will bring up a short background in the right hand window. At bottom left, select whether to play the **German Side** or **Soviet Side**, and select the **Easy, Normal, or Hard Mode** difficulty option. The difficulty you choose will determine how large of a force you can build for this scenario.

As commander for your side in the upcoming scenario, you will have a certain number of points available to you (depending on the difficulty level). These points are used to 'buy' tank, infantry, and mechanized platoons. The procedures for this are discussed under section 5.0, below. To get there, click **Next**.

5.0 Playing the Game

The fascists finally moved, their tanks and armored vehicles vomiting smoke into the chilly air. Shivering, Zabav grinned like a demon. He waved a hand, low to the ground, towards a neighboring submachinegun unit, the man in charge their nodded and disappeared into the woods. Now, it would be a waiting game; whoever saw the other first would be the winner

Once you have chosen to either play a campaign game or a single scenario, you will be brought to the Purchase Units screen.



When first playing a Campaign game, you will see that there are several units already selected for you. These units are your Core Battle Group and will follow you throughout the campaign. They may earn experience and medals depending on how well they do and whether they suffer heavy losses or not. In general, the fewer losses you suffer while inflicting losses on the enemy, the more experienced your units will become. For the Campaign, you cannot change your Core Battle Group, but you can select from the list of other units to supplement your Battle Group for each scenario.

You will have a few points left to play with depending on the Difficult Level you selected – if you chose Hard, you will have fewer points; if you chose Normal or Easy, you will receive the standard number of points.

If you are playing a Set Battle, however, you will have no units selected initially (i.e. no Core Battle Group) but will have a lot more points to spend.



To build your force, you will need to consider each unit's strengths and weaknesses; the ones you have available to choose from are displayed in the upper left corner.

Each item in this list displays the unit type, how many are in a single unit, and the points cost for that item. For example, in the screenshot above, the first item is "Pz Kpfw III* 2 (54)." This means that you can buy this unit, comprised of two Panzer III's, for 54 points.

To the left of this list, the **Points** display shows you how many points you currently have available for buying new units. **This total cannot be exceeded.**

Finally, just to the right of this display is a list of all units you have purchased thus far. As you buy units, this list will be populated and your Points total will decrease.

To buy a unit, highlight it in the list at left and click the right double arrow (>>). If you clicked on the wrong unit or change your mind about a purchase, select it in the **Units Purchased** list and click the left double arrow (<<).

Some groups of units may not be at full strength; in this case, you can choose to **Replace Losses** in the group. The cost of replacements will be subtracted from your point totals. Note that replacements are considered to have training but not experience, thus there is a chance that they may reduce the experience level of a unit.



When you select a unit from the list at left, detailed specs for that unit will be displayed. For vehicles, this shows the armor value for various hit locations on the vehicle (see section 5.3 for more details) as well as the specific weapons and ammo that the vehicle has. For each weapon/ammo combination (you can click on the weapon/ammo names to see the different combinations), the values represent the chance to hit, penetration, and firepower ratings at range. All ranges are in meters. Please see section 5.3 for more details on these values.

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Please note that the purchase screen includes a mini-map of the battle you are about to fight. Displayed on the mini-map are the objective flags. When you click on a unit in the list, its location will be shown on the mini-map as a series of colored dots. This allows you to see where the unit would start in relation to the objectives. While placement adjustment is allowed, it is limited by default to 100m from the default starting location, so choose your units based on their starting location as well as their equipment.

Once you are satisfied with your purchases, click **Next** to proceed to the battle, or **Exit** to return to the Main Menu.

5.1 The Main Display

The top three quarters of the screen is your main view. From here you will see the battlefield unfold around the men you command, as well as issue orders to them.



The bottom quarter of the screen displays your HUD:



At left is displayed the selected unit's name and type, its current order, and its current target (including the weapon and ammo it is firing), if any. A small 'speaker' icon

represents if the unit is in radio contact for the turn. The name of a unit is color coded to represent its current level of training. Elite units have their name displayed in gold, veteran units in white, and green units in green.



The red or green circle that displays in this window will indicate whether the selected unit is in radio contact or not (red indicates the unit is not in contact, while green indicates it is). This will have an important effect on gameplay.



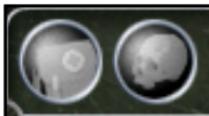
Below that, if a unit is in cover, an icon will show the type of cover it is in. A house is shown for the hard cover provided by buildings. A tree is shown for the softer cover provided by woods. Within the game itself, cover affects not only combat results but also sighting both into and out of different cover types.

The bottom row of icons represents damage to the unit:



For vehicles, from left to right these are: Crew Casualty (Commander, Gunner), Gun Damaged (Main Gun, Machine Gun), Mobility Damaged (Tracks, Engine, Driver Killed), Crew Stunned, Destroyed (on fire, abandoned etc.). Increasingly severe damage can lead a crew to abandon a vehicle and can also cause a vehicle to be written off as a loss after the battle.

For infantry, these icons include Suppressed and Destroyed (respectively). Note that destroyed infantry units may have taken serious casualties and been dispersed but not entirely destroyed. All infantry units have a chance of reconstitution after a battle even if destroyed.



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The two gauges (one with German and one with Soviet icons over them) represent the current Victory level for that side. A side wins the battle if its Victory level reaches the top of the gauge before the enemy's does. Note that the defender starts most scenarios already 'winning'. Victory points are earned for occupying objectives (marked by flags) and destroying/disabling enemy units. In addition, the defender will earn bonus victory points each turn if a battle goes on long enough without the attacker securing a victory.

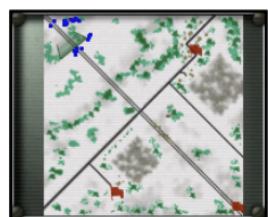


The center of the HUD is a list of miniature icons that represent all friendly units. The selected platoon will be highlighted with a dark red background, while each individual unit within that platoon will have its icon filled with gold. **The commander of each platoon is denoted with a star (*)**. Due to damage or losses, the commander of a platoon may change during play.

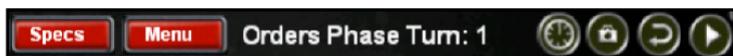
Single clicking on a unit in the miniature icon list selects that unit, while **double clicking the unit icon will move the main view to that selected unit**. During play, if a unit comes under enemy fire, the unit's mini icon will receive a yellow highlight to quickly notify you of this.

The far right area is the mini-map, displaying the area you are currently fighting over. Russian units are displayed as red dots while German units are displayed as blue dots; however, only enemy units that have been spotted by your units will be displayed on the mini-map.

Clicking on the mini map will move the screen to the clicked location; you can also click and hold to drag the camera on the mini map to quickly pan it around.



At the top of the HUD (above the miniature unit icons) are game control buttons.



The **Specs** button will display the detailed unit statistics for each unit (see section 5.3 for more details).

The **Menu** button will display a menu that allows you to **Save Game, Load, Resume, or Exit** the game.

The status bar displays the current game phase (either Orders or Reaction, as well as a progress bar in the background if that phase is currently running).

The four icons to the right of the status bar are, from left to right:

- **Game Speed** for playback (you can select .1x, .5x, 1x, 1.5x, 2x, or 3x speed);
- **Camera move to kills is on/off** will, if on, immediately move your main view to a kill (when one of your units destroys an enemy unit or is destroyed). If set to off, your main view will not be interrupted for this event. Note that the kill must occur completely outside your current camera view in order for the camera to move. Even if the kill is 500m away, as long as it's in your current view the camera won't move to it. This ensures that you don't miss a kill while keeping your camera from jumping around too much.
- **Rewind Turn** will only be available at the end of a phase; this will allow you to replay the entire phase in case you missed something.
- **Play (>), Continue to Next Phase (>>), or Pause (|||)**. Throughout *Panzer Command: Operation Winter Storm*, the player will be able to control turn passage through these three buttons. If the **Play (>)** button is displayed, you can issue orders to your units; pressing it will start the game turn's resolution. If the **Continue to Next Phase (>>)** button is displayed, the current phase can be completed by clicking this button. The **Pause (|||)** button will be displayed while a turn is being resolved, allowing you to halt the action. Pressing it again will resume.

Directly above the HUD on the right side is a message window that will display important text messages. Clicking on a message will 'jump' your main view to the unit mentioned in the message. Messages in red text denote damage effects (to either your units or the enemy's), messages in white text denote morale effects, and messages in dark blue are miscellaneous.



5.1.1 Unit Placement

After you've purchased your units, the scenario will load. Once the scenario loads, you will be in the Placement Phase. This phase occurs once per scenario, at the beginning. This gives you a chance to fine-tune the default placements to suit your plan.

In order to adjust unit placement, select a unit by left-clicking on it or on its icon, then right click on the main view to pull up the placement menu. The selections here are Place Unit and Face Unit.

Place Unit allows you to specify a new location on the map for the unit you have selected. This location must be within 100m of its original starting location and also cannot be too close to the enemy positions. If you can't move a unit further onto the map during placement, even if you can't see the enemy, this is because of the

enemy distance limit being enforced by the game. When this order is selected, a blue line will be displayed; move the line to where you want the unit to move and click to set the destination. A number will be displayed next to the cursor as you move it around, indicating the distance in meters to that spot. Text will be displayed next to the distance, indicating the terrain type in the location under the cursor.

Face Unit allows you to specify a facing for the unit you have selected. When this order is selected, a blue line will be displayed; move the line to indicate the angle you want the unit's front to face towards. This will not change the unit location, only its facing.

5.2 Giving Orders

Now that you know your way around the main display, let's focus on the main view and what you'll be seeing during battle. *Panzer Command: Operation Winter Storm* is played in turns; during each turn you issue orders to your platoon commanders, who in turn give orders to their platoon. **It's very important to realize that orders are issued only to the command unit for each platoon.** You can adjust at the individual unit, but the type of order for the whole platoon can only be set by the command unit (the one with a star on its icon).

Each turn is divided into two phases: the **Orders phase**, where you issue orders, and the **Reaction phase**, where reactions are determined. Prior to the Orders phase, the player is allowed to issue new orders (see section 5.4 for more details) to the units under their control. Prior to the Reaction phase, the player is allowed to issue a handful of reactions to the units under their control. These reactions will allow a player to halt movement and/or target an enemy unit. **Orders cannot be changed during the Reaction phase, but units can react and make small adjustments based on their orders to the last phase of events.** Reactions generally take the form of halting movement or changing targets.

Each phase represents 40 seconds of real time. Whenever you hit the Play button to end your orders for a phase, the game calculates the results. *Panzer Command* is a "WEGO" or simultaneous resolution system. You won't know what your opponent is planning for the next phase until you finish your own orders, at which point all orders are executed together and the results played back for each side.

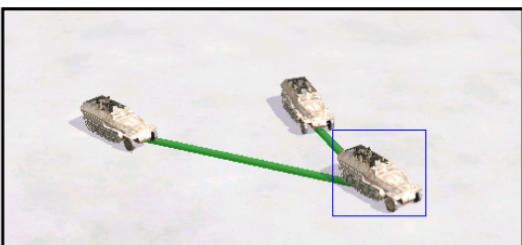
Orders that you issue can overlap into subsequent turns; for example, if you can order a unit to advance from one side of the map to the other, it will take several turns' worth of movement to complete such an order; the unit will continue obeying their movement order until they reach their destination or you give them another order. Most orders dictate how a unit moves and determines when and/or if the unit fires during the turn.

A note on conventions: *Panzer Command* is a tactical level game, where the basic group of units is a *platoon*. When you purchase units in the game (e.g. a Panzer III L), you're purchasing a *platoon* comprised of this item. A *platoon*, though, is made up of several *squads*. For game purposes, a single tank, armored car, or infantry unit is considered to be a *squad* and is part of a larger *platoon* organization.

Select a unit by clicking on it or by clicking once on its miniature icon in the HUD. Double clicking on the HUD miniature icon will center the map on the unit. Miniature icons with a star (*) symbol represent the commander of the platoon. **You must have the commander of the platoon selected and be in the Orders phase in order to change the orders for the platoon.**

When a unit is selected, green lines connect the group leader to other units in their platoon. Yellow lines will be displayed for each enemy unit that is currently targeting the selected unit. Red lines indicate enemy units being targeted by the selected unit.

To issue an order to a platoon, right click in the main view with the platoon commander selected; individual units (vehicles and squads) can be issued orders as well, but the selection is limited by the platoon orders. For example, a platoon that is ordered to move can have the movement destination adjusted for each individual unit, but units that are in a moving platoon can't be given individual targets; that would require a different platoon order. Right clicking will display the Order menu for the selected unit (note that the selected unit does not have to be visible; for example, you can right click right where you think an enemy unit is and issue an Engage order). All members of a squad **must** share the order their commander receives.



Once the platoon commander is issued an order, the subunits within the platoon can be issued with very specific variations of this order. For example, you can order a platoon commander to Defend – Hold, and can then issue an order to one of the platoon commander's squads to Defend – Move. Usually, when the platoon commander is given an order, all squad mates receive the same order unless the player goes in to an individual squad and changes the order directly. Using the above example, any squad in the commander's platoon not independently ordered would assume the Defend – Hold order that you issued to their platoon commander.

For movement orders, all units in a group will move relative to the commander as their default. For example, if a platoon is ordered to Advance, all units in the group will advance in formation relative to the commander's location. Of course, the individual units can be ordered to move to different locations if necessary.

For most orders, the sub-units in a platoon will automatically follow the leader's order in formation. Selecting a sub unit and then Right clicking will allow you to independently order that unit. Please note that any time the commander's order is changed, all orders for the platoon are changed (platoon units can only be independent within the context of the commander's order). After placing the command unit's order, select and then right click on each squad in the platoon to bring up their individual Order menu. The Order menu in this case will not be grayed out but will be limited to actions that are

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allowed by the platoon orders. Units without specific targets will automatically target and fire during the turn based on their order choice.

Some orders have submenus that will display as you select the order. Most orders have a target or destination that must also be indicated (by clicking on the main view where you want this action to take place, e.g. a location to move or a target to fire at) to complete the order. For movement orders, a blue line will be displayed; clicking a point on the map will lock the unit or platoon into a path. For targeting, a solid red line will be displayed if the target can be clearly seen, a transparent red line will be used if the line of fire is obstructed.

A few order buttons are displayed with a gold background; these are special commands that instantly take place during the issuing of the orders (as opposed to during playback). These orders allow a vehicle to Button Up or Unbutton their hatches and for infantry to mount and un-mount vehicles and/or buildings.

5.3 Unit Specifications

To fully understand the orders you can issue, you need to know the types of units available. There are two major categories of units: Vehicles and Infantry. The Vehicles category includes armored and non-armored vehicles as well as field guns and towed artillery.



The unit specifications for any Vehicle category unit can be viewed in game by clicking the **Specs** button in the HUD and can also be viewed in the Purchase Units screen before the battle. At left, a chart displays the armor value at different hit locations of

the vehicle is hit from the front, side, or rear, as well as other values (track, hull, top deck, cupola, etc., if applicable). The numeric value listed is the centimeters of armor at that location.

This value may also have symbols that represent additional protection adjustments for attributes such as sloped or rounded armor, as follows:

- An **underline** (ex: 9) indicates the armor is sloped at this location.
- An **r** or **rr** (ex: **9r**) indicates the armor is rounded (r) or double rounded (rr) at this location.
- A **carrot** (^) (ex: **2^5**) indicates the armor value of the track and body for side shots which might penetrate both the vehicle's tread and/or its body. The number to the left of the carrot represents the track, while the number to the right of the carrot represents the body.
- A **slash** (/) (ex: **2/5**) indicates there is a 50% chance that the first value will be used instead of the second value when determining the armor value for a given hit.
- An **s** followed by a **value** (ex: **5s8**) indicates that the second value is used only if defending against HEAT ammunition; otherwise, the first value is used.
- **Two numbers** separated by a **plus sign** (ex: **4+3**) indicates the base armor and a stun adjustment. The first value (**4** in this example) is the base armor value and the second value (**+3** in the example) is a modifier to the vehicle being stunned if hit.

Beneath the armor chart are four additional attributes:

- **Size** indicates how easily the unit is spotted; the higher the number, the easier it is for the enemy to see it.
- **Speed** indicates the number of meters the unit can move using Normal speed (to the left of the slash) and Rush speed (to the right of the slash).
- **Stun** indicates how easily the crew of a vehicle is stunned. A positive modifier here indicates a vehicle that is more likely to receive a stun effect from a hit.
- **RM** indicates, for turreted vehicles only, how quickly the turret can rotate. This is always expressed as an R (for Rotation) followed by a (**F**ast, (**M**edium, (**S**low, or **VS** (Very Slow). (For example, a Fast turret can turn 135 degrees in 20 seconds)

Infantry have no attributes in this section other than their Normal/Rush speeds. Infantry is rated based on its weaponry and also for its morale level, which is not shown here.

When you select a unit, its weapons will be displayed in the top center Specs window. The Specs window listing displays the weapon type, the ideal Rate of Fire (ROF), and where the weapon is mounted (Turret or Hull). Furthermore, some weapon types will have one or more types of ammunition that can be fired. When a weapon is selected in the top center portion of the Specs window, the ammunition it is capable of using is displayed in the window at top right. Clicking on each weapon and each ammunition type will show the exact specifications for that combination.

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A weapon chart is displayed for the selected weapon and ammunition to allow you to analyze its effectiveness. The following information is displayed:

75mmL43			Range	275	350	425	450	500	550	600	675	750	900	1200	
APHE	D	S	To Hit	1	1	1	2	3	4	5	6	7	8	9	
6	10		F Pwr.	1	1	1	1	1	1	1	1	1	1	1	
			Range	75	250	450	625	850	1125	1200					
			Pen.	13	12	11	10	9	8	7					

- **Weapon Type** – Displayed in the upper left corner.
- **D** – This is the “D”estruction value of the current ammunition type. The lower the number, the more destructive the effect of the shell if it penetrates.
- **S** – This is the “S”tun value of the current ammunition type. The lower the number, the more likely it is to stun the crew even if it doesn’t penetrate the armor.
- **Range** – A list of numbers, in meters, is displayed to the right (e.g. 100, 250, 300, etc.) to indicate the weapon’s effectiveness for each range band in the following two categories (To Hit and F Pwr).
- **To Hit** – Indicates the chance a weapon has to hit its intended target at the indicated range. As the range increases, this number will generally increase and therefore will make it more difficult to hit the target. This is the base number on a d10 that the firing unit has to equal or exceed in order to score a hit.
- **F Pwr** – The firepower rating of the weapon, which indicates its effectiveness at the indicated range against soft targets. Firepower ratings of 2+ are generally effective in most situations. Ratings of 1 and below most often result in suppression of a soft target rather than casualties.

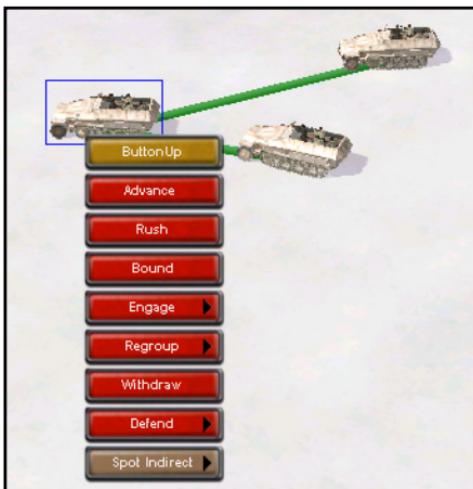
A second **Range** listing is displayed beneath, indicating the normal maximum Penetration ability (Pen) of the selected weapon at the indicated range.

It's worth noting that the ideal Rate Of Fire of a unit is not normally achieved. In practice, you will find that ROF is an indication of which units will fire more often, but it is not matched by actual shots. Unit experience is also a factor in calculating actual ROF on the battlefield.

