

GAME MANUAL



CLOSE COMBAT™
LAST STAND ARNHEM



EPILEPSY WARNING

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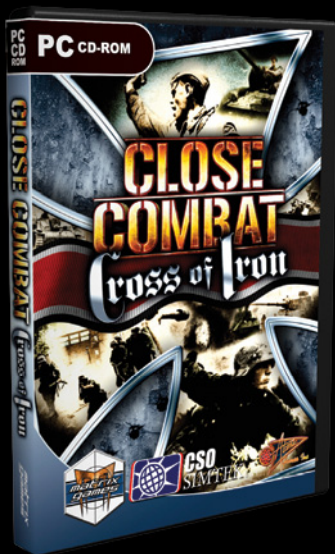
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- Do not sit too close to the monitor.
Sit as far as comfortably possible.
- Use as small a monitor as possible.
- Do not play when tired or short on sleep.
- Take care that there is sufficient lighting in the room.
- Be sure to take a break of 10-15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

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Based on the Atomic Games award winning Close Combat™ series of games. Close Combat™: Cross of Iron, brings back the award-winning classic in new epic battles of the Eastern Front of World War II.

Immerse yourself in the ultimate Close Combat™ release: Close Combat™: Cross of Iron for the PC. Take command of German or Soviet Battle Groups during WWII as you face the strength of the enemy war machine in a Grand Campaign giving you both the original and all new battles and operations that will test your tactical mettle.

Improvements have been made to the AI to reduce some of the more inadequate performance issues, in particular with respect to vehicle pathing, the 'crawl of death', and Team and Unit morale and response in general. For example, it is much more risky to try and use Teams in isolation as the influence of Command Teams is more significant. You should find that you will need to play more cohesively than in the original release.

Crush the enemy and gain the respect of your troops as you lead them to ultimate victory in Close Combat™: Cross of Iron!



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CLOSE COMBAT: LAST STAND ARNHEM™

Thank you for Purchasing Close Combat: Last Stand Arnhem™!

1.0 INSTALLING THE GAME

Please ensure your system meets the minimum requirements listed below. To install the game, insert the Close Combat: Last Stand Arnhem™ 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.

1.1 MINIMUM SYSTEM REQUIREMENTS

OS:	Windows 2000/XP (XP/Vista)
Processor:	300Mhz processor or faster recommended
RAM:	512MB recommended (1GB for Windows Vista)
Video Card/Graphics:	1MB RAM (8MB recommended) and display capable of 1024x768 resolution
Sound Card:	16-Bit DirectX 9.0 compatible sound Card
CD-ROM:	Yes
Hard Drive:	2GB Free
DirectX Version:	9.0c
Additionally:	A network or internet connection for 2-player head to head play

1.2 INSTALLATION

Please ensure your system meets the minimum requirements listed below. To install the game, either double click on the installation file you downloaded or insert the Close Combat: Last Stand Arnhem™ 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.

1.3 UNINSTALLING THE GAME

Please use the Add/Remove Programs option from the Windows Control Panel or the Uninstall shortcut in the games Windows START menu folder to uninstall the game. Uninstalling through any other method will not properly uninstall the game.

1.4 PRODUCT UPDATES

In order to maintain our product excellence, Matrix Games releases updates containing new features, enhancements, and corrections to any known issues. All our updates are available free on our website and can also be downloaded quickly and easily by clicking on the "Update" link in your Game Menu or by using the "Update Game" shortcut in your Windows START menu folder for the game.

We also periodically make beta (preview) updates and other content available to registered owners. Keeping up with these special updates is made easy and is free by signing up for a Matrix Games Member account. When you are signed up, you can then register your Matrix Games products in order to receive access to these game-related materials. Doing so is a simple two step process:

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We strongly recommend registering your game as it will give you a backup location for your serial number should you lose it in the future. 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 public and registered downloads, including patches, for that particular title.

You can also access patches and updates via our "Games Section" (<http://www.matrixgames.com/games/>), once there select the game you wish to check updates for, then check the "downloads" link. Certain value content and additional downloads will be restricted to "Members Area" members. so it is always worthwhile to sign up there.

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Thank you and enjoy your game!

1.5 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,

of defense for the Germans. The thinking was that this would hasten the end of the war by several months. His plan consisted of two major operations; Operation Market and Operation Garden.

Operation Garden was simple in concept. Allied armored and infantry formations of XXX Corps would sweep through the Netherlands, crossing several major river and canal water ways, and drive into Germany, thus doing an end run around the Siegfried Line. It was thought that the German Army was still reeling from their defeat and needed more time to mount a coordinated defense.

The only potential stumbling block to Operation Garden was the crossing of the major rivers and canals between the Dutch border with Belgium and Arnhem, where they would cross the Rhine River. Thus, Operation Market was conceived. It called for a "carpet," as it were, laid down by a parachute army to capture the bridges needed to be crossed by XXX Corps. The American 101st and 82nd Airborne Divisions would secure the bridges north of Eindhoven and in the vicinity of Nijmegen, respectively, and the British 1st Airborne Division, assisted by the Polish 1st Independent Parachute Brigade, would secure the bridge crossing the Rhine River at Arnhem.

So, from September 17 until September 26, 1944, this grand plan of the Allied Army played itself out and became known as Operation Market Garden.

Close Combat: Last Stand Arnhem retells the story of this historic Allied operation from the perspective of the men who fought in Operation Market Garden. As the Allied Commander, your objective is to get your armor and infantry forces over the Rhine River in Arnhem. As the German Commander, you must deny the Allies their objective...the Arnhem Bridge.

You now take control of one side of the Operation Market Garden forces to try to change history.

3.0 GAME PLAY

Close Combat: Last Stand Arnhem is a real time strategy game that puts the emphasis on REAL. During a battle you command up to 15 units ranging from squads of infantry to armored vehicles. The soldiers under your command act like real soldiers. If you order them to exert themselves they get tired, if the enemy shoots at them they keep their heads down, and when



in danger they get scared. If a soldier becomes too scared he may stop listening to orders; he may even surrender or desert.

Your units have the same strengths and weaknesses that they do in real life. So in planning your strategy you need to think about what would work in the real world. Historically, real world tanks had a hard time detecting enemy infantry, and enemy infantry could easily sneak up on a tank and use explosives to disable or destroy it. Real world tanks used infantry to scout ahead of them; you are well advised to do the same.

Your goal during each battle is to do more than just kill the enemy. Operation Market Garden was an operation to capture key bridges over water ways and rivers in Holland...taking them first by paratroopers, and then having armor and infantry attack to secure them. Each map has a certain number of important strategic spots called "Victory Locations," and success or failure is determined by who holds them when a battle ends.

During Campaigns and Operations you have both strategic command of the war and tactical control of every engagement. At the strategic level, you direct your Battle Groups along the network of roads that connects the towns and villages of the Dutch countryside. You must deal with issues of supply, allocate limited resources, and control your overall battle strategy.

4.0 WHAT'S NEW

Close Combat: Last Stand Arnhem has had a comprehensive overhaul to make it compatible with today's modern computer systems. Enhancements have been made to the original game's AI performance and graphics, and the ability for mod makers to modify the game has been streamlined. As well as improvements, the game has been expanded in scope beyond any previous release in the Close Combat Series.

4.1 FEATURES INCLUDED FROM CLOSE COMBAT: THE LONGEST DAY

- » Battle the enemy in the darkness. This includes simulated flare effects where ability to see the enemy troops is effected by flare deployment.
- » Comes with more than 60 all new battles, operations and campaigns.
- » Expanded strategic layer with a new strategic map image as well as 64 gorgeous hand-drawn tactical maps. That's an additional 21 tactical map slots over the original game!
- » New reports at the end of battle showing campaign cohesion and VL control – track your progress after each bout.
- » Display of Battle Group cohesion and fatigue status.
- » Game accepts maps up to 4800x4800 pixels as compared to the stock CC5 map size of 3600x3600 pixels.
- » Off-board or off-map support quantities now tied to difficulty level.
- » Improved graphical communication of strategic map connections.

- » Game can be played in windowed mode.
- » Tweaked User Interface graphics, with nearly all new planes, vehicles and map graphics. Also includes carefully crafted game play manual
- » No longer requires second party utilities for modding to provide years of additional gaming excitement.
- » Among the moddable features: ALL strategic layer features, ALL campaign details including weather, turns per day, scoring, all support mission types for both sides and locations, Battle Group recycling, Battle Group retreat/disband, supply and much more!
- » Teams, Battle Group, elements, force pools, soldiers, vehicles, and weapons files maximum number of entries extended.
- » Capable of representing multiple nationalities with varying capabilities available to both sides.
- » Capable of simulating airborne Battle Group deployment drop zones.

4.2 IMPORTANT NEW FEATURES

- » A point buying system - each battle group and parent formation has a limited pool of points to be spent to 'buy' teams from the Force Pool.
- » Bridge demolition and repair.
- » Assault river crossings and ferry river crossings.
- » Improved Battle Group management – ability to stack battle groups, ability to merge battle groups, ability for one battle group to lend teams to another.
- » Static troops – a small number of teams associated with a specific map – will defend the map even if no Battle Group is present.
- » Ability to specify starting turn (of starting day) for operations and campaigns to the scenario editor.
- » Ability to specify arrival turn for reinforcements in scenario editor.
- » Increased maximum number of turns per day to 6.
- » Size and echelon data for Battle Groups (i.e. Company / Battalion / Regiment) which controls the number of team slots available on Battle Group screen.
- » Parent formation point pool tracking for battle groups – for example, the parent formation for both 1 Para Brig and 4 Para Brig will be "British 1st Airborne Division".
- » Reduced aerial re-supply effectiveness if an enemy Battle Group is present on the target map.
- » Video playback at battle / campaign / operation start and each new day of the grand campaign.
- » Even more improvements have been made to the AI to reduce some of the more inadequate performance issues, in

particular with respect to vehicle pathing, the 'crawl of death', and Team and Unit morale and response in general.

5.0 QUICK START

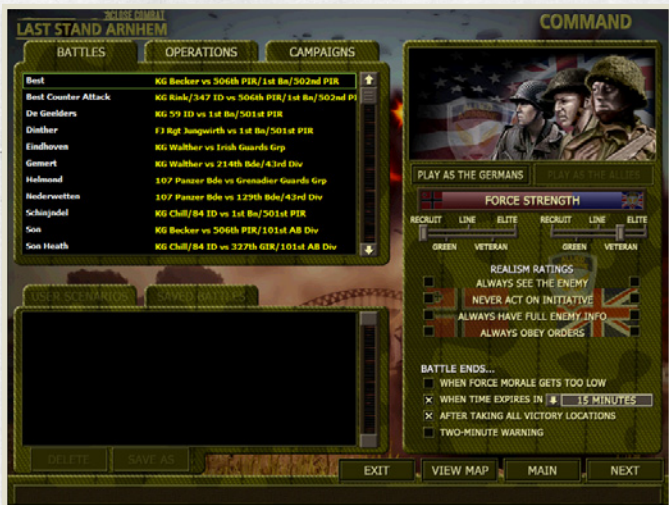
Double click on the desktop icon to start the game.

5.1 MAIN SCREEN



Once the game starts, you are on the Main Screen and you have a few choices. You can select Play a Game, go to the Boot Camp, Create a Scenario, configure Multiplayer, select game Options or read the production Credits. If this is your first time playing, you should consider playing the Boot Camp tutorial.

5.2 COMMAND SCREEN



Once on the Command screen, if you want to jump in quickly, choose a Battle listed in the window on the upper left hand side rather than a Campaign or Operation. Once you have decided which battle you want to play and whether Allies or Germans, double click on it or select it and click on Next.

5.3 BATTLE GROUP SCREEN



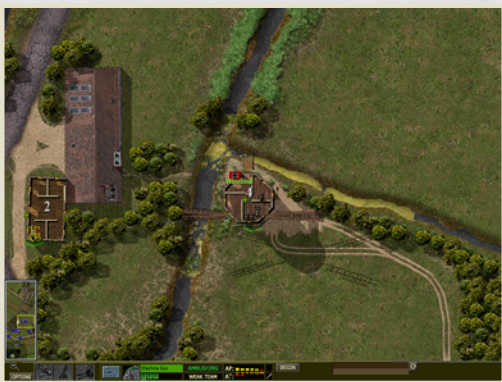
This brings you to the Battle Group screen where you can look at the units you'll be fighting the Battle with. You can rename the individual units (squads and vehicles) if you want by first clicking on the unit and then using the Rename button on the bottom of the screen. You can also look at a unit's Experience Level, Morale, the weapons and equipment they carry by clicking on it.

Select Next from the lower right hand corner to display the Battle screen when you're ready to fight. When the Battle screen first appears, the action is suspended. This represents the pre-battle phase where you can place your troops. The darkened portion of the map represents where the enemy starts, while the lightly shaded portion is a no man's land between your unshaded portion and the enemy.

5.4 BATTLE SCREEN



Place your troops to your best advantage; left click on a unit and drag it to move it. You may also give orders to units during this stage. Right click on a unit to give it an order. When placing anti-tank guns, which usually cannot move, it is useful to give them a Fire order and move the cursor around to set their field of fire. You can cancel the firing order by ordering the gun to Defend or Ambush. Infantry should usually start in cover either in buildings, woods, ditches or prepared entrenchments/bunkers. Command teams improve the performance of other teams within their circle of influence. To see the area over which a command team has influence, press the Space bar. The green circle displayed represents the extent of the team's command and control.



When you are satisfied with your troop placement, press the Begin button on the tool bar at the bottom of the screen.

Keep in mind while playing that Function keys F5 - F7 control your optional monitor displays and that you can issue orders to a unit by right-clicking on it. Air strikes, mortar and artillery can each be used only once per Battle, when they are available.

6.0 MAIN SCREEN



6.1 PLAY A GAME

Left-clicking on the Play a Game option selects the Command screen. From the Command screen you may load a saved game or select any of the single player Battles, Operations, or Campaigns.

6.2 BOOT CAMP (TRAINING)

The Boot Camp option selects the boot camp screen where you may choose to play any of the five training scenarios. The tutorials include pop up windows directing your actions and are designed to teach basic unit commands and how to monitor the status of your teams and soldiers. It is highly recommended that all players play through all five boot camps.

6.3 CREATE A SCENARIO

While Close Combat: Last Stand Arnhem comes with pre-made battles, operations, and campaigns, a scenario editor (Battlemaker) has been provided for creating your own battles, operations, and campaigns.

6.4 MULTIPLAYER

While the AI in a single player game does present a worthy opponent, there is something uniquely satisfying about out thinking a human player. Close Combat: Last Stand Arnhem presents a number of options allowing two human players to square off.

6.5 OPTIONS

The Options screens allow the player to configure certain aspects of the game. There are three screens; Game Play, General, and About.

7.0 BOOT CAMP



Boot Camp is an online tutorial that teaches basic unit commands and fundamental tactics. There are five boot camps; it is recommended that new players complete them in order from top to bottom. During the boot camps you can always repeat the previous instruction by pressing Ctrl+H. You may exit boot camp at any time by pressing the ESC key.

