

1944

ACROSS THE RHINE

MICROPROSE

G A M E P L A Y M A N U A L



1944 ACROSS THE RHINE

GAMEPLAY MANUAL

MICROPROSE

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FOREWARD

"Driver, halt!" you yell out over the intercom, "Enemy tank at eleven o'clock!" Private Anderson responds immediately, and the Sherman jerks to a stop. At the same time, the turret is swinging around to face the threat. Your gunner draws a bead on the German tank hidden in a stand of trees.

"Target front. Loader, AP quick," you bark out, and the crew follows through like a well-oiled machine. The Sherman's 76mm gun has trouble dealing with the heavier German tanks, and you know from experience that being quick on the draw is your best weapon. Fortunately, your crew has learned the same lesson. Otherwise, you wouldn't be here today.

"Range... 600 yards," a long moment passes, and you hope they haven't spotted you yet. "Fire!"

KLLAAANNNGGG! The shell ricochets harmlessly off the front of the German tank.

"Reload HVAP!" Your fat could be in the fire now. "Fire!" The Sherman's second shot strikes home and slams through the beast's thick hide. A huge plume of smoke and fire erupts out of the armoured carcass.

You wipe sweat from your eyes. That was close. You can't understand how anyone can sweat so profusely when it's so cold out. At least you're still here to worry about it.

Survival costs, though. Damn, but you hate expending HVAP rounds. The miserable few rounds you've got stashed in the lower ammo bin are dwindling fast. Those boys from the 704th TD Battalion are probably still wondering what happened to their ammo allotment. Miller, your loader, is hands-down the best scrounger in the outfit—he can *smell* unprotected goods. As for the boys from the 704th, what they never had, they'll never miss.

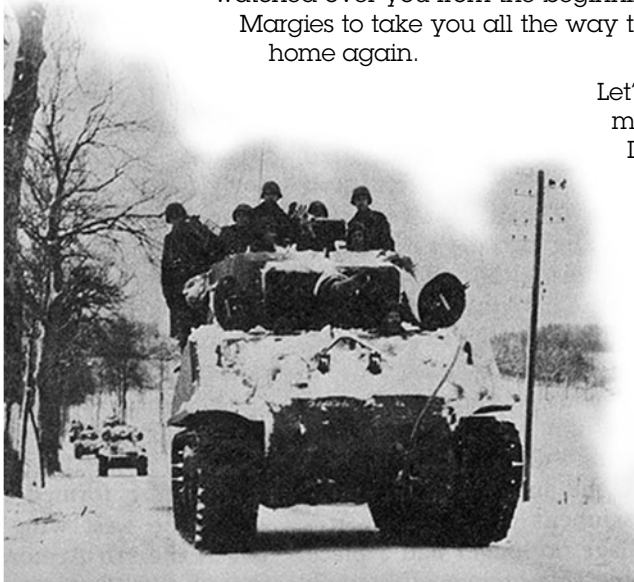
Looks like it's gonna be a long, ugly war, you think to yourself. What you wouldn't give to have those guys who said the war would be over by Christmas in the sights of your 76. Little did you expect that instead, you'd be spending Christmas fighting it out in the Ardennes Forest.



Tough but not invincible, knocked out German Panthers near Falaise.

The road to Bastogne is going to be a bloody one...

If you could take the time to stop and consider the thousands of American tanks and other vehicles that have already landed in France, you might not think that your one little tank amounts to much, but to you, this tank means everything. You have even named her—*Margie*. That's your girl's name, the one back home in Tennessee. Before you shipped out, you promised her that you would return to her when this was all over. It feels as though she has watched over you from the beginning. You're counting on both *Margies* to take you all the way to Berlin in one piece—and home again.



A Sherman of 4th Armoured Division on the road to Bastogne.

Let's trace "*Margie's*" place in the military organisation as of December 10, 1944. *Margie* is tank number 1 in the 2nd Platoon of Captain Bert Ezell's Task Force. That task force is a part of Lt. Col. Albin Irzyk's 8th Tank Battalion. The 8th Tank Battalion is just one of several battalions belonging to Brigadier General Holmes Dager's CCB (Combat Command B), which in turn is one of three Combat Commands in Major General Hugh Gaffey's 4th Armoured Division. The 4th Armour Division is just one of the divisions in Maj. Gen.

Manton Eddy's XII Corps. Eddy's XII Corps is a portion of Lt. Gen. George Patton's Third Army, which itself is one army in Lt. Gen. Omar Bradley's 12th Army group.

Attempting to hold the line against you and this mighty host are a handful of German Panzer units. Although they are operating severely below their listed combat strength, these veteran tank formations are required to act as fire brigades—constantly rushing from one threatened point in the line to another. The rest of the German army has been worn down until it is little more than a collection of horse-drawn "leg" units.

It is the remaining *Panzertruppen* that provide the German army with some semblance of offensive potential. Used for defense, they bolster the morale of the weary foot soldiers. If the Germans have any hope of stopping the Allied advance west of the Rhine, it is based solely on the technical superiority of these small Panzer units. If the Allies succeed in pushing across the Rhine River, Germany loses the war.

Six days later, somewhere across the line...

It's December 16, 1944, and Operation Autumn Mist is beginning. Since early morning, the sound of a thousand German engines has thundered along the front. The long awaited counterattack has finally come; the great German plan is to split the British and American forces and drive a deep wedge into their lines. There will be no more retreating. You're eager to see how well your enemies hold their ground.

At the headquarters of the Panzer Lehr Division, an adjutant is busy fielding endless status reports—American troops are surrendering by the score. You steal a glance overhead. This time, you must give credit to the planners; the weather couldn't be more perfect—overcast and snowing. **That** should keep the *Jabos* grounded. With none of the Allied fighter-bombers aloft, you finally have a chance to move forward in the light of day. The prospect of advancing in clear weather sends a chill up your spine. Getting spotted by Allied aircraft means instant death in a hail of rockets and cannon fire.

Your driver looks over at you with a hesitant smile. This fair haired seventeen-year-old comes from a small village outside Munich. He can't wait to have a go at the Americans. Though you're barely twenty-two yourself, next to him you seem like a combat-hardened veteran. The two years you spent on the eastern front have aged you considerably. They also made you wise to the ways of war. Having tasted combat first hand, you find it difficult to share your driver's enthusiasm at the prospect of meeting American armour again.

Nevertheless, you grin back at him. It would feel like cruelty to discourage his naive eagerness, though you know full well the harsh realities of war. Your tank was one of the first to run afoul of Russian anti-tank guns outside Prochorovka, south of Kursk. Hit by shrapnel and badly burned, you were kept in the hospital for months. If the Fatherland had not been so desperate for



Lethal cat, a Panther in the Ardennes.

experienced commanders, your wounds might have been your ticket out of this war.

It was not meant to be. When you were deemed fit enough, the hospital discharged you to the training cadre. At first, that seemed like easy duty, but your unit and others were later formed into the Panzer Lehr Division.

The early action around Normandy was utter hell. You feel fortunate to have fared as well as you did. At least you were able to spend the last few weeks out of the line in refit. It was restful in spite of this looming battle.

Some of the new men in your company constantly complain about the conditions. You find it difficult to feel sympathy for them. Even though it's winter, the mild French weather stands in stark contrast to the frozen hell of the bleak Ukrainian steppes.

Hauptmann Flieger, your company commander, thinks there's nothing to worry about. He says that the whole operation will go off as planned. You know that nothing ever goes off as planned. As the hour approaches, even Flieger appears anxious as he addresses the hastily assembled group of platoon leaders. Soon, your company will move out into action against the Allied forces.

Not that any of that bothers you. You've listened to all the stories about the American and British tanks. They say they're no match for superior German technology, and that one of our Panzers can hold off ten of the enemy. You're more than content to sit and listen; there's really no point in joining in. There will certainly be many more than just ten enemies.

As the briefing breaks up, you and the other platoon leaders quickly order fuel and ammo distributed among the crews. Today, the men seem to share a grim determination to get the job done. Orders are brief by necessity; it's time to move out. You position your panther in the van of the company wedge and head off toward your destiny. . . .



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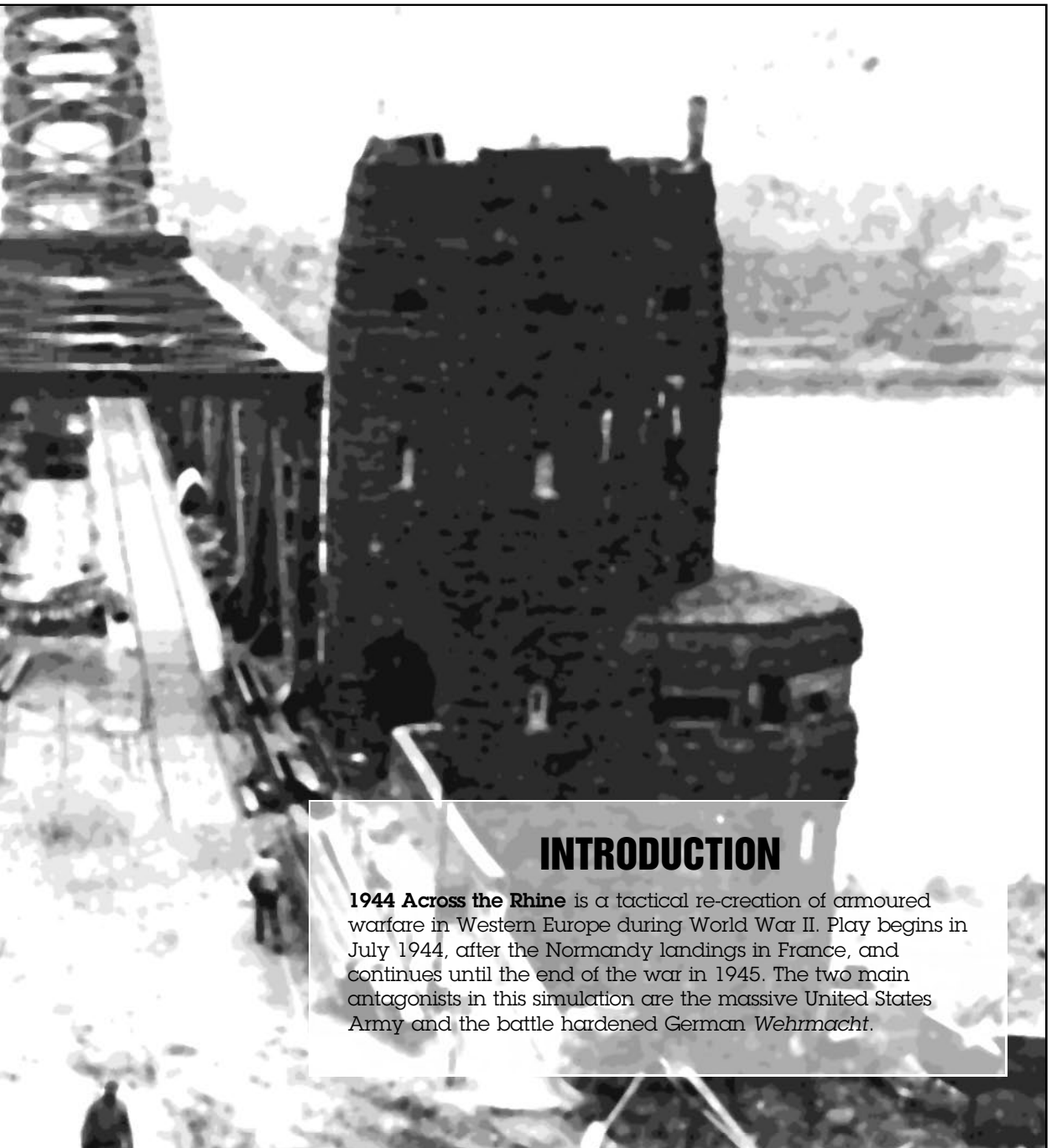
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ACROSS THE RHINE 1944



Across the Rhine, the Ludendorff Bridge at Remagen



INTRODUCTION

1944 Across the Rhine is a tactical re-creation of armoured warfare in Western Europe during World War II. Play begins in July 1944, after the Normandy landings in France, and continues until the end of the war in 1945. The two main antagonists in this simulation are the massive United States Army and the battle hardened German *Wehrmacht*.