Accuracy is also modified by terrain, whether the unit is moving, whether its target is moving and so on. The base number is used to start with, but can be modified up or down by as much as three to five points in some situations. Firepower can also be modified by cover, whether the firing unit is suppressed and so on. If a shot looks difficult to you, it probably is! Don't expect much of a tank firing on the move at a target 20m into a patch of heavy woods. On the flipside, a stationary machine gun firing at infantry running in the open will be quite deadly.

5.4 Order Types

What Orders Mean: It's important to understand that, in *Panzer Command*, orders are issued at the platoon level during the Orders phase. While orders can be **adjusted** during the Reaction phase, they cannot be changed. Orders for a platoon can be changed by selecting the HQ vehicle or squad for the platoon. Once the platoon's orders are set, individual modifications to those orders can be issued to the other vehicles or squads in the platoon; however, these modifications have to be within the bounds allowed by the general platoon order. For example, units that are part of a platoon given a Rush order cannot then be given individual targeting orders until the platoon order is changed. This means that you, as the commander, need to plan ahead. A good plan will allow your units to fight effectively within the bounds of the orders you have set for each full turn.



Order Execution Delay: There is no delay in order execution for the German side. On Turn 1 of any battle, there is no delay in order execution for the Soviet side. After Turn 1, Soviet forces have a 40 second (one phase) delay from the time an order is issued until it takes effect, unless the Soviet unit started with a Defend order, in which case the delay is only 20 seconds. Note that if the new order issued is the same as the order the platoon already had, there is no delay. Only in the case of a new order that is also a change in orders does the delay come into effect. This models the fact that Soviet command and control at a tactical level was less advanced and generally less flexible than that of their radio-equipped German counterparts during 1942.

The orders you can issue are as follows.

(un)Mount (Infantry Only)

This orders the selected infantry unit to mount a vehicle or mount a building (or unmount, or exit, a currently mounted vehicle/building). Infantry in buildings are much harder to spot and damage than infantry in the open. Infantry mounted on a vehicle will move with that vehicle; they can be issued with Engage or Defend orders and are capable of firing while mounted on that vehicle. However, mounted infantry on vehicles can be destroyed if the vehicle comes under fire. Both trucks and tanks can be mounted, with one squad allowed per vehicle. Note that infantry mounted in halftracks will receive some protection, while infantry mounted on tanks are considered exposed and are slightly more vulnerable to casualties than when unmounted. Buildings allow for one to three squads to be mounted depending on the building's size.

(un)Button (Vehicles Only)

This orders a vehicle with hatches to keep everyone in the vehicle inside with the hatches closed (buttoned up), which limits its ability to spot the enemy but protects the crew. When unbuttoned, the vehicle will have a much easier time of spotting enemy units, but the crew is considered to be partially exposed and therefore has a greater chance of getting killed. This choice is left up to the player because of its significant effect on sighting. It is generally advisable to button up when under fire.

Advance

This is a cautious, slow movement of the platoon during both the Orders and Reaction phases, with one fire opportunity allowed during each phase. Units that are able to target, move and fire at the same time will perform the best with this order – in other words, infantry or turreted vehicles that don't require the vehicle to be moved to aim the gun. Vehicles that have fixed weapon mounts will only be able to fire at targets directly ahead of them as they move, which will generally limit their opportunity for firing while Advancing. When this order is selected, a blue line will be displayed; move the line to where you want the unit to move and click to set the destination. A number will be displayed next to the cursor as you move it around, indicating the distance in meters to that spot. Text will be displayed next to the distance, indicating the terrain type in the location under the cursor.

The unit as a whole moves forward at half speed while ordered to Advance.

Advance orders remain in effect until the goal is reached. Units may change orders from Advance to any other in the next Orders phase.

Rush

This is a fast movement during both the Orders and Reaction phases, covering a lot of ground. The trade off is that the unit(s) cannot fire during either phase, unless they have reached their objective and stopped moving, in which case a fire opportunity is possible. When this order is selected, a blue line will be displayed; move the line to where you want the unit to move and click to set the destination. A number will be displayed next to the cursor as you move it around, indicating the distance in meters to that spot. Text will be displayed next to the distance, indicating the terrain type in the location under the cursor.

Units using a Rush order will move at their full movement capability.

Units may change orders each turn from Rush to any other order.

Bound

This orders half the platoon to move towards the indicated location while the other half of the platoon covers their movement. Once the moving portion of the platoon moves for one phase of movement, the roles are reversed; the units that moved will now cover the other portion of the platoon as it moves up to join the first group. This order is only available to German units and reflects their higher level of tactical coordination. When this order is selected, a blue line will be displayed; move the line to where you want the unit to move and click to set the destination. A number will be displayed next to the cursor as you move it around, indicating the distance in meters

to that spot. Text will be displayed next to the distance, indicating the terrain type in the location under the cursor.

The unit will automatically be divided by the computer into two equal sized groups where possible.

Only German units may issue a Bound order.

Engage

The platoon will target any enemy unit and/or move freely; they will have firing opportunities during each phase. You can select the weapon and, if applicable, even choose the ammo type to fire if you're targeting an enemy unit manually. Otherwise, if you select Engage and Target, the unit will automatically choose the best possible weapon and ammunition for the target you select. Engage is the only order that allows you to manually specify a target for each unit. Overall, this is the most tactically flexible platoon order.

Engage > Move

A Move during an Engage order proceeds at a normal speed over both phases if the unit does not fire. When the move sub-order is selected, a blue line will be displayed; move the line to where you want the unit to move and click to set the destination. A number will be displayed next to the cursor as you move it around, indicating the distance in meters to that spot. Text will be displayed next to the distance, indicating the terrain type in the location under the cursor.

Engage > Hold

The hold sub-order will clear any target the unit has and allow it to auto-target (this order is similar to Defend > Stay).

Engage > Target

When the target sub-order is selected, a red line will be displayed; move the line to where you want the unit to fire and click to set the destination. If the shot is clear, the red line will be solid. If the shot is obstructed, the red line will be transparent. Note in some cases, the red line will be transparent because the target is outside the normal firing arc at that instant, even if the shot looks to be otherwise clear. In such a case, a vehicle will try to move its turret or body to bring the target into view so that it can fire. A number will be displayed next to the cursor as you move it around, indicating the distance in meters to that spot. When you are over a target, text will appear to indicate the quality of the shot. Text will be displayed next to the distance, indicating the terrain type in the location under the cursor.

Withdraw

The platoon will move in reverse, and will have one firing opportunity. When this order is selected, a blue line will be displayed; move the line to where you want the unit to move and click to set the destination. A number will be displayed next to the cursor as you move it around, indicating the distance in meters to that spot. Text will be displayed next to the distance, indicating the terrain type in the location under the cursor.

This order is ideal for vehicles you wish to move back from the battle line without exposing their rear armor.

Defend

The platoon will defend the indicated location. Through sub-orders, this allows the platoon to cover a limited distance for adjustment purposes but also allows it to fire during both phases if not moving. **Note that whenever a platoon has completed its previous orders, it will default back to a Defend platoon order to allow it to defend itself.**

Defend > Move

When the move sub-order is selected, a blue line will be displayed; this line will turn to gray when it moves past the limited movement distance allowed by this order. Move the line to where you want the unit to move and click to set the destination. A number will be displayed next to the cursor as you move it around, indicating the distance in meters to that spot. Text will be displayed next to the distance, indicating the terrain type in the location under the cursor.

Defend > Stay

The stay sub-order will clear any target the unit has and allow it to auto-target (this order is similar to Engage > Hold).

Defend > Facing

The facing sub-order allows manual adjustment of the facing of an individual platoon.

This order is ideal for setting up a defensive position exactly the way you want it.

Regroup

Sometimes, terrain and/or enemy contact can break up your platoon's cohesiveness. This order will tell the platoon to reform into a predetermined formation and facing relative to the platoon command squad and will conduct movement over both phases to do so. When this order is selected, a blue line will be displayed; move the line to where you want the unit to move and click to set the destination. A number will be displayed next to the cursor as you move it around, indicating the distance in meters to that spot. Text will be displayed next to the distance, indicating the terrain type in the location under the cursor.

Regroup > Line

Regroup > Column

Regroup > Wedge

These sub-orders determine the formation the platoon regroups to. A Line has the command squad on the left end, a Column has the command squad at the front and a Wedge has the command squad at the center.

Spot Indirect

To issue this order, you must have purchased artillery units on the Purchase Units screen. Only a Command unit (i.e. platoon leader) is capable of calling in indirect

artillery fire to any visible map location (see Artillery). Only Command units currently in radio contact can issue this order. If the Spot Indirect option is grayed out, it is not currently available. If the command unit is in contact and an artillery unit is listed, but cannot be selected, the number listed next to the artillery unit indicates how many phases remain before it will be available for a fire mission. When an artillery unit is already firing, the number indicates how many phases remain before the end of the current fire mission.

Spot Indirect > Open Sheaf

Spot Indirect > Closed Sheaf

An Open Sheaf will cover a larger area than a Closed Sheaf, but will be less concentrated in terms of firepower. For an Open Sheaf, each weapon in the battery fires on an adjacent area the same size as the normal Closed Sheaf. In a Closed Sheaf, all weapons fire on a single area rather than adjacent ones. The size of the area covered depends on the size of the artillery, but both open and closed sheafs are shaped like boxes.

Here are the sheaf sizes for commonly used artillery units:

81mm Mortar =

Open Sheaf (75m x 75m per Tube) / Closed Sheaf (75m x 75m per Battery)

105mm Artillery Gun =

Open Sheaf (75m x 125m per Tube) / Closed Sheaf (75m x 125m per Battery)

150mm Artillery Gun =

Open Sheaf (100m x 150m per Tube) / Closed Sheaf (100m x 150m per Battery)

German units have a much better chance of being in radio contact than Soviet units. However, Soviet units are always assumed to be in radio contact on Turn 1 of any scenario. Please note that this does not mean that each unit is assumed to have a radio. Rather, this is an abstraction of an actual forward observer that models the observer's location and communication abilities based on historical estimates.

Artillery fire missions can scatter from the chosen target, rocket artillery more so than the rest. Keep your troops at a safe distance to avoid "friendly fire"!

German artillery fire missions will arrive one turn (two phases) after being requested. Soviet artillery fire missions will arrive two turns (four phases) after being requested.

5.5 Resolving Orders

As mentioned, once you are satisfied with your orders, click the **Play (>)** button on the HUD and the computer will simulate the turn. The simulation is somewhat like a movie of the next 40 seconds of real time action. When Play is clicked, the game's AI will process briefly and then the turn will resolve itself, with orders from both sides being implemented simultaneously. After watching this action (and replaying it if you want), click the **Continue to Next Phase (>>)** button to move to the next Orders phase. Click the **Rewind** button to rewind to the start of the turn and watch it play out again.

Each full Turn consists of two phases (Orders and Reaction). After the Orders phase is resolved and you are done reviewing the playback, the game will start the Reaction phase to allow you a limited opportunity to react to the events of the Orders phase. Your units can be ordered to **Halt**, which will stop their movement completely, or **Target**, which will also stop their movement completely but allow them to select an enemy unit to attack during the upcoming resolution. Press **Play** (>) again to process the Reaction phase and view the results. Once it completes, the turn will be finished. Click the **Continue to Next Phase** (>>) button to move to the Orders phase for the next full Turn.

6.0 Sighting and Combat

Fassbinder stood in his turret, even though every fiber in his being cried out, you fool, duck down. He had a much better view from where he was, however, and could more easily direct his tank (and platoon) in this manner.

As the tank crunched across the landscape, leaving a dirty-brown wake like a ship on a white sea, he spotted an enemy T-34 tank in the distance, at the same time that a Soviet-made 76mm shell screamed past his ear, he could feel the air pressure change and it nearly knocked him senseless.

He strained to keep his eyes on the enemy tank as he called out the numbers to the gunner. And so, it began. The enemy had spotted him first, but Fassbinder and his crew were lucky that the shot had missed. Many tanks didn't survive that first shot.

The game uses real-time 3D sighting between units; a line of sight must be established from one unit to another that is free of blocking obstacles in order to spot. Degrading obstacles such as trees may allow for some line of sight to pass through in some cases (e.g. a thin line of trees) while not in others (thick woods).

Sighting is a very important part of *Panzer Command*. It is checked every eight seconds during each game turn; a multiple step procedure is used to determine whether or not a unit is spotted. This process is summarized below, as this information can greatly affect tactical considerations.

Very Important Note: Just because one of your units can see an enemy doesn't mean all units will be able to actually see that same enemy. If it looks like someone "should" be able to see an enemy, review the various factors below to see if you have considered their facing, orders, and activity as far as how that might differentiate one unit from another in terms of sighting. For example, an unbuttoned tank will have a better spotting distance than a buttoned tank right next to it. While this is a much more realistic sighting model than allowing all units to share the same sighting, it may require some getting used to for the player because all sighted enemy units will appear on the map even though those units may not be sighted by a particular friendly unit.

Basic Sighting: Cone of Sight > Target Type > Base Sighting Distance > Terrain Obstacle Check > Activity and Damage Modifiers > Experience and Abilities = Final Sighting Result

- Cone of Sight:** A squad attempting to spot an enemy squad must have the enemy unit within a cone of sight. This cone varies in size and largely depends on the type of unit it is. An unbuttoned vehicle has a cone of sight 90 degrees to either side of its front (a 180 degree arc), while a buttoned vehicle can only see 45 degrees to either side of its front (a 90 degree arc). Infantry can spot 90 degrees to either side of their front (a 180 degree arc) while moving; if they are sitting still, they can spot in a full 360 degree circle.
- Target Type:** The target type will affect sighting, with vehicles generally easier to spot than infantry. In addition the size modifier of the target will be considered here, which will make larger vehicles easier to spot and smaller ones harder to spot.
- Base Sighting Distance:** The base sighting distance before any modifiers is determined as follows.

- Vehicle Moving/Buttoned Up: **250m Base Distance**
- Vehicle Stationary/Buttoned Up: **350m Base Distance**
- Vehicle Moving/Unbuttoned: **550m Base Distance**
- Vehicle Stationary/Unbuttoned OR Infantry: **800m Base Distance**

As an example, while a stationary, buttoned vehicle has a base 350m sighting distance, that is increased to 1200m when the enemy is a moving vehicle in the open. Modifiers in the other sections affect the adjusted sighting distance a great deal!

- Terrain Obstacle Check:** A path is generated from the spotting unit to the enemy unit and terrain factors are considered. Every object that is touched by the path will degrade the spotting distance, depending on the terrain type (including buildings) and the amount of degrading terrain in meters. Modifiers for different terrain types are cumulative and are subtracted from the sighting distance.

We'll use Infantry sighting distance (Base 800m) to show the various modifiers for terrain. Note that these distances will vary somewhat for the other starting base sighting distances, but the relative effects will remain similar.

Cumulative spotting effects are not strictly additive, as the effect to sighting decreases on the low end with each modifier and increases on the high end. In other words, a unit can never be "invisible" at any range due to sighting modifiers. The visible range will approach zero, but never actually reach it. Similarly, spotting bonuses will add significantly more distance after a distance of about 1100m has been reached.

The minimum spotting distance in *Panzer Command* is 10 meters. For example, a vehicle that is Hull Down and visible through 10m of Light Woods

would end up with a net cumulative modifier that equates to - 650m rather than - 900m, due to the diminishing effects on the low end.

For Vehicle Targets:

- 1-25m Light Woods: - **450m Distance**
(Could be seen if within 350m)
- 26-50m Light Woods: - **575m Distance**
(Could be seen if within 225m)
- 51-75m Light Woods: - **725m Distance**
(Could be seen if within 25-50m)
- 76-100m Light Woods: - **775m Distance**
(Effectively invisible)
- 1-25m Heavy Woods: - **650m Distance**
(Could be seen if within 150m)
- Buildings or Rubble: - **450m Distance**
(Could be seen if within 350m)
- Hull Down: - **450m Distance**
(Could be seen if within 350m)

For Infantry Targets:

- 1-25m Light Woods: - **725m Distance**
(Could be seen if within 75m)
- 1-25m Heavy Woods: - **785m Distance**
(Could be seen if within 15m)
- In Building: - **725m Distance**
(Could be seen if within 75 m)
- 76-100m Light Woods: - **775m Distance**
(Effectively invisible)
- 1-25m Heavy Woods: - **650m Distance**
(Could be seen if within 150m)

So that the "For Infantry Targets:" list ends with the following point:
In Building: - 725m Distance(Could be seen if within 75 m)

A unit inside of a building that is attempting to spot outside of the building is not affected by the building's walls.

4. **Activity and Damage Modifiers:** In general, stationary units will be best at spotting and units that have fired will be easier to spot. Modifiers are applied to the base sighting factor. Again, we will use the Infantry base sighting distance (800m) as a starting point.

If the Sighting Unit is a Vehicle:

- Sighting unit is firing main weapon: - **100m Distance**
- Sighting unit is buttoned, but has cupola: + **100m Distance**
- Vehicle Commander killed: - **350m Distance**

Sighting Unit is Infantry:

- Sighting unit is suppressed: - **575m Distance**
- Sighting unit is firing weapons: - **100m Distance**
- Sighting unit is under HE fire: - **575m Distance**
- Sighting unit is broken: - **575m Distance**

Target is Vehicle:

- Target unit is stationary, but rotating turret 45 degrees or more: + **150m Distance**
- Target unit shift moved (such as a Defend – Move order): + **400m Distance**
- Target unit moved a full move (such as a Rush): + **1400m Distance**
- Target unit fired machine gun(s): + **700m Distance**
- Target unit fired cannon 20-41mm: + **900m Distance**
- Target unit fired cannon 42-82mm: + **1400m Distance**
- Target unit fired cannon 83-164mm: + **1700m Distance**

Target is Infantry:

- Infantry Squad: - **650m Distance**
- Target unit is firing: + **700m Distance**
- Target unit is moving: + **900m Distance**

5. **Experience and Abilities** affect sighting, as follows:

- Sighting Unit is Green: - **100m Distance**
- Sighting Unit is Elite: + **150m Distance**
- Panzer Ace or Tank Ace Special Ability: + **400m Distance**
- Veteran Sergeant Special Ability: + **400m Distance**
- Target unit has Infiltrator Special Ability: - **250m Distance**
- Unit is already spotted by a friendly squad: + **400m Distance**

6. **The Final Sighting Distance** is determined based on all the combined modifiers. This new, adjusted Sighting Distance is compared to the distance to the target unit; if the Sighting Distance is greater than or equal to the distance to the target unit, the target unit is spotted.

A Final Note on Sighting:

Consider your view as a wargamer; you get the enviable ability of being able to see from a bird's-eye perspective how things are unfolding. You can see from one end of the battlefield to the other, and might get a bit frustrated when you know you can 'see' an enemy unit, but your soldiers cannot. This is just part of wargaming, where you, the player, are not able to get down in the dirt with your troops.

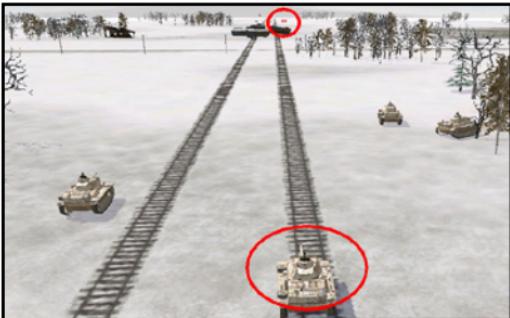
With *Panzer Command*, however, you can indeed get down in the dirt. As a result, you can gain a much better appreciation for what your historical counterparts went through. Consider the following image:

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The small circle near the top is highlighting an even smaller box; this is the box that is displayed around vehicles normally when they are selected. It's so small, in fact, you cannot even see the tank that it is surrounding (which happens to be a T-34).