7.1 QUICK TOUR

This explains how to give orders to a unit as well as basic targeting. Remember that right-clicking on a unit selects the unit and opens the orders menu. Orders may be cancelled by right-clicking again, or by left-clicking off of the menu.

7.2 MONITORS/TOOLBARS

This segment shows how to call in Air Strikes, Mortar and Artillery Support, as well as monitoring team abilities and status. The prime things to remember from this boot camp are that the F5 key toggles the Team Monitor, F6 toggles the Map Monitor, and F7 toggles the Soldier Monitor

7.3 VIEWING THE TERRAIN

This explains moving your view around the map and the effects of terrain. The important things to remember are that you can left-click in the popup menu to shift your view. Zoom in and out with the Zoom buttons on the toolbar at the bottom of the screen. The properties of the various terrain types are also discussed. Buildings provide great cover for infantry. Buildings greater than 1 story have a number on them. For purposes of determining line of sight all, units in a building are assumed to be on the top floor. A building roof becomes invisible when you have men inside so you can see what's going on.

7.4 INFANTRY TACTICS

This is a demonstration of basic infantry strategy including the use of two or more teams to lay down suppression fire, and how to use smoke to cover advancing infantry. Basic mortar use is also covered.

7.5 ARMOR TACTICS

This segment is short, but teaches a vital lesson. Tanks are extremely vulnerable to infantry at close range and bad at detecting them. To protect against these two failings, armor works best when supported by infantry.

8.0 COMMAND SCREEN



The Command Screen has three panels.

8.1 BATTLES, OPERATIONS AND CAMPAIGNS

The top left panel allows you to select from any of the pre-made battles, operations, and campaigns. A Battle is a single engagement between German and Allied forces. It takes place on a single map, and the forces available to each side are fixed when the Battle begins. An Operation is a fight between two or more Battle Groups on the strategic screen. Operations usually involve multiple engagements over a selection of linked maps on the strategic screen. A Campaign also uses the Strategic Screen and has several or all of the available Battle Groups for each side engaged in conflict over, generally, a larger area and a longer time span.

8.2 SAVED GAME AND USER CREATED SCENARIO

To load a saved game or to play a custom scenario, select it from the list in the lower left hand panel. Saved games and scenarios may also be deleted by selecting them and clicking the delete button.

8.3 GAME SETTINGS

The right hand panel controls the parameters for new single and multiplayer games. At the top of the window you may select between playing either as the Germans or the Allies.

Below, there are two sliders indicating the Difficulty Level for each side: Recruit, Green, Line, Veteran, and Elite. Recruit level difficulty provides better forces with higher morale, whereas, Veterans play at normal levels of force strength. At Elite difficulty the particular side starts with weakened forces. The Difficulty level also controls how quickly reinforcement pools regenerate over time. The Line difficulty level is representative of historical conditions.

8.3.1 REALISM SETTINGS

Below the Difficulty Level indicators are the Realism Settings. You can change the indicators by clicking in the adjacent check-boxes.

Always See Enemy: Does exactly what it sounds like it should do. A side with this option chosen knows where the enemy is at all times. This can be an extremely useful option for new players as they learn the game.

Never Act On Own Initiative: Your soldiers never do anything unless they are ordered to.

Always Have Full Enemy Info: The player always has access to the tool-bar info of enemy units with this selected. This does not extend to Soldier Monitor information.

Always Obey Orders: Your units always obey orders with this selected. This is for when you tire of your soldiers' senses of self-preservation. They will also not act on their own initiative.

8.3.2 BATTLE ENDS CONDITIONS

Below the Realism Rating settings are the Battle Ends conditions.

The player can change these conditions by clicking in the adjacent check box.

Those conditions are:

- » When Force Morale Gets Too Low

The recommended settings are Force Morale enabled for Operations and Campaigns, and disabled for individual Battles.

- » When Time Expires In (the drop-down menu gives you a choice of times)
- » After Taking All Victory Locations
- » Two-Minute Warning (for battle to end)

Note: Be advised that disabling the Force Morale option will severely alter play balance when playing Operations and Campaigns.

Note: It is recommended that you play with the timer set to 15 minutes for optimum play against the AI (the game's artificial intelligence).

The two-minute warning option allows a player who controls no victory location two minutes to capture one before the game ends.

The View Map tab along the bottom of the screen allows you to view the map used in a particular battle.

9.0 BATTLE GROUP SCREEN

Once you have selected your battle, you gain access to the Battle Group Screen that shows all the forces available for a particular contest. This screen provides the Battle Group's Active Roster, Forcepool, Battle Group and Formation Point Pools, Strength and Parent Formation.



Battle Groups are composed of various individual units made up of infantry, tanks and other vehicles, and support teams. They have a parent formation....such as the Allied 502nd PIR of the 101st Airborne Division shown in the screen shot. They generally represent a force roughly the size of the lead element in a regimental combat group. However, in Close Combat: Last Stand Arnhem the size of a Battle Group can vary. The size of the Battle Group is in relation to the number of individual units available.

- 1 or 2 Companies**..... 6 units
- A Battalion (3 - 4 Companies)**..... 9 units
- 2 Battalions (6 - 8 Companies)**..... 12 units
- 3 Battalions (9 - 12 Companies)**..... 15 units

9.1 ACTIVE ROSTER

The main area of the Battle Group screen is called the Active Roster, and is filled with teams or squads (referred to as units) made up of infantry, vehicles, or crew served support weapons available to the Battle Group. There are a maximum of 15 unit slots in the Active Roster. However, not all 15 slots may be available to the Battle Group.

The units are organized into three platoons (each column of 5 slots representing a platoon). Platoons consist of either infantry (with field infantry, infantry AT (having anti tank capability), machine gun, light mortar or engineer units, vehicle (such as tanks, halftracks, armored cars, etc.) or support (platoons that can be filed with any type of unit).

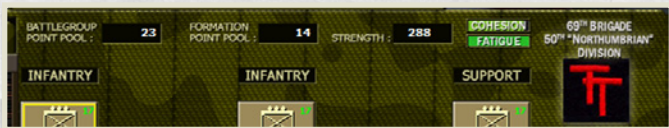
The mix of platoons for a Battle Group depends on the type of Battle Group. Infantry, mechanized infantry, parachute, and engineer Battle Groups have two infantry platoons and a support platoon; while armor and recon Battle Groups have one vehicle, one infantry, and one support platoon.

Just above the Active Roster are the displays for the Battle Group Point Pool, Formation Point Pool and current point Strength. Also, at the top of the screen are the indicators showing whether the Battle Group is fatigued or has lost cohesion because of previous fighting.

Left-clicking on any of the units listed displays the unit's Experience Level, Morale and armament in the bottom panel, as well as giving you a chance to rename the unit.

9.2 FORCEPOOL

The Forcepool of a Battle Group (displayed to the left of the Active Roster) represent all of the fighting units available to the Battle Group. The Active Roster displays the units selected to fight in the Battle Group. The Forcepool displays those units of the Battle Group that are not currently engaged in combat. Units can be traded between the Forcepool and Active Roster (see discussion in 9.2.1).



9.2.1 BATTLE GROUP POINT POOL

Each Battle Group has been allotted a point pool with which units can be selected from the Forcepool. Units that can be selected are displayed in highlighted text font. Those in greyed-out font are not available for selection because there are insufficient points or because there is no unit slot they can be selected for (for example, a tank with no more slots in the vehicle or support platoons).

Units can be traded between the Active Roster and the Forcepool. To change your unit mix in the Active Roster, you must double-click on a unit to remove it, thus returning it to the Forcepool. Next, you must select a new unit from the list of available units in the Forcepool on the left hand side of the screen by double-clicking on the unit in the Forcepool. There are two numbers shown to the right of the unit's description in the Forcepool that represent the unit's value (point cost) and the total number of that unit available in the Forcepool. The number of Battle Group points available will determine the final unit mix.

Note: Battle Group strength points are affected by the difficulty level. The allocations are: Recruit (140 percent); Green (120 percent); Line (100 percent); Veteran (80 percent); and Elite (60 percent).

The point value you will get for returning a unit is shown in the upper right corner of the unit icon on the Active Roster. If the number is green, the unit is uncommitted and the number shows the full value of the team. If the number is red, the unit has been committed to the Battle Group's active roster and the number shown is 50% of its full value.

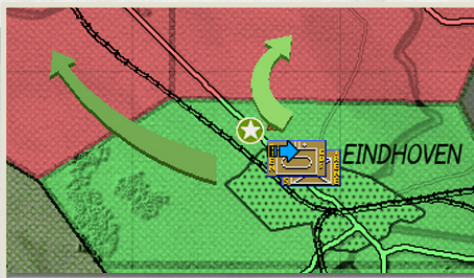
Note: A unit is 'committed' to the Battle Group's active roster as soon as it has been in a battle. After a unit has been committed you will only get 50% of the point value if you return it to the Forcepool. An uncommitted unit can be returned to the Forcepool for its full point value.

Note: Removing a squad from your active roster will erase its history, including any experience bonuses or medals it has earned

Group). However, it can borrow teams from the second Battle Group (the reserve Battle Group) that lies beneath the frontline Battle Group. You can toggle which Battle Group's Forcepool you are drawing teams from by clicking the Forcepool tab at the top of the Forcepool list. The points for the borrowed team come from the reserve Battle Group's point pool. If both Battle Groups are from the same formation, the reserve Battle Group can also use points from the formation point pool.

Depending on the size of the Battle Group, a platoon may have less than the maximum 5 slots available. A very weak infantry Battle Group may have a 4 unit slots infantry platoon in the first column, no unit slots at all in the second column, and 2 unit slots in a support platoon in the third column. Unit slots that are not available will be marked with a graphic that says UNAVAILABLE across the unit slot.

In situations where two Battle Groups are stacked on the same map, only one Battle Group does the fighting (the frontline Battle



If the borrowed team survives the battle it is automatically returned to the reserve Battle Group's Forcepool and 50% of its point cost is returned to the reserve Battle Group's point pool.

Having a reserve Battle Group may increase the number of slots available to the platoons of the front line Battle Group. Slots available for use by only one of two Battle Groups will be greyed out when drawing from the Forcepool of the other Battle Group.

If you swap out teams at the Battle Group screen when two Battle Groups are present, the purchase points are always refunded to the Battle Group they came from, regardless of which Forcepool you currently have selected.

9.2.2 FORMATION POINT POOL

The Formation Point Pool represents the available points to the Battle Group from the Parent Formation. The Parent Formation is displayed in the upper right corner of the screen. The Parent Formation represents the Battle Group's higher headquarters. An additional pool of points is shared among all the Battle Groups under the same Parent Formation.

9.2.3 BATTLE GROUP STRENGTH

The strength of a Battle Group represents total points of all the units in the Active Roster.

9.3 RENAME BUTTON

The button marked Rename allows you to rename the selected team.

9.4 REMOVE BUTTON

The button marked Remove allows you to remove the selected team. When the selected team is removed, the next team in order of platoon precedence is selected. It may then be removed by clicking Remove again. This can be repeated until all teams are removed.

9.5 ADD BUTTON

When a team is selected in the Forcepool and there is an open slot in the Battle Group screen the Add button appears in place of the Remove button. Clicking the Add button will fill an empty slot in the Battle Group with the selected team. To change the type of team to fill empty slots, simply select a different team by left-clicking on it in the Forcepool list.

9.6 REVERT BUTTON

The Revert button resets the Battle Group Active Roster to the computer-selected unit mix when the Battle Group screen was first displayed.

9.7 EDIT OPPONENT

The button marked Edit Opponent allows you to set the opposing side's Battle Group's team strength and composition. It is only selectable when playing in single player mode.

9.8 VIEW MAP

The View Map button lets you preview the map with your area of deployment highlighted. The enemy deployment area is shown in a darker shade.

10.0 SOLDIER SCREEN



The button marked Soldier takes you to the Soldier Screen. The Soldier Screen shows the Health, Morale, Leadership, Intelligence, Strength, and Experience for each soldier in the unit, as well as accumulated achievements such as kills, medals, acts of bravery, or acts of cowardice.

10.1 HEALTH

Health represents the physical status of the soldier.

10.2 MORALE

Morale indicates the willingness of a soldier to fight on. Soldiers with high morale are braver and are more willing to face danger than men with poor morale. Leadership represents the

ability of a man to improve the morale of the men around him and to keep his team together. However, when a unit leader with a high leadership level dies, it can have a devastating effect on unit morale.

10.3 INTELLIGENCE

Intelligence reflects how likely the soldier is to go berserk or panic in a fire fight. Intelligent men are less likely to make such fatal errors.

10.4 STRENGTH

Strength determines how quickly the soldier becomes fatigued when moving, and affects how severe his wounds are if he is shot. The stronger the man, the longer he can keep going.

10.5 EXPERIENCE

Experience is vital for a soldier and can affect a wide range of his abilities, ranging from how good a shot he is, to how well he can hide himself in Ambush, or how well he conserves ammo. More experienced soldiers do just about everything better than green troops.

Each soldier also has his kills and achievements listed as a cumulative total in Operations and Campaigns.

The button marked Previous takes you back to the command Screen so you can select another Battle or exit the game.

11.0 BATTLEFIELD SCREEN AND OTHER CONTROLS

11.1 BASIC UNIT ORDERS

Right-clicking on any unit brings up a popup menu listing possible orders for that unit. These orders are: Move, Move Fast, Sneak, Fire, Smoke, Defend, and Ambush. Order options that a unit cannot perform are marked. For example, a tank that has blown a tread can neither Move, Move Fast nor Sneak. An order may then be selected by left-clicking on the order option. If you change your mind and do not wish to issue an order, either right or left-clicking on the map removes the popup menu. Orders may also be given by hot key commands once the unit is selected.



11.1.1 HOT KEY ORDERS

All orders can also be given by hot key commands. To give an order by hot key, left click on the unit, then press the appropriate key.

Z	Move
X	Move Fast
CSneak
V	Fire
B	Smoke
N	Defend
M	Ambush

11.2 MOVEMENT ORDERS

Units have three movement commands: Sneak, Move, and Move Fast. When the movement order is selected, place the cursor where you want the selected unit to go and left click. If you wish to cancel the movement order during this phase hit Backspace on your keyboard or Right Click your mouse. A colored dot appears on the map marking the unit's destination. The unit attempts to reach its destination by whatever movement type you have selected. The color of the dot corresponds with the type of movement order given.

Move	Blue
Move Fast	Purple
Sneak	Yellow

Once created, the destination dot can be dragged to another location by left-clicking and holding the left mouse button on it. When a moving team reaches its destination, the destination dot disappears and a voice cue and text message announce the completed movement. After carrying out a MOVE or MOVE FAST order, the team assumes Defend status in the direction of its movement. When a team sneaking reaches its destination it assumes Ambush status in the direction of its movement.