Although the scale of this simulation accounts for hundreds of formations, controlling them has been reduced to a very manageable, very tactical, very personal level. When we say this simulation is tactical, we mean it. You are eventually able to control formations of up to battalion size, but combat is resolved on a platoon level. You fight battles in real time, although, we use time compression to advance the campaign during periods of relative inactivity.

1944 Across the Rhine (also referred to as **AiR**) comes to you after months of meticulous research. The design team drew much of the data used in making this simulation from either archival or first person sources. We spent months poring over volumes of tattered and yellowing documents in order to set the stage for this climactic contest. Nowhere else is the 1944-45 Allied march through France and Germany represented in such painstaking detail.

This simulation traces the day-by-day progress of six divisional formations (three American and three German) in the 1944-45 campaign. The level of accuracy is such that—if it were not already a simulation—**AiR** could be used as an instructor's reference guide at any Military Academy in the country. We've tried to make this simulation as fun to play as it is educational.

To a certain degree, **AiR** could almost be considered a role-playing game. At the lowest level, a player starts the game as either a US Sergeant or a German *Unteroffizier* commanding a single tank platoon. As the campaign unfolds, you are promoted according to battlefield successes. With promotion comes responsibility. Good players will ultimately find themselves in command of armoured companies and, finally, battalion-sized combined-arms teams.

Of course, achieving rank takes time. For those who can't wait, **AiR** has an instant promotion feature that allows players to have immediate access to higher level command. The preferred method, however, is to earn your stripes, since there's a certain learning process that goes hand-in-hand with earning promotions.

As a platoon commander, your responsibilities are centred around your tank and the other tanks under your command. Your concerns are immediate.

- Do I bound forward to take cover in the woods ahead or might those trees conceal an anti-tank gun protected by a squad of infantry?
- Should I crest this hill to get a good look around or will I just silhouette my tank—making me an easy target?
- Do I stick to the road and forego surprise or do I get off the road and take a chance on bogging down?

At higher levels of command, the decisions tend to be somewhat different—more operational in nature. You're no longer just thinking of your small group. Now, you must be aware of a bigger picture and the entire force under your command.

- Does each vehicle have enough fuel to carry out its mission?
- Is there enough ammunition to go around?
- How do I integrate my infantry with my anti-tank (AT) guns?
- What is the best deployment for my tanks?

No matter what level of command you choose, battles tend to be gear-grinding, heavy metal contests. Commanders who successfully combine all the various tools available to them do well. **AtR** players direct the operations of many different elements, including tanks, infantry, artillery, and anti-tank weapons. Players who are able to use the principles of *combined-arms* (getting the different elements to work together) are rewarded with greater victories and fewer casualties. During a campaign game, these rewards are especially important.

AtR features a wide selection of armoured vehicles. On the American side, five variants of the M4 Sherman are available. In addition, there are the M10 Wolverine, the M18 Hellcat, the M36 Jackson, and two versions of the M5 Stuart Light Tank. Choose to play the German side, and you get to command some of the more famous tanks of the Second World War, such as the Pzkw IV, Pzkw V "Panther", and both Pzkw VI "Tigers." Naturally, we've also included an assortment of assault guns and tank destroyers, such as the STuG 40, Hetzer, Jägdpanther, and Jägdtiger.

AtR mirrors the actual confrontation in that German vehicles possess a definite qualitative superiority over their American counterparts. There's nothing like the feeling you get from commanding a "King Tiger" and knowing that you're nearly invincible on the battlefield. The trouble is that there are never enough King Tigers to go around.

In most instances, the German player is beset by an enemy with more tanks, more guns, and especially more infantry. It was easier to replace American tanks that were lost in the field than it was for German tanks. Keep this in mind while you are playing the game.

Both sides have a wide selection of support forces available. These forces include infantry squads, artillery pieces, anti-tank guns, and aircraft. For the American commander, there's nothing quite as satisfying as watching a group of friendly fighter-bombers put holes in an armoured column. Because of the Allied air superiority, the German *Luftwaffe* is seen far less frequently. Instead of aircraft, German officers must rely on their formidable array of indirect support weapons. They must be masters at employing artillery and mortars.

The heart of **AtR** is its campaign system. Each campaign allows you to become a member of a particular American or German armoured division. "American" players choose between the 4th, 7th, and 10th Armoured Divisions. "German" players choose between the *11th* and *116th Panzer Divisions* or the *Panzer Lehr Division*. These six divisions represent some of the most experienced and successful units that participated throughout the 1944-45 campaign.

Once you join one of these divisions you have an opportunity, through the campaign system, to improve on its historical performance. You are able to enter a particular campaign at a number of different points, thus you decide when to pick up the action. You can start at the very beginning—July 1944—or join a campaign that is already in progress.

Remember, this is a first person simulation. At the start of each campaign, you assume the role of an American or German commander responsible for a platoon of tanks. You shouldn't be overly concerned with the big picture—not yet. As the campaign progresses, however, you gain rank and the added burden of leadership. (As an option for experienced players, you can choose to begin the game at a higher rank and incur additional responsibilities right away).

Eventually, you'll command a battalion-sized combined-arms task force (American designation) or *Kampfgruppe* (German designation) made up of units drawn from your division. When you're commanding these larger units, your actions have a more direct influence on the outcome of a particular battle. In fact, victory depends on your ability to integrate all the various combined-arms elements successfully.

When you play a Historical Campaign, no matter how well (or poorly) you perform, you cannot change the course of the war. As the German player, for example, you cannot single-handedly cause Germany to win the war. Even if you attain the highest level of authority allowed in the game, your forces are not substantial enough to have much more than a local affect on the overall campaign. You can, however, garner extreme personal success and outperform the previous (historical) commander of your division.

There is also an option that allows you to play out a Hypothetical Campaign. In this campaign you *can* change the course of the war. As a German commander, you have an opportunity to stop the Allied drive right in its tracks. If you're good enough, you could even send them back to the English Channel.

If you fight a Hypothetical Campaign as an American commander, you can try to do better than your real-life counterpart. Can you manage your fuel and ammunition more efficiently than he could, enabling your forces to cross the Rhine River in 1944? Can you change the face of post-war Europe by ending the fighting before Christmas of 1944?

Even if you don't have the time to play out an entire 10 month campaign, **AtR** allows entry into the campaigns part way through. **AtR** also includes a number of ready-made battles which take far less time to complete than a full campaign.

There is also the Battle Builder. The Battle Builder is a situation generator that allows you to create an unlimited number of engagements, designed to suit your own tastes. These "roll-your-own" battles are perfect for practicing tactics and perfecting strategies without investing the time required to play out a full campaign. You can create just one side of a battle and let the computer generate an opposing force of equal, lesser or greater strength. You can pass these battles on to others—to test their skills against your creations.



A Sherman "Easy 8" prepares for battle.

THE CONTROLS

1944 Across the Rhine is an advanced, complex, historical military simulation. The game can *not* be played using only keyboard controls. Use of a mouse is absolutely necessary.

AtR is designed to work with most of the available flight and racing simulation add-on hardware systems. If you follow the installation instructions and the documentation that came with the add-on system you're using, you should not have any problems. Customer Service should be able to solve whatever problems you do encounter. However, please remember that there is no guarantee that any particular piece of non-standard hardware will function with this game.

Mouse Controls

Throughout this manual, the trackball and mouse are treated as being synonymous and are referred to as the 'mouse.' The mouse is most often used to select from menus and maps and to move around the Briefing and Battle Builder screens. You can even control your tank using the mouse. There are a few terms that are standard when using the mouse. They are as follows.

Click

When the term 'click' is used, it refers to placing the pointer on a designated area, then clicking the Left Mouse button (LMB).

Right Click

To 'right click' an object, follow the directions for click, except that you click the Right Mouse button (RMB), rather than the left.

Click and Drag

When you want to move windows or other objects on the screen, you will 'click and drag' the object. To do this, place your pointer on the appropriate object, click and hold the LMB, then drag the object to the new place on the screen. When the object is where you want it, release the LMB.

Keyboard

The keyboard is the primary control device for your computer, but it is often a secondary controller while playing **AtR**. Keystroke commands are most commonly used to change the viewpoint during combat, to enter text in certain fields (naming players or units, for example), and to control things such as the throttle, weapon selection, and some administrative controls.

Keyboard controls are represented in this manual as a picture of a key. Thus, for example, Function Key #1 would appear as **F1**, just as it does on the keyboard itself. Key combinations that should be pressed at the same time are presented together, as in **Ctrl Alt Del**. All keys will appear capitalised, but do not enter capital letters. (For a capital P you would press **Shift P**, which could be a totally different command than simply pressing **P**.) We use the standard abbreviations for the special keys.

Though some of the keyboard commands are described in the relevant sections, please refer to the **Keycard** for the exact keystrokes used in controlling **AtR**. There are some keyboard command standards that are shared by virtually all MicroProse games; those are described here.

Pausing

At any time, you can press **Alt P** to pause the game. Notification of the pause appears, and nothing happens (in the game) until you release the pause. To restart the game click on the **Continue** button in the small pause menu.

Quitting

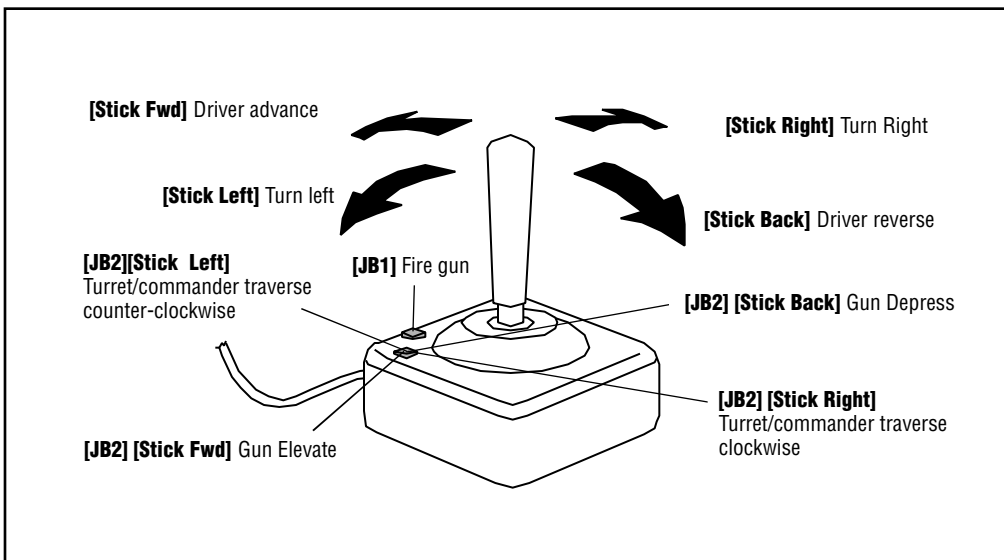
The Main Menu screens include an **Exit** option for leaving the game, but you might not have the luxury of enough time to work your way back to a menu to quit. To quit **AtR** at any time, you can press **[Alt] [Q]**. A dialog box appears presenting two options. You can **Exit to DOS**, which ends your session of **AtR**. (If you are in the middle of a battle, the battle is not saved when you select this option.) You can also click **Cancel**, which returns you to **AtR**.