Now, let's get down to the commander's perspective:

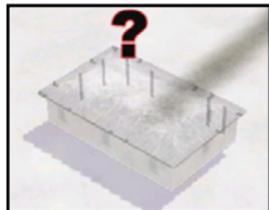
Your commander is essentially blind from this view. However, he is trained to make the hard spots that you might not be able to. Regardless, this particular tank commander cannot see the enemy tank from the previous view, but other vehicles in his platoon can.



Also, do not forget the Binocular view – select a unit and press the Tab key twice to see things through the commander's eyes.

If a unit that has been sighted becomes unsighted (e.g., by moving behind trees), a question mark (?) will be displayed at the unit's last known position. This question mark will fade over time if no friendly units move to sight the area.

Any enemy unit that is sighted by any friendly unit is shown on the map and on the mini-map. However, for targeting and firing purposes, an individual unit must be able to sight the enemy unit to be able to fire at it. A red line from a friendly unit to an enemy unit indicates a clear line of sight, while a transparent red or gray line indicates that the enemy unit is spotted by another friendly platoon or squad, but the selected squad cannot target it due to terrain obstructions or because the target is outside the firing unit's current arc of fire.



The gray line indicates that the enemy unit has been spotted by other friendly units (platoons or squads), but the selected friendly squad cannot fire as its line of sight is blocked by trees.



The red line indicates that the enemy squad has been spotted and that the selected friendly squad has a clear line of sight to it.

Note that a friendly squad that has a gray targeting line on an enemy unit will move or traverse its turret (if applicable) to spot the enemy unit. However, it is possible that the enemy unit will move during this time as well.

6.1 Firing and Defense

There are two critical attributes for weapon effectiveness:

- The base chance to hit a target at a given range, and
- The base chance to penetrate or kill the target if it is hit at a given range.

A squad's to hit number is displayed beneath the range band on the unit specification screen.

Range	150	275	325	375	425	500	550	625	725	825	1000
To Hit	1	2	3	4	5	6	7	8	9	10	11

The range band will differ from squad to squad, depending on its type and the weapon it employs. The higher the to hit number, the harder it is to hit the target. The numbers generated by the computer roughly correspond to what a 10-sided die roll can generate; furthermore, the 'roll' can be modified as much as -5 to +5 to model critical successes or failures.

If the firing unit is moving, the chance of hitting is drastically reduced. World War II tanks, for example, did not feature automatic targeting systems; the gunners had to aim their weapons manually, and to do that effectively, needed the vehicle to be still. For infantry, moving and firing meant a significant decrease in accuracy and firepower, as opposed to sitting still and firing, especially when it came to automatic weapons which could not be fired effectively on the move.

For firing on vehicles, if the Penetration Value is greater than the armor value of the target at the target's hit location, there is a good chance that the target will

be penetrated and damage will occur. Based on the unit facing, the hit location is determined randomly. Top locations are only accessible for artillery and air strikes, unless there is a significant elevation difference in the firing and target unit. Also, firing at the angles between front and side and side and rear can lead to special deflection shots that treat even normal armor as sloped. If the target is hull-down, the hit location will be limited to exclude parts of the vehicle that can't realistically be seen. Once a location is hit, there is still a good deal of variability to the base penetration based on ammo type and armor type. Factors also include the armor type (Sloped or Rounded).

- AP (Armor Piercing) and APHE (Armor Piercing High Explosive): Comprised of a strengthened casing and especially dense nose with a sharper, spear-like appearance, the AP was designed to penetrate armor. During 1942, this was a good round type to fire, although AP ammo is not very effective against armor with rounded hulls; it has a tendency to deflect off at an angle. With 'normal' straight-on shots and versus armor with sloped armor, it was still a good choice.
- APCR (Armor Piercing, Composite Rigid): Comprised of a core of high-density metal, such as tungsten carbide, surrounded by a lighter material in the surrounding shell. Less effective against sloped or rounded armor.
- HE (High Explosive): The simplest of shells, it has a fuse on the nose that explodes on impact. HE ammo is not effective against armored targets as it is not designed to penetrate armor; instead, it is best used against infantry and/or soft-skinned vehicles, such as trucks. When fired against armor, HE ammunition will generally be more likely to stun the crew than other ammunition types and is less effective against sloped armor.

For example, the base penetration of AP ammunition may, if you're unlucky, be reduced down to one quarter its base value when targeting rounded armor. In general, the base penetration will not be reduced below $\frac{1}{2}$ of its value unless hitting a type of armor that the ammunition is ill-suited to deal with.

Similarly, there is always a possibility of a "critical hit" in which case the shell found a weak spot or seam in the armor. While these are rare, they can increase the base penetration value up to two-fold if the firing unit is very lucky.

Even if the target vehicle is not destroyed, there is a good chance that stun and/or morale checks will be required.

For firing on infantry, these values are not compared. Instead, the firepower is the base chance to kill the target; however, the base firepower at range can be adjusted by factors such as cover, movement, etc.

There are many factors that can impact the base chance to-hit and penetration/fire power ratings of units. Primary factors include the amount of movement both the firing unit and target unit execute in a turn, the cover and terrain the target occupies, and the type of ammunition versus the type of target (for instance, HE (High Explosive) is good against infantry but bad against armor).

A summary of the various modifiers to accuracy and firepower is listed here for those who wish to better understand the details of the system. The minimum hit chance is roughly 10%, even if modifiers would otherwise push it below that range. Firepower can be adjusted into negative values. Negative firepower can still cause units to be suppressed, though it cannot cause casualties to them.

Accuracy Roll Modifiers:

Target Size >0: +1

Target Stationary, Side Facing: +1

Elite Unit: +1

Medal: German Cross: +1

Medal: Order of Lenin: +1

Medal: Hero of Soviet Union: +1

Ability: Panzer Ace (German): +1

Ability: Tank Ace (Soviet): +1

Green Unit: -1

Unit >150m from platoon commander: -1

Area Fire : -2

Target Size <0: -2

Target Moving at >600m Range: -2

Target Moving at <=600m Range: -1

Firing Unit Moved: -2

Firing Unit Moved >= Half Speed: -3

Firing Unit Moved >= Full Speed: -4

Line of Fire through <=25m of Woods/Obstacles: -1

Line of Fire through <25m and <=50m of Woods/Obstacles: -2

Line of Fire through >50m and <=75m of Woods/Obstacles: -4

Line of Fire through >75m of Woods/Obstacles: -7

Target is in Building: -2

Example: A unit that has a base accuracy of 5 would need to roll a 5 or more on a d10 to hit. If that unit moved at half speed and is a Green unit, it would have a modifier of -4 to that roll. As a result it would have to roll a 9 or a 10 in order to hit.

Base Firepower Modifiers:

Target moving in Clear terrain: +1

Target is riding in a Truck or on a Tank: +1

Target in Woods or Heavy Woods attacked by HE: +1

Elite Unit: +1

Medal: Sharpshooter: +1

Area Fire: -1

Green Unit: -1

Firing from Open AFV: -1

Target is in a Halftrack: -1

Target is stationary or moving slowly in Woods: -1

Target is stationary or moving slowly in Heavy Woods: -2

Target is in Building: -2

Firing unit is infantry and is moving: -2

Example: A unit that has a base firepower of 2 would need to roll a 1 or a 2 on a d10 to cause casualties and possibly destroy an infantry squad. If the infantry squad is moving in the open and the firing unit is Elite, the firepower would be increased to a 4, so a roll of 1 to 4 would now cause casualties and possibly destroy the target.

6.1.1 Targeting

Units will generally automatically target enemies they can see and have better than a "poor" shot at, provided their orders give them an opportunity to fire. However, by using the **Engage - Target** order or the Reaction phase **Target** order, the player may assign a specific target. In all cases, the target must be visible to the firing unit (not just visible on the screen) for a shot to take place. A friendly unit can target an enemy unit not visible to the friendly unit at the moment the order is placed; the target may move into sight. If ordered from the command vehicle or squad for a platoon, **Engage - Target** will set the target for any units in the platoon that have not already been assigned individual targets. This is a quick way to target a platoon all at once, though sometimes concentrated fire on a single target is not desirable.

The unit's rate of fire (ROF) will determine the absolute maximum number of shots the unit is allowed during a given 40 second phase. The actual shots will be generally spaced out over the entire phase. Actual rate of fire will be adjusted by experience, abilities and other situational modifiers and will rarely reach the absolute maximum.

When manually targeting, a red targeting line will appear. This line will become somewhat transparent when it is dragged through terrain that may block a shot. When the targeting line is over an enemy unit, it will take any sighting factors of that enemy unit into account. Sometimes, these sighting factors will counteract terrain modification and the targeting line will change back to bright red. In this case, you have a visible target in your sights.

For example, say there is an enemy tank is moving on the other side of a small grove of trees. The targeting line between the firing unit and the mouse cursor may turn transparent when pulled through the trees, representing the fact that the trees may block sighting.

However, when the line is put over the enemy tank it might turn back to a solid red since the enemy tank is moving and is already sighted by another friendly unit. Moving and being sighted both increase sighting range and in this case counteract the penalty for sighting through light woods.

Also, when a unit is selected, all units that are targeting that selected unit will be denoted with a yellow rubber band.



If you target something that is not directly sighted, the line will turn gray. This is to warn you that you probably do not have a shot on the target. Also, the line will turn gray when you pull it outside of the sighting or firing arc of your unit. Generally speaking, units can only 'see' in front of their current heading/facing.

The firing arc for a vehicle is 45 degrees, centered on the gun barrel or the front of the hull. The firing arc for stationary infantry is 360 degrees. While moving, the firing arc for infantry is 90 degrees to the front centered on their movement path.

6.1.2 Direct Fire Combat

Direct fire is when a unit fires its weapon directly upon a target. This is the vast majority of combat in the game. The first step is to hit the target. Assuming the target is hit, damage is then determined. As mentioned earlier, if the target is an armored target, the penetration value of the firing unit is compared to the armor value of the defending unit to determine if it penetrates or deflects. If the target is an infantry unit, the firing unit's firepower rating is checked to determine if it causes casualties or suppresses or routs the target unit.

There are a variety of damage results based on the type of target. For vehicles, parts of the vehicle may be disabled or it may be stunned or outright destroyed. Stunned vehicles may not move or fire while stunned (refer to Morale for details). For infantry, the result may be suppression, casualties, morale failure or destruction. Suppressed infantry move very slowly and do not fire as effectively as unsuppressed infantry.

6.1.3 Area Fire Combat

Area fire is when a unit fires its weapon at a spot rather than a unit. In this case, the shot has a chance to affect everything within a certain area of the target point. The affected area is indicated by a small box that is attached to the target line. While hitting an individual unit in the targeted area is harder than with direct fire, you can potentially hit multiple units.

This type of fire is ideal for suppression of enemy units and can be used even when you haven't sighted the enemy, but suspect that they may be hiding in a particular area of woods or a building.

6.1.4 Critical Hits

Occasionally a shell will hit a location such as a turret ring, welded edge, machine gun port, or periscope such that it will be able to penetrate much more easily than it would under normal circumstances. This will result in an increase in the actual penetration of the shell, ranging from +1 to up to double the normal value.

6.1.5 Close Combat

Close combat is a special type of combat that infantry may perform against vehicles if the infantry is within 30 meters of a vehicle target. Instead of using their normal

gun/ammo combination against the vehicle, they use special close combat rules. In a nutshell, infantry in close combat can be very effective and lethal against vehicles – don't let your tanks wander too far from your supporting infantry and too close to cover, or they may be picked off by hidden enemy infantry. Envision a squad crawling up to your vehicle or even running up into a blind spot with Molotov cocktails, anti-tank grenades, etc. As long as you keep your vehicles far enough from infantry, this option is not available to them.

Close combat against vehicles is more effective against the side or rear of a vehicle and against open topped vehicles. Moving vehicles are harder to close assault and stationary infantry has a better chance to close assault than moving infantry. Experience also has a significant effect in the success of a close assault and suppressed infantry will not generally be able to conduct a successful close assault and broken infantry cannot close assault at all. If all goes well, the chance of succeeding at causing a single damage type to the vehicle is roughly 50%, but this can result in everything from track damage up to and including the destruction of the vehicle.

Close Combat Modifiers:

Assault on AFV Rear: +2

Assault on AFV Side: +1

Assault on Open or Unbuttoned AFV: +1

Assault on Moving AFV: -1

Assault on Fast Moving AFV: -2

Attacking infantry is Suppressed: -3

Elite Assaulting Unit: +1

Green Assaulting Unit: -1

Medal: Infantry Assault Badge: +1

Medal: Tank Destroyer Badge (Silver or Gold): +1

Ability: Close Assault Hero: +1

7.0 Morale

The German shell screamed downrange, piercing the T-34 just between the hull and turret. It was a dead-on shot, but a lucky one, as it tore into the inside of the vehicle, spraying the inside with a deadly hailstorm of jagged metal fragments. The T-34's ammunition and fuel were instantly cut through, and the vehicle exploded in an expanding fireball.

The T-34 platoon stood in place, the commanders staring in disbelief as their tank commander's vehicle burned fiercely. The first strike went to the Germans, and the Russian tank platoon froze for a moment, not knowing what to do next.

Each platoon or group of units checks against its Morale every turn and each squad or vehicle also checks individual Morale based on its status. The largest influence to platoon Morale is the percentage of losses in a given platoon, but there are other factors as well. If a platoon fails a Morale Check, the entire platoon will suffer as a result.

Effects include surrender, abandoning vehicles, involuntary withdrawal, buttoning up vehicles without being ordered to and loss of targets.

Troops rarely fight to the last man. Instead after taking casualties the remaining troops will lose their motivation and seek their own survival. General Morale is different from squad or vehicle crew morale. General morale covers the morale of platoons rather than individual elements.

When platoons suffer losses through casualties that pass through the following percentile loss levels: 15%, 30%, 60% or 80%, they must test their Morale. The test is made when losses reach or surpass the percentages listed. That is, a platoon that has suffered 14% losses does not test, but a platoon with 25% losses does test at 15%. A platoon must only test for any given loss percentage once per scenario. If more than one level is surpassed in a turn a test must be made on each level.

Platoons that are not within 800 meters of the enemy and not under attack do not have to test for General Morale.

Calculations are based on percentages remaining of the original number of squad elements for infantry and vehicle elements for armor. The loss percentage is a ratio of loss elements to the number the unit started with at the beginning of the scenario

For example, a loss of one squad from a three-squad platoon will dictate the platoon takes a Morale test as having lost 33% of its units.

Squads that have broken are considered casualties for morale purposes. However, if a unit tests morale at a given percentage level (15%, 30% etc.) and later the squads rally and rejoin their unit, when that unit again takes losses and again reaches a tested level of loss, it does not take the test again (for that level).

If a unit fails its morale test a second die roll must be made to determine what the result of that morale failure is.

When a basic unit takes 30% losses or more in its first game turn under fire, not only must it test at the 15% and the 30% level, but if it fails either morale check, the result is adjusted to be worse than it would otherwise be.

Platoons or individual squads or vehicles forced to retreat due to morale failure will be given a special retreat order than cannot be changed. At the end of each turn, a rally check will be made for any retreating units to see if they rally. Rallied units will be able to receive orders normally again.

All units are rated for their likelihood to break and chance to rally. The chance for an individual unit (rather than a platoon) to break when under heavy fire is roughly 10% for German units and roughly 20% for Russian units. The base chance to rally each phase when broken is roughly 40% for German units and roughly 30% for Russian units.

Gun crews that must retreat will abandon their gun, effectively destroying it.

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If a unit is stunned as a result of combat or morale failure, it suffers from shock, concussion, disorientation, damage, fear, or any combination thereof. This can also reflect a temporarily damaged vehicle component on a vehicle, or maybe a wounded man that needs immediate medical attention.

Stunned vehicles may not move nor fire in the same turn they were stunned; at the end of each turn, a stunned vehicle will have a chance to un-stun. This check is modified by further hits upon the vehicle, i.e. it is much harder for a stunned vehicle to become unstunned if it continues to be hit throughout a turn.

Any stunned unit has a 60% chance to recover from being stunned at the end of each phase.

8.0 Artillery

Fassbinder's shell had just struck the T-34 when he spotted a puff of smoke from the treeline – an antitank gun. Where there were antitank guns, usually there was infantry, too. A 45mm shell clanged against the hull of one of the tanks in his platoon, piercing the track on the side. Disabled, the tank came to a halt as its commander dropped down into the turret to return fire.

The Oberleutnant cursed a tank gone already. His hands flew over his radio, which crackled with life as the Battalion became engaged. Quickly, he called out his unit and the necessary numbers, hoping to lay a shroud of death upon the treeline. Luckily, he still had a connection to the headquarters, and they had artillery assigned to their assault. He ducked down and buttoned up the tank, knowing the shells would tear every last living thing in the woods to pieces when they arrived.

All artillery purchased is considered to be off board; i.e. they have no representation on the map. To use artillery, any Command unit of a platoon that is in radio contact for the turn can spot and call in fire support. This does not necessarily represent the commander having a radio, though in some cases that may be true. In general, it represents an abstracted forward observer and his contact with the various battle elements.

Radio contact is determined by each side at the beginning of every turn; the Germans have a 50% chance per surviving command unit of having radio contact, whereas the Soviets have a very low chance – only 10% per command unit. However, all Soviet commanders are automatically in radio contact on the first turn of any battle.

To call in artillery, use the Spot Indirect order. This order will display all available artillery that can be used. Once a battery of artillery is chosen, select the type of spread; either **Closed Sheaf** (concentrated fire) or **Open Sheaf** (spread-out fire) and then select a sighted location anywhere on the map.

An Open Sheaf will cover a larger area than a Closed Sheaf, but will be less concentrated in terms of firepower. For an Open Sheaf, each weapon in the battery fires on an adjacent area the same size as the normal Closed Sheaf. In a Closed Sheaf, all weapons

fire on a single area rather than adjacent ones. The size of the area covered depends on the size of the artillery, but both open and closed sheafs are shaped like boxes.

Here are the sheaf sizes for commonly used artillery units:

81mm Mortar =

Open Sheaf (75m x 75m per Tube) / Closed Sheaf (75m x 75m per Battery)

105mm Artillery Gun =

Open Sheaf (75m x 125m per Tube) / Closed Sheaf (75m x 125m per Battery)

150mm Artillery Gun =

Open Sheaf (100m x 150m per Tube) / Closed Sheaf (100m x 150m per Battery)

Artillery fire missions can scatter from the chosen target, rocket artillery more so than the rest. Keep your troops at a safe distance to avoid “friendly fire”!

After being targeted, German artillery will take one full turn (two phases) before firing and Russian artillery will take two full turns (four phases). Once artillery fire begins, it will continue for three full turns (six phases). There is a chance that the artillery will scatter and be significantly offset from the chosen location; however, scatter will automatically correct toward the targeted location with each turn of fire. After the three turns of artillery fire are complete, the firing artillery unit will not available for three full turns; this is called ‘cool down’ (the Spot Indirect choice on the Order menu will display a number showing phases of fire and cool down remaining).

At any time, any commander in radio contact can cancel a fire order. It takes one full turn to cancel a fire order. Regardless of how many turns the artillery unit actually fired, cancelled artillery must still have three full turns of cool down.

Each turn artillery fire lands, all units (friendly or enemy) inside that artillery fire area may take damage. The area of fire is based upon the caliber of the firing artillery (larger calibers cover larger areas) as well as if the fire is Closed Sheaf (concentrated) vs. Open Sheaf, (spread out). However, random factors can affect the area as well.