Move – The MOVE order is represented by a blue line stretching from the selected team being issued the order, to an invisible cursor. The white numbers at the end of the Move line measure the distance in meters from the team to that point on the map. Scroll the mouse and left click to place a blue Move dot on the map location intended as the team's destination.

When the Move dot is placed the team will advance toward that point in a tactical manner. The team's rate of movement is affected by the terrain it crosses en route. Moving teams may initiate combat and assault if the opportunity presents. Moving teams are much more vulnerable to enemy fire than stationary teams or teams moving covertly.

A team carrying out a MOVE order will most likely stop and seek cover if it comes under effective fire.

Move Fast – The MOVE FAST order is represented by a purple line stretching from the selected team being issued the order, to an invisible cursor. The white numbers at the end of the Move

Fast line measure the distance in meters from the team to that point on the map. Scroll the mouse and left click to place a purple Move Fast dot on the map location intended as the team's destination.

When the Move Fast dot is placed the team will advance toward that point as rapidly as possible. The team's rate of movement is affected by the terrain it crosses en route. Moving teams may initiate combat and assault if the opportunity presents. Teams moving fast are more vulnerable to enemy fire than moving teams.

A team carrying out a MOVE FAST order will most likely continue to it's destination if it is relatively close otherwise it will stop and seek cover if it comes under effective fire. This is the most reliable way to get teams to move if under fire.

Sneak – The SNEAK order is represented by a yellow line stretching from the selected team being issued the order, to an invisible cursor. The white numbers at the end of the SNEAK order line measure the distance in meters from the team to that point on the map. Scroll the mouse and left click to place a yellow SNEAK dot on the map location intended as the team's destination.

When the SNEAK dot is placed the team will advance toward that point as cautiously as possible. The team's rate of movement, literally a crawl, is affected by the terrain it crosses on route. Teams sneaking do not initiate combat or assault if the opportunity presents. Teams sneaking are more vulnerable to enemy fire than stationary teams.

A team carrying out a Sneak order will most likely stop and seek cover if it comes under effective fire.

11.3 VEHICLES

Vehicles are not stealthy (particularly tanks). However, a sneaking tank is at maximum watchfulness and at its slowest speed. Vehicles, unlike infantry teams, will initiate combat in Sneak mode. A tank on the move is somewhat faster and slightly less observant. A tank that is sneaking or moving attempts to maintain its original armor arc as much as possible. For example, a tank that is facing the enemy could be ordered to back up using the Sneak or Move command.

Tanks ordered to Move Fast turn to face their destination and then move there at maximum possible speed. Tanks can fire while following any movement order, although their rate of fire decreases as their speed increases.

11.4 INDIRECT PATHS/WAYPOINTS

Rather than move in a straight line, it is possible to order infantry and vehicles to follow an indirect route. Routes are determined by setting waypoints. To set waypoints, right



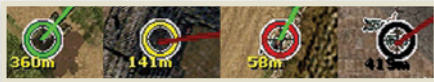
click on a unit as normal and determine which type of movement, then press and hold the shift key and plot the path you wish the unit to take. Each number represents a point the unit passes through on its way to its destination. When you have completed your path, release the shift key and the unit proceeds as ordered. You can place a total of 20 waypoints. Set waypoints can also be selected and dragged to alter a unit's path.

11.5 FIRE

While your soldiers are capable at firing on their own initiative, it is often useful to direct their fire. The Fire option brings up a targeting circle. The targeting circle is connected to the firing unit by a colored line.

When the circle is not sitting above an enemy unit, it appears as a thin white circle. When placed on an enemy unit the circle either turns green, yellow, red, or black. This color corresponds with the chance that a shot will kill the enemy unit.

Green	100-60%
Yellow	59-30%
Red	29-10%
Black	9-0%



When deciding whether or not to order a unit to Fire, it is important to consider the situation. If a unit is laying down suppression fire, it doesn't have to actually kill the enemy to have the desired effect. On the other hand, a small Bazooka team waiting in ambush while an armored column approaches had better wait for a killing shot.

11.6 LINE OF SIGHT AND RANGE

The color of the line connecting the targeting circle to the firing unit indicates line of sight.

For direct fire weapons, the line is light green for clear lines of sight, dark green for lines of sight obscured by foliage, smoke, or darkness (but the team can still fire towards the target with greatly reduced accuracy), and red for lines of sight that are completely blocked. Infantry line of sight is determined for each soldier individually, so enemies visible to one soldier might not be seen by another.

For indirect firing weapons, the connecting line is orange for targets in line of sight and brown for targets beyond line of sight. Teams that fire indirect weapons, such as mortar squads, do not need line of sight to fire at their targets. However, having line of sight greatly increases the accuracy of indirect fire.

The number by the targeting circle represents the distance from the firing unit. This distance is particularly important for infantry whose anti-tank weapons and flamethrowers have short effective ranges. The distance number by the targeting circle also indicates range effects.

Green	Within effective range.
Yellow	The distance is too close or too far away; the weapon has reduced effectiveness.

Red The weapon has even less effectiveness than the Yellow range.

Black The distance is too close or too far away for the weapon to fire at all.

If a line of sight is obstructed, a white number appears along the targeting line indicating the range to the obstruction. If a line of sight is partly obstructed by foliage, and then completely blocked further along, both ranges are indicated.

Partial obstruction by foliage or smoke prevents the attacker from specifically targeting enemies, but the firing unit can lay down fire in the hopes of suppressing the enemy or getting lucky.

11.7 SMOKE

There are times in battle when the ability to conceal yourself from the enemy, even partially, can be the difference between survival and death. Vehicles and infantry on both sides are often equipped with smoke grenades. Units hiding behind smoke are harder to detect, and if they are detected it is impossible to target them specifically. Smoke has roughly the same effect as partial obstruction by foliage; units may still Fire in a general area behind smoke in the hopes of suppressing the enemy.



Note: It is not impossible to target teams behind smoke. However, the chance of hitting the target is greatly reduced (as in the dark green line of sight condition mentioned in Section 11.6).

The Smoke command brings up a targeting circle for firing smoke grenades. Mortar teams can lay down smoke virtually anywhere on the map, a standing soldier can throw smoke grenades 30 meters, and a prone infantryman can throw 15 meters.

Some vehicles and artillery have the ability to fire smoke rounds, which can reach out to the weapon's maximum range. If a unit has smoke rounds, the Smoke command is available on the unit menu. Some vehicles have smoke dischargers and/or smoke mortars. These work in the same way as smoke rounds.

Units, both tanks and infantry, often use smoke on their own when they come under sudden attack in an attempt to screen themselves from enemy fire.

11.8 DEFEND

Units that have been ordered to Defend stop, seek whatever cover is available, and engage any target of opportunity. When ordered to Defend a blue arc appears above the unit; this indicates the direction of facing. To change the direction of defensive facing, left click the highlighted arc; a blue circle appears above the unit. Move the cursor to the arc, drag the arc to the point on the circle that you wish the unit to face, and left click again. Anti-tank guns and tanks rotate to face that direction and infantry seeks cover defending from that direction. Defending units engage enemies not in the blue arc, but only if those enemies are very close. Units that are defending will fire on targets of opportunity that they have at least a reasonable chance of killing. That's equivalent to a yellow or green targeting circle.



Defend is the default setting for tanks. When not under specific orders, tanks Defend the area in front of them.

11.9 AMBUSH

Ordering a unit to Ambush is similar to the order to Defend. As in Defend the units stop in place and seek cover, but ambushing units only attack when an enemy comes within very close range. When a unit is ordered to Ambush a green arc appears above the unit. This works in the same way as the blue arc in the Defend order. To change the direction that the unit is ordered to ambush, left click on the green arc, move the arc to the desired facing, and left click again to release.

It is vital for any successful commander to understand the importance of the Ambush order. Infantry are generally far more effective at close range, and many anti-tank weapons are more effective from the side or rear. Keeping bazooka and concealed anti-tank guns hidden until the right moment can be critical to success.

11.10 GROUP ORDERS

Orders may be issued to multiple units at the same time. To select the units to be given orders, left click on the screen and drag the cursor. This creates a darkened area on the map; release the left mouse button when all the units you wish to order are inside the darkened area. A second way for a group to be formed is to hold down the shift key and then left click on each unit you wish to give an order.

Any order given to one unit is given to all selected units. If ordered to move, they attempt to maintain



their current relative positions when they reach their destinations. Remember that if you give the order to Fire, line of sight is individually determined for each unit, and for each soldier in each unit.

Once created, up to 9 groups can be saved into memory by pressing CTRL (1-9) while the group is selected. To later recall the group press the corresponding number (1-9) without pressing CTRL. If the number is pressed a second time it centers the map on the group.

To end giving orders to multiple units, simply create a darkened selector box around a single unit and issue a new order, or left click anywhere on the map (but not on a unit) .

12.0 OTHER CONTROLS

When first on the Battlefield Screen, the game is suspended because combat has not yet started. This allows time to survey the battlefield, place units, set options, and plan tactics.

12.1 ARTILLERY, MORTAR AND AIR STRIKES

If available, Artillery, Mortar and Air Strike support can be selected from the icons on the tool bar on the lower left side of the screen. A new targeting crosshair appears; left click on where you want the air strike or mortar/artillery barrage to occur. It is important to remember that once a Artillery and Mortar barrage or Air Strike is used, it is not available for the rest of that engagement.

Air strikes are only available during day light h battles. Air Strikes are carried out by a single plane making one pass over the target area. The type of plane is randomly determined from a list of available aircraft to each side.

The plane comes from a randomly determined direction and strafes and/or drops bombs in the target area. Air Strikes are not available at the start of the battle, but become available 5 - 12 minutes into the battle for the Allies and 8 - 12 minutes for the Germans.



Note: During the battle and when the air support becomes available, the type of air support is stated on a text line in the Combat Messages.

GERMAN PLANES

- Me-109**..... Machine guns, 2cm cannon
FW-190..... Machine guns, 20mm cannon, 3.7 cm cannon, and 1 large bomb

ALLIED PLANES

Mitchell (B-25)..... 50 cal machine guns or 20 mm cannon and 6 large bombs
RAF Spitfire..... 20 mm cannon and 303 cal machine guns,
RAF Typhoon..... 20 mm cannon and 8 rockets

Artillery and Mortar barrages are called in the same way Air Strikes are. Mortar barrages consist of four 80mm mortars, all firing at once. A battery of mortars fire between 40 and 60 rounds. Like a Battle Groups' on-map mortar fire, mortar barrage fire is not always accurate, so be careful not to call in mortar fire that would not endanger your own troops. If it is available during a battle, a mortar barrage appears after 0 - 2 minutes for both sides.

Artillery barrages are called in the same way as mortar barrages and consist of four long range guns all firing at once, indirectly, from an off-map firing position. This battery of guns fires between 10 and 20 rounds. Like a Mortar Barrage, an Artillery Barrage is not always accurate. So, similar precautions need to be taken.

12.2 Night Time Battles

Close Combat: Last Stand Arnhem can simulate night time conditions. Players will be able to distinguish between day and night battles by noting the turn indicator at the left hand side of the Strategic Screen, as well as noting the presence of the flare icon on the lower left side of the tool bar. Also note that the Battle Screen is darker when the battle commences. During the day time, an air strike symbol will be displayed; whereas during night time a symbol representing a flare will be displayed.



During the night time, the battlefield map will be darker than during day light hours. Whenever artillery or mortar rounds land and explode, the immediate impact area will be momentarily lit up.

Also, illumination flares will become available during night time battles (usually within 30 to 90 seconds from start of the battle). Flares will have the capability of illuminating a large area on the battlefield for approximately 30 seconds. Flares are available to both the Germans and Allies every 8 – 12 minutes into the battle. As in placing artillery or air support on the battlefield, click on the flare symbol and place it on the chosen spot on the map.

12.3 TRUCE OPTION

The Truce command offers the enemy a chance to call it a draw. If the enemy offers a truce you may accept by clicking the Truce button. If one side offers a truce and the other does not accept the offer, fighting continues. If a truce is agreed to, both sides may recover their wounded. The battlefield remains contested and in mixed control.

12.4 COMBAT MESSAGES

The Combat Messages window (lower right-hand corner of tool bar) informs you of the situation on the battlefield. If the message regards a unit, you may center the view on that unit by clicking on the message.



12.5 TEAM MONITOR



Team Monitor defaults as 'on' and displays all the teams on your side of the battle on the bottom of the screen and shows their current status. You may also select a team by clicking on it from this window. Team Monitor can also be toggled 'on' and 'off' with the F5 key.

12.6 MAP MONITOR

This is a miniature map of the battlefield that appears on the screen. This map may be repositioned on the screen by right-clicking and dragging it. Left-clicking on a portion of the Map monitor centers the screen in that location. The highlighted rectangle on the Map monitor represents the current screen. All of a player's viable units in their Battle Group and the spotted opposing army's units are shown with small blue and red squares. The Map monitor can be toggled with the F6 key.



12.7 SOLDIER MONITOR

This gives detailed reports on whatever unit is currently selected, showing the weapon type, ammunition level, and state of morale for every man in the unit. If a soldier has low morale or comes under fire, his current action can be very different from what you order him to do. The Soldier Monitor can be turned on and off with the F7 key. The Soldier Monitor may also be repositioned on the screen by right-clicking and dragging it.



Possible Morale States

- Healthy** Soldier is in good health and good spirits.
- Injured** Soldier is hurt.
- Incapacitated** Seriously injured.
- Dead** Someone back home is getting a telegram.
- Winded** Soldier is tired but able to recover with a short break.
- Fatigued** Soldier is completely exhausted and cannot act.
- Panicked** The soldier is losing it. His combat efficiency is dramatically diminished. He may calm down given time, but you might want to keep the squad around him until he relaxes.
- Broken** The soldier has stopped obeying orders and is thinking about making a run for it. As with panicked soldiers, he may calm down given time, and the presence of a battlefield commander and his unit may help bring him around.
- Routed** This soldier has decided to make a run for it; he cannot be recovered.
- Suppressed** The soldier is taking cover from enemy fire while firing back.
- Pinned** The soldier is taking heavy fire and is spending more time hiding than firing.
- Cowering** The soldier is staying put, keeping his head down, and will only fire occasionally.
- Stunned** An explosion has temporarily knocked the soldier out.
- Heroic** Soldier is feeling confident and is at an increased level of performance.

- Fanatic** More than confident, the soldier takes chances and is gunning for a medal.
- Berserk** The soldier feels invulnerable and attacks the enemy without fear. Such displays of fearlessness inspire those around him.

12.8 UNIT STATUS

Unit status takes up the bottom center of the screen. It shows the type of unit, what it is doing, the health of its men, and how effective it is against infantry and tanks at various ranges. The ranges denoted are 20, 40, 80, 160, 320, and 640 meters. The top graph marked AP represents effectiveness against infantry and the lower AT against tanks. The graph below demonstrates how an infantry squad can be highly effective against a tank, but only if they can get in at close range.

The Color of the faces indicates the status of the men in the Unit.