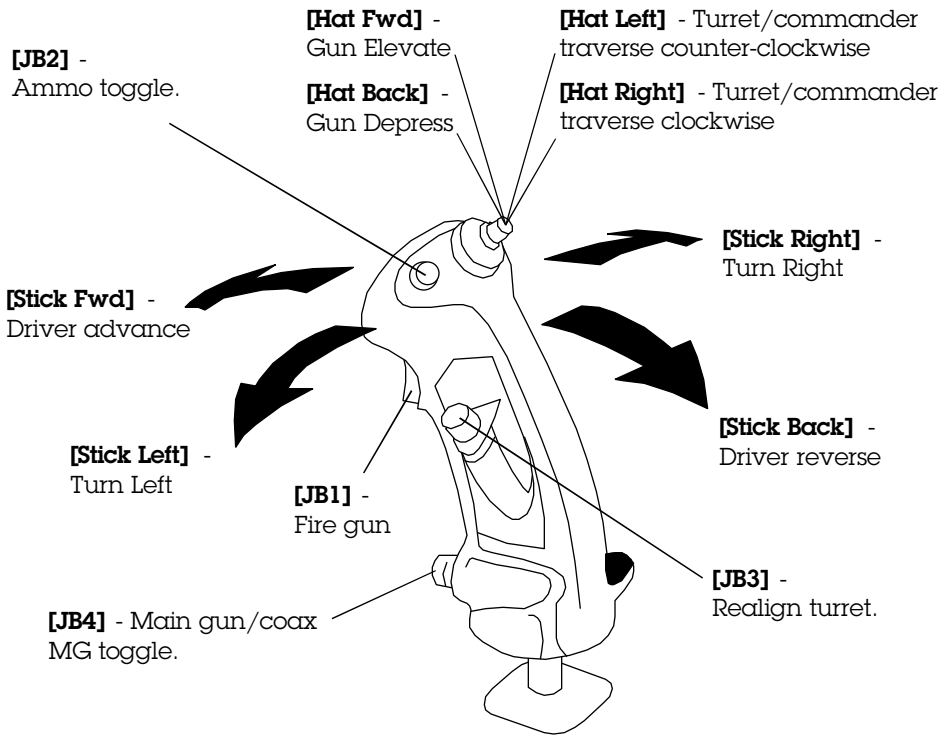
If you wish to end your current battle without the hassle of shutting down the whole game and restarting, press **[Alt] [E]**. A prompt asks you to verify this command. If you were fighting a campaign battle, the battle is decided based on the current situation.

Joystick

Joystick controls are represented in this manual in **bold type** and [enclosed in brackets]. Thus, for example, Joystick button #1 would appear as **[JB1]**. Directional controls are represented by 'stick' commands—**[Stick Left]**, for example. For those joysticks incorporating a 'hat' switch, these controls are represented by 'hat' commands—**[Hat Fwd]**, for example.

Joystick controls are used only during the Battle section of the game. You can not use the joystick in place of a mouse to control the other aspects of the game. The joystick controls used during combat are summarised here.





THRUSTMASTER/FLIGHTSTICK PRO



The crew of a Panzer IV take a welcome break.

RUNNING ACROSS THE RHINE

After you've installed **AiR** according to the directions in the Technical Supplement, the game is ready to play. If you have moved from the game directory since installing, return to the game directory by typing **C:\MPS\1944** and pressing Enter.

Type **ATR**, then press Enter to load the game. The title screen and credits should appear after no more than a few seconds. After the credits, which you can skip by pressing any key, the Nationality Selection Screen appears. Select the US or German forces by clicking on the respective poster—US (ARMOUR) on the left, German (*Panzertruppen*) on the right. Note that selecting a side from this screen does not preclude playing for the other side.

After you select a nationality, the CD-ROM verification screen appears. The **AiR** CD must be in your computer's CD-ROM drive for **AiR** to start and continue to run.

ROSTER

There are separate Roster Screens for US and German characters. After the CD-ROM verification the Roster Screen for your chosen nationality appears. The paper will move up in the typewriter line by line, or you can press any key to immediately display the entire roster. Clicking on an entry opens a dialog box.

(Note that all dialog boxes can be repositioned on the screen by dragging them with the mouse.) The options in this box include **Begin Game**, **Erase Character**, view the character's **Footlocker**, and **Cancel**. Click on the desired option. (Note that only active characters can progress beyond this point. If you are KIA, you can't fight.)



A Panzer IV and a Tiger destroyed in Villers Bocage.

BEGIN GAME

This selection returns you to the Main Menu.

ERASE CHARACTER

You can erase any character, even an active character, and replace it with a new character. A safety check prevents inadvertent erasures.

When you first begin the game you will need to erase one of the characters on the roster to create your own character. Once you have erased that character, you will be prompted to supply a new name. Type in the name and press Enter . Next, you must choose your starting rank. You can select any rank from Sergeant to Major (in the case of US forces), or *Unteroffizier* to Major (in the case of German forces). This will be the starting point for your character.



Roster Screen

Your current rank is very important, as it determines your level of command responsibility. There are three levels of command: Battalion, Company, and Platoon. The current rank puts you in command at one of these three levels.

On the US side, your character must be at least a Major to command a Battalion. To command a Company, you must be at least a 1st Lieutenant. A Sergeant can command a Platoon.

On the German side, your character must be at least a Major to command a Battalion. To command a Company, you must be at least an *Oberleutnant*. An *Unteroffizier* can command a Platoon.



Footlocker Screen

FOOTLOCKER

The footlocker contains the character's uniform tunic (with the appropriate rank insignia), medal case, and campaign diary. Click on the medal case or the diary to activate the respective screen. Click in the upper left corner of the screen to exit (pressing **ESC** also exits the screen).

Medal Case

The medal case contains all the awards this character has received. Move the mouse pointer over any medal or ribbon to see its identification. Exit by clicking in the upper left-hand corner.

Diary

The diary contains a running commentary of this character's campaign. Note that entries are not made for the set piece or Battle Builder battles. Click on the left or right page to turn the page in that direction. You can add text to any page simply by beginning to type. Your text will appear on the page the cursor was on when you began typing. Right click on either page to bring up the **Go to Page** dialog box.

This box contains a date control bar and four buttons. The date bar allows you to go to a specific date in your diary. Use the arrow keys to either side of the date to move through each available date. The left key moves to an earlier date, and the right key moves to a later day. Once the date you wish to go to is selected, click on the Jump button; the diary goes to the entry for that date. The Print Diary button saves the diary as a text file, allowing you to print the diary entries using any word processing program. The diary is saved as a .txt file, with the first seven letters of your character's name, plus a number as the file name. For example, the diary for an American character named George "GI" Joe would be saved as "GEORGEGI.TXT." The Footlocker button returns you to the Footlocker screen. The Cancel button closes the Go To Menu and returns you to the Diary. Once back in the Diary screen you can click on the top left corner to exit.

MAIN MENU

This is the central control of the game from which you choose the way you wish to fight the war in Europe. You can command your troops, fight historical engagements, design and fight your own battles, or live out the campaign with your battle group.



American Main Menu

BATTLE: Command and fight one of the included set piece battles or a battle created in the Battle Builder. The nationality of your current active character determines for which side you fight.

ROSTER: Shows the Roster screen for the active side.

BUILDER: Design and fight battles in the context of the European theatre, circa 1944 or 1945. You can save your battles to play later.

INSIGNIA: Clicking on the German Panzer Assault Badge or American Armoured Division patch switches to the other side's Main Menu.

CAMPAIGN: Start, continue, or cancel a Historical or Hypothetical Campaign.

EXIT: Quit the game and return control to DOS.



German Main Menu

QUICK START

Veteran simulation players will notice that the usual "Quick Start" option is missing from **1944 Across the Rhine**. Since you can enter combat so quickly using the **BATTLE** option, including "Quick Start" seemed redundant. For those of you who want to jump right into the turret and leave the details for later, here's the shortest route:

- After starting **AtR**, select the side you wish to play on the Nationality Selection screen.
- At the Roster screen, select an active character.
- On the Main Menu, choose **BATTLE**.
- Choose **Instant Action** from the list displayed in the upper left-hand area of the menu.
- Choose your **Command Level**.
- Decide which of the Realism Options you want turned on.
- Read or ignore the mission briefing. Click the button on the upper left corner of the Battle Briefing screen.
- You can now either modify your unit organisation and deployments, or accept the computer defaults and enter the battle. Click on **Battle** from the Menu Bar and select **Enter Battle**.
- Commence action.

For details on the controls used to control your tank and command your battlegroup, please refer to the Keyboard Reference Card (the **Keycard**) and to the Battle Section.



National Archives

An M10 Wolverine supports American infantry in a French town.



A King Tiger advances in the Ardennes past a line of American prisoners.

At the heart of **AtR** is the Campaign System—it represents the ultimate combat experience. You can choose between six historical campaigns (three American and three German) or attempt to change history in a Hypothetical Campaign. Click on **CAMPAIGN** at the Main Menu to activate this option. (One point of special note: a character can have only one active campaign going at any time. In fact, each character can only fight one campaign in a career—a soldier only went through the war once.) Even though each character is limited to one campaign, the choice of campaigns is, of course, up to you. The nationality of the current Active Character determines which nationality's campaigns are available.

When you first select CAMPAIGN, choose either the **Historical Campaigns** or a **Hypothetical Campaign**. Click on the desired option.

PROMOTIONS AND DECORATIONS

Before we start, you should know that your ultimate goal, apart from surviving the war, is to be promoted up the chain of command until you reach the rank of Colonel. In addition to promotions, **AtR** also rewards superior performance in combat with decorations—medals.

PROMOTIONS

Promotions are based on your accumulated performance and are difficult to attain. The promotion system in **AtR** is different from that of most simulations. Since you choose your starting rank, starting from zero would make it nearly impossible for a player choosing Company Commander to be promoted. In this game, players starting at higher ranks still start their point totals from zero, but the points needed to achieve the next rank are lowered as compensation. For example, if the difference between 2nd Lieutenant and 1st Lieutenant is 10,000 points, this is always the number of points a player needs to gain the first promotion. It might seem that this system minimises the importance of promotions, but this is not our intention. This system allows each player to determine how he plays the game. Your score still reflects ongoing success in comparison to players of similar rank. A captain that came up through the ranks has a much higher cumulative score than a captain that started at that rank.

Promotions also affect the Non Player Characters (NPCs) "commanding" the companies. If your rank is below the company command level, you are automatically a member of a company commanded by an NPC.

The following table shows the comparative ranks and the command level associated with each one.

Comparative Rank Table

American	German	Command
Sergeant	<i>Unteroffizier</i>	Platoon
Staff Sergeant	<i>Unterfeldwebel</i>	Platoon
Technical Sergeant	<i>Feldwebel</i>	Platoon
Master Sergeant	<i>Oberfeldwebel</i>	Platoon
2nd Lieutenant	<i>Leutnant</i>	Platoon
1st Lieutenant	<i>Oberleutnant</i>	Company
Captain	<i>Hauptmann</i>	Company
Major	<i>Major</i>	Battalion

DECORATIONS

Decorations are classified into two broad groups: performance based and situational.

Decorations for performance are solely based on your character's achievements within a single victorious battle. These decorations are not easily translated into a computer simulation. They were generally awarded for true acts of extreme bravery in the face of an opposing force. That is pretty difficult to measure in the terms of a computer battle. Fortunately, there is a reasonable option. For commanders, these decorations were also awarded for acts of significant contribution during war time command. This is what is really simulated here. The decorations are a reward for a job done exceptionally well. How well, determines the magnitude of the award.

Performance decorations are not awarded for attaining a specific number of points in a battle. The great number of factors in a battle—size of forces, options enabled, quality of troops, and so on—make such a system impractical. Instead, decorations are awarded based on your performance compared to the best possible performance.

Situational decorations are awarded for meeting the criteria associated with the particular award. This can be time in action, overall superior performance, or some specific event.

In addition to performance based and situational decorations, you might be given **Phoenix Awards**. The Phoenix Award is not a decoration but is given each time a player refights any campaign battle. The award also displays the number of times it has been earned.

American Medals

There are different sets of decorations for the American and the German forces. Additionally, each nation has a totally different philosophy regarding the manner in which these decorations were awarded. In the American army, the particular situation is judged purely on its own merits, and the appropriate level of decoration is awarded. In addition, with the exception of the Medal of Honour, multiple awards of the same decoration are possible. These multiple awards are signified by adding a bronze oak leaf cluster for each additional award. A silver oak leaf cluster equals five additional decorations.



U.S. Medal Case

There are four American Performance Decorations; in order from lowest to highest they are: The **Bronze Star for Valour**; the **Silver Star**; the **Distinguished Service Cross**; and finally the **Medal of Honour**. Only one Medal of Honour can be awarded to any single character.

The American Situational Decorations are listed below, with a brief explanation of the award criteria.