8.0.1 Air Strikes

Some scenarios may allow you to purchase one or more planes as air support. These flyboys are not under your control, but they've been assigned to your section of the battle to support as they can. If you purchase air strikes, they will arrive at a random turn during the battle, weighted towards the beginning. Once they arrive, they will do their own spotting from altitude and dive down to strike the best target they can see. Please note that as they are doing their own spotting, you may not always see what they are attacking, but as you advance across the battlefield, you may see the aftermath of your air strikes. When an air strike occurs, you will see a message indicating that it is happening and hear the sound of the diving plane.

Note that in cases where both sides can buy air support, the side with more purchased planes is assumed to have air superiority and thus has a higher chance each turn of an air strike arriving on the battlefield.

9.0 Experience, Medals, and Special Abilities

Zabav knew the antitank gun crew next to him had fired too soon, but nothing could be done about it now. He'd have to fire as quickly as possible now and hope that German artillery didn't come crashing down on his ears. He looked at his crew, all veterans that had been lucky enough to survive the fascist onslaught so far. They had their craft down pat, and needed little direction from the senior sergeant.

Working fast, the crew loaded the gun and sent the round screaming downrange, Zabev smiled with delight as the round clanged home into the tank next to the disabled one, but had no time to celebrate. The empty case was being discarded and the next one slammed in when the whistle of artillery grew in his ears, everyone's eyes went wide as they ducked for the best cover they could find. Despite being veterans, they were not fools.

As a Campaign progresses, your units will move from scenario to scenario (provided they aren't wiped out). At the end of each Campaign scenario, the performance of each of your units is analyzed; if they've performed well and are lucky, they may be awarded a Medal or Special Ability. Unit experience may increase as well, or decrease as you reinforce a veteran or elite unit with fresh replacements.

Medals and Special Abilities are specific bonuses to your unit's fighting ability. These bonuses will stay with the unit until it is wiped out. Each medal or ability is unique; a unit may never have more than one of the same medal or ability.

9.0.1 Post-Battle Losses and Recovery

In some cases, units that were destroyed on the battlefield were rendered combat ineffective but possible to repair or reconstitute quickly after the battle. At the same time, sometimes battlefield losses proved to be more significant than realized, leading to a unit being disbanded or written off after the battle.

In the post-battle summary, you will see a list of which units were permanently lost due to battle damage or casualties and which were recovered after battle. For vehicles, the less severe the damage the greater the chance of recovery. A tank that has taken a track hit and gun damage will be much more likely to be with you next battle than one that suffered crew casualties, mobility damage and gun damage. For infantry, all destroyed squads have a chance to reconstitute and reform after the battle.

9.1 Experience

Squads will have an Experience rating (Green, Veteran, or Elite) that will determine various bonuses or penalties in the game. Each time a squad has a chance to earn a Level gain, a one-time test is conducted each time the qualifications are met. If successful, the squad will move up one Experience Level. Each time a squad is reinforced with replacements, it has a chance to lose an Experience Level. Think carefully before clicking that "Replace Losses" button!

An increase in experience is generally the single most effective bonus a unit can get, better than any single medal or ability. Keeping your Core Battle Group from suffering severe casualties and giving them the chance to increase in experience will help you greatly as the campaign progresses.

Elite units generally cost 20% more than Veteran units. Green units are generally 20% cheaper than Veteran units.

9.2 German Medals

A note on Medals and the Abilities they grant: Abilities are not cumulative within the same type of medal. In other words, a German squad that earns an Iron Cross Second (1st) Class will not earn an additional +2 to their Sighting ability over what they had with the Iron Cross (2nd Class), for a total of +4. In these cases, the older medal will generally be replaced by the new one. The effects described for each Medal are the effects the squad that earns it will enjoy. Note that "kill" denotes an enemy squad or vehicle, not a full enemy unit

9.2.1 Wound Badge (Black)

“..as a mark of honor for all risked their lives for the Fatherland and have been wounded or maimed.”

-Reinstitution Decree, 1939

All members of the German Armed Forces, Police units, and from 1943 on, all civilians injured during Allied air raids, were eligible for the award. Those individuals killed in action were posthumously awarded the Gold grade, which was presented to the next of kin.

A few months after Operation Fall Weiss began the 1939 Wound Badge 2nd type was available and started to be presented. This version, very similar to its predecessors, was oval with pebbling on the background plate and featured an M35 helmet with a mobile swastika on it. Behind the helmet were crossed swords and a wreath surrounding the badge with a ribbon at the base.

A squad that earns an unrecovered loss and has no previous Wound Badge will earn a Wound Badge (Black) automatically. The Wound Badge (Black) has no effect on gameplay, but forms the basis for earning the Silver and Gold versions.

9.2.2 Wound Badge (Silver)

The Silver grade was produced initially from silver-plated brass, and in 1942 from whitewashed zinc. Awarded for three or four wounds, it could also be awarded for more serious wounds if such wound included loss of hearing, a hand, a foot, an eye, brain damage, or facial disfigurement.

A squad that earns an unrecovered loss and already has a Wound Badge (Black) will earn a Wound Badge (Silver) automatically. The Wound Badge (Silver) gives the squad an immediate 10% chance to gain one Experience Level.

9.2.3 Wound Badge (Gold)

The Gold grade was produced at first from gold-plated and/or brass. As the war progressed and gold and brass became scarcer, it was not unheard of to have black badges painted a gold color before presentation. Generally, these awards were granted to individuals killed in the line of duty, or to those who had suffered five or more wounds, total blindness, or severe brain damage.

A squad that earns an unrecovered loss and already has a Wound Badge (Silver) will earn a Wound Badge (Gold) automatically. The Wound Badge (Gold) gives the squad an immediate 10% chance to gain one Experience Level.

9.1.4 Iron Cross Second (2nd) Class

The Iron Cross series was reinstated in 1939 by Adolf Hitler to recognize an individual that performed an act of bravery or distinguished themselves in a manner over and above the call of duty. The Iron Cross Second (2nd) Class was the lowest Award in this series and a relatively prestigious award in the early years of World War II; as the war progressed, however, more and more were doled out (in sum, almost two and a half million were awarded from 1939 to 1945; the total climbs upwards to close to three million counting the awards made to non-German Axis allies). This diluted their importance somewhat, but not enough to destroy their mystique.

A squad that scores two or more kills in a single scenario will have a 25% chance to receive this Medal. If the squad survives the scenario and successfully earns this Medal, it will gain a +2 to its Sighting ability.

9.1.5 Iron Cross First (1st) Class

Soldiers receiving the Iron Cross First (1st) Class had to perform three to four further acts of courage over and above the one(s) performed to earn the Iron Cross Second (2nd) Class. It was therefore held in higher regard over the 2nd Class. About 300,000 were awarded from 1939-1945.

A squad that scores three or more kills in a single Campaign scenario and has an Iron Cross Second (2nd) Class will have a 20% chance to receive this Medal. If the squad survives the scenario and successfully earns this Medal, it will keep its +2 to its Sighting ability and also will gain a +1 to its Rally rolls. Additionally, the unit will have an immediate 10% chance to gain an Experience Level.

9.1.6 Knight's Cross to the Iron Cross First (1st) Class

The Knight's Cross was the first of five Knight's Cross awards, created by Hitler in 1939 to bridge the sizeable gap between the Iron Cross First (1st) Class and the Grand Cross of the Iron Cross. The Knight's Cross was awarded to individuals that held the Iron Cross First (1st) Class that continued to perform heroic deeds in the line of duty. In total, 7,313 Knight's Crosses were awarded from 1939-1945.

A squad that scores three or more kills in a single Campaign scenario and has an Iron Cross First (1st) Class will have a 10% chance to receive this Medal. If the squad survives the scenario and successfully earns this Medal, it will keep its +2 to Sighting and its +1 to Rally rolls, but will also earn a +1 to its Initiative and will have an immediate 10% Chance to gain an Experience Level.

9.1.9 Infantry Assault Badge (Bronze)

Sometimes referred to as the Infantry Combat Badge, this Award was granted to soldiers that participated in three or more battles, one hand-to-hand battle, or participated in three separate days' worth of combat.

A Panzergrenadier infantry unit with at least Veteran experience that has participated in three or more Campaign scenarios will receive a 30% chance to earn this Medal. If granted, the squad will gain a +1 to its Close Assault ability and will receive an immediate 10% chance to gain one Experience Level.

9.1.10 War Merit Cross (2nd Class)

The 2nd Class version of the War Merit Cross was awarded to persons whose actions were deemed to be in furtherance of the war effort. As such, it tended to have a very liberal interpretation and was granted to military and civilian personnel alike; about 15 million total were issued during the Third Reich's reign.

A squad that scores at least one kill in a single Campaign scenario but suffers no unrecovered losses will have a 20% chance to receive this Medal. If granted, the unit will receive a +1 bonus to its Rally rolls.

9.1.11 War Merit Cross (1st Class)

The 1st Class version of the War Merit Cross was awarded for meritorious service or courage in furtherance of the war effort; as such it was granted in not nearly the same numbers as its 2nd Class cousin. All told, about 91,000 of these were granted.

A squad that scores at least two kills in a single Campaign scenario, suffers no unrecovered losses, and already has a War Merit Cross (2nd Class) Medal will have a 10% chance to receive this Medal. If granted, the unit will continue to receive a +1 bonus to its Rally rolls, and will additionally receive a +1 to its Initiative.

9.1.12 German Cross (Gold)

The German Cross (Gold) was awarded to individuals whose repeated acts of bravery or exceptional command ability did not quite justify a Knight's Cross to the Iron Cross, but exceeded the requirements of the Iron Cross First (1st) Class.

A squad that scores at least three kills in a scenario, has a War Merit Cross (1st Class), and has an Iron Cross 1st Class already will have a 20% chance to receive this Medal. The unit will receive an additional +1 to its Initiative, a +1 to its Accuracy, and will receive an immediate 10% chance to gain one Experience Level.

9.1.13 Panzer Assault Badge (Silver)

The Silver iteration of the Panzer Assault Badge required that its recipients take part in three tank assaults on three separate days, to be wounded in the course of a tank assault, or to have earned a decoration for bravery in the course of a tank assault. This Medal was granted to tank crewmen only – commanders, gunners, drivers, and so forth.

A Panzer squad with at least Veteran experience, a Wound Badge of any kind (Black, Silver, or Gold), and one other medal of any kind, which also has participated in three or more Campaign scenarios, will have a 50% chance to receive this Medal. If granted, the squad will have their weapons' ROF adjusted by +1 and will receive an immediate 10% chance to gain one Experience Level.

9.1.14 Panzer Assault Badge (Bronze)

The Bronze iteration of the Panzer Assault Badge was created to recognize crewmen of armored vehicles (not tanks) or passengers who went into battle inside an armored vehicle, using the same criterion as the Silver version of this Medal.

A Halftrack squad with at least Veteran experience, a Wound Badge of any kind (Black, Silver, or Gold), and one other medal of any kind, which has participated in three or more Campaign scenarios, will have a 50% chance to receive this Medal. If granted, the squad will have their weapons' ROF adjusted by +1 and will receive an immediate 10% chance to gain one Experience Level.

9.1.15 Tank Destruction Badge (Silver)

This Medal was granted to an individual that destroyed a single enemy tank using handheld means (such as explosives).

A Panzergrenadier infantry squad with a total of two or more vehicle kills will have a 50% chance to receive this Medal. If granted, the squad gains a +1 to their Close Assault ability.

9.1.16 Tank Destruction Badge (Gold)

This Medal was granted to an individual that destroyed five total enemy tanks using handheld means (such as explosives).

A Panzergrenadier infantry squad with a total of six or more vehicle kills and possessing a Tank Destruction Badge (Silver) will have a 50% chance to receive this Medal. If granted, the squad will keep their +1 to Close Assault ability and will receive an additional -5 to be sighted by enemy units.



9.1.17 Close Combat Bar (Bronze)

This Medal was granted to individuals who used close combat weapons to fight the enemy for a period of 15 days.

A Panzergrenadier infantry squad which has participated in two or more Campaign scenarios will have a 20% chance to receive this Medal. If granted, the squad will receive an immediate 10% chance to gain one Experience Level.

9.3 Soviet Medals

9.3.1 Medal for Bravery

Established in 1938, this Medal was also known as the Medal for Courage, Medal for Valor, and Medal for Gallantry. Considered the most highly respected Soviet military medal, it was awarded to personnel of all ranks in the Army, Navy, Border Troops, and Ministry of Internal Affairs troops for personal bravery and for performance of a soldier's duty in life-risking situations. Approximately 4,600,000 were issued.

A squad that gains at least two kills in a Campaign scenario and receives at least one unrecovered loss will have a 20% chance to receive this Medal. If granted, the unit will have an immediate 20% chance to gain one Experience Level and will gain a +1 to their Rally rolls.

9.3.2 Medal for Military Merit

This Medal was awarded for superior service to the State or Secret Police.

A squad that gains at least two kills in a Campaign scenario and receives no unrecovered losses will have a 20% chance to receive this Medal. If granted, the unit will have an immediate 10% chance to gain one Experience Level and will gain a +1 to their Initiative.

9.3.3 Order of the Red Star

Established in 1930, this Medal was given to individuals that demonstrated outstanding service in the defense of the Soviet Union. It was one of the most common Soviet Medals to be awarded during World War II; more than two million were granted.

A squad with at least Veteran experience that has participated in three or more Campaign scenarios will have a 20% chance to receive this Medal. If granted, the unit will have an immediate 20% chance to gain one Experience Level.

9.3.4 Order of Lenin

Established in 1930, this Medal was awarded to civilians for outstanding services to the State, but was also awarded to military personnel that received a Hero of the Soviet Union Medal.

A squad that, in a single Campaign scenario, has least five kills, no unrecovered losses, and at least one other medal will have a 10% chance to receive this Medal (which can also be awarded if the squad receives a Hero of the Soviet Union Medal). If granted, the unit will gain a +1 to their Initiative, +1 to their Rally roll, a +1 to their Accuracy, and will have an immediate 20% chance to gain one Experience Level.

9.3.5 Hero of the Soviet Union

Established in 1934, the Hero of the Soviet Union was granted to individuals who demonstrated high personal or collective deeds of heroism; recipients also received an Order of Lenin.

A squad that has at least five kills in a Campaign scenario and at least two other medals will have a 5% chance to receive this Medal. If granted, the unit will have a +1 to its ROF, a +1 to its Accuracy, and will receive an immediate 20% chance to gain one Experience Level. Additionally, the unit will have a chance of receiving an Order of Lenin Medal.

9.3.6 Order of the Patriotic War (2nd Class)

Established in May of 1942, this Medal was awarded to officers and enlisted men of the armed forces, security troops, and partisans, irrespective of rank, for lesser personal valor in action. Very specific delineations of personal acts were listed that individuals had to meet in order to be given this Medal.

A squad with at least two kills in a Campaign scenario will have a 20% chance to receive this Medal. If granted, the unit will gain a +1 to its Rally rolls.

9.3.7 Order of the Patriotic War (1st Class)

Established in May of 1942, this Medal was awarded to officers and enlisted men of the armed forces and security troops and to partisans, irrespective of rank, for greater acts of heroism than what would have earned the recipient an Order of the Patriotic War (2nd Class).

A squad with at least two kills in a Campaign scenario and that already has an Order of the Patriotic War (2nd Class) will have a 10% chance to receive this Medal. If granted, the unit will have a +1 to its Rally rolls and a +1 to its Initiative.

9.3.8 Order of Alexander Nevsky

Initially, this Medal was instituted by Empress Catherine I in 1725, and was reinstated in July of 1942. It was awarded to commanders who led their units with personal skill and bravery.

A squad with at least three kills in a scenario will have a 10% chance to receive this Medal. If granted, the unit will have a +2 to its Sighting ability.

9.3.9 Order of the Red Banner

Originally established in 1918 during the Russian Civil War, the Order of the Red Banner was later adopted by the Soviet government in 1924 to be awarded to military personnel of the Army who displayed exceptional courage and valor in combat.

A squad with at least three kills in a scenario and at least one unrecovered loss will have a 20% chance to receive this Medal. If granted, the unit will have a +2 to its Sighting ability and a +1 to its Rally roll.

9.4 Special Abilities

9.4.1 Panzer Ace

A German Panzer squad that ends a scenario with 20 or more total kills to date in the current Campaign will have a 25% chance to receive this Ability. If granted, the squad will have a +1 to its Accuracy, a +1 to its Penetration, and a +5 to its Sighting ability.

9.4.2 Tank Ace

A Soviet Tank squad that ends a scenario with 20 or more total kills to date in the current Campaign will have a 25% chance to receive this Ability. If granted, the squad will have a +1 to its Accuracy, a +1 to its Penetration, and a +5 to its Sighting ability.

9.4.3 Veteran Sergeant

Any infantry squad that ends a campaign scenario with ten or more total kills to date in the current Campaign and at least Veteran experience will have a 25% chance to receive this Ability. If granted, the squad will have a +5 to its Sighting, a +1 to its Initiative, and a +1 to its Rally rolls.

9.4.4 Infiltration

Any Soviet infantry squad that ends a campaign scenario with five or more total kills to date in the current Campaign and at least Veteran experience will have a 50% chance to receive this Ability. If granted, the squad will be -5 to be sighted by enemy units.

9.4.5 Veteran Driver

Any vehicle squad which ends a Campaign scenario with at least Veteran experience and no unrecovered losses will have a 10% chance to receive this Ability. If granted, the squad will have a +10 to its Movement Speed.

9.4.6 Close Assault Hero

Any infantry squad that ends a Campaign scenario with ten or more total kills and at least Veteran experience will have a 10% chance to receive this Ability. If granted, the unit will have a +1 to its Close Assault ability.

9.4.7 Sharpshooter

Any infantry squad that ends a Campaign scenario with ten or more total kills and at least Veteran experience will have a 10% chance to receive this Ability. If granted, the unit will have a +1 to its weapons' Killpower.

10.0 Victory

The woods shook with thunderous impacts from the German 150mm shells, smashing the gun to Zabev's left and decimating its crew. He willed the ground to open up and swallow him whole, his mouth wide as the shells crashed into the trees, sending white-hot metal fragments mixed with tree-bark shrapnel into a rain of death. His gunner, Vasilov, screamed in agony, but Zabev could barely hear him over the cacophony of noise.

Soon, the shelling stopped, and through his ringing ears and blurry eyes he could just make out the shapes and sounds of the German panzers crawling through a gap in the woods a few hundred meters down from him. Looking around, he knew the Germans had won this round, and further resistance would be suicide, his gun was sitting at a lazy angle, his gunner was severely wounded, and the men had ghastly looks about them. Word came down quickly: retreat. He patted the 45mm antitank gun that had served him so well over the last six months, and helped scoop up Vasilov as they ran for the rear. The Germans might have won this round, but there would be many other chances over the coming days.

The game ends once either player's Victory Point gauge reaches the top. On each game map, a flag indicates a Victory Objective; the flag color and symbol (Soviet or German) indicates current ownership. Each of these locations is worth Victory Points, the exact number can be found by clicking on the flag in the main view window.

Victory Points Awarded:

Objective Flag Captured = Flag Value

Unit Destroyed = Unit Point Value

Unit Damaged = $\frac{1}{2}$ Unit Point Value

Defenders start each scenario with a significant VP advantage, since they own all of the Victory Objectives. In some scenarios, an attacker will want to capture one of the objectives quickly to ward off a defeat as his losses as the defender's victory points mount.

After Turn 15 in each scenario, the defender begins to earn bonus victory points each turn. Both sides in this campaign had speed as one of their main objectives. While slow, methodical attacks may be the safest option, they are not always the most successful.

Ownership of a Victory Objective is based on the total forces within 150 meters of the objective. Additional Victory Points are awarded for destroying and/or damaging enemy units.