- Green** Healthy
- Yellow** Injured
- Orange** Incapacitated
- Black** Panicked
- White** Surrendered
- Red** Dead

12.9 OPTIONS

The Options button appears in the lower left hand corner of the map (and can also be activated by the F8 key). Options is made up of three panels, Game Play, General, and About. These can be selected using the tabs on the top of the screen.

The top two options on the Game Play Options control battlefield graphics. Remove Killed Soldiers removes the corpses of the dead so that you can concentrate on the living, and Remove Trees makes the foliage on trees invisible, although it still affects line of sight.

In the center of the Game Play screen, the Status Indicators control the highlighted bar and colored outlines of friendly units. These can be set to reflect any number of conditions, ranging from morale, to ammunition supply, to unit health. Set these to whatever you feel you need to know about your men.

Below the Status Indicators are toggles for:

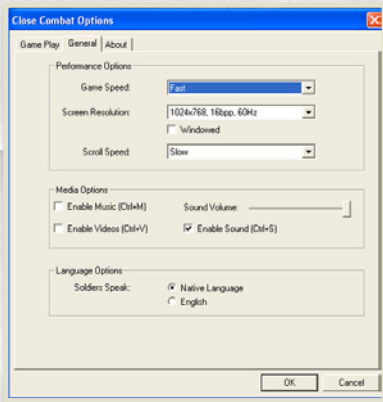
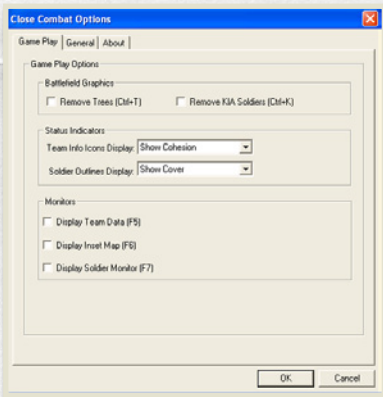
Team Monitor..... F5

Map Monitor F6

Soldier Monitor.... F7

The General screen contains controls for performance options, media options and language options. A new feature in the Media Options allows a player to adjust the volume level of the game's sound effects without having to leave the game to do it.

There is also a check box labelled Windowed in between the Screen Resolution and Scroll Speed settings. When the game runs in full screen mode, it completely takes over the display. To interact with other programs, you must minimize the game, which causes the game to pause. Windowed mode sets the game to run in a separate window. The size of the window will match the chosen



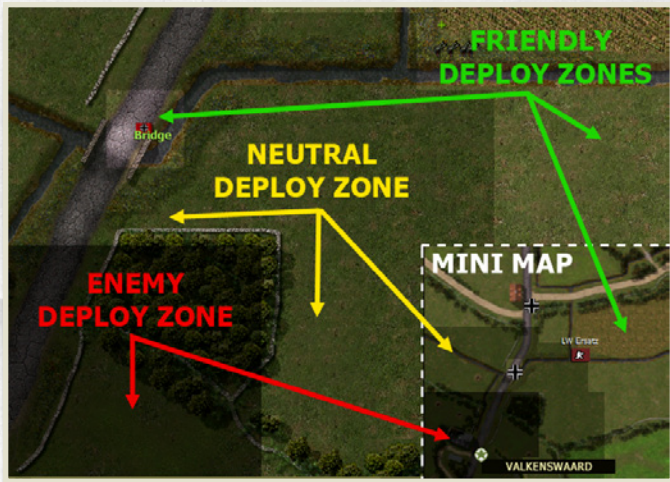
resolution (or size of the system resolution, if smaller). In Windowed mode, the game continues to run if the game window loses the focus. However, the game will automatically pause if the it's window is minimized.

In other words, the Windowed mode feature allows the player to switch from the game to another program (for example, a chat program or MSN messenger) while allowing the game to continue to play. It is activated by checking the Windowed box, exiting the game, and then restarting the game. Deactivation is a similar operation by un-checking the box, exiting and then restarting.

The About screen shows game credits and version information.

12.10 ZOOM CONTROL

Zoom control is in the lower left hand corner of the map beside the Options button. Aside from the default zoom option, the map can be zoomed out, at which point all units are represented by colored boxes. While it is generally easier to control the game from the default zoom level, the zoomed out map is often useful for planning initial unit placement or to get a brief glimpse of how the battle is progressing. One of the best uses for the maximum zoom out level is to check the areas affected by your command teams. The Space Bar shows the command radius of each command unit, making it easy to see which unit is benefiting from officers and who is not.



13.0 COMMAND AND MORALE

While each unit has some kind of officer or non-com who leads the troops into battle, each unit's fighting effectiveness and morale is improved by being close to a higher ranking commander, who can direct the efforts of those men under his command. Keeping battlefield commanders near units on the front improves performance and morale dramatically. The higher ranking a commander the larger the area of battlefield he is able to administer. Pressing the Space Bar on the Battlefield Screen shows the command radius of command units. The color of the circle indicates the quality of the commander.



Green	High
Yellow	Medium
Red	Low
Black	Very Low
No Circle	No Leadership Effect

During the placement phase and during battle, it is often useful to zoom out the map and make sure that your commanders are positioned to provide leadership to the troops.

As a battle progresses, some soldier may lose morale. Receiving enemy fire, having their officers die, being flanked or ambushed, or being around too many dead bodies, can all sap a soldier's will to fight. Eventually a soldier may panic, run from the fight, or even surrender to the enemy. Convincing enemy troops to surrender by breaking their morale can be a very efficient way to win battles.

Aside from competent command, you can improve soldiers' morale by successfully ambushing the enemy. Infantry that manage to destroy enemy tanks also get a large morale boost.

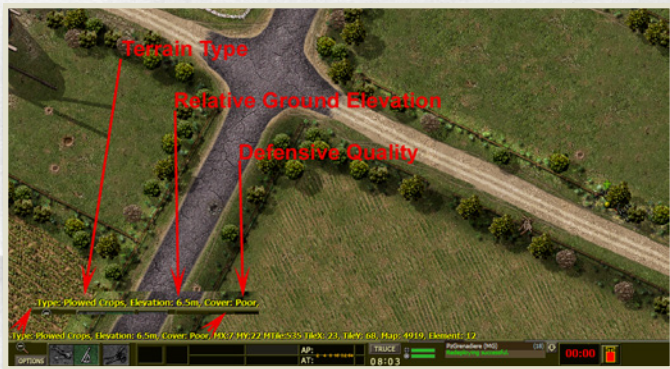
13.1 RALLYING AND SEPARATION

Soldiers that are routed will rally after a time. If they are within the command radius of a command team, this time period will be shorter. If the broken soldier is not within the command radius of a leader, the time needed to rally the soldier will be longer. Also, occasionally a soldier may get separated from his unit. This can happen from either panic or simple fortunes of war. If this happens, the soldier attempts to find his way back to his unit. This process can be hastened by moving the unit closer to their lost man. The presence of a commander can also assist in keeping groups together and bringing in separated men.

Note: Artillery and vehicle crews that abandon their gun or vehicle will automatically attempt to flee the battlefield and cannot be rallied.

14.0 THE BATTLEFIELD

In many cases, the terrain of a battlefield can be the best resource a commander has. A clump of trees, an abandoned house, a gully, or a drainage ditch can all be powerful tools if used in the right way. By right clicking and holding down the mouse button with the cursor over a terrain feature, a player can assess the relative ground elevation and quality of the terrain for defense. These details are displayed along the bottom of the Battlefield screen.



14.1 HILLS

Holding the high ground is an old military maxim and it does have its benefits. Units on top of hills can see over obstacles, giving them a good view and line of sight. Also moving uphill slows units down and moving downhill is generally faster. This is useful if you don't want enemies to

reach you, or to make a quick get away. However, perhaps the most useful trait of hills is that hills block line of sight. Units can hide behind hills to avoid detection and to protect their flanks. Defensive units on the reverse slope of hills can engage attacking enemy units as they come over the hill while being protected from the enemy's direct supporting fire.

14.2 GULLIES, TRENCHES, AND GUN PITS

While units cannot cross deep water, shallow water can generally be crossed. Depressions in the earth left by running water can also serve as excellent natural protection. Gullies and trenches conceal soldiers and make them harder to hit, but they can become death traps if the enemy can flank the position and fire down the trench. Gun pits are circular trenches dug for small calibre artillery and anti-tank guns. In Campaigns or Operations, if a Battle Group does not move for a turn they are considered to be "Dug in". If a "Dug in" Battle Group is attacked, any artillery or anti-tank gun it places in the open automatically starts in either a trench or a gun pit.



14.3 FORESTS

Forests provide something of a mixed blessing. Troops moving through forests have a great deal of cover. Tree trunks block fire, and the foliage of the trees prevents units from being specifically targeted. This cover works both ways, so units have a hard time firing out of forests. This unusual nature makes forests a



natural place for flamethrowers, which can use the cover to approach the enemy. The ability for infantry to hide in forests make them dangerous place for tanks, and tanks should avoid forests unless absolutely necessary. Vehicles also risk damage from moving through forests or trees. Remember that the CTRL+T command can be used to hide the foliage of forests. The foliage is still there and affects the game, but it makes it much easier for the player to see units.

14.4 BUILDINGS

The key to understanding how to use and deal with buildings is that buildings are incredibly useful to units inside them, particularly infantry. Building roofs provide cover from mortar fire, building walls provide good concealment and hard cover



from enemy fire, and tall buildings allow clear fields of fire over low-level obstructions. This makes them extremely valuable for infantry and Anti-tank gun units, and a menace to tanks. A tank on its own generally cannot detect infantry in a building until it is within Ambush range. A wise commander will go to great lengths to avoid putting a tank anywhere near a building that has not been checked out by friendly infantry first. When approaching, a building it is often useful to deploy smoke to allow units to advance without fear of detection. It is also good practice to Fire machine guns at buildings as your infantry approach to suppress any units that might be in the building.

Because anti-tank guns have limited mobility and are vulnerable to mortar fire, buildings are generally a good choice for placement. Unfortunately, placing an anti-tank gun in a building also tends to limit its field of fire. The size of an anti-tank gun that may be placed in a building can be limited by the size of the building

While all buildings conceal troops from the enemy, the stronger the building the more cover it offers from enemy fire. Wooden buildings provide no protection from cannon fire and only limited protection from other kinds of attacks. Stone buildings provide greater protection, and protect against small caliber cannon attacks. The purpose-built military installations that made up the Atlantic Wall fortifications provide shelter from all but the most punishing attacks.

14.5 RUBBLE AND ROADS

Rubble can be treated like buildings in most cases, but in the absence of a roof, mortar fire becomes a factor. Roads provide a simple trade off. Moving along a road is generally faster than slogging through snow or mud, but roads are, by their very nature, flat open places without obstacles to hide behind.

14.6 SCRUB AND BRUSH

Not every plant is a tree, and sometimes a bush is all that a soldier has to hide behind as he lies in wait for the enemy. However, once he is discovered, that soldier may find that a bush cannot stop a bullet. Brush covered areas also easily conceal infantry sneaking through these areas, and are also good positions from which an ambush can be sprung.

14.7 BRIDGES

The key to success in Operation Market Garden was the capture of key bridges and canals of Holland. Therefore, these structures are a prominent part of the battlefield. There are both road and railroad bridges that can be used by infantry and vehicles. Bridges can also be made useless by causing them to be blown up.



Note: If desired, the bridge girders can be hidden by hitting Ctrl+T (similar to hiding the tree canopy)

There are two classes of bridges, minor and major, which correspond to the size of the river or canal they cross. Major bridges cross large rivers like the Maas, Waal, and Rhine. Minor bridges cross canals and small rivers.

14.8 MINE FIELDS

Mine fields are used to defend areas and slow the attacking force without using valuable and vulnerable manpower. You do not place mine fields, they are automatically deployed if available in a battle. Mine fields can be detected by expanding out to maximum zoom level where mine fields are shown as red dots. Vehicle units crossing mines can be damaged or even destroyed. Infantry units moving through a minefield at any speed other than a crawl will likely suffer casualties by activating mines.

There are several ways to deal with mine fields. The fastest way is with a tank equipped with mine rolling or flail equipment (giant devices rolled on the ground in front of the tank or several steel chains attached to a roller to detonate mines before the tank passes over them). Mine roller or flail tanks are unusual pieces of equipment and their specialized equipment only detonates mines directly in front of the tank, making turning or backing up dangerous manoeuvres.

Engineer/Pioneer units are also skilled at removing mines. Engineers passing through a minefield, while ordered to Sneak, disarm any mines they come across. While they won't disarm the mines, other infantry types can Sneak across mine fields with only a small chance of detonating mines.

Finally, if all else fails, concentrated mortar or artillery fire can be used to detonate mine fields, but this is not a very efficient solution and some mines may be missed.

14.9 HEDGEROWS AND BOCAGE

When the Allied armies invaded Normandy, they discovered terrain features that they had not been trained to fight in. Hedgerows and bocage (the French term for farmlands bordered by hedgerows) consisted of dense wooded strips where a combination of trees, thickets, earth berms and tree roots had created a barrier virtually un-crossable by tank or halftrack. These terrain features have the following effects.



Soldiers – Movement through all hedgerow terrain is allowed. The bocage terrain is slightly more resistant to movement through than a small or large hedgerow.

Guns – Some movement is allowed through small or large hedgerow terrain, but there is much higher resistance to movement through that terrain compared to a grassy field, for instance. No movement or deployment is allowed in bocage terrain.

Vehicles and Halftracks – Movement through small or large hedgerow terrain is allowed, but, of course, there is greater resistance to movement for vehicles compared to a grassy field. No movement or deployment is allowed in bocage terrain.

Tanks – Movement through small or large hedgerow terrain is allowed, but, as with vehicles and halftracks, it is harder to maneuver than on a grassy field. There is no movement or deployment allowed in bocage terrain.

All guns, vehicles, halftracks and tanks have a chance to bog or get tracked on small or large hedgerow terrain.

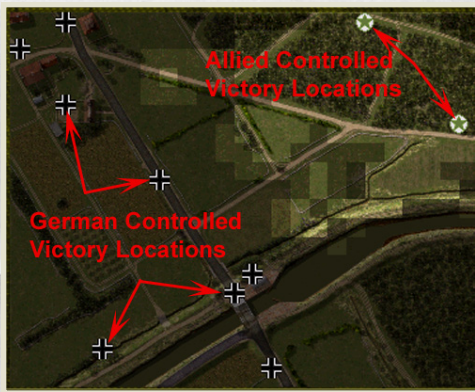
Also, bocage terrain will block LOS unless a unit is directly next to it.

15.0 ENDING A BATTLE

Battles can end in a number of different ways. In single battle games, many of these possible endings can be deselected in the lower right hand corner of the Command Screen.

15.1 VICTORY LOCATIONS

On each map there are a number of victory locations. Each victory location is marked with the flag of the controlling army and represents either important strategic locations (a map road exit is an example) or other points of political interest. If one side controls all victory locations on a map, the opposing force is given two minutes to recapture at least one location or be forced to retreat off the map (if the Two-Minute option is selected on the Command Screen). Victory locations controlled by neither side are represented by a split flag. To capture a victory location, move any unit (other than a sniper) to the location. Victory locations are also used to score a battle. Each victory location is worth between 1-3 points depending on its position and font size. Victory locations with larger fonts are worth more points. Victory locations along map borders are generally worth only one point.