Purple Heart: Awarded for being wounded or killed in combat.

European Campaign Ribbon: Awarded for participation in one or more of the five recognised Western European Campaigns; (Normandy, Northern France, Ardennes-Alsace, the Rhineland and Central Europe). Bronze *Battle Stars* are awarded for subsequent campaigns. You must have an active campaign in progress on the required dates to earn this award.

Victory in WW II Medal: Awarded for being alive and in Europe at the end of the Western Europe campaign. Awarded at the end of any division campaign track.

Presidential Unit Citation: Awarded for recognition of exemplary performance by a unit. This is awarded for winning most of a running number of battles. To be eligible, you must fight at least 20 battles. Only one award of this type is made per character.

German Medals

The Germans were very linear in their approach to performance decorations. The decorations were awarded in order, and it was necessary to receive the preceding decoration before the next level could be awarded. The Germans also saw decorations as a recognition of an ongoing contribution, they did not consider the singularity of an event. This approach makes a little more sense when it is understood that only one of each particular award could be received by any individual.



German Medal Case

This means that the lower end German decorations are easier to win than similar American decorations. There are also seven distinct German awards, compared to just four for the Americans. On the other hand, the highest German award is tougher to receive than the highest American decoration.

There are seven German Performance Decorations; in order from lowest to highest they are: the **Iron Cross 2nd Class**, the **Iron Cross 1st Class**, the **German Cross**, the **Knight's Cross**, the **Knight's Cross with Oak Leaves**, the **Knight's Cross with Oak Leaves and Swords**, and finally the **Knight's Cross with Oak Leaves, Swords and Diamonds**. The higher awards of the Knight's Cross are actually embellishments added to the original Knight's Cross, the cross itself is only awarded once.

German Situational Decorations are listed below, with a brief explanation of the award criteria.

Wound Badge: Awarded for being wounded or killed in combat. The colour of the badge indicates the number of times wounded. Black is awarded for the first wound, Silver for the third wound, and Gold for the fifth wound or for being killed in action.

Panzer Assault Badge : Awarded for participation in armoured combat. The basic badge is awarded after fighting three battles. The 25, 50, 75, and 100 step badges are awarded after fighting in the indicated number of battles.

Honour Roll Clasp: Awarded for recognition of exemplary performance by a unit. This is awarded for winning most of a running number of battles. To be eligible, you must fight at least 20 battles. Only one award of this type is made per character.

HYPOTHETICAL CAMPAIGN

The time is October 1944; the War in Western Europe has reached a decision point. The final outcome is still in doubt, and the opposing forces are poised to make history. As the US commander, can you spearhead the breakthrough and the subsequent drive to the Rhine? As the German commander, can you change the course of history and push the Allies back to the sea? The outcome of the entire campaign now rests on your shoulders.

The game begins at the map of Western Europe. The date is 1 October 1944; the campaign starts at this point. The battle lines have been drawn, and the antagonists are lined up. In the Hypothetical Campaign you could change the historical outcome of the war in Europe.

Select a division and a battalion composition. In addition to the standard historical battalion organisations, the Hypothetical Campaign allows you to select from the battalion organisations normally used by the computer, as well as the battalions created using the Battle Builder. Several *Waffen SS Kampfgruppe* are included in the available organisations. If you choose one of these battalions, you play a *Waffen SS Battalion* Organisation attached to your selected *Wehrmacht* Panzer Division. Your character retains the *Heer* (German Army) rank and uniform.

You can give the battalion you've chosen a title by clicking on the title box at the top of the window. After you've chosen your forces, you'll need to set the reality options. This is exactly the same as in the Historical Campaign. When that's done, the game will begin.

EXISTING CAMPAIGN

If you choose **Campaign**, you have the option of choosing **Continue** or **Quit**. Click on the desired option.

START/CONTINUE HYPOTHETICAL CAMPAIGN

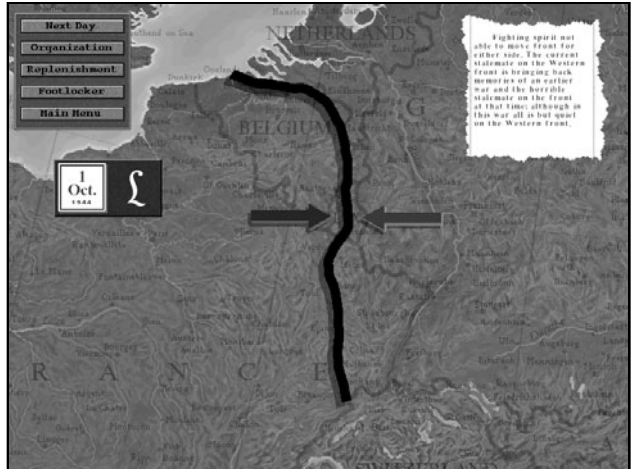
The Hypothetical Campaign starts on 1 October 1944, or on the current date of an ongoing campaign. The calendar, with the current date indicated, appears along with the divisional insignia.

Newspaper clippings appear from time to time, enabling you to follow the current state of the war.

CAMPAIGN BATTLE LINES

The campaign is displayed on the map of Western Europe, with the battle line on the map. The direction of advance for the US (blue arrow) and German (gray arrow) forces are on opposite sides of the battle line.

As the campaign progresses and battles are won or lost, portions of the battle line move in the direction of the advance. The weight of these advances eventually forces the entire line to shift to a new position.



Hypothetical Battle Line

HISTORICAL CAMPAIGN

The Historical Campaigns allow you to command up to a battalion sized battle group—from Armoured or Panzer divisions. The campaigns follow the actual historic path and combat record of a chosen division. The ultimate outcome of the war is never in question. However, your character can outperform or lag behind the historical division's actual performance.

AMERICAN CAMPAIGNS

4th Armoured Division



The 4th Armoured Division is widely held to have been the best American division in Europe. This division was called by many names in the press, including "Patton's Best" and the "Fabulous Fourth," but in truth it had no official nickname. In the words of the 4th's most famous commander, Maj. Gen. "P" Wood, "The 4th Armoured will have no nickname, they shall be known by their deeds alone." Those deeds were impressive. The 4th landed in Normandy on 13 July and had its first engagement on 17 July during Operation Cobra. It was the spearhead of the Third Army's drive to cut off the Brittany Peninsula, which it achieved by 4 August. The division was then turned to the east and again was the spearhead division in Patton's race across France, ending up at the Meuse River in September. After participating in the Westwall battles in the Arracourt region in September and early October, the 4th Armoured Division was pulled out of line for a well deserved rest and reorganisation period. This was time to prepare for Patton's planned Saar offensive. The battles through the Saar basin continued through November and early December. In response to the German Ardennes offensive, the 4th was pulled out of its eastward attack, sent 150 miles north, and launched as the spearhead of the Bastogne relief offensive. Bastogne was relieved on 26 December, and the 4th continued its attack to cut the Bulge in two. After the conclusion of the Battle of the Bulge, the 4th was again given a period of R&R. In February 1945, it was committed to the final assault into Germany. The 4th Armoured was in Czechoslovakia when the war ended.

7th Armoured Division: "Lucky Seven"



The 7th Armoured Division landed in Normandy on 11 August and had its first engagement in the Battle of Chartres on the 15 August. It participated in the Third Army's drive to the Seine, which it crossed on 24 August. It then continued the pursuit across France, ending up at the Meuse River near Verdun in September. After participating in the Westwall battles in the Metz region in September, the 7th Division was pulled out of line and transferred to the Ninth Army in Holland. It fought in the Peel Marshes and Velno areas until mid-November, when it was pulled out of the line to prepare for an attack into Germany in mid-December. When the German attack in the Ardennes began, the 7th Armoured was committed to the defense of St. Vith and fought in the Manhay area. The 7th Armoured began its own counter attack on 20 January 1945 and reentered St. Vith on 23 January. The division then received a well earned period of R&R and was committed to clearing the west bank of the Rhine between Bonn and Remagen. In late March, the 7th Armoured participated in the reduction of the Ruhr Pocket. They were on the Elbe River, near the Baltic coast, when the war ended.

10th Armoured Division: "Tiger" Division



The 10th Armoured Division landed in Cherbourg on 23 September. The division's first engagement was on 2 November in the Saar-Moselle Triangle, where it remained heavily engaged throughout November and early December. It was pulled out of the line and sent to Luxembourg City on 17 December in response to the Ardennes Offensive, and was committed to the Bastogne counterattack on 19 December. The 10th Armoured was relieved on the twenty-sixth and saw only light action until January, when it attacked near Noville. The division returned to the Metz area in early February, where it was again heavily engaged in the Saar-Moselle Triangle. It was pulled out of the line and sent to Trier for a period of R&R on 12 March. The 10th Armoured renewed its offensive on 16 March and crossed the Rhine on 28 March. It was continuously engaged in the final offensive across Germany and ended the war at Innsbruck, Austria.

GERMAN CAMPAIGNS

130th Panzer Division: "Panzer Lehr"



The Panzer Lehr Division was formed in November 1943, agglomerated from the various demonstration and training units of the German Panzer schools. These troops were some of the best in the German army, making this division a crack unit from the start. Panzer Lehr was in reserve near Paris on June 6, when it was quickly moved to the front. The division proved that it deserved its elite reputation, facing as many as four Allied divisions in the St. Lo-Caen area. It was a major obstacle to the American advance through June and early July. Panzer Lehr bore the brunt of the massive carpet bombing that served as preparation for the Cobra breakthrough, suffering catastrophic losses. After the losses suffered in Cobra, Mortain, and the Falaise Pocket, the remnants of Panzer Lehr withdrew across France. These were sent to the Saar and then to Paderborn for refitting. Panzer Lehr was committed to the Saar to face the US Third Army's attacks in November, then transferred to the Schnee Eifel just prior to the opening of the Ardennes offensive. During the Battle of the Bulge, Panzer Lehr was one of the spearhead units of Fifth Panzer Army and was engaged at Bastogne and Celles—at the tip of the Bulge. After the failure of this offensive, the division switched to defensive actions in early 1945. In April, it was trapped in the Ruhr Pocket and forced to surrender to American forces.

11th Panzer Division: "Ghost Division"



The 11th Panzer Division transferred from the Russian front in June 1944—after severe losses of men and material—for a complete refit. It was transferred to Toulouse in July and in August was the main Panzer unit in southern France. Its magnificent delaying actions after the Allied "Dragoon" landings in southern France allowed the German forces in southern and southwestern France to withdraw without massive casualties. This type of action

continued until September, when the 11th Panzer was committed to the defense of the Belfort Gap and subsequently withdrew north into the Saar area. The division saw only minor action in the Ardennes, spending most of the time in OKW reserve. The 11th Panzer was heavily engaged in the Trier area in January and February 1945, as part of Seventh Army. In March, its remnants were committed against the American advance at Remagen. At the end of the war, they surrendered to American forces in the Bavarian Forest.

116th Panzer Division: "Greyhounds"



The "Greyhound" Division was formed in March 1944 from the remnants of the 116th Panzergrenadier Division, recently withdrawn from the eastern front. The 116th was heavily engaged throughout the Normandy campaign and at Mortain. It suffered catastrophic losses in the Falaise Gap and fought continuously until its withdrawal from France in late August. It was committed to heavy defensive action while it was also trying to rebuild in the Aachen and Schnee Eifel areas. The 116th Panzer

was part of Fifth Panzer Army during the Ardennes offensive and suffered severe losses while engaged in the central section of the Bulge. In January 1945, the "Greyhounds" were transferred to the Kleve sector, on the Rhine. By April, the 116th Panzer was trapped in the Ruhr Pocket and forced to surrender to American forces.

DIVISION HISTORICAL TRACKS

When you select this option, the map of Western Europe appears with the highlighted division's historical track overlaying it. Click on either of the other two divisions to view their historical track. Click on **View Path** to watch the selected division's path actually play out.

ENTRY POINTS

The small flags mark the points at which you can enter the current division's historical campaign. You can play the campaign from the beginning or from a chosen entry point until the end of the war in Europe.

Position the cursor over any of the flags to view that entry date. Click on a flag to select that entry point and begin your campaign.