Based on your victory point ratio vs. your opponent, the quality of your victory (or defeat) will be determined. This can range from a Marginal up to a Legendary rating. **Your performance in each campaign scenario is tracked and stored. At the end of the campaign, a campaign rating and rank is assigned to you based on your performance.**

11.0 Notes and Historical Information

The maps included in *Panzer Command* are based on generalities surrounding the German and Soviet offensives, rather than attempting to model or simulate exactly any particular battle site. The goal is to be representative of the actual campaign while allowing designers to use the included maps to create a number of other engagements set in the general area and timeframe of this operation. The entire historical offensive was extremely fluid, making modeling of particular battles in any particular place difficult. To that end, *Panzer Command*'s Campaign game system is spread out over several scenarios, intending to model several situations faced by either side at a various points during the battle as well as some that were not (the actual river crossings were accomplished without much resistance, by *coup de main*, but we decided that including some river maps to break up the steppe and show the key obstacles of the campaign was a must). There were a few other considerations to make during the course of designing this game, as follows.

Our first challenge was choosing a unit that could be followed in each campaign from start to finish. The 6th Panzer Division's forces represented the best such candidate for the German side and elements of the 7th Tank Corps emerged as the best option for the Soviets. Historically, the 6th Panzer Division's spearheads were made up almost entirely of a massed force of Panzers. In *Panzer Command*, the German player is given a unique opportunity to create your own battle group from not only Panzers, but also Panzergrenadiers, halftracks, off-map artillery, and other units. While somewhat ahistorical, homogeneous Panzer units would not be very much fun to play, giving you fewer tactical options to consider throughout a battle. In addition, there were plenty of instances where the Panzer and PanzerGrenadier units worked together as the campaign went on. The 6th Panzer Division was heavily involved from the start right up until the offensive stalled, when it was withdrawn to try to stabilize the rapidly crumbling front to the west of WinterStorm.

The Soviet player will be able to pick from a variety of troops as well, starting with a flexible core force of T-34s and Infantry. Soviet forces in this time were still outmatched when facing even numbers of German regulars, particularly in armored battles on open ground, so the Soviet player will find some scenarios to be tough going, particularly against some of the remaining Elite German Panzer forces. In the campaign, the Soviet player is part of a formation that earned its Guards appellation during this fight, thanks to its aggressive counter-attack and eventual re-capture of Kotelnikovo. The Germans were in the midst of a strategic disaster that threatened to be much larger than Stalingrad as the Christmas counter-offensive was launched. The faster and more decisive the Soviet advance, the better their chance of turning a tactical victory into a full strategic rout and capturing more German forces along the way.

Historically, heavy fighting raged around the village of Verkhne-Kumsky. Historically, the Germans intended to follow the rail line northeast straight into the Stalingrad pocket but ran into a wall of Soviet units which diverted them west to this village. Instead of using their mobility to their advantage, the Germans bogged themselves down in close fighting with tank-heavy Soviet forces opposing them. While fighting two Soviet mechanized corps, several independent tank formations, and a few rifle divisions from December 13-19, the 6th Panzer Division went from 120 tanks to only 30. Given the ferocity of the fighting in the area, to do such a thing justice would have required upwards of seven or eight scenarios just to accurately portray it in the game. We decided that rather than grinding down the player's forces here, we would include them in one (albeit difficult) scenario towards the end of the battle, ensuring you get a taste of the heated combat that took place here without making the game too focused on one area.

For designers and players who may wish to edit the forces or scenarios in these campaigns, we suggest a look at Section 14.0, which describes just how open the campaign and scenario structure and data in *Panzer Command* is to modification and customization.

11.1 A History of Operation Winter Storm (Unternehmen Wintergewitter)

The foundations of *Winter Storm* were solidly embedded in the debacle at Stalingrad. In the summer and early autumn of 1942, German and German Allied forces broke the Soviet lines in the south of the country, pursuing them across the endless steppe of the southern Ukraine. Once German forces passed Rostov, and with Soviet forces melting in the wind before the Axis forces, Hitler ordered that Army Group South be divided into two: Army Group A and Army Group B. 'A' would turn right at Rostov and head for the rich oil fields of the southern Caucasus, while 'B' would capture Stalingrad and farther on, Astrakhan, on the Caspian Sea. The split was but the first of several poor choices made during *Operation Blue*, the Axis name for their southern offensive, because it was made thinking that the Soviet Army was fleeing because it was finished. In reality, the Soviets were trading space for time, falling back on their supply sources while the Germans were rapidly outpacing theirs.

As the Germans advanced across huge distances, they tasked their allies (Hungarians, Italians, and Romanians) to cover the flanks while they themselves pressed in towards Stalingrad. Compared to German formations, their allies were poorly-armed and -led; the long distances meant they had to stretch their already meager combat strength even further. The Germans were not entirely unaware of this predicament, and detailed tiny formations of veteran troops to bolster their frontage against this possibility, but was entirely inadequate for the needs at hand.

The Germans crashed into Stalingrad from several directions, which was already mostly obliterated from repeated Stuka and level bomber attacks. The Soviets fought until they were cornered in small but well-fortified positions, some only yards away from the wide Volga River. Beyond this river was empty steppe for hundreds of miles;

the Soviets knew they had to hold the Germans here, for there were no other physical barriers to defend.

German casualties from assaulting the devastated city rose steadily; German High Command (OKH) repeatedly sent reinforcements into the city, which mangled men, machines, and entire formations faster than they could be fed into it. The Germans developed a severe case of tunnel vision, becoming totally intent on taking Stalingrad and defeating the stubborn Soviets embedded deeply within its blasted foundations. By this time, the entirety of the German Sixth Army as well as several additional units – about a quarter of a million men – were bleeding themselves white trying to clear the city.

They became so enraptured with this assault that repeated intelligence warnings of Soviet forces massing on their flanks – reported, incidentally, by their allied forces – were dismissed as falsehoods. After all, they reasoned, the Soviets were getting weaker and did not have the strength to marshal such forces – or so they thought. Besides, these reports came from their allied formations, and were not always held in high regard or given due consideration by all in the command chain.

This obstinacy would cost the Germans dearly. On November 19, 1942, Operation Uranus began, which saw massive Soviet forces hit the Romanians along the northern flank of the Don River; the Romanians were almost immediately overrun, with survivors streaming to the rear to escape the overwhelming Soviet attack. The few German troops in the area could do little to stem the onrushing tank armies. A few days later another operation hit the German flank south of Stalingrad, and by November 22 both offensives met up and the Stalingrad pocket was formed.

Hitler demanded that Sixth Army stand in place while the Germans stabilized their front along the Chir River, some fifty or so miles to the west of the pocket. This decision to hold 6th Army in place was based on Hitler still convincing himself that the Soviets were weak and this was but a last gasp offensive; all the Germans needed to do was form a counterattack force to relieve the Stalingrad pocket. In Hitler's mind, the Germans could then commence with the re-conquest of the Caucasus come the spring. However, almost immediately upon encirclement, Sixth Army's supply situation was desperate. Goering's terrifically incompetent promise to Hitler that his Luftwaffe could supply Sixth Army with all it needed by air was all Hitler needed to cement his decision to order the Sixth to hold. General von Paulus, commander of Sixth Army, was a dutiful general who could not bend Hitler's orders the way other German generals did; instead of planning an immediate breakout, Paulus had his men fortify their positions and wait for relief.

By early December, Paulus was virtually immobile through lack of fuel and food; Goering's promises rang empty as the brave but very vulnerable German air transport fleet, stretched to the breaking point throughout occupied Europe by concentrating here to try to deliver the necessary supplies, could not deliver near the necessary daily allotment needed by a full army to survive, let alone defend itself effectively.

Operation Winter Storm was formed in order to re-establish a land supply link to the Germans in Stalingrad. Since German forces, now fighting on the Chir in the face of tremendous Soviet pressure, had no troops to spare, three Panzer divisions were

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brought from other parts of Europe to spearhead the attack. The original plan was to involve twelve German divisions, but as with many such plans, the end result was that only two Panzer divisions were available to strike the blow, only one of which was at full strength.

Hoth's 4th Panzer Army headquarters was tasked with organizing the infantry and cavalry to support this attack (largely composed of Romanians); the 57th Panzer Corps was pulled in from the Caucasus to organize the three Panzer divisions that would spearhead the offensive – the fresh and recently re-equipped 6th Panzer Division from France, the 17th from Orel near Moscow, and the 23rd from the Caucasus. The 57th Panzer Corps with Romanian infantry protecting its flanks would advance from the Kotelnikovo area; when it reached the Myshkova River it would be joined for a lunge to the pocket by 48th Panzer Corps, which currently was holding a thin bridgehead over the Don. The plan also stipulated that Sixth Army would, without giving up what little territory it held in the Stalingrad pocket, come out to meet Hoth's relief force once they had advanced close enough.

This extremely ambitious plan was not without difficulties. The attack would have to begin without a third of their panzer force, as the 17th Panzer Division was delayed enroute from the Orel area – already, 57th Panzer Corps was weakened. The 48th Panzer Corps wasn't much better off, as its main unit, the 11th Panzer Division, was extremely weak after fighting one battle after another to hold the line at the Chir. Sixth Army's part of the operation was highly unlikely as the supply airlift was not getting enough into Stalingrad to feed an attack from that direction. Finally, the weather was the worst possible combination of rain, snow, sleet, freezing, and thawing possible. Despite all this, December 8 was set as the date of attack; further delays pushed this back to the 10th, and finally the 12th.

The Russians, not oblivious to their situation, knew the Germans would try a relief attempt and reinforced the outer ring of defenses accordingly. The Stalingrad pocket stabilized as the men inside slowly starved and suffered from constant artillery bombardment and probing attacks. The Soviets had to tie down large forces to surround Stalingrad, forces that could have been used to concentrate on taking Rostov on the Black Sea, thereby trapping Army Group B, a much larger prize than Sixth Army. Reducing Stalingrad would be a high priority, but in knowing the Germans would make a relief effort, Stalin vacillated and could not make a decision on what to do first.

As early as December 1st the Soviets had begun to move their 51st Army from the inner ring toward Kotelnikovo. The 51st had 34,000 men and about 77 tanks. On December 3rd they activated Malinovsky's 1st Reserve Army as the 2nd Guards and ordered it from the distant upper Don to the inner ring. On December 9th, noting the increased German activity near the Don bridgehead of the 48th Panzer Corps, a new 5th Shock Army was formed to meet any threat from that direction. The 5th was a hastily-built formation, but over 70,000 men and 250 tanks. By December 11th Stalin ordered Vasilievsky to make the destruction of the Sixth Army a priority.

General Hoth, in command of Operation Winter Storm, struck the next day (12 December). He made the decision not to wait for the 17th Panzer Division as Sixth

Army was probably not going to have the strength for a breakout for long; every moment became precious.

11.2 Timeline of Events

Saturday, December 12, 1942

Hoth begins his offensive in the area of Kotelnikovo, intending to follow the rail line all the way to the northeast, straight into the Stalingrad pocket. As reports of Hoth's panzers striking against Soviet positions start to pour in, Stalin makes no decision regarding deployment of troops to meet the threat. Instead, the 51st Army moves against Hoth, trying to slow the Germans down. Richthofen's Luftlotte is trying to support Winter Storm, supply Stalingrad, and supply troops in the Caucasus. Sixth Army needs, at minimum, 300 tons a day of supply; today, only 80 tons of supply gets into the pocket.

Sunday, December 13, 1942

Hoth pushes the 51st Army over the Aksai River, but gets drawn into heavy fighting at the 8th of March Collective Farm at Verkhne-Kumsky, and around the railway ganger's hut immediately to the north of the Aksai's banks. While the 51st Army is pushed across the Aksai River, Stalin still vacillates on making a decision regarding reinforcements. 9,000 wounded are flown out of the Stalingrad pocket.

Monday, December 14, 1942

Eremenko uses 5th Shock Army to destroy the 48th Panzer Corps bridgehead over the Don; Hoth's advance on his left flank worries the Soviet commander enough to ask Stalin for permission to use 2nd Guards Army, currently unloading up north to be used against the Stalingrad pocket, to help stem the German tide.

Eighty tons of fuel makes it through to Stalingrad today; the weather is so bad at the Pitomnik airfield (where Sixth Army receives its supplies) that landed aircraft cannot take off again.

Tuesday, December 15, 1942

Hoth's drive stalls for the first time as Soviet resistance stiffens. 90 tons makes it through to Stalingrad today, as the Luftwaffe employs new 'star tactics' involving larger formations of transport aircraft flying in from multiple directions, covered with a handful of fighters.

Wednesday, December 16, 1942

17th Panzer Division finally arrives to take its place within the 57th Panzer Corps and moves towards the front. As the relief force continues its thrust towards Stalingrad, Soviet Marshal Georgy Zhukov hits the Axis front line further to the north, smack in the middle of the Don over a front of 60 miles. The Italian Eighth Army and part of the Romanian 3rd Army, centered on this attack, are suffering the same effects of the cold weather and can give little resistance to the T-34s crashing through their positions. Having crushed both Axis Allied armies, Zhukov made for Tatskinskaya, the air base closest to Stalingrad and from which the Luftwaffe had been embarking on

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the hopelessly ambitious task of supplying half a million fighting men in uncertain weather.

174 tons makes it in to Stalingrad today, but two JU-52 transport aircraft crash on the Pitomnik airfield; the Luftwaffe starts making supply runs at night to lessen their losses.

Thursday, December 17, 1942

Throughout the night of the 16th rain pummels the area around Hoth, but despite this he presses on with the 17th Panzer on his left, 6th Panzer in the center, and the 23rd to his right. The mix of snow, mud and Russian resistance slows but doesn't stop the 6th Panzer Division from reaching the Myshkova.

Hoth's advance is already in trouble at this point. Thanks to Eremenko's assault, the 48th Panzer Corps would not be joining the attack, robbing the effort of badly needed strength. Hoth has managed to advance 40 miles at this point, with only 35 to go to the pocket, but his casualties are mounting and irreplaceable while a steady stream of Soviet forces is constantly pressing in on all three sides; also, the weather is getting progressively worse.

Today, only a very few transport planes manage to get through to the Sixth Army; only 28 tons is supplied. At this point, Paulus thinks he has enough fuel to move his tank and motorized units eighteen miles.

Friday, December 18, 1942

The 6th Panzer Division gains a foothold over the Myshkova River. The 2nd Guards Army is still marching towards Hoth's advance, so STAVKA releases the 4th Mechanized Corps, 87th Rifle Division, and what's left of Shapkin's Cavalry Corps to further bolster the Soviet defenses.

The JU-86 and JU-52 transport aircraft cannot start their engines today due to the fierce cold; only the HE-111 bombers, converted to transport duty, seem to have less of an issue starting in cold weather. Even then, only six HE-111's make it through to Pitomnik with barely ten tons of supply.

Saturday, December 19, 1942

The 2nd Guards start to make their presence felt, first with the 98th Rifle Division of the 1st Corps and then with the 3rd Guards Rifle Division of the 13th Corps. K. V. Sviridov's 2nd Mechanized Corps came in right behind these two divisions.

While these powerful Soviet reinforcements arrived, Hoth knew next to nothing about their presence thanks to poor intelligence; von Manstein mentioned nothing of this to Zeitzler. However, Manstein does order Paulus to come out and meet Hoth as soon as possible without, of course, giving up his positions within the Stalingrad Pocket. Furthermore, he told Paulus that the developing situation might make it necessary for Paulus to pull out entirely but that he should do so only upon receipt of an explicit order (known as Operation Thunderclap, which was not yet, and never would be, approved by Hitler).

In summary, the Germans expected Paulus, with the little intelligence available to him, to fight his way through Russian forces of undetermined strength over a distance for which he did not have the fuel to do so, and at precisely the time that the arrival of the 2nd Guards Army ground Hoth's advance to a halt.

After the war, Manstein would argue that he tried to persuade Hitler to approve Thunderclap and also tried to get Paulus to launch it with or without permission, but given the current situation even an immediate attack by Paulus's severely weakened army would likely fail.

Despite all this, Hoth's men manage to make a few more miles towards Stalingrad. However, the Soviet offensive over the Don to the north steamrolls into Kantemirovka, cutting the Voronezh-Rostov railway line just north of Millerovo. Remnants of the Italian Eighth Army continue to evaporate in front of the onslaught.

Since so little supply (ten tons) got through yesterday, Sixth Army demands an immediate increase in flights; as a result, 70 tons make it through over Friday night. The next day, Saturday, 270 tons comes in, a high mark for the effort to date. Paulus tells OKH that Sixth Army needs 1,800 tons of food and 4,000 tons of fuel, an impossible amount given the losses, weather, and deliveries to date.

Sunday, December 20, 1942

Hoth's troops, exhausted from more than a week of constant combat, lack of sleep, and casualties, still manage to gain a few more miles. Reports only now come in from OKH Headquarters in East Prussia that 2nd Guards Army is now deployed directly in Hoth's path, not around Stalingrad as they previously thought.

The largest supply run so far makes it in to Stalingrad; over 340 tons of supply gets through. The weather is better today, giving the Luftwaffe transport pilots an easier time, but it's also easier for Russian fighters to find them and shoot them down.

Monday, December 21, 1942

More Guards units arrive in front of and around Hoth's weakening offensive. By now, the Soviet numbers are overwhelming. German troops on the southern perimeter of the Stalingrad pocket can see flashes on the distant southern horizon, and are cheered knowing that "Papa Hoth" is coming for them.

Soviet forces to the north are now halfway between the Don and the Donetz. The Germans watch the advance of this formidable force with great worry, and urge Hoth to move faster.

The weather is terrible in the Stalingrad area; only the HE-111's can go through, which deliver almost 80 tons today.

Tuesday, December 22, 1942

Hoth is now only 22-25 miles from Stalingrad, but his men are at the end of their tether. The arrival of the Soviet 6th Mechanized Corps and 7th Tank Corps further mitigates the stall of a now-hopeless offensive. Hoth's position becomes so unmanageable that he has no choice but to order a retreat.

PANZER COMMAND

The Soviet offensive to the north is supported by Russian raids on Morozovskaya; the ground units are only 20 kilometers away from this important airfield. Von Kleist recognizes that Army Group B, down in the Caucasus, is now in grave danger of being cut off from the rest of the German army if von Manstein cannot hold the Soviet Don offensive. Von Kleist orders Army Group B to begin withdrawing north towards Rostov, in the face of six reorganized Soviet armies that will dog them all the way north.

No flights make it through to Stalingrad today.

Wednesday, December 23, 1942

Hoth is now less than 30 miles from Stalingrad, but Zhukov's successes to the north cause von Manstein to detach the 6th Panzer Division from Hoth along the Myshkova River and rush it to the Italian Eighth Army's aid, saving the position there for the moment but essentially dooming the relief attempt. This is the critical juncture; von Paulus has one last shot at ordering a breakout, and after agonizing all day over the decision he announces he will not make a move without a direct order from Hitler. Hoth's efforts, as well as that of his men, have been for naught. Sensing the German offensive is at the end of its rope, the Soviet 51st Army attacks them anew.

The Luftwaffe manages 177 tons of supply to Sixth Army today, even as the airfield of Tatskinskaya comes under bombardment by artillery during Tuesday night. On Wednesday, 141 tons make it through to Stalingrad.

Thursday, December 24, 1942

The Russians launch a general offensive against Hoth with 2nd Guards, 5th Shock, and 51st Army. At Tatskinskaya, the air base supplying Stalingrad, Soviet tanks drive through snowstorms to overrun the airfield and roam about for hours, destroying German transport planes at their leisure. This and bad weather mean no flights into Sixth Army. The Luftwaffe rebases to Novocherkassk, about 40 kilometers northeast of Rostov.