15.2 TRUCE

A battle may be ended (before time has elapsed) if both sides agree to end it. To propose a truce, click the Truce button on the tool bar in the lower right hand corner. Only when both players agree to a truce is the fighting stopped. Once a truce is offered, you may accept by pressing the Truce button.

15.3 TIME

In battles with a time limit, the engagement ends when the clock runs out. It is recommended to set the timer to 15 minutes for best (single player) game play against the AI.

15.4 MORALE FAILURE

When you play an Operation or Campaign, either historical or one you have made with the scenario editor, the Force Morale end-of-battle option is always enabled. You may disable this function by checking the box on the command screen. For individual battles, either historical or self-made, the default setting for Force Morale is off.

The Operations and Campaigns that are included in the game have been designed to be played with Force Morale enabled.

Note: Be advised that disabling Force Morale will severely alter play balance when playing Operations and Campaigns.

If a battle ends because of a truce or time expired, the battlefield is still split between the forces. In Campaigns or Operations, the deployments for the following cycle are based on how far each side pushed during the previous battle. If a battle ends because of a morale failure, the Battle Group that flees loses 1-3 victory locations depending on the ratio of the winner's Force Morale to the loser's Force Morale. In addition, the Battle Group will lose two teams chosen at random from its force mix as a rearguard/breakout force loss penalty. If the victor has 33% more force morale than the loser, the winner will gain one victory location. If the ratio is between 33% and 66% the victor will gain two victory locations. If the ratio is greater than 66% the victor will gain three victory locations. If the fleeing side still has any victory locations left, the field continues to be split based on previous positions; otherwise, the losing side is pushed off the map.

If a Battle Group is pushed off of a map, and there is an unoccupied, friendly map that it can move to, the Battle Group will retreat to the available map. If the Battle Group is able to retreat it is unable to move next turn as it regroups. If it cannot retreat, it is disbanded. If the Battle Group was still in supply when it was disbanded, there is a 75% chance that each team makes it back to be added to the Battle Group's Forcepool.

If one side destroys all enemy units, they hold the field, and the enemy Battle Group is disbanded. This very rarely happens because the losing side generally flees from morale failure first.

15.5 BLOWN UP BRIDGE

Historically, the destruction of a bridge was the last resort of a retreating army, and would only be done to prevent the enemy from capturing an intact bridge. In Close Combat: Last Stand Arnhem, if a bridge is blown up, the battle will immediately end. The defending player (in most cases the German) must concede the map to the opposing player and retreat to an adjoining map controlled by the defending player.



Battle Groups defending a map with a blown bridge will retreat, and static (German) Battle Groups are lost from the game.

15.6 DEBRIEFING SCREEN

When a battle ends the Battle Debrief Screen appears. This screen indicates which side won, why they won, and what areas they controlled on the map at the end of the battle. The non-shaded portions of the map indicate areas that ended under your control. It also shows the casualties and tank/vehicle/gun losses sustained by each side.

LAST STAND ARNHEM VALKENSWAARD DEBRIEF

BATTLE DEBRIEF OPERATIONAL DEBRIEF

MINOR AXIS VICTORY

FORCE MORALE:
 ALLIES: ██████████ 80%
 AXIS: ██████████ 20%
 TOTAL VIL CONTROL: ██████████ ██████████

AXIS	KILLED	INCAPACITATED	PRISONER	ALLIES	KILLED	INCAPACITATED	PRISONER
LEADERS:	0	0	0	LEADERS:	0	1	0
INFANTRY:	3	9	0	INFANTRY:	1	2	0
	DESTROYED	DAMAGED	CAPTURED		DESTROYED	DAMAGED	CAPTURED
ARMOR:	0	1	0	ARMOR:	0	0	0
VEHICLES:	0	0	0	VEHICLES:	0	0	0
GUNS:	0	0	0	GUNS:	0	0	0

TEXT

SOLDIER SAVE AS COMMAND NEXT

On the left side of the Debriefing Screen, there is a display representing the Force Morale for both Allied and German Battle Groups upon completion of the battle. Force Morale is a

post battle measure of the ability of the Battle Group's individual units (infantry squads and support weapons) to rapidly execute the orders given. Battle Groups that have sustained heavy casualties will have reduced morale, and thus may not perform effectively in future battles unless rested.

The Details button on the lower left hand side of the screen changes the debriefing screen to show specific casualty figures for both sides. The Text button returns to the original screen.

The Soldier button (described in Section 10.0) allows you to see how your individual soldiers performed in battle. Use the Next Team button in the lower left hand corner of the screen to cycle through your units.



The Campaign Debrief tab at the top of the screen brings up a map of the campaign or operation area showing the regions each side controls, and listing the current Campaign score. On the left side of the screen, the overall cohesion of the participating Allied and German Battle Groups is shown, as well as a relative measure of Victory Location control by each army. An army's cohesion is similar to measuring its morale. You can toggle between the Text or Details on the Campaign Debrief screens. The Details lists the total losses incurred on each side during the entire campaign or operation.

When you are done viewing the battle results, the Next button advances you to the next battle or strategic turn.

16.0 TACTICS

16.1 SUPPRESSION

Suppression is the term used to describe the fact that people keep their heads down while they are being shot at. A soldier desperately seeking cover is not shooting at the enemy.

Typical suppression strategy is to have one or two units fire on the enemy while another unit advances closer. When the advancing unit has reached its position, a unit further back moves up. With their rapid fire and large ammunition supplies, machine guns are excellent at suppressing enemy troops, and mortar attacks can force advancing infantry to hit the dirt without exposing your troops at all.

Take this example: You want to attack an enemy building that contains a force of enemy troops and you have a machine gun team and two infantry teams to attack with. After setting up in a suitable location, the machine gun can open fire on the building. Both infantry units would want to fire as well. This large volume of fire would keep the enemy away from doors and windows. After a few seconds, one of the firing infantry units would move up then resume firing, allowing the second infantry unit to also move up. By switching off, both infantry units can approach the building in relative safety.

When suppressing the enemy, be careful not to walk your own troops into the line of fire. Soldiers can be accidentally killed by friendly units.

16.2 FLANKING

Flanking describes any attack made from a direction that the enemy is not facing. Units that are being shot at from more than one direction have a hard time finding cover and quickly lose morale. Units being flanked also have a difficult time returning fire when attacked from multiple directions.

Take the previous example: A flanking attack would begin with suppression fire as previously described, but instead of the leap frog movement of the infantry units, one infantry unit would move to the side of the building. Once in position it would open fire.

Flanking is not only a powerful tool against infantry, but in many cases can be the only way to deal with the thick frontal armor of enemy tanks.

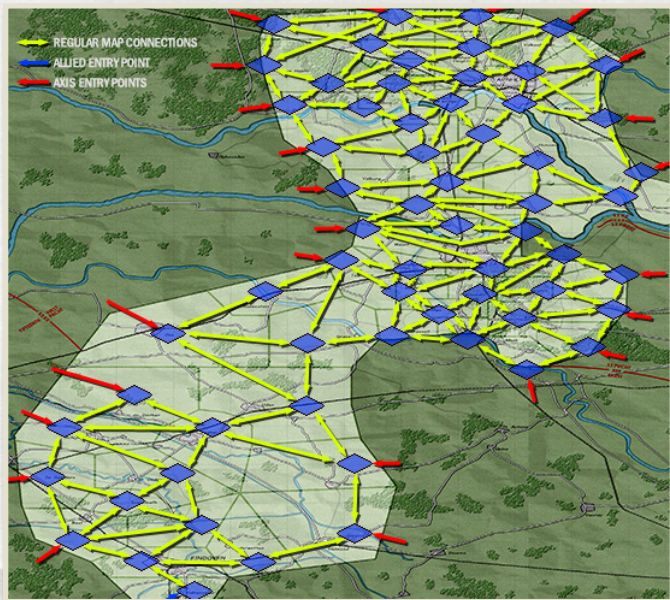
17.0 STRATEGIC LEVEL

The Strategic screen controls the movements of Battle Groups for Operation and Campaign play. At this level, you determine the battle plan, not for squads of men on the battlefield, but for the campaign itself. Each of the Battle Groups represents the much larger military units that fought in Operation Market Garden. The result of a Battle Group in combat represents the success or failure of the entire formation.

Brig. General James Gavin, Commander of the 82nd Airborne Division, had reservations about the Market Garden Plan. As he noted in his daily diary...."It looks very rough. If I get through this one I will be very lucky."

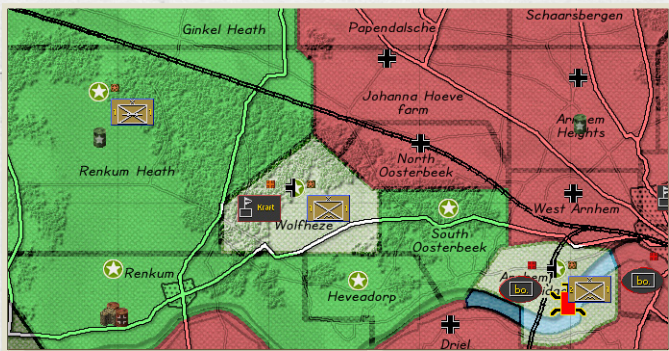
17.1 THE STRATEGIC MAP

Pictured below is the Close Combat: Last Stand Arnhem operational area with map connections and showing German entry maps (the red arrows). A larger printable version of this image is available in your support folder.



The Strategic Map shows the general region that Operation Market Garden was fought over. The game covers from September 17, until September 26, 1944. During a particular Campaign or Operation, some or all of the Strategic Map may be available. Each available map has a colored diamond in its center. The configuration of this diamond denotes who controls the map or if that map is currently contested. It also shows where supply depots are. Maps are connected by roads. A Battle Group cannot move to another map, unless a road connects them and they control the victory location connected with the road they are leaving from.

Allied Control	White Star on Green
German Control	Black Cross
Mixed Control	1/2 White star 1/2 Black Cross.
Allied Supply Depot	Green Barrels
German Supply Depot	Red Barrels



Friendly, and detected enemy, Battle Groups are visible on the Strategic screen. You can look at any Battle Group by left-clicking on it. This displays the units that make up the Battle Group on the task bar at the bottom of the screen. Click on any unit in the Battle Group to examine the Soldier screen for that unit.

Allied and German Battle Groups also show a star or cross above them. The color of this icon displays the approximate relative firepower of each Battle Group.

Green	Strong anti tank (AT) and anti personnel (AP)
Yellow	Moderate AT and strong AP
Orange	Moderate AT and AP
Red	Weak AT and moderate AP
Black	Very weak AT and weak AP

Units with low firepower are best used defensively, to prevent enemy advance, while your stronger units attack. Even the heaviest armored column can be held at bay by a properly led infantry group.

17.2 WEATHER AND GROUND CONDITION INDICATORS

At the top left hand corner of the Strategic Map is the weather indicator showing the current weather for the strategic turn being played. Below the weather indicator is the current ground condition for the strategic turn being played (either wet or dry). Weather at the strategic level affects the availability air support. Ground conditions have an effect on the movement of vehicles in terrain such as a field due to mud. The worse the weather, the less air support and air re-supply available.



17.3 STRATEGIC TURN INDICATORS

Below the Ground Condition Indicator are the Strategic Turn Indicators showing the Start Date and End Date for the operation or campaign and the time of day for the strategic turn. Depending on the settings of the scenario, it is possible to choose six time settings for each day (0000 - midnight, 0600, 0900, 1200, 1500, and 1800). Clicking on the arrows next to either the current day or time of day indicators move time forward and backward to show where/when reinforcement Battle Groups are scheduled to arrive on the strategic map. The dates run from September 17, to September 26.

17.4 BATTLE GROUPS

Battle Groups are depicted on the strategic map with symbols indicating their type; infantry, parachute infantry, mechanized infantry, recon or armor. As mentioned in Section 9.2.1, a Battle Group can vary in the number of units they contain. Two Battle Groups can be stacked on a map; the top one being the frontline Battle Group, the underlying one being the reserve.

17.5 STATIC FORCES

Static Forces are a special type of German unit that represent local security or garrison troops that happen to be in the area and get caught up in the fighting during the Allied airborne assault. They are depicted on the strategic map by a smaller, oval shaped icon.

Static Forces only have the units available in their active team slots. They have no Forcepool to draw from, and do not have or use purchase points. Static Forces will automatically be absorbed into any friendly Battle Group that moves onto the same map, and its teams will be transferred to the Battle Group's Forcepool.

Note: Static Battle Groups cannot be moved from the map they start on to another map, and cannot receive strategic level air, artillery or mortar support. Also, they are lost from the game if a bridge is blown up since they cannot retreat.

17.6 REPAIR AND REPLACEMENT

Tanks that have been damaged and infantry units that have taken losses are able to make some repairs in the field and find replacements, respectively. All damaged tanks are assigned for field repair after each battle. 40% of damaged tanks can be made functional, but the rest are either too damaged for repair or are scrapped for parts to repair the 40% that survive.

Any infantry unit that has 50% or more of its soldiers killed or seriously wounded is disbanded, and its survivors are either sent to other units or rotated to the rear. Infantry units that take less than the 50% losses are assumed to find replacement men from disbanded infantry units or from new men brought up from the rear.

Scrapped tanks and disbanded infantry units must be replaced from the unit's reserve Forcepool.

Note: Repair and resupply occurs at the end of every strategic turn.

Replacements do not strictly come forward from "rear" areas. They are also supplied from the larger organization which your Battle Group belongs to. Even when surrounded, your Battle Group can receive replacements because it is assumed they are being sent over from company or division HQ, which has been surrounded along with your Battle Group.

Battle Groups out of supply have reduced chance of repairing damaged vehicles or replacing infantry losses.

After a battle, units with less than 50% personnel strength are automatically returned to the Forcepool, and their soldiers are used to fill out losses in other teams. If enough soldiers from low strength teams are left over (i.e. not needed to fill out other units in the Battle Group) they are grouped together to form reduced strength teams (4 man ad-hoc / ersatz rifle teams, or 2 man light machine gun teams) that are added to your Forcepool automatically.

A Battle Group will recover about 20% of its maximum unit purchase points every turn, though a low cohesion will reduce the number of points regained. Successfully resting a Battle Group will increase the number of points returned, in addition to restoring Battle Group cohesion.

Note: Critically weak Battle Groups that lose their last team due to being under 50% strength, and that cannot field even one team from their Forcepool to replace it, are automatically disbanded during the repair and resupply phase. This generally only happens to Static Forces.