Campaign Map

BATTALION SELECTION

After selecting your division and entry point, you'll see the Battalion Selection screen. In the Historical Campaign, you have the choice of using any of the standard historic battalion organisations. The composition of your battalion is determined by the organisation you choose. You can also give the battalion a distinctly personal title by clicking on the title box at the top of the window. Enter any name you desire.

CAMPAIGN REALITY OPTIONS

These list the control options that determine the degree of realism and difficulty of a campaign. The overall degree of difficulty has a direct relationship with the campaign performance rating. This rating determines your opportunity for decorations and promotion. Note that these reality options are not locked in for the duration of the campaign. Each time you start or continue a campaign you can change the options. These options can be changed any number of times during a campaign.



Reality Options Screen

Fuel

When this is disabled, fuel stocks are not maintained; there is always enough fuel on hand for the needs of all units. When Fuel is enabled, a commander can be required to Rest one or more units during a battle due to a shortage of available fuel. If this option is enabled and subsequently disabled, the current fuel stock numbers are retained, and if the option is again enabled, fuel stocks are returned to the previous level. While Fuel is disabled, no fuel is added to the stocks available.

Ammo

When Ammo is disabled, all combat units enter every battle with 100 percent ammo. When it's enabled, the US or German commander must carry the designated ammo loads into battle; these can be less than 100 percent. If this option is enabled and subsequently disabled, the current ammo stock figures are retained, and if the option is again enabled, ammo stocks are returned to the previous level. While this is disabled, no ammo is added to the stocks available.

Replacement

When this is enabled, battle losses are not automatically replaced. Each unit is subject to the historical limits on availability. Replacements are received on a daily basis. When Replacement is disabled, all combat units are automatically replaced. The battalion continually fights at full strength.

Reliability

When Reliability is enabled, combat units are subject to mechanical breakdowns. Combat units can experience mechanical breakdown each day. When this is disabled, all combat units are automatically available for action.

Morale

When this is enabled, battalion companies are subject to the effects of varying morale and unit cohesion. When Morale is disabled, all combat units ignore these effects.

Intelligence

When this is set to **Full**, all of the opposing forces are continually visible on the battle map. You can examine these units during the battle to determine their type and make-up. The pre-battle intelligence briefing fully describes the opposing force.

When Intelligence is set to **Partial**, only a portion of the opposing forces are continually visible on the battle map. Visible units can be examined to determine their type and make-up. The pre-battle intelligence briefing only partially describes the opposing force; force concentration markers are placed on the map to represent the location of known units.

When this is set to **Limited**, only those opposing units actually sighted are visible on the map. You can examine visible units to determine their type and make-up. The pre-battle intelligence briefing provides a limited description of the opposing force; force concentration markers might be placed on the map.

Opponent Grade

This option sets the desired grade for the opposing forces. If you set it to **Historical**, all of the opposition companies fight at their historical grade for each battle. Grade may vary from company to company. If you select a specific grade, that grade applies to all companies in all opposition battalions.

Friendly Grade

Use this option to set the grade for the friendly forces. If you choose **Historical**, all friendly companies fight at their historical grade for the battle. Grade can vary from company to company. If you select a specific grade, that grade applies to all companies in the battalion. Once a grade is set, all standing companies will maintain that grade for the remainder of the campaign, even if the option is reset to **Historical**. Resetting the option to **Historical** will only affect any units added to your force as attachments or replacements.

Assets

When this is set to **Full Control**, you have total command of all artillery and air assets assigned to your force. If this is set to **Historical**, you have control of assets based upon your current command level. Battalion commanders control all assets. Company commanders have control of some of the force's assets and may request additional individual missions. Platoon commanders may request individual missions, but have no guaranteed control. The **Historical** setting should always be used with the Battalion command level.

Invulnerability

When this option is enabled, your character can not be wounded or killed during combat. In addition, none of the vehicles in the character's platoon can be destroyed. Using this option will greatly reduce the points awarded for a battle. If Invulnerability is disabled, the character can be killed or wounded and the vehicles in his platoon can be destroyed.

Rank Control

When this is set to **Full Control**, you have total command of all units assigned to your force no matter what your current rank. If **Rank Control** is set to **Historical**, you have control of units based upon your current command level. For example, if set to **Full Control**, a Sargent can command all the units assigned to his force. If, on the other hand, this option is set to **Historical**, you would have to be a Major to command the battalion, while a Sargent would be limited to commanding a platoon.

STARTING THE CAMPAIGN

After you select the reality options, the actual campaign begins on the first day of action.

START/CONTINUE HISTORICAL CAMPAIGN

The campaign starts at the date of the selected entry point, or the current date of the campaign. The map of Western Europe appears first with the divisional track marked on the map. The track shows the division's progress to the current date. The calendar, with the current date indicated, appears along with the divisional insignia. Newspaper clippings appear on occasion, helping you to follow the current state of the war.

THE DIVISIONAL TRACK

A window shows a magnified area around the point of the divisional track. This is meant to aid in determining the location of, and the geographical features surrounding, your forces. The top of this view lists the location the division is moving toward.

Note that a smaller track is superimposed over the divisional track. This track indicates your actual performance in relation to the division's historical performance. In this way, you have ongoing feedback of your actual campaign performance. In the case of the US Divisions, if the smaller track leads the historical track, your campaign is outperforming the historical division. Lagging behind the historical track indicates that you are performing less effectively than your historical counterpart.

With the German divisions, at most points along the track, a superior performance finds the smaller track lagging behind the historical track. The Germans were retreating a great deal during this period of the war. If the actual performance is not retreating quite as fast as the historical division, you are outperforming it.

The zoomed view also includes a ["+"] sign to indicate positive performance, or a ["-"] to indicate lagging performance. You can right click on the zoomed view of the track to receive additional performance information.



Zoomed Division Track

CAMPAIGN COMMANDS

The commands for both Historical and Hypothetical Campaigns include the following: **Next Day**, **Organisation**, **Replenishment**, **Footlocker**, and **Main Menu**.

Next Day

Click on **Next Day** to progress to the next day of action. The calendar page flips to the next day, indicating the passage of time. As each day passes (depending on the Reality Option settings in Historical Campaigns), the battalion receives replenishment (fuel, ammunition, and replacement combat units). Combat units are also subject to mechanical breakdown.

Attachments

Periodically, the division and corps level higher commands will attach additional platoons or an entire company to your battalion. These additional forces are temporary additions to the battalion; they remain available to the battalion for 1 to 3 weeks. While attached, they are treated as battalion forces in all ways. They require fuel, ammo, and replacements, and they are subject to mechanical breakdowns. There is one catch, however; if the attached unit is lost in combat (completely eliminated or broken) it is not replaced. The remnants are returned to the higher command. The possibility of future attachments is affected by the treatment these units receive.



Campaign Control Menu

Engineers

Combat engineers (*Pioneers*) have special training and abilities beyond those of the basic infantryman. Over and above their enhanced combat skills, they are able to remove certain fortifications.

When an attacker's engineer unit comes into contact with a roadblock, it will automatically begin to remove the roadblock. It takes a few minutes to remove a roadblock, and if the engineer moves before it completes the removal project, the object is not removed. If the engineer later returns to the same location, the process begins again. In addition, the presence of Engineers in a company will reduce the amount of damage caused by a minefield.

Organisation

Click **Organisation** to view the current state of the battalion and the battalion's fuel and ammo reserves. On the days a battalion does not see action, it is still a good idea to check its status. On battle days, there is still a chance to modify the battalion organisation prior to entering battle.

The battalion organisation is displayed as a hierarchical tree with the battalion at the top. The battalion's member companies appear directly below the battalion box. The units are displayed using either their Symbolic or Military icons. The **[F12]** key toggles between these two options. (Consult the Appendix for a full list of these symbols and their meanings.)

Right click on the battalion to view its stats. The Battalion Stats window displays a summary of the battalion information. This information is based on the Reality Option settings you chose, therefore certain selections might be blank. Certain information, such as **Grade**, **Morale** and **Readiness**, can not be modified—they are collective tallies of the battalion companies. If the **Ammo** option or the **Fuel** option is enabled it can be modified. For more information on Reality Options, see the Unit Statistics section of Chapter 4, Battle. Click on the button in the upper left corner to close this window.

Right click on any company to expand it into its sections and platoons. Right click on any expanded company to view its statistics. This window lists the *Ammo*, *Fuel*, *Grade*, *Morale*, and *Readiness* of the company.

Right click on any platoon or section to expand it into its individual units. Right click on any expanded platoon or section to view its statistics. This window lists the *Ammo* and *Fuel* for the unit.

Right click on any individual unit to open the Data Viewer. In the Organisation window the data viewer is limited to describing the unit and giving organisational and tactical information. A more detailed Data Viewer and description can be found in the Battle Builder. Click on the button in the upper left corner to close the Data Viewer.

You can modify the battalion organisation using the **Move** button. Move transfers platoons and sections from one company to another. You can not move Headquarters sections. In addition, each company must always consist of an HQ section and at least one other platoon or section. To move a platoon or section, click on **Move**. Click on the platoon or section you want to move, then click on the destination company. Companies can not move; platoons and sections move only from one company to another. In all likelihood, the company stats will be affected by moves. Ammo and Fuel requirements are certainly affected. Grade, Morale and Readiness might be affected. Moving one or more Green platoons into a Veteran company can reduce the overall Grade of that company. The action might have a similar impact on the company's Morale and Readiness. Thus, you should be careful when moving forces. When you are finished, click **Move** to deactivate the function so that no inadvertent moves are made.

Rest takes platoons, sections, or entire companies out of the line and places them in static reserve. You can not rest individual vehicles or individual squads. The rest function should not be used during individual battles unless ammo and fuel requirements make it necessary. The most common use for the rest command is during campaign battles, when long term planning is a factor.

When a unit is placed on rest status, it is not available for the ensuing battle. Units placed into reserve can be taken out of reserve for subsequent battles; this is not a permanent status. While resting, the unit's resource requirements are substantially reduced. This has the advantage of saving the unit's Ammo and Fuel. Through this process, resource starved battalions can meet battle requirements or even save resources for a later day. Click **Rest** to activate the function. Click on the platoon, section, or company to be placed into reserve. The unit is greyed out to indicate its reserve status. Note that the Battalion Stats reflect this change. Some restrictions do apply: company headquarters sections can not be rested, as this action rests the entire company; the Headquarters Company as a whole can not be rested, although individual platoons or sections in the Headquarters Company can. When you are finished, click **Rest** again to deactivate the function.

There is one final function available. You can **Disband** a unit by holding the **Shift** key and clicking on that unit. This action removes the unit from your command permanently. This command can not be used on Headquarters Units. You should only Disband units which are no longer combat effective or which consume more supplies than you can afford.

When you are satisfied with the force organisation, click **MAP**.

Replenishment

Choose **Replenishment** to view the current Fuel, Ammo, and Replacement information for a combat unit. This report summarises the amount of fuel and ammo received. It also outlines the quantity, type, and identity of the formations received as replacements. Click on the button at the upper left to close the report.

Footlocker

The **Footlocker** command opens your character's footlocker, as described in the Roster Section. The footlocker contains the character's uniform tunic (with the appropriate rank insignia), medal case, and campaign diary. See the Roster section for more details. Move the mouse pointer to the upper left corner of the screen and click or press **Esc** to return to the campaign.

Main Menu

Choose **Main Menu** to place the campaign on hold and return to the Main Menu. The current state of the campaign is retained.



A familiar scene, a Sherman destroyed by a German '88.

The BATTLE option provides the opportunity to play the set piece battles included in **AiR** and any scenarios you create and save in the Battle Builder. Testing yourself against the enemy in single combat is one of the best ways to train yourself before embarking on a career as a tankier.

Single battles are also a good choice for those of you who don't want to spend the time to develop a commander through a campaign, or don't want to get involved in a campaign just yet. This option is the fastest route to the front.

In addition, all battles fought in the campaign games use this same system, starting at the section on Battle Briefing. In a campaign, the computer determines the terrain, the setup of enemy forces, the weather, and time of day. The sections detailing the actual Battlefield are identical whether you are fighting a single battle or a campaign battle.