Friday, December 25, 1942

Christmas Day sees Hoth in full retreat. Only seven tons of supply gets through to the Sixth Army defenders. Although the supply effort would continue, Sixth Army was dying a slow death and no amount of supply, beyond a few hundred thousand fresh troops and hundreds of tons of supplies per day (both complete fantasies at this point) could save the positions around Stalingrad.

Tuesday, December 29, 1942

Hoth is driven back to and beyond Kotelnikovo, his starting point for Operation Winter Storm; the Soviets are now threatening both Rostov and the entirety of Army Group A, comprised of 400,000 men still bottled up on the Terek River in the Caucasus. Hitler makes the decision to pull this army out altogether, consigning Stalingrad to its fate.

11.3 The Units Involved

11.3.1 Sixth Panzer Division

Originally formed as the 1st Light Division, it was redesignated as a full Panzer division (along with a different number) after the fall of Poland. To fill out its compliment, it incorporated 132 captured Czechoslovakian tanks, designated as Pz 35(t) and Pz.Bef.35(t); the other 91 tanks were Pz II and IV's. Sixth Panzer formed part of the armored spearhead that cut through the Ardennes in Belgium during the 1940 invasion of the West.

Soon thereafter, Sixth Panzer was attached to Army Group North and participated in the initial invasion of the Soviet Union; it was one of the first German units to breach the Stalin Line and reach Leningrad. However, it was transferred in October 1941 to Army Group Center to support the German's attempt at capturing Moscow. It suffered grievous casualties during the winter months in the unsuccessful bid at capturing the capital as well as during the fighting retreat in the face of the Soviet's winter counteroffensive. It was so badly damaged that it was sent to France to refit; there, it shed most of its remaining Czech tanks, replacing them with the much more capable Pz IIIIs, IIINs and IV "Specials".

It was while the division was in France that it was called on to form part of Hoth's counterattack force in the attempt to relieve Stalingrad. Parts of this division are said to have made it to within approximately 13 miles of the outer Stalingrad perimeter before being forced back.

Later in the war, Sixth Panzer fought at Kursk in the southern sector, and was involved in heavy fighting around Kharkov. As German fortunes ebbed in the east, the division retreated across the Ukraine. It fought near Budapest in 1945 and later retreated through Austria and into Moravia, where it surrendered to Soviet forces.

11.3.2 17th Panzer Division

Formed in late 1940 during an expansion of the Panzer arm, most personnel came from the veteran 27th Infantry Division. The 17th had a number of the specially-designed diving tanks, made with the invasion of England in mind, but now instead relegated to a more pressing role instead.

The 17th's first action was not until the invasion of Russia, during which it was attached to Guderian's 2nd Panzergruppe. It fought at Smolensk and helped close the massive trap behind several thousand Soviet troops at Kiev. Its parent formation was then sent back to drive on Moscow, where it fought in the Tula area but was forced to retreat in the face of the Soviet's winter counteroffensive.

The division remained there throughout 1942, and was called on to serve as part of Hoth's offensive to relieve Stalingrad in December of that year. Traveling over hundreds of miles in winter conditions, the 17th was delayed enroute; furthermore, Hitler insisted it be used as a reserve, overriding Hoth's and Manstein's objections. When Winter Storm started to get bogged down, it was released to help cover the

flanks in support of the hard-pressed Rumanian infantry; the timing was flawless as heavy Soviet counterattacks were made against the offensive's flanks soon thereafter. Without the 17th's presence, the other two Panzer divisions likely would have been surrounded.

After Winter Storm's failure, 17th Panzer fought with Hoth during his counterattack at Kharkov and operated in the Donetz basin. Once the Kursk offensive failed, the 17th was caught up in the long retreat from Russia, but did fight well around the Cherkassy (Korsun) Pocket by helping blast a corridor through heavy Soviet forces to relieve 50,000 trapped German soldiers.

Throughout the remainder of 1944 the division fought through a number of withdrawing actions across western Russia and Poland. In November of that year it was withdrawn to Germany and refitted, although it was barely the strength of a Kampfgruppe. It was posted on the Oder River with Army Group Center and was quickly pushed out of those positions by Soviet attacks. Eventually it surrendered to the Soviets at the end of April 1945.

11.3.3 23rd Panzer Division

The 23rd Panzer Division was formed in September of 1941 near Paris, France (hence its original Eiffel Tower insignia); initially it was outfitted with captured French tanks but by early 1942 had re-equipped itself with several Panzer IIIs and IVs, as well as a handful of Panzer IIs. In April of 1942, it was transferred to Army Group South at Kharkov to be part of the army's reserve.

In June 1942 it was moved from reserve to the 60th Panzerkorps, which fought in the Caucasus in the push for the Soviet oil fields. After the Soviet offensive that surrounded Stalingrad, the 23rd was called on to be part of Hoth's counteroffensive; it helped the 6th Panzer push the Soviets back to almost within a dozen miles of the Stalingrad perimeter, but suffered very heavy losses as a result; it was down to only a couple dozen tanks by the time the Germans retreated past their initial jumping off points for Winter Storm.

Later, it was rebuilt between April and June 1943, and served as a reserve formation behind the German lines along the Mius River, to the south of Kursk. There, it met heavy Soviet attacks, fighting alongside the likes of the 2nd SS Panzer Division 'Das Reich' and 3rd SS Panzer Division 'Totenkopf.' Eventually forced into retreat with the rest of the German Army, it fought through the Ukraine and into Poland. Eventually it was sent to Hungary in October 1944 where it fought to defend Budapest. Facing increased Soviet pressure, it fought through Slovakia before it was surrounded and destroyed in Austria in May 1945.

11.3.4 Soviet 51st Army

The 51st Army fought the Germans during the 1942 campaign initially as part of the Soviet counteroffensive at Stalingrad, along the southern front. The Germans fought desperately and only finally halted the 51st's advance just in front of Kotelnikovo, the

railhead 80 miles southwest of Stalingrad, and Hoth's initial jumping off for Winter Storm.

As such, the 51st suffered the brunt of Hoth's initial counterattack and fought it throughout the operation, bolstered finally by the 2nd Guards Army in a bid that slowed and soon halted the Germans. The 51st fought with tenacity, helping to push the Germans past Kotelnikovo on December 29th.

11.3.5 Soviet 2nd Guards Army

Initially earmarked for Operation Saturn, the Soviet code-name for their offensive against the Italians on the upper Don shortly after Stalingrad was surrounded, it ended up heading for Hoth's counteroffensive once it began. The 2nd Guards was one of the Soviet Union's most powerful formations, and along with the 51st Army it succeeded in pushing back veteran German combat formations that very nearly broke into Stalingrad despite the long odds against the Germans.

As the Soviet 1st Guards Army assaulted the Italian's positions along the upper Don, the Germans withdrew the 6th Panzer Division, robbing Hoth of much needed strength at a crucial moment. The 2nd Guards Army and 51st Army had an easier time at pushing the Germans back past their jumping off positions.

The 2nd Guards Army was involved in many of the counterattacks that harried Army Group A's withdrawal through Rostov; it played a very important part in making Operation Winter Storm a failure for the Germans.

11.3.5 Soviet 7th Tank Corps

A large armored formation, commanded by General Rotmistrov, later the victor of Prokhorovka at Kursk, a soldier-scholar who had joined the Red Army in 1919 and had commanded armored forces since the start of Operation Barbarossa, including a previous encounter with the 6th Panzer Division during Operation Typhoon, the Battle for Moscow. The 7th Tank Corps had recently been refit and planned to assist in the destruction of the German forces trapped in Stalingrad.

After fighting against the 11th Panzer Division for roughly a week, it was order on December 19th to reinforce the defense of the Myshkova. At this time, the 7th Tank Corps consisted of 92 tanks, 20 of them KV-1s and 41 T-34s. After checking the German advance, the 7th Tank Corps was given a key position in the counteroffensive, to begin on Christmas Eve, 1942.

After a difficult fight at the start of the operation, the Soviet tank formations knifed through the German defenses, crossing the Aksay on December 26th and heading for Kotelnikovo a rail center for the area and the launching point of the German attack. A quickly prepared plan to attack Kotelnikovo from three sides succeeded and cleared the area of German forces by the night of December 29th. Over the five days of the offensive, the 7th Tank Corps advanced 80 kilometers and destroyed at least 25 Tanks, 65 Guns and killed or captured 2,300 German soldiers. After this battle, the 7th Tank Corps

was redesignated the 3rd Guards Tank Corps and General Rotmistrov was promoted to Lieutenant General.

11.4 Units of the Battle

The below list includes most of the units you will encounter during the campaign and in skirmish scenarios. Prepare yourself by reading up on their historical abilities and checking their specifications in-game. One of the keys to victory is making sure that you engage the enemy on your terms and play to your strengths and his weaknesses.

11.4.1 German Units

Panzer II F

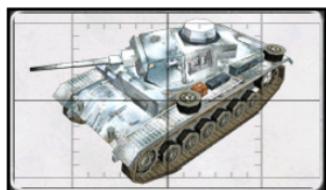


Crew:	3
Weight:	10 tons
Max Speed:	40 km/h road
Armament:	1 x 20mm KwK30 L/55 main gun; 1x 7.92mm MG34

The Aust F version of the Panzer II was built between 1940 and 1943, during which time 543 were produced.

It built on lessons learned in previous Panzer II models, including an improved front hull and superstructure, new mantlet and suspension, and a new commander's cupola. By the time it entered Russia in 1941, it was already obsolete, lacking armor and firepower to go head-to-head with heavier Russian tanks.

Panzer III J



Crew:	5
Weight:	21.5 tons
Max Speed:	40 km/h road
Armament:	1 x 50mm KwK 38 L/42 main gun; 2 x 7.92mm MG34

Over 1500 J models were produced during the war, which outnumbered the 1400 models E, F, G, and H lost

during the first years. It had a thicker front plate of armor than previous Panzer IIIs, and was lengthened slightly. It was the last Panzer III model to mount the early version of the 50mm L/42 main gun and was overall a reliable medium tank.

Panzer III L



Crew:	5
Weight:	22.7 tons
Max Speed:	40 km/h road
Armament:	1 x 50mm KwK 39 L/60 main gun; 2 x 7.92mm MG34 (coaxial, bow)

The L model of the Panzer III was built between June and December of 1942; about 650 were made. Armor improvements, including upping the turret from 30mm to 57mm. It was also one of the first Panzers to be fitted with an anti-aircraft gun mount to the commander's cupola.

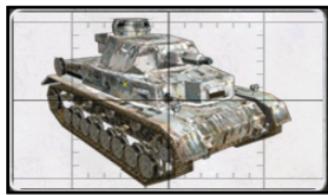
Panzer III N



Crew:	5
Weight:	22.7 tons
Max Speed:	40 km/h road
Armament:	1 x 75mm KwK L/24 main gun; 2 x 7.92mm MG34 (coaxial, bow)

The N variant of the veritable Panzer III series incorporated a short-barreled 75mm gun previously used in Panzer IV models. While not ideal for the antitank role, this main gun was excellent against infantry; indeed, the Panzer III N was known as the „Sturmpanzer III Assault Tank,” reflecting its intended use as a close infantry support platform. These vehicles were usually assigned to heavy tank companies to support Tiger I's. Almost 700 III N's were built from late 1942 to early 1943.

Panzer IV E

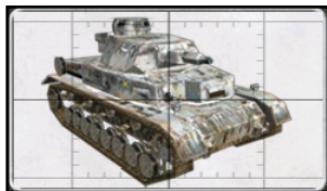


Crew:	4
Weight:	25 tons
Max Speed:	38 km/h road
Armament:	1x 75mm KwK37 L/24 2x 7.92mm MG34

The Panzer IV was a reliable medium-heavy tank, serving well throughout the war. The Model E variant of the Panzer IV introduced thicker nose plate armor (increasing it to two inches), as well as extra appliqué armor plate bolted to the sides. Additionally, it incorporated a new type of visor and new commander's cupola. Between December 1940 and February 1941, 223 Panzer IVEs were produced.

PANZER COMMAND

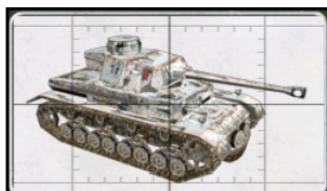
Panzer IVF1



Crew:	5
Weight:	22.3 tons
Max Speed:	42 km/h road
Armament:	1 x 75mm KwK 37 L/24 main gun; 2 x 7.92mm MG34 (coaxial, bow)

About 460 of the F1 model were produced from April 1941 to March 1942.

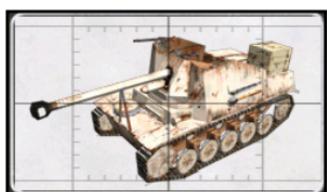
Panzer IVF2



Crew:	5
Weight:	23 tons
Max Speed:	40 km/h road
Armament:	1 x 75mm KwK40 L/43 main gun; 2 x 7.92mm MG34 (coaxial, bow)

The F2 model was actually considered an early version of the G model. It was the first to be fitted with the newer 75mm main gun, comparable to the 76.2mm main gun on the Soviet T-34. It was nicknamed the "Mark IV Special" by the British, identifying it as a tank that was superior to any equivalent Western Allied tank at the time. Since this was a "pre-G" model, only 175 were built, 25 converted from the F1, from March to July 1942.

Marder II



Crew:	3 or 4
Weight:	12 tons
Max Speed:	40 km/h road
Armament:	1 x 75mm Pak 40/2 main gun; 1 x 7.92mm MG34

The Marder II was built in 1941 in order to keep the efficient Panzer II production line moving, but to replace this already obsolescent tank. Keeping the Panzer II chassis, the designers married the standard 75mm antitank gun to it and created a decent combination of firepower and mobility. Over 1,200 were built from 1941 to 1944, and it served in all theatres, but especially on the Eastern Front. A limited number of a specialized version was developed with infrared sighting systems to fight at night.

StuG III Model C

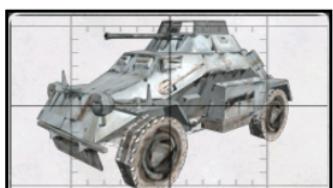
Crew:	4
Weight:	20 tons
Max Speed:	40 km/h road
Armament:	1 x 75mm StuK37 L/24 main gun

The Model C variant of the StuG III assault gun was a 1941 model that had a few improvements over the earlier A and B models, the most notable of which was a new superstructure design. The biggest weakness of these early model StuG III models (including the C variant) was the lack of a machinegun for defense against infantry. This tank was solely intended as an infantry direct-fire support vehicle, but soon evolved into an antitank platform as later models incorporated more powerful main guns. The C (as any StuG III model) had a very low profile, making it difficult to hit. Only 50 of the Model C were ever built.

StuG III Model F

Crew:	4
Weight:	21.6 tons
Max Speed:	40 km/h road
Armament:	1 x 75mm StuK 40 L/43 or L/48 main gun; 1 x 7.92mm MG34

The Model F variant of the StuG III assault gun was the direct result of a Hitler order to develop a more mobile antitank weapon platform. As a result, the Model F was the first StuG III assault gun version to be equipped with the long-barreled 75mm StuK 40 L/43 main gun and also had either an MG34 or MG42 fitted in front of the loader's hatch. It performed well in its new antitank role, and the machinegun helped to make it less helpless against enemy infantry. Sources vary as to how many were produced, ranging from 150 to upwards of 350.

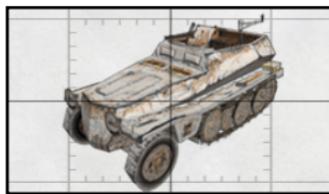
Sd Kfz 222

Crew:	3
Weight:	4.8 tons
Max Speed:	85 km/h road
Armament:	1 x 20mm KwK 30/38 L/55 main gun; 1 x 7.92mm MG34

The 222 was a light armored car modified from the 221 version to carry a 20mm automatic cannon instead of a machine gun. Production started in 1936 and lasted

through June 1943; a total of 989 were produced. Later models had improved armor protection (up to 30mm) and remained in service to the end of the war.

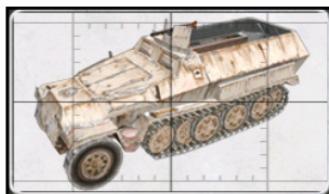
Sd Kfz 250



Crew:	2
Weight:	5.8 tons
Max Speed:	60 km/h road
Armament:	Depends on variant, but usually had 1 x 7.92mm MG34

The 250 was an armored halftrack, of which there were at least nine variants made. Its angled plate design helped to give excellent protection against gunfire, but made it difficult and expensive to manufacture.

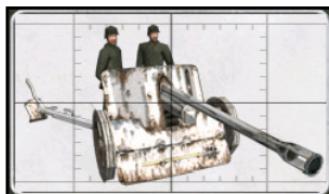
Sd Kfz 251



Crew:	12
Weight:	9 tons
Max Speed:	52.5 km/h road
Armament:	varied depending on type, but base models had 2 x 7.92mm MG34 machineguns

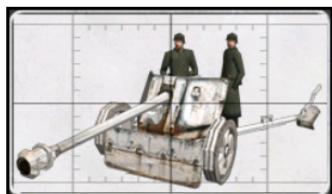
The 251 was developed specifically to provide infantry accompanying Panzer formations with an armored vehicle capable of carrying a full squad and its equipment. With a reputation for being reliable in its role as an infantry carrier, this soon branched out into other areas and 23 official versions were created, including an armored ambulance variant and an assault engineer variant.

PaK 38 ATG



Designed in 1938, the PaK 38 fired 50mm antitank shells in its service throughout the war. Initially, it fired special tungsten-cored shells, but when the supply of this scarce and precious metal disappeared in 1942, the effectiveness of this gun dropped sharply.

PaK 40 ATG



The PaK 40 was a 75mm anti-tank gun, developed at an initially leisurely pace, but the invasion of Russia and subsequent encounters with heavy Soviet KV-1 and T-34 tanks kicked production into high gear. By November of 1941, the first guns were being delivered to frontline units. Almost 30,000 were built during the war, including several thousand to be mounted on assault gun platforms.

Panzergrenadiers



The word 'Panzergrenadier' was adopted in 1942 to define infantry within a Panzer Division, or within the newly-developed Panzergrenadier Divisions. The conception that all Panzergrenadier troops rode in armored halftracks is a misleading one, as many never saw the inside of one; in fact, most rode in trucks when they were lucky enough to have them early on in the war. These men were trained in combined-arms fashion and were very effective at supporting Panzer formations.

Pioneers

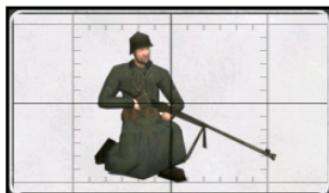
Before World War II, German combat engineers were never intended to be used as a fighting service; however, they steadily became ingrained into the Wehrmacht as reliable, steady troops that had various weapons available and were capable of cracking the toughest of defensive 'nuts.'

MG42 HMG



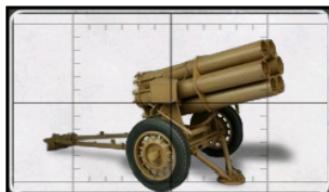
The MG42 was developed in 1942 to supplant the reliable MG34. It likely had the highest rate of fire for any light machinegun of its time (upwards of 1200 rounds per minute, or 20 rounds per second). It had a very distinctive sound when fired, often compared to a zipper or a sheet being torn. It was a terrifying weapon to face.

German Anti-Tank Rifle



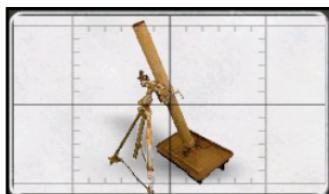
The Panzerbüchse, or German anti-tank rifle, had many variants throughout the war. About 40,000 were made up until 1941. The effectiveness of the weapon varied, depending on the ammunition used, but generally could penetrate 30mm of armor if fired at the right angle for maximum effectiveness.