17.7 RETREAT

Battle Groups will retreat when routed from a map (due to morale failure) only under the following circumstances:

- » The battle ends because of a force morale failure;
- » The losing Battle Group holds at least one exit Victory Location when the battle ends;
- » The exit Victory Location(s) held by the losing Battle Group is connected to an empty map controlled by friendly forces; and
- » The losing Battle Group has lost all its Victory Locations because of the force morale differential.(the difference between force morale of the winning and losing Battle Groups).

If all these criteria are met, the losing Battle Group will retreat by one of the available exit Victory Locations to an adjacent map. If not, it is forced to disband. Battle Groups that retreat can't move on the following strategic turn. Battle Groups can also retreat via an exit location that leads off the strategic map. For Allied units, the only such exit is 'from Muese-Escat Canal' on Valkenswaard. All other off-map exit Victory Locations are German controlled.

Also, a Battle Group will be forced to retreat when it is defending a map that contains a bridge that is destroyed by that Battle Group.

Battle Groups that retreat off the strategic map will try to re-enter at 0600 during the following day's strategic turn.

17.8 DISBANDING

Battle Groups are disbanded whenever they are forced to leave a map, and can't retreat, either through loss of victory locations or from morale failure. A disbanded Battle Group becomes unavailable for the remainder of a campaign or operation. However, some teams/units from a disbanded Battle Group may be absorbed into nearby friendly Battle Groups as long as they are under the same parent formation.

If you have only one Battle Group remaining you may not willingly disband it.

17.9 REFORMING AND REINFORCEMENTS

Reinforcement Battle Groups are Battle Groups that arrive after the initial strategic turn of a campaign or operation (this can be after any following night or day turn). In pre-generated or user created Campaigns and Operations, the Battle Group arrives on a pre-designated map.

If the Reinforcement Battle Group is trying to arrive on a designated map, but cannot because there was another friendly Battle Group on the map, it finds the closest open "friendly" supply depot to it's initial deploy map and deploys there.

The units available to the Battle Group will be dependent on Forcepool reinforcements. There are units that are added to the Battle Group's Forcepool by the AI. These reinforcements arrive on a specific day and time (including night time), and may be dependent on the Battle Group being in supply from a specific level of supply source (limited or full). These reinforcements could be lost if the Reinforcement Battle Group does not have that level of supply at the exact time required.

17.10 SUPPLY

Note: If a supply depot is enemy controlled, the Battle Group attacks onto the map.

Battle Groups receive fuel and ammunition from friendly supply dumps. A Battle Group can receive supplies from any friendly dump that it can trace a path back to that dump by passing through only friendly, uncontested territory. This is its line of supply. If you cut it (occupy a map in that path), you can drastically reduce the combat effectiveness of the Battle Group you have cut off. A Battle Group that has been cut off is described as "out of supply." For each turn that

Note: There is an "incoming supply" indicator on the current ammo and fuel gauge for a Battle Group. It's code is; ++ for full supply (recovers 2 levels per turn); + for limited supply (recovers 1 level per turn); and X for out of supply..

an unsupplied unit engages in combat, it drops one supply level in ammunition and fuel. Loss of ammunition supply reduces ammunition starting levels during battles. Loss of fuel won't affect tanks immediately. However, once fuel supplies reach Low, there is an increasing chance that each vehicle begins each battle out of fuel and thus immobile.



Supply State	Fuel Level Effect	Ammunition Level Effect
High (green)	Normal	100% Optimum
Normal (green)	Normal	80% Optimum
Low (yellow)	30% Chance for vehicle immobility	60% Optimum
None (red)	.60% Chance for vehicle immobility	30% Optimum

Note: A Battle Group in supply starts with a maximum fuel and ammunition level of 3 for each. As the Battle Group moves and fights, fuel and ammunition expenditure per strategic turn is as follows:

- » If a Battle Group fights, it uses 1 ammo level.
- » If a Battle Group moves or fights, it uses 1 fuel level.
- » If a Battle Group can trace supply to a major depot, then it regains 2 fuel and 2 ammo level (to the maximum level allowed)
- » If a Battle Group can trace supply to a minor depot, then it regains 1 fuel and 1 ammo level (to a maximum level of 2 for each).
- » If a Battle Group gains uncontested control of an enemy major depot, its fuel level goes to the maximum; however, its ammo level is not affected.
- » A Battle Group's re-supply by air-drop allows it to regain 3 fuel and ammo levels.
- » An armored, armored infantry, and recon Battle Group with zero fuel cannot move on the strategic map.

A Battle Group that is out of supply and low on fuel can capture fuel from enemy supply dumps. To use enemy fuel, the Battle Group must occupy the dump; once it leaves the dump, the fuel supply starts to diminish as normal. Enemy supply dumps only provide fuel on site; no supply line is created. Enemy supply dumps do not provide ammunition.

In addition to loss of supplies, Battle Groups that are out of supply have a more difficult time replacing infantry losses and repairing/replacing tanks and vehicles. Battle Groups whose ammunition supply reaches None only replace infantry or repair damaged vehicles 75% of the time..

Note: Allied airborne Battle Groups are automatically considered to drop with enough supplies that they are in minor supply for the day they drop and all the next day.

Note: Armored, armored infantry and recon Battle Groups cannot move to another map at the strategic level if they have run out of fuel..

17.11 STRATEGIC TURNS

Each strategic turn represents several hours of fighting. There can be as many as six strategic turns over the course of a day.

During each strategic turn, you may move each Battle Group you control, and assign air strike, artillery and mortar support, or air re-supplies available to you. If you feel it necessary, you may also disband any Battle Groups. When you have finished your strategic moves and assignment of support, hit Execute...this

Note: The game is capable of having one night turn for each day as well.

brings up the Strategic Results screen. The game is automatically saved at this point. After reviewing the results of your decision, you play out any resulting battles in an order set by the game.

17.12 BATTLE GROUP ORDERS

A Battle Group has the option of attacking, being moved, relieved, rested, merged with another Battle Group, disbanded and supported by an air strike, artillery and mortar barrage, or air supply drop. These orders are accessed by right clicking on a Battle Group icon and choosing the desired command; Attack, Move, Relieve, Rest, Merge, Disband and Support. To trigger any one of these orders, simply click on the word in the list. Clicking on the word again will cancel any order as well.

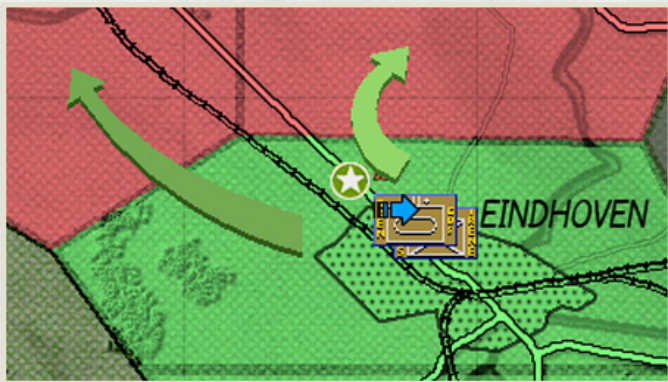


17.12.1 ATTACK

Attack is a movement order that means 'move to the destination map and engage the enemy.' The player uses Attack to indicate that they want the Battle Group to become the frontline Battle Group when it reaches the destination map. Only one Battle Group can be attacking a map at a time. If you issue an Attack movement order to a map that already has another friendly Battle Group attacking it, the previous Attack order is automatically changed to a Move order. If an attacking Battle Group is engaged by an enemy Battle Group before it can move, it will become the frontline Battle Group on its current map. The Attack movement order causes slightly more fatigue and loss of cohesion than the Move order.

17.12.2 MOVE

By left clicking the Battle Group icon, a yellow border will appear around all adjacent maps. The yellow boarder is thicker for those maps that the Battle Group may move to. When you have decided where you want to move your Battle Group, right click on the icon and choose Move from the orders list. Then click on the map the Battle Group is to be moved to. Movement arrows will then appear to remind you of where you have ordered the Battle Group to move to. Battle Groups on uncontested maps may move along any connecting road. On maps that are of mixed control, you may only move along roads for which you hold the victory locations.



Although you can order as many Battle Groups as you want to move onto the same map, only a maximum of two friendly Battle Groups can occupy a map. If you issue movement orders that would result in more than two friendly Battle Groups sharing the same map, the first two Battle Groups to arrive will complete their move. Any additional Battle Groups will not be able to execute their movement orders and will remain in their starting location. The sequence of movement for friendly Battle Groups is random. Therefore, there is no way to guarantee which of your Battle Groups will be the first (and second) on to the map.

Note: Each side is allowed to have up to two Battle Groups on each map at a time. The two Battle Groups may be independently moved to different maps. The frontline Battle Group (on top of the stack) has a lighter color arrow to indicate its ordered movement than the movement order (and corresponding arrow) for the reserve Battle Group underneath.

A Battle Group that is not ordered to move will automatically prepare trenches and gun pits. If movement is ordered, but cannot be carried out (because of conflicting movement orders), no trenches or gun pits will be prepared.

All movement on each turn happens simultaneously. If two adjacent enemy forces move at each other, the battle occurs on the map of the slower Battle Group. Armor groups are faster than mechanized groups, and mechanized groups are faster than infantry.

Note: It is possible for more than one unit to use a road, so units may switch maps.

Battle Group speed rankings are; 1) Recon (fastest), 2) Armor & Mechanized Infantry, 3) Allied Infantry, 4) German infantry (slowest). If the German and Allied Battle Groups are

the same speed, the tie goes to the Germans, and the battle is fought on the Allied map.

When you are done making your moves and have assigned any support options, you may finalize your orders with the Execute command which takes you to the strategic results screen so you can see the result of your movement orders.

The Strategic Results screen indicates the outcome of the moves for the turn and if any battles are to occur. To fight the battles listed, or to advance to the next strategic turn, left-click on Next. The order in which the battles are fought is from north to south and from west to east.

17.12.3 RELIEVE

This orders the reserve Battle Group (the one on the bottom of the stack) to relieve the front line Battle Group (the one on the top of the stack) and takes over the frontline position. This swap happens instantly.

17.12.4 REST

This orders the Battle group to try to rest and regroup in order to recover morale and dig in. The Battle Group will not be able to rest if there is a hostile Battle Group on the same map unless the other Battle Group has also been ordered to rest. If both sides have a Battle Group on a map and both choose to rest their Battle Groups, no battle will occur for that turn.

If a rested Battle Group is attacked, it defends its map from prepared positions. When an infantry or support unit is placed on an open stretch of ground, a trench or gun pit is placed under them that provide cover where none existed previously. These fortifications are permanent, and appear on the battlefield in future battles. Enemy troops are unaware of field fortifications until they have a line of sight. So what may appear to an attacker as an open field on a map could actually be a vast network of enemy trenches.

Infantry trenches are dug based on the unit's facing, so it is important to establish facing before clicking Begin.

17.12.5 MERGE

This orders two Battle Groups that occupy a single map to merge into one Battle Group. The larger of the two Battle Groups absorbs the smaller one. If they are equal in size, the one with the best commanding office absorbs the other. Merging Battle Groups moves all teams from

the absorbed Battle Group into the Forcepool of the absorbing Battle Group. Merging Battle Groups may increase the number of available team/unit slots, as long as the combined Battle Group is significantly stronger than the original ones.

The actual merge does not occur until you Execute movement orders for the strategic turn. A merge cannot be interrupted (even if there is a hostile Battle Group present on the same map), and occurs before any tactical battle on the map.

17.12.6 DISBAND

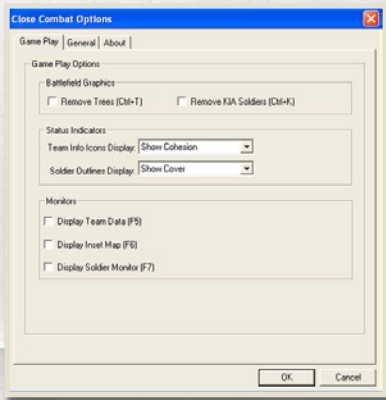
This orders a Battle Group to voluntarily disband (see Section 17.7 for a discussion of how a Battle Group is disbanded after a battle). A Battle Group will not actually disband until the execution of the strategic movement orders occurs.

17.12.7 SUPPORT

This order adds or removes available air strike, artillery and mortar, and air supply support from a Battle Group.

17.13 AIR STRIKES AND ARTILLERY/MORTAR SUPPORT

Air Strikes, and Artillery and Mortar support are available from buttons on the left-hand side of the strategic map screen. The number by the support option indicates the number of support missions available each day. It is important to remember that there are multiple strategic turns in a day. If Artillery or Mortar support, or an Air Strike is assigned, but not used during a battle, the unused support mission is available for use later that (strategic) day. The Battle Group icon will indicate the support assigned to it. Artillery, Mortar and Air Strike support is assigned to Battle Groups, not to maps. A Battle Group may have all three support types available for a battle, but never more than one of each.



During the night time turns of an operation or campaign, if the player has received a fire support allocation, no new fire support allocations are available until a new morning (day light) turn.

Artillery support is generally available, but limited in the following ways:

- » Some maps are out of the firing range of friendly artillery...even considering that it moves forward. You cannot allocate artillery support to a Battle Group on, or moving to, one of these maps.
- » Some Battle Groups are part of a formation that has integrated field artillery. These Battle Groups can be allocated artillery support even if they are out of supply. The British XXX Corps and German II.SS Panzer Korps are the only such formations in the stock grand campaign.
- » Battle Groups that are not a part of XXX Corps or II. SS Panzer Korps can receive artillery if they have a clear supply line to a full supply depot, or they are adjacent to a Battle Group that has a clear supply line to a full supply depot.
- » It is more plentiful at lower difficulty levels (Recruit and Green) and less plentiful as you increase levels (Line, Veteran and Elite). The maps where artillery is available will highlight when you select the artillery support icon.

17.14 AIR SUPPLY

Fuel and ammunition levels drop quickly for Battle Groups that are out of supply. However, these cut-off Battle Groups can still be supplied by an air drop. Air Supply support is assigned and removed in exactly the same way that air strike, artillery and mortar support is assigned. Battle Groups that receive Air Supply have their ammunition and fuel levels reset to high. It should be noted that when using the historical weather option, Air Supply drops are intermittently available. Also, note that an air drop is less effective if an enemy Battle Group occupies the same map as the receiving Battle Group..

17.15 INTELLIGENCE

When on the Strategic Map Screen, you are usually unable to see the enemy. On a clear day, Allied forces can see which German Battle Groups occupy maps within Dutch countryside. Otherwise, the only enemy Battle Groups you can detect on the strategic map are ones that you have fought with during the previous turn.

17.16 WEATHER

Weather affects the availability of Air Strikes and Air supply. Generally, the clearer the weather, the more support that is available. Pre-generated scenarios use the historic weather conditions, User created scenarios can opt for historic, random, or clear weather effects.

17.17 BRIDGE DEMOLITION

A bridge can start primed for demolition, or the Germans can prime the bridge by moving a Battle Group onto the bridge map. Static Forces cannot prime a bridge. If the Allies gain control of a bridge map, any demolitions are automatically removed.