COMBAT SYSTEM

Combat in **AiR** is resolved using a Platoon Combat System. In this system, the smallest unit displayed on the Battlefield and Zoom maps represents a single platoon or a section of one to five vehicles. A single platoon is the smallest possible independent unit which can be given independent orders. This is also true in the 3D views, where each "vehicle" you see represents a platoon or section.

In the Platoon Combat System, the computer maintains the status of each vehicle or unit assigned to the platoon. Individual vehicles or squads can not be detached from their parent platoons. Units in a platoon maintain an appropriate combat formation and observation plan, and the computer takes this into account. When you engage an enemy vehicle in the 3D View screen, your platoon or HQ section engages that enemy platoon or section. The program uses a number of factors to determine which, if any, vehicles of either platoon are put out of action. These factors include the number of firing vehicles/units, their armament, the situation, the armour of the defender and the penetration of the firer. Note that "put out of action" includes damaged and abandoned vehicles as well as completely decimated units. This means that while vehicle explosions and fires indicate that you're hitting your target, you have not eliminated the entire platoon until all the vehicles in it are destroyed or abandoned.



Indicates hits on a platoon and at least one vehicle/unit put out of action.



Indicates all of the vehicles in a platoon have been put out of action.

NATIONALITY

You can access the **BATTLE** option from either the US or the German Main Menu and you assume the nationality of whichever side is current. Your nationality limits the types of units and equipment available to you and determines whether you are on the offensive or defensive during any particular mission. Not all battles are available for selection, see the Battle Builder section for details.

BATTLE SELECTION

Once you have entered combat, you see the Battle Selection screen. This screen allows you to select a particular battle you wish to fight, and to glance over the general circumstances surrounding each combat. The screen is divided into three sections. The upper left section lists all available battles by name. Click to highlight a battle and bring up details for that battle in the remaining sections of the screen.



Battle Selection Screen

To the right is the battle map for the currently selected battle with the standard colour format. (See Zoom Map, below, for detail.)

The lower left section displays conditions associated with the currently selected battle. Only the **Command** button is active at this point; the *Season*, *Weather*, *Time of Day*, and *Battle Type* attacker were selected in the Battle Builder and can not be changed at this time.

Command:

The **Command** button allows you to determine the command level for the battle. This choice overrides the standard rank command levels. A character of just Sergeant rank could command a full battalion.

Season:

The Season options include Spring, Summer, Fall, Winter (Heavy Snow) and Winter (Light Snow).

Time Of Day:

The Time of Day options include Day, Dawn, Dusk and Moonlight.

Battle Type:

The Battle Type options include Engagement, Assault, Delay and Counterattack.

Attacker:

The Attacker option gives the nationality of the attacking force.

Weather:

The Weather options include Clear Skies, Overcast Skies, Raining and Snowing. The actual precipitation depends on the Season setting.

ATTACKER AND DEFENDER

All battle types, with the exception of Engagement, have a distinct attacker and defender. The attacker usually possesses the superior force, and must take the battle to the defending force.

OBJECTIVES

All battle types, with the exception of Delay, have specific objective areas; these are marked on the map by flags. The type of flag, American, German or neutral, shows which side, if any, currently controls the objective. The objectives can be in the possession of the defending force at the start of the battle. The attacking force must seize the objectives from the defending force. The main purpose of the battle is to control as many of these objectives as possible. The destruction of the opposing force is a secondary objective. To capture an objective, a force must occupy the immediate area surrounding the objective. Once this happens, the objective flag changes to the new controlling player's nationality. To maintain possession, a force is not required to continually occupy the objective area, although not remaining in the area would allow easy capture by an opposing force.

BATTLE TYPES

In an **Engagement** both forces take the role of attacker. The objectives are not controlled by either side at the start of the battle. Both forces must move to capture the objectives.

In an **Assault** the defending force starts the battle in possession of the objectives. The attacker must manoeuvre to capture the objectives.

In a **Delay** there are no specific objectives marked on the Battle Map. The attacker's objective is to move his force to the opposite side of the Battle Map. The defender's objective is to prevent the attacker from reaching his objective.

A **Counterattack** reverses roles. The defender's force is split. The smaller element is in possession of the objectives, while the larger element is to the rear. The attacker's force is far larger than the defender's forward element, but it is smaller than the combined defending force. The attacker must capture the objectives from the defender and then hold the objectives from the advancing defending element.

ACCEPTING BATTLES

To begin combat, highlight the desired battle and click **OK**. Click **Cancel** to exit and return to the Main Menu.

BATTLE REALITY OPTIONS

This screen lists the control options that determine the degree of realism and difficulty for a battle. The overall degree of difficulty has a direct relation to your battle performance rating. This rating determines the opportunity for decorations and promotion. The replacement and reliability options are functional only in the Campaign Games. The other six control options are fully functional in all settings. Click on any option to enable or disable the option.

Fuel

When the Fuel option is enabled, the US or German commander can be required to hold one or more units out of the impending battle, due to a shortage of available fuel. When disabled, all combat units begin with full fuel tanks.

Ammo

When the Ammo option is enabled, the US or German commander must determine the designated ammo loads his units carry into battle based on the total available ammunition. When disabled, all combat units enter the battle with 100 percent ammo.

Replacement

The Replacement option has no impact in set piece or Battle Builder battles.

Reliability

The Reliability option has no impact in set piece or Battle Builder battles.



Battle Reality Options Screen

Morale

When the Morale option is enabled, battalion companies are subject to the effects of morale and unit cohesion. When disabled, all combat units ignore the effects of morale and cohesion.

Intelligence

You can select one of three possible Intelligence options. When this option is set to **Full**, all of the opposing forces are continually visible on the battle map. These units can be accessed during the battle to determine their type and make-up.

The pre-battle intelligence briefing fully describes the opposing force. When intelligence is set to **Partial**, a portion of the opposing forces are visible on the battle map in addition to any sighted enemy units. Visible units can be accessed during the battle to determine their type and make-up. The pre-battle intelligence briefing only describes the visible opposing force; force concentration markers are placed on the map for the remaining forces. When set to **Limited**, only those opposing units actually sighted are visible on the map. The pre-battle intelligence briefing provides a limited description of the opposing force; force concentration markers might be placed on the map.

Opponent Grade

Opponent Grade allows you to set the desired quality grade for all opposing forces. If this option is set to **Historical**, all opposing companies fight at their historical grade for the battle. Grades can vary from company to company. If instead, you select a specific grade, that grade applies to all companies in the battalion.

Friendly Grade

Friendly Grade allows you to set the desired quality grade for all friendly forces. If this option is set to **Historical**, all friendly companies fight at their historical grade for the battle. Grades can vary from company to company. If instead, you select a specific grade, that grade applies to all companies in the battalion.

Assets

When the Assets option is set to **Full Control**, you have total command of all artillery and air assets assigned to your force. If this is set to **Historical**, you have control of assets based upon your current command level. Battalion commanders control all assets. Company commanders control some of the force's assets and may request additional individual missions. Platoon commanders may request individual missions, but have no guaranteed control. The **Historical** setting should always be used when playing at the level of Battalion command.

Invulnerability

When this option is enabled, your character can not be wounded or killed during combat. In addition, none of the vehicles in your platoon can be destroyed. Using this option will greatly reduce the points awarded for a battle. If Invulnerability is disabled, the character can be killed or wounded and the vehicles in his platoon can be destroyed.

Rank Control

The Rank Control Option has no impact in set piece or Battle Builder battles

PRE-BATTLE

MENU COMMANDS

The Pre-Battle section Menu Bar allows you to move around the main viewing screen and control many of the Pre-Battle functions. The Menu Commands and their effects are explained below;

BATTLE

Show Briefing:	Opens the Battle Briefing window.
Enter Battle:	Exits the Pre-Battle functions and enters combat. All unit positions and organisations currently displayed are used. If your battalion does not meet ammunition or fuel restrictions, you are notified of this and are returned to the Pre-Battle section.
Main Menu:	Exits the current battle and returns you to the Main Menu for the currently active nationality.

ORGANISATION

Show Organisation:	Makes the Battalion Organisation screen active.
Show Military Icons:	Toggles between displaying symbolic and military icons both on the Organisation screen and on the Zoom Map. Only companies, platoons and sections are affected by this command. Individual vehicles and squads are always represented by symbolic icons. Consult the Appendix for a full list of these icons and their meanings.
Show Battalion Stats:	Displays the Battalion Statistics window. This command is active in both the Organisation screen and the Map window.

MAP

Show Map:	Opens the Map window.
Turn Off/On Overlay:	Turns the Nationality overlay on the Map window on or off.
Turn Off/On Contours:	Turns the terrain contours on the Map window on or off.
View All:	This is the normal magnification of the Zoom Map. All of the playing area is visible on the Zoom Map.
4x Scale:	Increases the magnification of the Zoom Map by a factor of four. Allows you to see a quarter of the total map in greater detail. The Battle Map is not affected.
8x Scale:	Increases the overall magnification of the Zoom Map by a factor of eight. Allows you to see an eighth of the total map in greater detail. The Battle Map is not affected.
16x Scale:	Increases the overall magnification of the Zoom Map by a factor of 16. Allows you to see one sixteenth of the total map in greater detail. The Battle Map is not affected.
32x Scale:	Increases the overall magnification of the Zoom Map by a factor of 32. Allows you to see one thirty-second of the total map in greater detail. The Battle Map is not affected.
64x Scale:	Increases the overall magnification of the Zoom Map by a factor of 64. Allows you to see one sixty-fourth of the total map in the greatest possible detail. The Battle Map is not affected.

BATTLE BRIEFING

The Battle Briefing is displayed in the center of the screen. A very short description of the battle and any known information about the opposition is

included in the briefing. You can close the window by clicking the close box in the top left corner of the window. To redisplay the briefing, select the Show Briefing command under **BATTLE** in the Main Menu.



Battle Briefing Map Screen

UNIT PLACEMENT

The Map screen includes three areas. The Zoom Map is a detail map on the left of the screen. The Battle Map is a reduced-size map positioned at the lower right. Map Objects lists all available companies and their subordinate platoons/sections in your current force.

Each company is assigned a letter. This is how it identifies itself during the battle. The headquarters company is always company "H." The remaining companies are labelled "A" through "F," moving from left to right in the Organisation screen. The platoons/sections of a company are numbered 1 to 8 in order of their location in the Organisation Screen, except for headquarters sections, which are assigned the letter "H." By combining the two labels you get a unique designation for each sub-unit on the map. For example, the headquarters section of battalion HQ would be "HH," while the second platoon of B company would be "B2."

The Battle Map also uses company identifiers of all friendly forces and all known opposing forces. On the Zoom Map at the left, companies are identified by their symbolic icons—the default setting—or at your option, by military icons.

Your battalion's companies are pre-deployed on the Battle Map. You may accept this deployment "as is" or reorganise. To rearrange your forces, select a unit from the list at the upper right window. Next, click its new position on the Zoom Map. The company's icon moves to the new location on both the Zoom Map and the Battle Map. Remember you may only deploy US Companies in the blue banded area of the Battle Map, and German companies in the gold banded area. A company's deployment area can not overlap that of another company. In addition, terrain limitations may affect unit setups.

Platoons within each company are deployed by the computer in a formation appropriate to the company's orders. If you wish a platoon to be placed in a particular position, zoom the map for a better view of the terrain, select the platoon/section from the map objects and place it as if it were a company. A small square icon is shown for a detached platoon in the Map window; Platoons are also visible on the Zoom Map. Once placed in this manner, a platoon or section is considered to be detached from its parent company, as described below under Command and Control. To remove a detached platoon, right click on the platoon's icon on the Zoom Map.

In addition, entire companies may be deployed as detached units. This allows you to place companies in restricted areas, such as cities and forest roads, which are normally not allowed. You can place each platoon individually, and the HQ as the last unit, or allow the computer to place the entire company for you. When you attempt to place a company in a terrain restricted area, a warning box appears which gives you the choice of allowing the computer to place the company as detached units. Units placed in this manner are considered detached for all purposes.