150mm Nebelwerfer



The Nebelwerfer was a German artillery piece, initially developed in the 1930s. It fired rockets from six 150mm barrels; a full salvo took about ten seconds to complete. When fired, these rounds effected a loud screeching noise, which gave it the nickname "Screaming Mimi" or "Moaning Mini". It was an effective artillery piece, especially when used en masse.

81mm Mortar



The German 81mm mortar was actually closer to 80mm in size, and was a standard heavy mortar that saw service throughout the war. It could fire a round up to two and a half kilometers away.

120mm Mortar



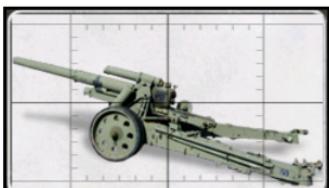
The German 120mm mortar was a direct copy of the Russian PM 38 120mm mortar, of which many were captured during 1941. It could fire a round up to six kilometers away.

105mm Artillery



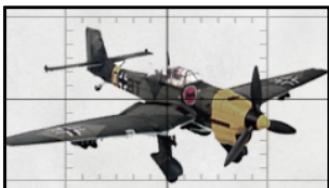
The 105mm German howitzer was the most common piece of field artillery employed by the Wehrmacht. It was introduced in 1935 and was capable of firing at ranges up to about 10.5 kilometers.

150mm Artillery



The 150mm German howitzer was a powerful artillery piece, capable of sending a shell out to almost 26 kilometers' distance. It was as scarce as it was powerful, however.

JU-87D Stuka



The Ju-87 Stuka dive bomber was a precision dive-bomber that provided very effective "airborne artillery" support to rapidly-advancing German columns. Its main disadvantage was that it was a slow and easy target for enemy fighters. Regardless, many variants became successful, especially the 'tank-hunter' variants that sported a 37mm anti-tank cannon under each wing. The version modeled in Operation Winter Storm is the Ju-87D.

11.4.2 Soviet Units

T-34/76B Model 1941



Crew:	4
Weight:	30 tons
Max Speed:	55 km/h road
Armament:	1 x F/34 76.2mm main gun; 2 x 7.62mm machineguns

The T-34, a big surprise to invading German forces in 1941, continued to be produced in huge numbers by the Soviets. The 1942 model (76C) had a somewhat larger turret than the 1941 model, and had two turret hatches instead of one. Many variants of this vehicle were produced, estimated at around 35,000 or so machines; some are still seeing use today.

T-34/76C Model 1942



Crew:	4
Weight:	30 tons
Max Speed:	55 km/h road
Armament:	1 x F/34 76.2mm main gun; 2 x 7.62mm machineguns

The 1942 model was not officially designated by the Soviets with manufacturing differences over the 76B, but this particular model came with simplified components as well as a little more space in the cramped, narrow turret.

KV-1 Model 1941



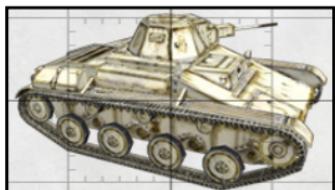
Crew:	5
Weight:	47 tons
Max Speed:	35 km/h road
Armament:	1 x 76.2mm main gun; 3 x 7.62mm machineguns

The KV-1 Heavy Tank was built in 1938 as a successor to the T-35 tank. It was a formidable vehicle, but was its own worst enemy, in that it suffered from mechanical problems continuously. Further, the Soviets constantly up-armored this tank without improving its power, giving it a bad power-to-weight ratio. Still, the Germans were quick to use any they captured for their own purposes, as its armor was virtually impenetrable for any early war gun except for the vaunted 88mm antiaircraft gun.

KV-1 Model 1942

Crew:	5
Weight:	47 tons
Max Speed:	35 km/h road
Armament:	1 x 76.2mm main gun; 3 x 7.62mm machineguns

The model 1942 version was protected by very heavy armor but continued the KV-1 tradition of being grossly underpowered for its weight. Soviet tank crew complained that although they were well-protected, their mobility was poor and they had no firepower advantage over the T-34 medium tank.

T-60

Crew:	2
Weight:	5.8 tons
Max Speed:	44 km/h road
Armament:	1 x 20mm main gun; 1 x 7.62mm machinegun

The T-60 was a light scout tank built in large numbers from 1941 to 1942 and could be found in many armored formations. The 20mm TNsh cannon was effective at penetrating light armor at close range. Over 6,000 T-60s were built.

T-70 Model 1942

Crew:	2
Weight:	9.2 tons
Max Speed:	45 km/h road
Armament:	1 x 45mm main gun; 1 x 7.62mm machinegun

Replacing the T-60, the T-70 was the end result of years of Soviet development of a series of light tanks. While its armament was ineffective against most German armored vehicles, it served well as a reconnaissance platform and as an infantry support vehicle. In 1942, Russia built nearly 4,900, with another 3,400 built the following year. As with the T-60, this was an undermanned tank which made life difficult for the crew in combat conditions.

SU-76



Crew:	4
Weight:	10.2 tons
Max Speed:	45 km/h road
Armament:	1 x 76.2mm main gun

The SU-76 was a self-propelled gun that utilized the T-70 chassis. While simple and easy-to-use, it suffered unflattering nicknames such as "Suchka" (or, "little bitch").

Despite this, it was the most-produced armored vehicle by the Soviets, right behind the T-34.

BA-64 Armored Car



Crew:	2
Weight:	2 tons
Max Speed:	28 km/h cross-country (ski version)
Armament:	1 x 7.62mm machinegun

The BA-64 was a Soviet 4x4 armored car employed starting in 1942 and serving until the 1960s. Several thousand of all variants were built throughout its

history. The experimental model BA-64SKh was a halftrack variant that replaced the two rear wheels with tracks and the front two wheels with skis, intending to make it traverse deep snow easily. Never intended to participate in heavy combat, its main advantages were its fast speed and high maneuverability, making it an ideal scout platform. The Germans captured many of these and employed them for the same purpose.

ZIS-2 ATG



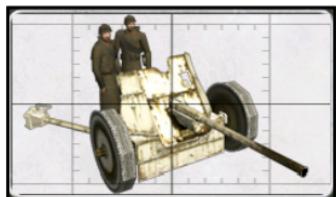
This 57mm anti-tank gun was produced from June to December of 1941; 371 were built, but production was halted as the rounds it fired often went right through German tanks without causing significant damage. The 45mm anti-tank gun became a staple, but as the war progressed and German tanks became thicker in armor than their predecessors, the ZIS-2 was re-instituted; in all, almost ten thousand were built during the war.

ZIS-3 ATG



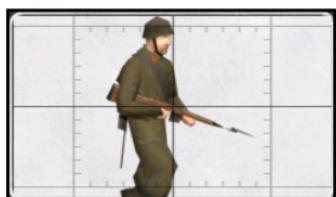
The ZIS-3 was initially intended to be a field gun, but its 76.2mm caliber made it a prime weapon to use in the anti-tank role. It replaced the ZIS-2 early in the war, and became the most numerous field gun in the Soviet Army. In all, over one hundred thousand were built.

45mm ATG Model 1942



The 45mm anti-tank gun, widely used by the Soviets, was largely ineffective against anything above light tanks or reconnaissance vehicles - barring a lucky side or rear shot.

Rifle Squad



The standard Soviet rifleman, a conscript and usually not up to a toe-to-toe fight with better-trained and - led Wehrmacht infantry. Squads were often understrength and under-equipped. Nevertheless deadly at close range and often stubborn in defense.

Guards Rifle Squad



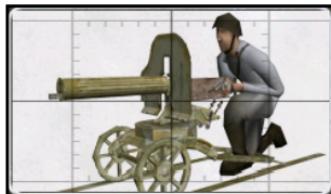
The Guards designation was bestowed upon combat units that distinguished themselves in combat against the Germans. These troops are generally better than the average Soviet rifle squad and often better equipped as well.

SMG Squad



Soviet submachine gun (SMG) squads operated with the PPSH-41 submachine gun, and were able to lay down a base of fire out of proportion to their numbers. They were especially useful in close-in combat, such as urban fighting, less so in open terrain where their submachine guns were outranged by rifles and machine guns.

Maxim MMG



The Soviet copy of the Maxim medium machinegun was capable of firing almost 600 rounds per minute. It was a standard of the Soviet Army throughout the war.

Soviet Anti-Tank Rifle



The Soviet PTRD-41 was a poor anti-tank weapon, but it was the only one in existence until Lend Lease brought U.S.-made bazookas to Soviet shores. Until then, it was only successful in the hands of an expert shot, as it was necessary to aim for small weak points such as visor slits or tank tracks in order to be effective.

82mm Mortar

The Soviet 82mm mortar was similar in form and function to the German 81mm mortar.

120mm Mortar

The Soviet 120mm mortar was similar in form and function to the German 120mm mortar.

152mm Artillery



The 152mm howitzer was a big success during the war, so much so that it continues to see service in other nations today. While heavy, it was very effective, and Germans respected them enough to use them if they were lucky enough to capture any.

82mm/132mm Katyusha Rocket Launcher



Named for a popular Soviet wartime song, the Katyusha was developed in response to the Nebelwerfer rocket launchers the Germans pressed into service. Trucks outfitted with this launching system had between 14 and 48 tubes attached.

IL-2 Sturmovik



The IL-2 was a Soviet ground-attack fighter capable of knocking out even the heaviest of German tanks (including the Tiger I and Panther). It was also likely the most produced aircraft in aviation history; tens of thousands were produced.

12.0 Play-By-Email

Panzer Command: Operation Winter Storm supports player versus player games through Play-by-Email. The *Panzer Command: Operation Winter Storm* Play-By-Email (PBEM) system is unique from other PBEM systems and it is important that players review this section prior to beginning a PBEM game with an opponent.

Our system is designed to allow player to simultaneously process their turns and therefore dramatically speed up game play as compared to traditional PBEM. However, the process for exchanging files and processing a turn is different and must be understood to avoid common mistakes.

To begin a PBEM game, the players should first agree to a scenario and who will play which side. Once this is done, both players must create a new PBEM game picking the agreed upon scenario and player sides. To create a new PBEM game, choose Multiplayer from the main menu and then type in a filename for the game and optional password – then press New Game. The filename you typed in will be your ‘saved copy’ of the game. After pressing New Game, choose the agreed upon scenario and side and then press the Next button. You will then be in the Purchase Troops screen and will continue to launch the game just like in a single player set-battle. After purchasing troops you will proceed to the unit setup (turn 0) phase. After setting up your units and pressing ‘play’ the game will update your saved copy of the game with your setup information and notify you to email this file to your opponent.

Your saved copy of the game will reside in a subdirectory (under where the game is installed) path “/PBM/Outbox/”. Your copy of the game will always reside in your Outbox.

Note, both you and your opponent will perform these same steps (but picking different sides and filenames) to begin a new game (i.e., both players will do the turn 0 simultaneously and have a saved file in their respective outboxes).

After creating your copy of the game, you are ready to email that file to your opponent. Because we encrypt the files to prevent cheating, it is important that you zip the file before emailing it as some email systems will corrupt binary files during transport.

Once you receive your opponent’s file, save this file into the subdirectory path: /PBM/Inbox/. Your opponent’s copy of the game will always be placed in your Inbox.

Remember: Your files are in the Outbox folder, your opponent’s files go in the Inbox folder!

Once you have your opponent’s turn, you can now continue your game. To continue, start Multiplayer but this time choose your filename instead of creating a new file and then press the Load button. The next screen will list your opponent’s file. Choose the file for your opponent and press the Merge button. It is also on this screen that you would type in your game’s password if you had previously assigned one when creating the game. This process of merging your Outbox file with your Opponents inbox file coordinates your respective orders and launches the game.



Please note that the system will create a backup (.BACKUP) file for every turn. The backup file represents your turn PRIOR to merging. This backup file can be used to restore to the previous turn (prior to merging) in case something goes wrong.

After you merge files with your opponent, the game will launch. For the first turn only (after setup) you will immediately be able to issue orders to your units (since it is the first turn). After issuing orders on the first turn, the game will save to your outbox folder and you will be notified to email the newest file in the outbox folder to your opponent. After the first turn, when the game launches, the game will start paused. Press the play button and the last turn's orders will simulate and you will watch that turn's action. After watching the action, you will then be allowed to issue new orders for the next turn. Pressing play will then save your outbox file again and request that you email this file to your opponent.

Note, both you and your opponent will perform these same steps. You will both be viewing the 'same' game simultaneously and issuing orders simultaneously. In our system, both players watch turn results and give orders AT THE SAME TIME – greatly speeding up PBEM game play.

Each game turn thereafter will consist of the same process. First, pick your outbox file. Second, merge with your opponent's file that you stored in the inbox. Play the simulation and see the turn's action, and then give new orders and email outbox file to your opponent (you outbox file is his inbox file and vice-versa

12.0.1 Troubleshooting PBEM Issues

One common mistake that can occur in our PBEM system is that a player can process two turns back to back; forgetting to email one of the files, and get the game out of sync with his opponent. Here is an example of how that can happen:

Player A starts a new game, sends his Setup Turn 0 outbox file to Player B. Player B creates a new game and sends his Setup Turn 0 to Player A.

Player A merges his setup file with opponent's setup file and creates Turn 1 – Orders Phase orders and emails this file to Player B.

Player B merges his setup Turn 0 with Player A's setup turn 0 and creates his Turn 1 – Orders Phase orders. Player B FORGETS to email this file to Player A. Now Player B receives Player A's Turn 1 – Orders Phase and merges this with his Turn 1 – Orders Phase and watches turn 1 play out, gives Turn 1 – Reaction Orders. Now Player B has a saved game in his outbox for the Reaction Turn. Say he emails this file to Player A.

Player A tries to merge is Turn 1 Orders phase with his opponent's Turn 1 Reaction phase causing an error.

Notice, that because both players are doing their orders at the same time, it is possible to 'merge' your newly minted orders with your opponent's orders (if he sent you his

orders early) before ever sending your opponent your newly minted orders. Allowing this is actually a key feature in that players can basically do two turns at once in our system as long as they remember to email their file before Merging. This is the most common mistake new players to our system encounter. Player B needed to FIRST email his Turn – 1 Orders phase outbox file to his opponent, and then merge orders and continue.

Should this occur, all is not lost. The .Backup version in Player B's outbox has his orders before his merges (in the example, the .Backup file has Player B's Turn 1 – Orders Phase. It is only necessary to send that file to your opponent so he can merge and "catch back up". As long as you remember to e-mail your file to your opponent at the end of each phase, you should be fine.

The key thing to remember when using our PBEM system is that players are not 'sharing' a game file. Instead they are both literally playing their own version of the game (their outbox file) simultaneously with the merge process used to receive and integrate your opponent's orders.

13.0 Hotkey Reference

Function & Control Keys

F1 – toggle on/off system performance
 F2 – toggle on/off showing map coordinates on rubberbands
 F3 – create file with unit position information (disabled for PBEM games)
 F4 – allow unrestricted unit placement during setup phase
 F5 – toggle on/off message box in HUD
 F10 – cycle through game speeds
 F11 – take screenshot (bmp file placed in 'screens' subdirectory)
 Insert key – toggle on/off display of underlying color coded terrain map
 Escape key – exit current screen

Camera Control Keys

~ (tilde) – reset camera to default position
 - (minus) – decrease current camera zoom
 + (plus) – increase current camera zoom
 Numpad 4 – rotate camera counter-clock wise
 Numpad 6 – rotate camera clock wise
 Numpad 9 – tilt camera up
 Numpad 3 – tilt camera down
 Stand alone arrow keys – move camera in direction of arrow
 Tab – lock camera on selected unit
 Tab/Tab – lock camera on selected unit and enter binocular view from unit
 1 – Close zoom level
 2 – Middle zoom level
 3 – Far zoom level

Unit Order Hotkeys

N – go to next unit
 O – Show order menu for selected unit
 L – Place unit (placement screen only)
 F – Face unit (placement screen only)
 A – Advance
 R – Rush
 W – Withdraw
 D – Defend/Stay
 B – Bound
 M – Engage/Move
 T – Engage/Target or Target (depending on current phase)

Other

P – Play/Pause/Move to next phase
 R – Rewind and replay turn
 S – Show unit specification for selected unit
 Note: All buttons will have a hotkey shown through tooltips

14.0 Scenario and Data Editing

One of the best features of the *Panzer Command* is the open data format. Virtually every unit specification, scenario placement and art file is accessible to dedicated users that have the desire to do some editing of their own. You can change how a unit is rated, what it looks like, what is included in a scenario, where it is placed and even the structure and order of a campaign.

Most data is stored in .XML files, which are essentially text files with organizational tags. These can be edited with Notepad or with any of a number of XML editors. One example of a free XML editor is the Open XML Editor, which can be found at <http://www.philo.de/xmledit/>

The most important file locations are as follows:

Vehicle Data: \Data\ArmouredUnits\ (*.xml files)

Vehicle Art: \Data\ArmouredUnits\[VehicleName] (sub-folders include mesh and texture information)

Infantry Data: \Data\Infantry\ (*.xml files)

Infantry Art: \Data\Infantry\[InfantryName] (sub-folders include mesh and texture information)

Weapon Data: \Data\Guns\ (*.xml files)

Scenario Data: \Data\Scenarios\ (*.xml files)

Campaign Structure: \Data\Campaigns\ (*.xml files)

Game Text (including Scenario Descriptions): \Data\Text\[languagename.xml]

Various Game Tables: \Data\Tables\ (*.xml files)

Game Art: \Media\Buttons\ and \Media\Graphics\

Scenario Art: \Media\[LevelName] (sub-folders include art for each level)

Game Sounds: \Media\Sounds\

We'll provide a few examples here of how to make some easy changes to various data files. The rest is up to you. Feel free to ask questions on our forums if you need help figuring out how to modify your game, but please realize that we don't provide official support for any problems you may encounter with a modified installation.

The first step in doing any editing is to make sure the file you want to edit is not marked read-only. You can do this by right-clicking on it and selecting properties, then un-checking the Read-only box if it's checked.

ALWAYS BACK UP ANY DATA FILES YOU PLAN ON EDITING BEFORE YOU START!

14.1 Editing a Vehicle

We'll use a simple example of wanting to change the point cost and an armor value on a KV-1 Model 1941. Open the file "KV-1 Model 1941.xml" in the \Data\ArmouredUnits\ folder. The first two lines of text look as follows:

```
<armouredunit type="KV-1 Model 1941" side="Russian" mass="45000" size="0" stun="0" speed="135/210" indirectFire = "false" turretrotation="RS" month="8" year="41" points="34">
```

Here's a brief definition of these values:

type = This defines the actual name used for this unit in-game.

side = This defines the unit's nationality

mass = This defines the weight of the unit

size = This defines any size modifiers. Negative modifiers make the vehicle a smaller target to hit, positive modifiers make it a larger, easier target to hit.

stun = This modifies any stun roll against the vehicle. Positive modifiers here make it easier to stun the vehicle's crew.

speed = The normal / full speed of the unit in-game. This is in meters per 40 second phase.

indirectfire = This defines whether the unit is capable of indirect fire. This is used only for off-map artillery.

turretrotation = This defines the speed of the turret with a two letter code. R is simply "R"otation and is always the first letter. "S" is slow, "M" is medium, "F" is Fast.

month = The first month the unit is available.

year = The first year the unit is available (1900 + this number gives the year)

points = The base cost of a single Veteran squad of this unit type.