When a bridge is primed for demolition the Germans can blow it during a tactical battle. There is a timer that indicates the time necessary before the bridge is fully primed and ready to be blown.

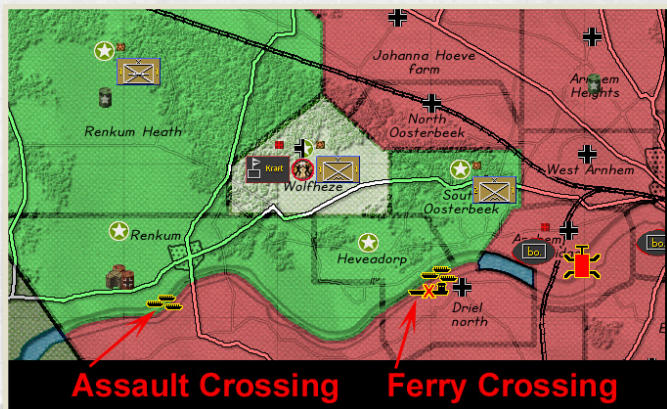
The attempt to blow the bridge can fail if the Germans don't control all the bridge VLs. Minor bridges usually just have 1 VL, and major bridges have 2 or 3. Due to the historical situation in Close Combat: Last Stand Arnhem, blowing any bridge was a last resort for the Germans, and would only be done to prevent the Allies from capturing the bridge. To reflect this, if the Germans blow a bridge in Close Combat: Last Stand Arnhem, the battle ends and the German forces retreat off the map. Battle Groups (or Static Forces) that cannot retreat are disbanded. So, the German player needs to evaluate when they want to blow the bridge (and only do it as a last resort).

Once a bridge is blown, the Germans retreat off the map and the Allies capture the entire map. The Allies will be able to set up infantry teams anywhere on the map in subsequent battles, but guns and vehicles will be restricted to the side of the map they could access from the Battle Group's original entry point without crossing the (destroyed) bridge.

If the Allies have a clear supply line to a major supply depot, Allied engineers will automatically start to repair the bridge. Minor bridges take 2-3 turns to repair, and major bridges about 6 turns. Repairs proceed as long as the supply line is open and the Allies control all of the bridge VLs. If the Germans are able to take control of any bridge VLs they can destroy the repair work and force to Allies to start over (after they recapture all the VLs).

While a major bridge is down, Battle Groups cannot exit the map in a way that would require them to cross the river. To cross a major river without using the bridge they will have to use a ferry crossing or assault crossing. Infantry, Airborne, and Engineer BGs can improvise a crossing of a minor river or canal, even when the bridge is out, and thus can leave the map with the blown bridge in any direction. Armored, Armored Infantry, and Recon BGs cannot do this. If a Battle Group improvises a crossing of a destroyed minor bridge, they will lose all guns and vehicles in their active team slots (they're returned to the Forcepool) and will not be able to field any guns or vehicles from their Forcepool until they are able to achieve a supply line equal to what they had before they made the crossing (or at least a supply line to a minor supply depot).

17.18 FERRY CROSSINGS



Note: A ferry crossing site (even for a destroyed ferry) can be used as an assault crossing site as well, even if you don't control both sides. A red 'X' over the ferry icon indicates if the player's Battle Groups can currently use one or both methods to cross a water way.

Ferry crossings are a special type of connection between two maps. In Close Combat: Last Stand Arnhem, they exist between Heveadorp - Driel North and Pannerdon - Doornenburg. To use a ferry you must have full control the maps on both sides of the ferry (i.e. no enemy units are present on either map). Any type of Battle Group can use the ferry, but only one Battle

Group per turn can use it. If there is a battle on either map involved in the ferry crossing, the ferry is considered destroyed and no one can make a ferry crossing there for the rest of the game.

17.19 ASSAULT CROSSINGS

An assault crossing site is a special type of connection between two different maps on opposite sides of a river (similar to a ferry crossing site). In Close Combat: Last Stand Arnhem where an assault crossing can occur are Weurt – Waal North Bank and Heteren – Renkum. Ferry sites can also be used as assault crossing sites. An assault crossing can be made by Infantry, airborne, or engineer Battle Groups only. To execute an assault crossing, you need to have a clear supply line to a major supply depot and you need to have assault crossing support available (as indicated under the other support icons on the strategic screen). You can only make one assault crossing per (24-hour) day. Only one Battle Group can make the assault crossing. Once a Battle Group makes an assault crossing, it will return any active gun or vehicle teams to its Forcepool, and will not be able to field guns or vehicles again until it is able to re-establish a supply line.

17.20 WINNING CAMPAIGNS AND OPERATIONS

User created Campaigns and Operations continue until the pre-determined ending date, or until one side has complete control of all usable maps. If a strategic layer game ends because of time out, then each side totals points for every victory location on every map in the scenario and the army with the most points wins.



Remember, each victory location is worth between 1-3 points. The only exception in scoring is during the Grand Campaign in the Campaign section. When playing the Grand Campaign against the AI, your score is not based on total victory location points, but on how your army does in comparison to how each side performed historically. In a Grand Campaign contest with a human player, your campaign victory is determined by your score.

17.21 STRATEGY TIPS

If an enemy advances, attempt to cut off his route of supply. Units with diminished ammunition supplies are far easier to deal with, and a battle group forced to disband while cut off takes heavy losses. In the same light, avoid allowing your troops to be cut off if at all possible.

Remember, on the battle map, that if the fight ends in a truce or time out, the army who controls the Victory Locations associated with the a road exit from the map can use that road to move to another map. If you assign Artillery and Mortar support or Air Strikes to a unit early in the day, and you appear to be winning the battle without calling on the support, keep them in reserve. Unused Air Strikes, Mortar and Artillery support missions are returned to you for use later during the same day.

18.0 SCENARIO EDITOR

18.1 THE MAP

The Scenario Editor is an easy to use feature that allows you to design your own single battle, campaign or operation. It is strongly suggested that you become familiar with the strategic screen and play the pre-made campaigns before designing your own. When designing a campaign or operation, every map that will be played on must be contiguous to each other. There should be a possible path from every map to every other map. Avoid unconnected map islands. Each side must also have at least one supply depot for any campaign or operation.

If you create a scenario with only one map, this will automatically become a single battle scenario. When you start a single battle from the Command Screen, you go directly to the Battle Group screen and then to the battle itself. The scenario is complete after the battle is over and you exit the debrief screen.

An operation is a scenario involving two or more connected maps, with a limited date range and a small number of Battle Groups for each side. A campaign is also a scenario involving two or more (usually several) connected maps with a date range up to the maximum time allowance and several Battle Groups for each side involved.



The Map Screen shows the entire Operation Market Garden strategic map. However, all of the map location boxes (the blue diamond shapes) are blank. Left click or right click on a location to rotate forward or reverse through all its possible control and supply conditions to select the desired condition.

The possible starting states are:

Allied control	no supply depot
German control	no supply depot
Split control	no supply depot
Allied control	Allied major supply depot
German control	Allied major supply depot
Split control	Allied major supply depot
Allied control	German major supply depot
German control	German major supply depot
Split control	German major supply depot
Allied control	German minor supply depot

German control	German minor supply depot
Split control	German minor supply depot
Allied control	Allied minor supply depot
German control	Allied minor supply depot
Split control	Allied minor supply depo



The tool bar at the bottom of the screen that displays the available dates for campaign or operation contains two sliding markers, one at each end of the 10-day time scale. These represent the starting and ending days of your campaign or operation. To create a campaign or operation scenario, follow these steps:

- » Slide the left bracket to the date you want the scenario to start on. When you release the bracket over a date / turn that becomes the first turn in your scenario.
- » Choose the maps you want to use by clicking on a map diamond to set the active map(s) and initial map control and supply conditions for your scenario.
- » Slide the right bracket to the date / turn you want to be the last turn played in the scenario. If you release the bracket over a date / turn, that becomes the last playable turn in your scenario.
- » Drag and drop Battle Group icons onto the map diamonds to place them on the map. The Battle Group will arrive on the currently selected turn. You can select the current turn by clicking on the date and then the turn (during that day) to set the current day / turn. This allows you to have reinforcements arrive during different days of the campaign or operation.
- » When more than one Battle Group is placed on a map on the first turn, the first Battle Group icon placed will be the frontline unit and the second one will be the reserve unit. Battle Groups designated to enter play after the first turn are considered reinforcements and may arrive in a different order than placed, depending on the situation on the strategic map at the time.

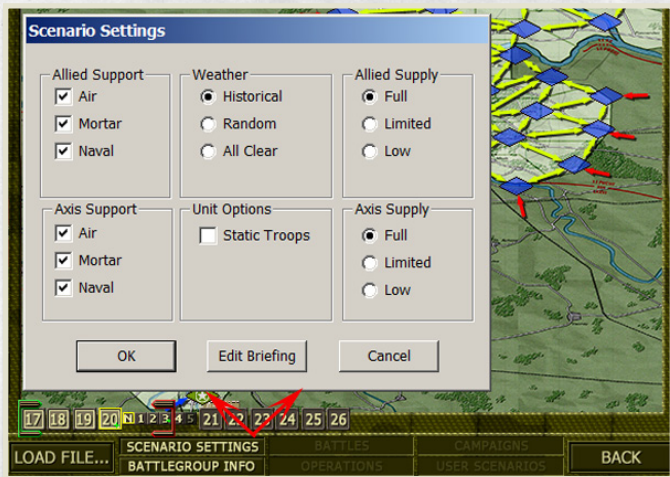
Note: Single battles do not have a time length, so you don't need to set the right bracket position. You can set the turn to any turn of a given day.

Once you have selected the Battle Groups you wish to appear, you can set the levels of available supplies and support for each side. This affects ammunition and fuel

levels for each side. For instance, a setting of Low supply there is a chance for tanks and vehicles to be out of fuel during each battle

When looking at the Scenario Editor map, you will only see the units that first appear on the day that is currently selected.

To place a Battle Group, left click on it, and then drag it to the map you wish it to start on. Remember that each side can have up to two Battle Groups on a map. Each side must have at least one Battle Group appear at some time during the campaign or operation.



You can also set the availability of mortar, (off-map) artillery and air support, as well as the weather and initial supply conditions, from the buttons on the pop-up screen. To activate the top up screen, click on the Scenario Settings tool bar button. When you are done, you may save the scenario you have created.

Scenarios that consist of just one map are Battles. Scenarios which contain both multiple maps and/or multiple Battle Groups are Operations or Campaigns. In all cases, multi-map battles require all maps included in the scenario to be contiguous, in other words, you must be able to trace along a road from any map in the scenario to any other map in the scenario. Any map left unclaimed is inaccessible to the user once the game has started.

18.2 EXAMPLE BATTLE

Suppose you want to create a Battle with the Germans defending the Oss map during daylight hours on September 19th. Click on the Oss map twice, turning it into a German controlled map and move the two date bars so that the 19th is lit. Slide the date bars to bracket the time

during the day for the desired battle. Then click on an German Battle Group you wish to have defend from this list of available units, and choose an Allied attacking Battle Group and drag it to the map. Click on the Scenario Settings to set support and supplies (the default setting for support and supplies is Full). If you want the defenders of Oss to be short on supplies you can lower their supply level. You must also change the weather if you want conditions different than Historical.

Now all you need to do is save the game. A pop-up window appears asking for the name of the battle, as well as a short description. Once you've named and saved it, this battle is available on the command screen under the User Scenarios listing.

To create Operations and Campaigns, all you need to do is add more maps, giving each side at least one supply depot, and more Battle Groups. Remember that you can have Battle Groups appear on the strategic map after the first day by clicking on the date you want them to appear and then dragging them to a map. There is a green arrow partially obscuring the date the units are appearing.

19.0 MULTIPLAYER

19.1 CONNECTION

To help coordinate Internet connections you can use Instant Messaging, Email, Websites, Fax, VOIP or Telephone to arrange online multiplayer Close Combat: Last Stand Arnhem sessions. Two players can connect over the internet, or by LAN, to play Close Combat: Last Stand Arnhem.

One player must act as HOST and communicate his IP address to the CLIENT player. It is recommended that the player with the fastest upload connection speed act as HOST. In general, cable modem

Note: A connection to the Internet or LAN is required.

internet service has faster upload speed than DSL which is faster than dial-up internet connections.

19.2 IP ADDRESS

19.2.1 EXTERNAL IP ADDRESS

- » There are web sites such as whatismyip.com and checkip.org that will display the user's current external IP address. Additionally, there are freeware applications such as Get My IP Address and IP Address Monster that will display the user's external IP address.
- » One of the easiest ways for the HOST player to determine his current external IP address is to start Close Combat: Last Stand Arnhem, click the Multiplayer button on the Command Screen, then click the HOST button

on the Multiplayer Screen. The Host's IP address will then be displayed in the lower left of the screen, to the right of the Search button.

- » It is important for a HOST player who accesses the Internet via a LAN, from behind a router or through a proxy server, to provide the JOINER players with his external gateway IP address. In such cases, when the HOST uses the Close Combat: Last Stand Arnhem Multiplayer Screen to determine his IP address there will often be two IP addresses shown, the local IP address followed by the external or gateway IP address. It is the HOST external gateway IP address that must be provided to JOINER players.

19.2.2 INTERNAL IP ADDRESS

The HOST player can determine his internal IP address by several methods.