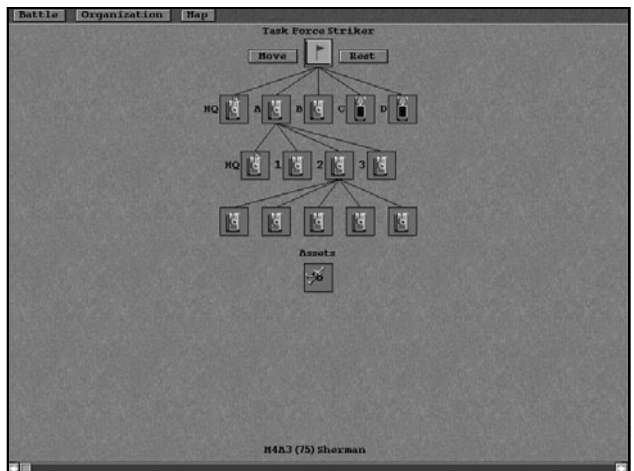
Detached platoons may be picked up by using the **Delete** Button in the Battle Builder, or by clicking on their icon in the Zoom window. If any platoon of a fully detached company is picked up, the Headquarters unit is also picked up. You can reposition the units individually or place the picked up units as a normal company. If they are placed individually, the Headquarters units must be placed last.

UNIT ORGANISATION

Click **Organisation** on the Menu Bar and select **Show Organisation**. The organisation is displayed in a hierarchical tree with the battalion at the top; the battalion's member companies appear directly below the battalion box. Companies and platoons are identified by their symbolic icons—the default setting—or at your option, by military icons. Squads and Individual Vehicles are always represented by symbolic icons.

Viewing Units

You can view the units in your battalion down to the individual vehicle or squad level. Right click on any company to expand it into its platoons. Right click on any platoon or section to expand it into its individual units. At the individual unit level, you have access to the Data Viewer. Right click on any individual unit to open the Data Viewer.



Organisation Screen

Unit Statistics

You can review the logistic requirements and combat capabilities of your unit by right clicking on the battalion flag icon. Battalion Stats displays a summary of the battalion's information. Click at the upper left to close the window. Depending on the Reality Option settings, some of the information might be disabled.

If the **Ammo** option is enabled you can set the percentage of a full loadout that each member of the battalion carries into battle. Options are 100, 75, 50, 25, and 0 percent. Listed below the **Ammo** button are your Ammo stats. *Ammo Needed* indicates the total number of ammo loadouts required for the battle. This calculation is based on the number of combat units and the percentage you set. *Ammo Avail* indicates the total number of loadouts currently available in the battalion supply trains. A battalion may not enter battle needing more ammunition than it has available. You can reduce the ammunition requirements in one of two ways. Set Ammo to a lower percentage or Rest certain formations (see below). As you make these adjustments, the *Ammo Needed* stat shrinks in response.

If the **Ammo** option is enabled you may set the **Ammo Loadout** of all the units in the battalion. There are three possible ammo loadouts. The **Standard** loadout includes a balanced number of Armour-Piercing and High Explosive rounds. The **Anti-Armour** loadout includes a larger number of AP rounds at the expense of HE rounds. This loadout should be taken if you expect to engage large numbers of armoured forces. The **Anti-Infantry** loadout reduces the number of AP rounds and increases the number of HE rounds. This loadout should only be taken if you are expecting to fight large numbers of enemy infantry, with only small numbers of tanks.

If the **Fuel** option is enabled, the Battalion Stats displays *Fuel Needed* and *Fuel Avail*. *Fuel Needed* indicates the total amount of fuel required for the battle, expressed in US gallons for the US forces, and liters for the German forces. This calculation is based on the type and quantity of each combat unit. It is a more complicated calculation than for ammunition; some vehicles just require much more fuel than others. A battalion may not enter the battle needing more fuel than it has available. You can reduce your fuel requirements in just one way. Some units must rest so as to not consume fuel resources (see below). As you make these adjustments, the *Fuel Needed* stat shrinks in response.

Grade is a collective tally of the experience level of your battalion's companies. Grade ranges from best to worst: *Elite*, *Veteran*, *Seasoned*, *Regulars*, and *Green*. The Grade of the battalion is provided for information purposes only, and can not be modified.

Morale is a collective tally of the current motivation level of your battalion's companies. Morale ranges from best to worst: *Superb*, *Outstanding*, *Satisfactory*, *Fair*, and *Poor*. The Morale of the battalion is provided for information purposes only, and can not be modified.

Points gives the total point value of the battalion.

Right click on any expanded company to view the Ammo, Fuel, Grade, Morale, and Points statistics for the company. These stats are for information purposes only; nothing can be modified at the company level. Right click on any expanded platoon or section to view the Ammo, Fuel and Points statistics for the platoon. These stats are for information purposes only; nothing can be modified at the platoon or section level.

Organisation Modifications

You can modify the battalion organisation using two commands: **Move** and **Rest**.

Move is used to transfer platoons or sections from one company to another. To move a platoon or section, first click on **Move**—this activates the function. Next click on the platoon or section you wish to move; finally, click on the destination company. You must move an entire platoon or section—you can not move individual vehicles or individual squads. Companies can not move. Platoons and sections move only from one company to another company. The company stats are in all likelihood affected by moves. Ammo and Fuel requirements are certainly affected. Grade and Morale might be affected. Moving one or more Green platoons into a Veteran company might reduce the overall Grade of that company. The action might have a similar impact on the company's Morale. Be careful when moving forces. When finished, click on the **Move** button again to deactivate the function so that no inadvertent moves are made. Attached platoons and platoons of attached companies can not be transferred using the **Move** command.

Rest takes platoons, sections, or entire companies out of the line and places them in static reserve. You can not rest individual vehicles or individual squads. The rest function is not used during individual battles unless ammo and fuel restrictions require it. The most common use for the **Rest** command is during campaign battles, when long term planning becomes a factor.

When a unit is placed on Rest status, it is not available for the ensuing battle. Units placed on reserve can be taken out of reserve for subsequent battles. Rest is not a permanent status. While resting, the unit's resource requirements are substantially reduced, thus saving on the unit's Ammo and Fuel requirements. Judicious use of this command can help resource-starved battalions meet battle requirements or even save resources for a later day. Click on **Rest** to activate the function. Click on a platoon, section, or company you wish to place in reserve. The unit changes colour to indicate its reserve status. Note that the Battalion Stats now reflect this change. Some restrictions do apply. Company headquarters sections can not be rested; this action rests the entire company. The Headquarters Company as a whole may not be rested, although individual platoons or sections in the Headquarters Company may be. When you are finished putting units on reserve, click **Rest** to deactivate the function.

ENTERING COMBAT

When you are satisfied with deployment and force organisation, click **Battle** from the Menu Bar and select **Enter Battle**.

BATTLEFIELD WINDOWS

At this time the computer takes a few moments to load the battlefield you selected into memory. Once the battle is loaded, you see four windows on your screen. These windows are the Battlefield, the Zoom Map, the 3D View and the Command Bar. These windows allow you to control the actions of your battalion and command your personal command vehicle.

Any of the windows can be moved by clicking and dragging in the window's title bar. When the window is where you want it, release the LMB (see Mouse Controls for details).

BATTLEFIELD MAP

The Battlefield Map presents a constant overall view of the battlefield, covering a ten kilometre by ten kilometre area.



Battlefield Map

The Battlefield Map also shows the positions of all friendly forces and all known opposing forces. The positions are marked with the company identifiers, "H" for headquarters company, "A" to "F" for other companies, as described in the Pre-Battle screens. The opposing force can consist of companies "A" to "K." Detached platoons and sections are shown by small generic markers which are one fourth the size of the standard company markers. Platoons of engaged companies are shown by small circular icons. The information available on the positions of enemy forces is dependent upon the Intelligence option selected for the current game. In the **Limited** and **Partial** Intelligence options, enemy forces are only displayed once they have been sighted by a friendly unit. If

these units move out of sight they disappear from the map in the **Limited** option. You are provided several markers shaped like map pins. Use these pins to mark locations on the Battlefield map. This is done by right clicking on the desired location on the Battlefield map to set the pin. You can remove the pin by right clicking on a set pin.

The Battlefield Map also contains a white square indicator. This square outlines the area currently displayed by the Zoom Map. The size of the square is dependent on the current Scale factor of the Zoom Map. This square, and with it the Zoom Map, can be centred on any location on the battlefield by clicking on the desired location not already inside the square or by clicking and dragging to an area inside the square.

ZOOM MAP

The Zoom Map defaults to full size. Details from the full 10 kilometre by 10 kilometre battlefield can be enlarged in increments by using the Zoom Control bar on the Command Bar until the Zoom Map focuses on a 200 meter by 200 meter area (see below). At most scales the location of companies are shown, at the larger scale factors platoon icons are shown. Single vehicles are not displayed on the Zoom Map.



Zoom Map

When zoomed in, move around the map by using the scroll bars along the right side and bottom of the Map window, or by clicking at a point in the Battlefield Map window as described above. The white square in the Battlefield Map indicates the area viewed in the Zoom Map. The window size of the Zoom Map can be changed by dragging the button in the lower right corner of the window. This adjusts the map to cover a larger or smaller area of your screen as needed. The slide control of the Command Bar can be used to control the magnification of the Zoom Map. Consult the section describing the Command Bar for a full discussion of this control.

The Zoom Map shows the terrain in the standard colour format. The different terrain types on the Zoom Map are depicted by colour variations, as shown in the illustration above. Solid dark patches are forested areas. Gray muted areas are hills. Blue lines are streams, and blue patches are small lakes. The gray and brown lines are roads and paths respectively. White patches along the roads are urban areas. The normal grass lands also contain individual trees and different coloured fields.

COMMAND BAR

The Command Bar contains many of the most commonly used controls needed for command and control of your battalion, and to control the other three windows on the screen.



The Command Bar consist of four rows of controls: the Title Bar, the Unit Display Bar, the Control Bar, and the Zoom Control.

Title Bar

The Title Bar consist of an up and a down arrow button, and a text window. The arrow buttons control the command level displayed in the Unit Display Bar. The text window displays the title of the currently selected unit in the Unit Display Bar. The up arrow changes the display to the next higher command echelon. The down arrow changes the display to the next lower command echelon for the selected unit.

Unit Display Bar

The Unit Display Bar displays your battalion organisation. The bar can display two command levels, companies or platoons. The units are represented by either their military icon or their symbolic icon, whichever is currently selected. Note that the symbolic icons do not indicate the size of the command represented. The current level of command displayed can be determined by observing the Title Bar of the Zoom Map. If displaying military icons, standard unit size notations apply.

The Display Bar has space to display six units. If there are more than six units in any command level they can be cycled through, using the left and right arrow keys on either side of the display. If there are no additional units in a particular direction, the arrow keys will be inactive, and will be greyed out. Units are arranged from left to right according to their position in the Unit Organisation in the pre-battle section. You can control the Command level being displayed using the arrow buttons in the Title Bar (see above).

You select one of the currently displayed units by clicking on its icon in the bar. The selected unit is highlighted by a white box around its icon. In addition, the Zoom Map automatically centres on the unit and changes magnification to show the correct command level of the unit selected.

The Display Bar will indicate the platoon currently controlled by the player. The platoon icon is enclosed in an orange outline to indicate player control. There is no such indication at the company level, only in the platoon display.

Control Bar

The Control Bar consists of 12 command buttons. These buttons correspond to the 12 Function keys, **[F1]** - **[F12]**. A more thorough description for the functions of these buttons is located in the Keyboard Control section below.



Command Open 3D View

Changes 3D View window to Command Open Mode.



Command Closed 3D View

Changes 3D View window to Command Closed Mode.



Gunner 3D View

Changes 3D View window to Gunner Mode.



Shift Position

Moves player's perspective to the command tank of the currently selected platoon.



Return

Moves player to original command vehicle. This is the vehicle commanded by the player's active character. This character suffers the fate of his original vehicle, and is not moved with the player's perspective.



Center on Tank

Centres the Zoom Map on the vehicle currently controlled by the player.



Command Unit

Activates Unit Data Display for player's command unit. If you are the battalion commander, the battalion headquarters' Company Data Display is activated. If you are a company commander, the Company Data Display for the appropriate company is displayed. If you is a platoon commander, the appropriate Platoon Data Display is shown.