Changing the point cost to say 30 points is as simple as editing the number in the quotes after "points=" and saving the file, so we would end up with this:

```
<armouredunit type="KV-1 Model 1941" side="Russian" mass="45000" size="0" stun="0"
speed="135/210" indirectFire="false" turretrotation="RS" month="8" year="41" points="30">
```

The next time you load the game, all KV-1 Model 1941 tanks would cost 30 points.

Below this section, you'll see the various armor ratings. Let's say we want to increase one of the hull armor values. We see the section looking like this:

```
<locations>
  <location position="12" location="Top Deck" front="5" side="5" rear="5"/>
  <location position="11" location="Top Turret" front="6" side="6" rear="6"/>
  <location position="10" location="Turret" front="9" side="8" rear="8"/>
  <location position="9" location="Turret" front="9" side="8" rear="8"/>
  <location position="8" location="Turret" front="9" side="8" rear="8"/>
  <location position="7" location="Hull" front="10" side="8" rear="9"/>
  <location position="6" location="Hull" front="10" side="8" rear="8"/>
  <location position="5" location="Hull" front="10/15u" side="8" rear="8"/>
  <location position="4" location="Track" front="3" side="3^11" rear="3"/>
  <location position="3" location="Hull" front="9" side="8" rear="7"/>
  <location position="2" location="Hull" front="9" side="8" rear="7"/>
  <location position="1" location="Track" front="3" side="3" rear="3"/>
</locations>
```

location position = This defines the location for the hit location table. If you look through the vehicles, you'll see how this is used to represent various vehicle types.

location = This defines and describes the location type.

front / side / rear = This defines the armor value for the location depending on whether it's hit from the front, side or rear facing. For a definition of the armor codes, see Section 5.3.

In order to adjust the middle hull location to have 11 front armor, simply replace the 10 that's in quotes after "front=" with an 11. The resulting line would look like this:

```
<location position="6" location="Hull" front="11" side="8" rear="8"/>
```

Once you save the file and re-load the game, that would be the new armor value for all KV-1 Model 1941 tanks.

A few more notes on vehicles. The `<guns>` section defines each weapon on a vehicle. Each gunid name has to match a defined gun in the `/Data/Guns/` folder in order for it to work. The individual gun .xml files in the `/Data/Guns` folder define the actual accuracy and penetration of each gun type, including also what kind of ammunition it can fire.

Finally, the `<models>` section is where the different sections of the vehicle model are defined. This is what determines how it will look like in the game. For laughs, you could change the line that reads:

```
<model name="turret" filename="KV-1 Model 1941/turret.x"/>
```

To read instead:

```
<model name="turret" filename="Pz Kpfw IVE/turret.x"/>
```

This would put a Panzer IVE turret on your newly modified KV-1. Not a pretty sight!

14.2 Editing Infantry

We'll use a simple example of wanting to change the point cost and morale value on a German Panzergrenadier 1942 squad and also expand it visually from five men up to ten (if Limit Infantry is turned off). Open the file "German Pz Grenadier 42.xml" in the `\Data\Infantry\` folder. The first line of text looks as follows:

```
<infantry type="Pz Grenadier 42" side="German" month="1" year="42" points="8" morale="+2.9.2" killpoweradjustment="0">
```

`type` = This defines the actual name used for this unit in-game.

`side` = This defines the unit's nationality

`month` = The first month the unit is available.

`year` = The first year the unit is available (1900 + this number gives the year)

`points` = The base cost of a single Veteran squad of this unit type.

`morale` = This defines the three components of unit morale. First is the range in which a unit will break. The lower this number is, the less likely the unit is to break while under fire. Second is the rally roll the unit has to make in order to rally. The lower this number is, the better a chance the unit has to rally when broken. The last number is

the number of turns a unit can remain broken before dispersing and being considered combat ineffective.

killpoweradjustment = This is a flat adjustment to the firepower of each of a unit's weapons. This is not normally used.

If we wanted to change the point cost of this unit to a 7 and make its rally chance a bit worse, the result would look as follows:

```
<infantry type="Pz Grenadier 42" side="German" month="1" year="42" points="7"
morale="+2.10.2" killpoweradjustment="0">
```

The **<guns>** section defines each weapon in a squad. Each gunid name has to match a defined gun in the **/Data/Guns/** folder in order for it to work. The individual gun **.xml** files in the **/Data/Guns** folder define the actual accuracy and penetration of each gun type, including also what kind of ammunition it can fire. Normally, one "weapon" is used for the squad's firepower. An infantry squad would normally use additional weapon entries if it had something like a Panzerfaust or an Anti-Tank rifle that would need to be treated differently from the normal squad firepower.

Finally, the **<models>** section is where the model used for each displayed man in the squad is defined. This is what determines how it will look like in the game. By default only the first three models are shown when the Limit Infantry option is on. When it's off, all models are shown. The data files in the game come with five models already defined. Let's expand this squad to a full ten models.

Starting with this, we will add five more "bodies". The **filename=** tells the game which model to use for each body. Note that the last part of the model name describes the weapon (i.e. **_elitesmg.x** or **eliterifle.x**). Since a PanzerGrenadier squad had two machine guns, we'll add one model with a machine gun and four more with rifles.

```
<models compendium="genericinfantry/germaneliterifle01.png">
  <model name="body1" filename="German Pz Grenadier 42/german_eliterifle.x"/>
  <model name="body2" filename="German Pz Grenadier 42/german_elitesmg.x"/>
  <model name="body3" filename="German Pz Grenadier 42/german_elitemgun.x"/>
  <model name="body4" filename="German Pz Grenadier 42/german_eliterifle.x"/>
  <model name="body5" filename="German Pz Grenadier 42/german_eliterifle.x"/>
</models>
```

Which will leave us with this:

```
<models compendium="genericinfantry/germaneliterifle01.png">
  <model name="body1" filename="German Pz Grenadier 42/german_eliterifle.x"/>
  <model name="body2" filename="German Pz Grenadier 42/german_elitesmg.x"/>
  <model name="body3" filename="German Pz Grenadier 42/german_elitemgun.x"/>
  <model name="body4" filename="German Pz Grenadier 42/german_eliterifle.x"/>
  <model name="body5" filename="German Pz Grenadier 42/german_eliterifle.x"/>
  <model name="body6" filename="German Pz Grenadier 42/german_elitemgun.x"/>
  <model name="body7" filename="German Pz Grenadier 42/german_eliterifle.x"/>
  <model name="body8" filename="German Pz Grenadier 42/german_eliterifle.x"/>
  <model name="body9" filename="German Pz Grenadier 42/german_eliterifle.x"/>
```

```
<model name="body10" filename="German Pz Grenadier 42/german_eliterifle.x"/>
</models>
```

Once we save this and re-load the game, our PanzerGrenadier squads will now be shown as having 10 men, with seven rifles, two machine-guns and one sub-machine gun, as long as the Limit Infantry option is turned off.

14.3 Editing Guns

We'll use a simple example of wanting to change the accuracy and firepower of the German 75mmL43 tank gun. Open the file "75mmL43.xml" in the \Data\Guns\ folder. The first section of text looks as follows:

```
<gun caliber="75" type="75mm/L43">
<ammunition destruction="6" stun="10" type="APHE">
    <tohits>
        <tohit number="1" range="275"></tohit>
        <tohit number="1" range="350"></tohit>
        <tohit number="1" range="425"></tohit>
        <tohit number="2" range="450"></tohit>
        <tohit number="3" range="500"></tohit>
        <tohit number="4" range="550"></tohit>
        <tohit number="5" range="600"></tohit>
        <tohit number="6" range="675"></tohit>
        <tohit number="7" range="750"></tohit>
        <tohit number="8" range="900"></tohit>
        <tohit number="9" range="1200"></tohit>
    </tohits>
    <penetrations>
        <penetration number="13" range="75"></penetration>
        <penetration number="12" range="250"></penetration>
        <penetration number="11" range="450"></penetration>
        <penetration number="10" range="625"></penetration>
        <penetration number="9" range="850"></penetration>
        <penetration number="8" range="1125"></penetration>
        <penetration number="7" range="1200"></penetration>
    </penetrations>
</ammunition>
```

caliber = Tells the game what the size of the gun is

type = Defines the actual name used for this gun in-game. This is also the name that should be used in the gunid= field when defining a weapon for a vehicle or infantry squad.

ammunition = Each <ammunition> tag defines a new ammunition type for the gun.

destruction = Defines the destruction value of the ammunition type. The lower this number, the more destructive the ammunition if it penetrates a vehicle.

stun = Defines the stun value of the ammunition type. The lower this number, the more likely a hit with this ammunition is to stun a vehicle's crew.

ammunition type = This defines the actual name used for this ammunition type in-game.

tohits = Each <tohits> section defines the accuracy of the ammunition type
 tohit number = The lower this number, the more likely the gun is to hit with this ammunition type at this range

to hit range = The range up to which the <tohit number> applies

penetrations = Each <penetrations> section defines the base penetration of the ammunition type

penetration number = The higher this number the better the penetration of the gun with this ammunition at this range

penetration range = The range up to which the <penetration number> applies

For example, the 75mm/L43 at 500 meters will hit a target on a roll of 3 or more on a d10 as its base unmodified chance. It will have a base penetration value of 10 with APHE ammunition at that range.

If we wanted to make the 75mm/L43 more accurate at 500 meters, we could simply change the <tohit number = "3" to a 2. We'd end up with the following line:

```
<tohit number="2" range="500"></tohit>
```

To make it hit harder, we could change the penetration up to 625 meters to an 11 as well, which would give us the following line:

```
<penetration number="11" range="625"></penetration>
```

In order to change the firepower, however, we have to go to a different file. First we would save our changes here and then open the file "Shell Killpower.xml" in the \Data\Tables\ folder. In this file, we would look for <shell type="APHE"> if we wanted to adjust the values for APHE ammunition firepower.

The section in question looks like this:

```
<shell type="APHE">
  <weapons>
    <weapon type="**">
      <killpowers>
        <killpower caliber="31" value="-2"/>
        <killpower caliber="39" value="-1"/>
        <killpower caliber="59" value="0"/>
        <killpower caliber="79" value="1"/>
        <killpower caliber="99" value="1"/>
        <killpower caliber="119" value="2"/>
        <killpower caliber="139" value="2"/>
        <killpower caliber="159" value="2"/>
        <killpower caliber="179" value="3"/>
        <killpower caliber="199" value="3"/>
        <killpower caliber="239" value="4"/>
        <killpower caliber="299" value="5"/>
      </killpowers>
    </weapon>
  </weapons>
</shell>
```

Note that it currently defines this as being the firepower for all APHE ammunition types (<weapon type="*"/>), with a range of ratings based on the defined caliber of the gun. However, by adding a new entry with a <weapon type="75mm/L43"/> we could change this just for our weapon. In this case, let's just tweak the firepower up a bit for weapons larger than 59mm. We'll do this by changing the 79 and 99 line to the following:

```
<killpower caliber="79" value="2"/>
<killpower caliber="99" value="2"/>
```

This would give all APHE ammunition fired from a 60mm cannon up to a 99mm cannon an in-game firepower value of 2 instead of 1.

14.4 Editing Scenarios

We'll use a simple example of wanting to change the victory points and location of an objective and add a tank platoon to the first campaign scenario. Open the file "Level01.xml" in the \Data\Scenarios folder. The first section of text looks as follows:

```
<scenario date="12/11/1942" id="Level1" media="Level1" name="Winterstorm D-Day"
turnlimit="25" victory="550" year="1942">
<objectives>
    <objective owner="Russian" points="75" x="332" z="155"></objective>
    <objective owner="Russian" points="100" x="940" z="81"></objective>
    <objective owner="Russian" points="125" x="729" z="864"></objective>
</objectives>
```

date = This defines the date on which the scenario takes place, in MM/DD/YYYY format.

id = This is the unique code used by the game for this scenario.

media = This tells the game which actual map to use for the scenario, per the date in the /Media/[LevelName] folders

name = The actual name that will be used in the scenario list in-game.

turnlimit = The maximum number of turns for this scenario.

victory = The victory point level that will end the scenario with a victory for the attacker or defender

year = The year of the scenario

objectives = This section defines the objectives in the scenario. In this case, there are three. Each objective is defined as follows:

owner = Which side owns the objective at the start of the scenario

points = How many points ownership of the objective adds to the victory point total for a side

x , z = The coordinates on the map where the objective is placed

In order to change the victory points of the first objective, we need only edit the 75 in points to the new total we want. Technically, changing the coordinates is just as easy. However, most designers will not have memorized the x and z coordinates of each location in the scenario. The easiest way to find out the coordinates of a spot you want

is to load up the scenario in the game, buy some units and get to the placement phase. While in placement, select a unit and use the Place Unit command. Then use the F2 hotkey to display the coordinates of the current location as you move the placement rubberband around. Note that in the game, the coordinates displayed with F2 are called x and y but these correspond to x and z in the scenario .xml file.

Find the spot you want for the objective and note it down, then edit it into the .xml file for the scenario. Once you re-load the game and scenario, you'll see that the objective has changed. In this example, we changed it as follows, which moves the objective back behind some woods.

```
<objective owner="Russian" points="100" x="455" z="124"></objective>
```

Ok, now let's look further down. The next sections is as follows:

```
<defender side="Russian">
  <coreunits>
    <unit unitid="T-70 Model 1942" unitname="1/1/1-81 Tank Platoon" exp="Green" number="4" max="4" x="749,730,758,749" z="805,845,795,888" heading="45,135,45,45"/>
    <unit unitid="T-70 Model 1942" unitname="1/1/1-302 Tank Platoon" exp="Green" number="3" max="3" x="400,284,337" z="184,121,121" heading="160,160,160"/>
    <unit unitid="Rifle 42" unitname="1/1/1-81 Rifle Platoon" exp="Green" number="2" max="2" x="761,710" z="854,880" heading="45,45"/>
    <unit unitid="Rifle 42" unitname="2/1/1-81 Rifle Platoon" exp="Veteran" number="2" max="2" x="715,732" z="787,819" heading="45,45"/>
    <unit unitid="Rifle 42" unitname="3/1/1-81 Rifle Platoon" exp="Green" number="2" max="2" x="680,746" z="679,703" heading="90,90"/>
    <unit unitid="45mm ATG M-1942" unitname="1/1-832 AT Platoon" exp="Veteran" number="2" max="2" x="973,871" z="156,66" heading="90,135"/>
    <unit unitid="Rifle 42" unitname="2/3/1-832 Rifle Platoon" exp="Veteran" number="2" max="2" x="375,346" z="157,109" heading="135,135"/>
    <unit unitid="Maxim MMG Team" unitname="1/1-832 MMG Team" exp="Veteran" number="1" max="1" x="372" z="163" heading="147"/>
  </coreunits>
```

defender side = This tells the game first that these are the defender's units and second which nationality the defender is.

coreunits = For campaign purposes, the core units in all campaign scenarios should remain the same. The first scenario in a campaign sets the core battle group for the campaign, but changing the core units in future campaign scenarios will cause issues. For set battles, the coreunits designation is not used.

unitid = This tells the game which unit type to use for this platoon, this should correspond exactly to the type field in the vehicle or infantry data file.

unitname = This is the descriptive name assigned for the platoon in-game. The game automatically adds /1, /2 etc. to this to identify each individual element.

exp = This defines the base experience level for this platoon. In the campaign, the tracked experience will override the base experience, but this is unchanged for the first campaign scenario and for any set battles. Experience can be Green, Veteran or Elite.

number = This defines the current number of vehicles or squads in the platoon

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max = This defines the maximum number of vehicles or squads in the platoon. If max is greater than number, then the player will be given the option to Replace Losses in the Purchase Unit screen.

x = This is a list of x coordinates, separated by commas, for each individual squad or vehicle in the platoon. The first coordinate in the list is used for the command unit. You must have a number of coordinates equal to the max value in order for this to load in the game.

z = This is a list of z coordinates (show as "y" in-game with the F2 key), separated by commas, for each individual squad or vehicle in the platoon. The first coordinate in the list is used for the command unit. You must have a number of coordinates equal to the max value in order for this to load in the game.

heading = This defines the initial facing of each vehicle or squad in the platoon, in degrees, separated by commas. The first number in the list is used for the command unit. You must have a number of facing numbers equal to the max value in order for this to load in the game.

heading = This defines the initial facing of each vehicle or squad in the platoon, in degrees, separated by commas. The first number in the list is used for the command unit. You must have a number of facing numbers equal to the max value in order for this to load in the game.

The next section starts as follows:

```
<auxillaryunits pointsavailable="350">
  <unit unitid="T-60" unitname="2/1/1-302 Tank Platoon" exp="Veteran" number="2"
max="2" x="925,894" z="367,398" heading="135,135"/>
  <unit unitid="T34-76 Model 1942" unitname="1/2/1-302 Tank Platoon" exp="Green"
number="3" max="3" x="823,838,815" z="179,186,164" heading="135,135,135"/>
```

auxillaryunits = This defines the section as listing the auxiliary (or non-core) units for campaign scenarios. This is not important for set battles.

pointsavailable = This defines the total points available for the side, in this case 350 points for the defending Russians. In campaign scenarios, the core units will be "pre-bought" from this point pool and the remainder will be available to purchase auxiliary units.

In this case, let's add an additional platoon of T-34s to the Soviet side. In the auxiliary units section, we'll simply copy the second unit line and paste in a copy. We'll also give them an additional 50 points, set the new unit to Veteran experience and give it a distinct descriptive name. The result is as follows:

```
<auxillaryunits pointsavailable="400">
  <unit unitid="T-60" unitname="2/1/1-302 Tank Platoon" exp="Veteran" number="2"
max="2" x="925,894" z="367,398" heading="135,135"/>
  <unit unitid="T34-76 Model 1942" unitname="1/2/1-302 Tank Platoon" exp="Green"
number="3" max="3" x="823,838,815" z="179,186,164" heading="135,135,135"/>
  <unit unitid="T34-76 Model 1942" unitname="2/2/1-302 Tank Platoon" exp="Veteran"
number="3" max="3" x="823,838,815" z="179,186,164" heading="135,135,135"/>
```

Now let's save this and load the game. Once in the game, load this scenario as the Russians and buy only the unit you just added in. In the placement phase, use the F4 hotkey to turn off placement limits and place each T-34 where you want it and face it the direction you want.

You may find it useful in the long run to set the points available much higher and buy all units in the scenario so that you can make sure placements locations don't conflict. For now, we'll just place the new T-34s and face them as we like in an area that we know is clear.

Then, hit the F3 hotkey to dump the coordinates for the new unit to a file called placement locations.dat in your installation folder. You can open up placement.dat with Notepad, find your new platoon and copy and paste that platoon's line, which is already formatted the way the scenario wants it, over the line you added. Then save the scenario. There you go, you've now added in a new unit and deployed it where you want it to be!

When editing large numbers of units, it's helpful to just add them all in at default coordinates, load up the scenario with a large number of available points, place and face them all and dump them in one shot using the F3 key. This allows you to fairly quickly set up an entire side's default deployment.

Note that artillery and air units are placed in off-map locations.

14.4 Editing A Campaign

In the \Data\Campaigns\ folder, the German OWS.xml and Russian OWS.xml files define the structure of the default German and Russian campaigns. The order of the scenarios is determined by how they appear here, as is the linked graphic for each scenario and the text file link to the scenario description in the English.xml file in \Data\Text\

14.5 Editing Game Text

In the \Data\Text\ folder, the English.xml file contains all the text used in the game. If you scroll down to line 531, you'll see the following:

```
<!-- Scenario Descriptions -->
```

This is the section for descriptions for each of the scenarios in the game when they are played as set battles. The id is simply the level name plus .description.

A little further down you'll see the following:

```
<!-- Campaign Descriptions -->
```

This is the section for descriptions for each of the scenarios in the game when played as part of the campaign. The id here is defined in the campaign structure xml files.

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Our Strength

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