One of the easiest ways for the HOST player to determine his current internal IP address is to start Close Combat: Last Stand Arnhem, click the Multiplayer button on the Command Screen, then click the HOST button on the Multiplayer Screen. The Host's IP address will then be displayed in the lower left of the screen, to the right of the Search button

Vista users Go to the start menu and type command in the box. Then right-click on Command Prompt and click Run as administrator. If a User Account Control window pops up, click Continue.

```

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

G:\Documents and Settings\Steve>ipconfig/all

Windows IP Configuration

Host Name . . . . . : admin
Primary Dns Suffix . . . . . :
Node Type . . . . . : Broadcast
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  . :
   Description . . . . . : Realtek RTL8139 Family PCI Fast Eth
   Physical Address. . . . . : 80-0E-85-E8-7E-03
   DHCP Enabled. . . . . : Yes
   Subnet Configuration Enabled. . . . : Yes
   IP Address. . . . . : 192.168.1.3
   Subnet Mask . . . . . : 255.255.255.0
   Default Gateway . . . . . : 192.168.1.1
   DHCP Server . . . . . : 192.168.1.1
   DNS Servers . . . . . : 192.168.1.1
   Lease Obtained. . . . . : Friday, March 22, 2002 9:33:17 PM
   Lease Expires . . . . . : Saturday, March 23, 2002 9:33:17 PM

G:\Documents and Settings\Steve>_
  
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At the C:\> prompt type ipconfig . Then press Enter. Your IP address, subnet mask and default gateway will be returned to you. If your IP address is 192.168.x.x, 10.x.x.x, or 172.16.x.x, then you are receiving an internal IP address from a router or other device.

Windows 2000/XP users can click the START button, click RUN, type -- cmd – in the RUN window and click OK. Then in the command line [DOS] window type – ipconfig – and press the Enter key.

Windows 98/ME users click Start, type – winipcfg – in the Run window, and then click OK.

19.3 FIREWALLS

Firewalls, Routers, Proxy Servers and Virtual Private Networks can interfere with multiplayer Close Combat: Last Stand Arnhem internet connections. Refer to the corresponding user

manuals for these types of hardware and software if you are experiencing difficulty establishing multiplayer Close Combat: Last Stand Arnhem internet connections. Websites such as portforward.com and HomeNetHelp.com offer further guidance in understanding and configuring Firewalls, Routers, Proxy Servers, Virtual Private Networks as well as solutions such as port forwarding and DMZ that may be required to enable multiplayer Close Combat: Last Stand Arnhem internet connections.

Close Combat: Last Stand Arnhem uses the following PORTS

- » UDP 6073 and the range UDP 2302 - 2400



Note: Be sure that both players have the same version of the game as well.

Multiplayer games operate by having one player, called the Host, start a game. The second player joins the game that the host creates. To play a multiplayer game, the computer that hosts the game and the joining computer must both have a copy of Close Combat: Last Stand Arnhem installed.

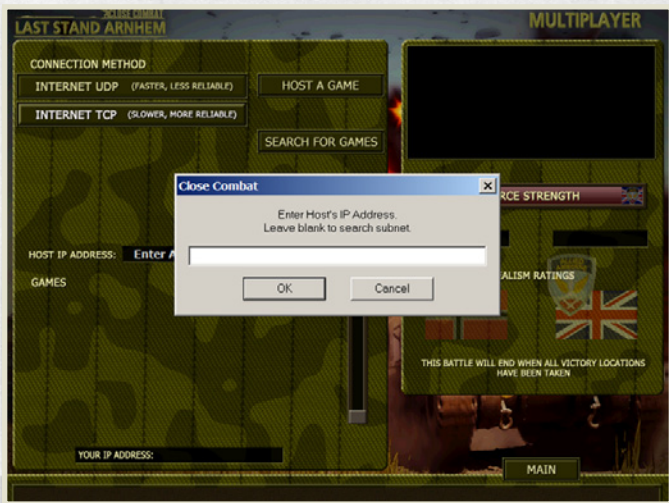
- » Internet TCP: Using this type of connection, you can play the game with another player over a LAN (Local Area Network), or over the Internet.
- » Internet UDP: Faster though slightly less stable than TCP, players may elect to connect over the Internet or a LAN using the UDP protocol.

19.4 USING A TCP CONNECTION

After both players have connected through their ISPs, both should select Multiplayer from the Main Screen. From the Multiplayer screen, select Internet TCP option.

If you are playing over a LAN, you can join any game listed. To join a game, left click on it, then left click on Join, or simply double click on the game you want to join. To get a current list of available games click the Search for Games button.

If you want to join an Internet game, select the Host IP button and enter the host's IP address. The host's IP address appears on the bottom of their screen. You need to find out from the host player what their IP address is. When you have entered the IP address and hit OK, you must then click on "Search for Games." Close Combat: Last Stand Arnhem will search the IP address for hosted games and display them under "Games." on the lower left of the screen. When you are done, select ready and wait for the host to start the game.



If you want to host the game, click on the Host A Game button. Your IP address appears on the bottom of the screen. You must inform the second player of your IP address so that they can join. The Next button is shaded out until both players select ready.



After electing to host a game the Select A Battle button takes you to the Command Screen where you can select the battle, operation, or campaign. If you are starting an operation or campaign be sure to decide on the Realism Rating settings.



When you have made your selections, select Next to return to the Multiplayer screen and Select Ready. When the second player has joined and selected Ready you can select Next to start the game.

19.5 USING A UDP CONNECTION

Other than selecting the different protocol, connecting with UDP is the same procedure as using TCP.

19.6 COMMUNICATING WITH YOUR OPPONENT

You can send messages to other players at any time. To send a message during play, click the CHAT button or press ENTER. Type in your message and then press ENTER. The message appears briefly on the other player's screen.

20.0 UNITS

The invasion involved hundreds of thousands of men using a wide array of weapons and vehicles.

20.1 INFANTRY

Light infantry: are armed with rifles and grenades. Because they are less encumbered, light infantry can travel good distances without becoming tired. This makes them well suited for attacking flanks and probing open territory.

Medium infantry: have rifles, grenades, and light automatic weapons like the BAR. Medium infantry are well rounded, in terms of both mobility and fire power.

Heavy infantry: have even more firepower, such as flamethrowers and demolition charges. Well suited to close combat, heavy infantry can also be quite effective against tanks if they can get close enough. Because of the heavy weight of their gear, heavy infantry are slow and can quickly become winded.

Snipers: are deadly long range shooters who work alone. They are more accurate at long range, are more likely to target enemy leaders, and are more likely to kill, but they have a low rate of fire. Snipers are easily suppressed once they are discovered and should switch positions regularly. Remember that the talent of a sniper is not in the amount of enemies he kills directly; by targeting officers and suppressing enemy troops at long range, he can sap enemy morale and reduce their efficiency. Snipers cannot capture victory locations.

Scouts: are used for infiltrating enemy lines to check deployments and set ambushes. They are quick and stealthy. They are faster and less likely to be discovered than average infantry. They are very effective at close range but not effective at long range. Scouts are particularly valuable in urban combat.

Infantry anti-tank: teams are armed with weapons like the Panzerschreck and the Bazooka. Infantry AT weapons generally have a low rate of fire, and limited ammunition. They are often only effective against the sides or rear of enemy armor. AT teams must use concealment and surprise to be effective.

BASIC INFANTRY TACTICS

During the Invasion of Normandy the ratio between infantry and tanks was hundreds to one. Infantry being the principal component of the battle, it is vital that you use them properly. Infantry are extremely vulnerable to virtually every other unit when in the open. They should always be kept under some kind of cover: buildings, trenches, forest, or smoke if necessary. When facing armor, infantry should assume Ambush positions and attack from the side or rear.

SECONDARY WEAPONS

In addition to their primary weapons, many soldiers carry secondary specialist weapons like explosive grenades, and demolition charges. The number of these weapons available for each unit is listed on the Battle Group screen. When the opportunity arises to use these weapons your soldiers do so automatically.

20.2 MORTARS

Mortar crews engage the enemy with indirect fire, lobbing powerful explosive shells great distances. While a mortar team is more accurate while firing at targets they can see, they are often best positioned well away from the front line where they can hammer enemy infantry and light vehicles from safety. Avoid setting mortars up directly under trees where branches might detonate a round right over the firing team.

The heavier a mortar is, the slower the rate of fire, but the more powerful the shell. Heavy and medium mortars are powerful enough to be used against buildings. Mortars can also lend vital support to friendly units by dropping smoke at great distance.

Mortars are also effective against light vehicles, particularly open topped vehicles such as half-tracks.

MORTAR TACTICS

A mortar is more of a tool than a weapon. It is important to understand that in most cases, the inaccurate nature of mortars make them only marginally useful at killing. Mortars are useless against any tank with an armored top and only kill an infantryman if the shell it launches lands very close. Aside from its immense power to suppress infantry, where the mortar shines is in destroying anti-tank guns in the open, and for dropping smoke anywhere on the map.

Nothing lessens the blow of enemy ambush like the power to shower your units in smoke while they pull a hasty retreat.

Anti-tank guns make good targets for mortars. anti-tank guns are un-armored, generally immobile, and need line of sight to return fire. When an anti-tank gun is detected in the open, it is often wise to pull your troops back and simply pound the gun until it is disabled. If the gun is defended by a building, dropping smoke in front of the building can temporarily disable it.

20.3 MACHINE GUNS

Machine guns are highly effective against infantry and light vehicles and are extremely effective at suppression. However, machine gun crews can only move their weapons slowly and require time to set up the weapon when they reach a new position. Because they are difficult to move and slow to set up, machine guns are often set up in buildings or other such cover locations to prevent them from being destroyed by mortar fire.

MACHINE GUN TACTICS

Machine guns are powerful weapons and are even more useful in that they generally do not require close supervision. Place machine guns in well protected areas, preferably with a roof and a wide field of fire, and they can work wonders against enemy infantry and light vehicles. Successful Ambush attack by machine guns can be devastating. If a machine gun draws the attention of enemy armor, it is definitely time to retreat.

20.4 FLAME-THROWER

These are very effective against both infantry and armor, but have a very short range and limited shots. They are heavy and slow moving, but don't require a setup period and can be fired on the run. As might be imagined, a flame-thrower tended to set fires. Troops with flame-throwers are extremely vulnerable and can actually explode if hit.

FLAME-THROWER TACTICS

Flame-thrower teams require a great deal of support from other friendly infantry. Their short range and vulnerability require either total surprise or that the enemy be well suppressed. When fighting armor, other infantry units can provide support to flame thrower teams by fixing the enemy's attention elsewhere.

20.5 ANTI TANK GUNS

Anti-tank guns are field pieces, modern cannons placed in the field to deal with enemy armor. Anti-tank guns are generally immobile, although smaller versions can be dragged about by their infantry crews. Inexpensive to produce but un-armored, Anti-tank guns require a mix of surprise and proper placement to be effective. Anti-tank guns can be highly effective against infantry, but are often better left hiding in wait for enemy armor that friendly infantry is unable to deal with.

ANTI TANK GUN TACTICS

There are two schools of thought regarding anti-tank gun tactics. The first school says that anti-tank guns should be placed on hills and in other places with wide views and wide fields of fire. This ensures that the anti-tank gun has a chance to target and hopefully destroy the enemy, but it also leaves the gun vulnerable to return fire or mortar bombardment.

The alternative school is to conceal anti-tank guns in buildings. This provides both concealment for the gun and protection for the crew. The downside to this strategy is that the anti-tank gun's field of fire is generally very restricted, and the building only offers limited protection against tank rounds.

20.6 CREWS

Vehicle Crews have little value outside the vehicle and leave the battlefield after abandoning their vehicle. Gun crews are armed. If the gun runs out of ammo they will defend the gun; if the gun is destroyed they leave as vehicle crews do.

20.7 VEHICLES AND TANKS

Close Combat: Last Stand Arnhem contains a variety of Allied and German vehicles.

HALF-TRACKS AND LIGHT VEHICLES

Half-tracks and other light vehicles allow the rapid deployment of heavy anti-infantry support and occasional anti-armor weapons. However, vehicles like half-tracks and armored cars are only lightly armored and vulnerable not only to anti-tank weapons but to rifle fire as well.

LIGHT VEHICLE TACTICS

Light vehicles have traded off armor for speed. Use that speed to launch flanking attacks and to reinforce infantry and tanks from a distance. Never bring a light vehicle anywhere near an enemy tank. Remember to stay on the move as well or risk drawing enemy mortar fire, which can punch right through the top of an armored car or half-track.

TANKS

A tank is virtually invulnerable to small arms fire. Tanks can carry machine guns to use against infantry, high explosive charges (HE) for longer ranged attacks against infantry (like a hand grenade with a greater range), and armor piercing rounds (AP) that are effective against all but the heaviest tanks. While tanks may seem like the lords of the battlefield, a tank is vulnerable to properly armed infantry who can get close enough. Tanks are well placed behind advancing infantry, lending their considerable firepower while allowing the infantry to ferret out anti-tank teams and other infantry that might lie in wait.

When not in immediate danger, tank crews generally keep portholes and the top hatch open, this allows maximum visibility, although it does allow the possibility of surprise attacks while partly vulnerable, particularly from snipers. Once danger is recognized, such ports are closed, affording protection but limiting visibility.

As a general rule, tanks have much heavier armor on the front than they do on the sides or rear. Please refer to the section entitled Battlefield and Other Controls for an explanation of how movement affects facing.

MOBILE GUNS – TANK DESTROYERS AND SELF PROPELLED HOWITZERS

These weapons have large guns that can fire AP rounds like tanks, but they are not heavily armored. They have good firepower, but little defense, and cost less than tanks. Mobile guns generally have no turret, firing only forward over a limited arc. While not nearly as flexible as tanks, their powerful forward guns are often the only way of dealing with armor from the front.

FLAMETHROWER TANKS

These are very effective against both infantry and armor but have a very short range. Because of their severe range limitations and modest armor, FT Tanks need to stay away from conventional tanks using buildings, foliage, smoke, and hills for cover until they can get close enough to strike.

BASIC ARMOR TACTICS

While great books have been written about the high art of tank vs. tank warfare, the basic principal is very simple. Whenever possible, be positioned in such a way so that you are shooting at an enemy's weak side or rear armor while he is shooting at your thick front armor.

Also remember that infantry cannot harm tanks at long range but can destroy them with a close range ambush on the sides or rear. To avoid this, tanks should act as support vehicles, using infantry to ferret out enemy infantry and concealed Anti-tank guns. Once the enemy is found, the tank can then blast away from range.

21.0 SELECTED FURTHER READING

- » Guard, Julie (editor), *Airborne World War II Paratroopers In Combat*, Osprey Publishing 2007
- » Kershaw, Robert J., 'It Never Snows In September' The German View of Market-Garden and The Battle of Arnhem, September 1944, Ian Allan Publishing 1990/2004
- » Ryan, Cornelius, *A Bridge Too Far*, Simon & Schuster Paperbacks 1974
- » Mitcham, Samuel W., *Retreat To The Reich The German Defeat in France*, Stackpole Books, 2007

22.0 FOR THE MODDING COMMUNITY

The Close Combat Series has benefited greatly by an active and exciting modding community. With this release we have attempted to aid the mod-maker with changes to the game that will make mods a less onerous task. Close Combat: Last Stand Arnhem is an improved game in comparison to the original Close Combat: Invasion Normandy. Enhancements have been made to the game's programming and graphics, and the ability for mod makers to modify the game has been streamlined. The following is a list of most of the improvements:

23.0 MOD-MAKER IMPROVEMENTS

- » Battle Group reinforcement can be set by the Battle Group and for variable number of times.
- » The Data file format has been changed to text file format.
- » A "Campaign.txt" file has been created to allow editing of previously hard coded campaign settings (for example: air, artillery, mortar, air supply and weather).
- » A "Nations.txt" file has been created to allow for multiple nations to be used in the game.
- » A "StratMap.txt" file has been created to allow easier editing of the strategic map.
- » A "Uniforms.txt" file has been created to allow easier editing of soldier colors.
- » The size of the Scenario Editor strategic map has been increased to display larger strategic maps.
- » The maximum number of Battle Groups has been increased to 64.
- » The strategic map has been expanded to a maximum of 64 individual maps with 128 possible road interconnections.
- » The maximum number of Teams has been expanded to 196.
- » The maximum number of Weapon icons has been expanded to 256.
- » Map BTD files have been exported to txt format editable in a spreadsheet.
- » The game supports a maximum map size of 4800 x 4800 square pixels.

See the downloadable Close Combat: Last Stand Arnhem Workbook for detailed information (when it becomes available).

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OUR STRENGTH

We thank God for giving us the ability and strength to complete this project and follow our dream.

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