Tactical View

Changes 3D View window to Tactical Chase View Mode.



Window Control Bar

Opens the Window Control Bar across the top of the screen. This bar includes one button for each open window on the screen. Clicking on each button will bring the designated window to the front of the screen. This command should be used if the required window is hidden behind other windows, reducing the need to move other windows.



View Toggle

Toggles the 3D View window from normal to a 512x300 screen. You must use the function key **[F10]** to exit the 512x300 screen.



Asset Control

Opens the Unit Data Display for all off map artillery and air assets.



Icon Toggle

Toggles the unit icon representation between Symbolic and Military icons on the Zoom Map and the Control Bar.

Zoom Control

The Zoom Control consist of two buttons and a slide bar. These controls manage the scale factor of the Zoom Map. The "F" button displays the full battlefield. The "C" button scales to show company icons and displays the map on a four power zoom. These buttons are activated by clicking on them. The control slide increases or decreases the zoom scale by individual increments. Moving the bar to the left reduces the zoom scale, showing a larger area of the total battlefield. Moving the bar to the right increases the zoom scale, showing a smaller area of the total battlefield. All of the zoom magnifications on the slider display platoon icons. The slider is moved by dragging with the mouse, or by clicking along the slide scale.

3D VIEW WINDOW

The 3D View window is the actual view from your position in your command or chosen vehicle.

This window is a view into your immediate surroundings, and enables you to take direct command of your vehicle in the heat of close range combat. When your command unit is not engaged or close to an enemy unit, the game speed can be greatly increased by minimising this window. In addition, by lowering the level of detail displayed for the sky and ground, you can also increase the speed of the game. This detail menu is accessed by pressing **[Alt V]**.

You have a choice of four different 3D views. The default view is the *Command Open* view. This gives you the view from the open hatch of your command tank. The second option is the *Command Closed* view, which is the commanders view from his closed command position. The next option is the *Gunner* view. This option places you in the gunner's position of your current tank. *Tactical* view gives you a "chase" view from outside of your tank.

There is no separate Driver's view in **AIR**. Instead, you can give the driver instructions from any of the 3D View windows. The specific driver controls are all explained in the section on keyboard controls below. In addition, your crew will give you updates verbally through the digital speech effects. This is explained more fully in the Command Dialog section below.

There are certain controls and indicators that are common to all three views. Two of these are integral parts of the tank controls; the Round Loaded Light, and the Turret Clock. The others are game indicators superimposed over your view to indicate certain events or game settings. These are the Vehicle Direction Compass, Computer Driving Control, Blocked Movement indicator, Targeting Alignment indicator and the Accelerated Time indicator.

Round Loaded Light

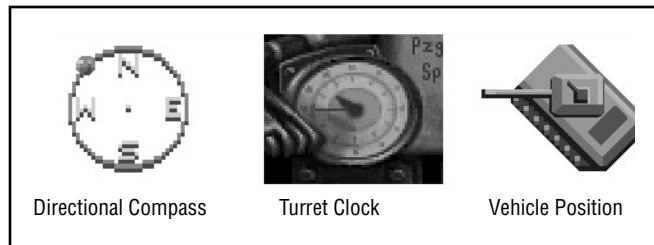
This light is on if the tank's main cannon is loaded. The light is off if the gun is not loaded (i.e., the loader hasn't finished loading another shell).

Vehicle Direction Compass

This is a small white circle superimposed in the upper left corner of your view. The cardinal points, North, South, East and West, are marked, and the current heading of the vehicle (i.e., the hull orientation) is marked by a small white and gray ball. This marker allows you to see which direction the tank hull is facing and moving.

Turret Clock

This is the mechanical dial indicator located to the left of the machine gun in German tanks, or to the right of the machine gun in American tanks, just below the lip of the TC hatch. This device has two hands, much like a clock face. The 12 o'clock position indicates the vehicles current hull position. The hands indicate the position of the turret and commander in relation to the hull. The longer hand indicates the *relative position* of the turret, and the short hand indicates the *relative position* of the Tank Commander. Do not confuse the turret clock with the Vehicle Direction Compass.



Computer Driving Control

Whenever the computer is in control of the vehicle's movement, (i.e., the computer is driving), you see a white "AUTO" caption flashing in the bottom center of the screen.

Accelerated Time Indicator

Whenever the game is in Accelerated Time mode, you see a white "ACCEL" caption flashing in the bottom left center of the 3D View window and in the Title Bar of the Battlefield Map windows.

Blocked Movement Indicator

If at any time the movement of your current vehicle is blocked by terrain or collisions, a small red stop sign shaped indicator will appear in the lower left of your view.

Target Alignment Indicator

This is a small white target reticule which appears to the right of the Blocked Movement indicator. When illuminated this indicates that the weapon, Machine gun in the Command Open View or the main gun or coaxial machine gun in the Gunner View is aligned horizontally with the target. This indicator is an aid in aligning the bearing of the gun, it does not guarantee a hit.

Command Open View

This is the viewpoint from the Tank Commander's cupola hatch when it's open ("unbuttoned"). Your view and the TC's controls are described below. Also see the illustration below.



Command Open 3D view

Turret Roof

You are looking out over the tank's roof.

Outside View of the Countryside

When looking out, you see the countryside around your tank. You are viewing the countryside with normal eyesight, but have the option of using 7x35 (seven power) military binoculars.

To rotate your view left/right or up/down, you can use the keyboard, joystick, or the hat switch of your joystick, if so equipped.

***Binocular Toggle Key* E**

This key toggles between normal and magnified view. Normal magnification is always one-power (1x), equivalent to normal eyesight. High magnification is seven-power (7x) using your 7x35 military binoculars.

Note that at normal magnification (1x) your viewpoint rotates faster and has a greater field of vision than at high power (7x). Use normal vision to quickly scan for trouble or reach a specific direction, then switch to binoculars to see the details.

Machine gun

In front of you is the tank commander's machine gun. American tanks possess an M2 .50 calibre heavy machine gun, while German tanks possess an MG42 machine gun. This gun is for use against aircraft and ground targets with little or no armour. The gun is aimed at the middle of your view. You can use your chosen control method to move left/right or up/down. To fire, click, press Enter, or press **[JB1]**. Each press fires a burst of machine gun bullets.

Tank destroyers and assault guns are not equipped with machine guns in the tank commander position.

Command Closed View

This is the viewpoint from the Tank Commanders position when his hatch is closed ("buttoned up").



Command Closed View

Outside View of the Countryside

When looking out, you see the countryside around your tank. You are viewing the countryside through the forward vision block of the commander's copula. If your current vehicle is an American tank destroyer, with an open topped turret, you are down lower in the turret looking out over the gunner's head.

To rotate your view left/right or up/down, you can use the keyboard, joystick, or the hat switch of your joystick, if so equipped.

Gunner View

This is the view from the gunner's seat.

This position places you in full control of your current vehicle's armament. The best time to use this control is during close range firefights where the action is fast and deadly. In longer ranged actions, you can usually defeat more of the enemy by controlling all of your forces through the Zoom Map.



U.S. Gunner 3D View



German Gunner 3D View

This position includes the gunner's sight, and the controls for both the main cannon and the coaxial machine gun. The controls for both the American and German position are the same, however, their arrangement is significantly different. Consult the two diagrams above for the arrangement of the controls being described.

Outside View of the Countryside

When looking out, you see the countryside around your tank. You are viewing the countryside through the main gun sight. This sight has a fixed magnification of 2.5x.

Turret Rotation

Turret rotation is controlled through one of several methods, keyboard commands, normal joystick, or the joysticks hat. Moving the controller left or right rotates the turret. When you center the joystick or stop pressing the direction key, the turret stops at the current facing. To use the mouse, click on any point on the turret clock; the turret will traverse to that facing.

The gunner's sights and equipment are all built into the turret. Therefore, as you rotate the turret, your view and weapon move together. Note that the tank's hull remains stationary.

Many German tank destroyers and assault guns do not have a turret. In order to rotate the gun you must turn the entire vehicle using the driving controls. These vehicles do have a limited traverse to allow fine targeting movement.

Elevation and Depression

Vehicles have limited elevation and depression angles, which vary slightly from vehicle to vehicle. To elevate your gunner's sight and weapon, move your joystick forward/up. To depress your gunner's sight and weapon, move your joystick back/down. Also, the elevation and depression can be controlled with the mouse by dragging the Elevation Slide, or with the keyboard controls.

Elevation Slide

This control looks like a metal ruler standing on end with a cap which slides up and down. This is the actual control for the elevation and depression of the gun. In reality, the Elevation Slide is attached to the breech end of the gun, therefore you would move the cap up to depress or down to elevate the gun. In **AtR**, this is what you actually see. However, this is not the way the game controls function. In order to avoid confusion, all gun controllers move up to elevate the gun and down to depress the gun. You can control gun laying with the mouse by clicking on the top of the slide to elevate and the bottom of the slide to depress the gun. Remember that you see the cap move in the opposite direction, *this is correct*. If you are using another controller, the cap moves to show the current state of the gun. The slide has a line across the ruler, which when lined up with the notch in the cap indicates that the gun is flat.

Main-Coax Switch

The Main-Coax switch toggles the gunner's weapon controls between the main cannon and the coaxial machine gun.

In American tanks, the "M" represents the main gun and the "C" the coaxial machine gun. In German tanks, the "M" represents the coaxial machine gun, and "K" represents the main gun (cannon). The default setting is to the cannon. If you switch to the machine gun it is wise to switch back immediately afterward. Otherwise you might find your gunner trying to machine gun an enemy tank, a remarkably futile activity.

Ammunition Switch

This control indicates which type of ammunition is loaded in the main gun (or being loaded if the ready light is off). The switch has three positions, which are, from left to right, High Explosive (HE), Armour Piercing (AP), and High Velocity Armour Piercing (HVAP). In German tanks the indications are in the same order but are listed with their German abbreviations, Spgr (HE), Pzgr 39 (AP), and Pzgr 40 (APCR). APCR (Armour Piercing, Composite, Rigid) is the German equivalent of the American HVAP.

The switch is controlled by clicking, pressing the Ammunition Toggle [key A on the keyboard] or, if using a Thrustmaster or Flightstick Pro, pressing **[JB2]**. When selected, the switch cycles from left to right and then returns to the start. For example, the switch would toggle HE/AP/HVAP/HE.

Right clicking in the ammunition box opens a small dialog box which lists your remaining ammunition as a number of "shots" of each type. A "shot" represents the ammunition fired by your entire platoon over the course of several seconds and therefore includes multiple rounds of ammunition. (A discussion on the application of ammunition types and weapons in general can be found in Chapter 7, Tactics.)

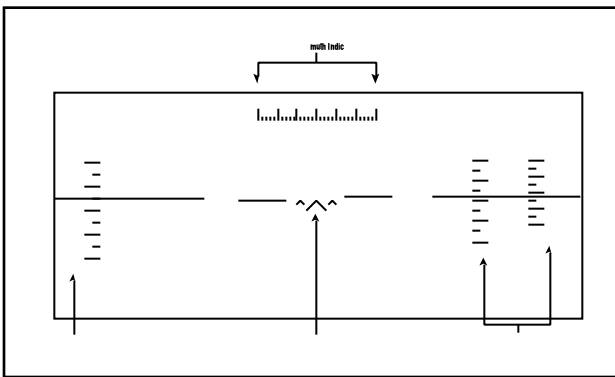
Firing Control

You can fire the main gun or coax machine gun (whichever is selected, see the Main-Coax switch), by clicking on the large **Fire** button on the screen, by pressing Enter or by pressing **[JB1]**.

You can not fire the main gun unless it is loaded. If the gun is not ready, the ready light is off and you'll get a "still loading" message from the loader.

Gun Sight

The gunsight picture in World War II armoured vehicles is very basic by today's standards. There is no specific aiming cross hair which you can place on the target and expect a hit. Instead, you have to estimate your aim point by using the three aiming indicators, (the Azimuth Indicator, the Range Line, and the Range Indicators) superimposed on the gunsight picture.

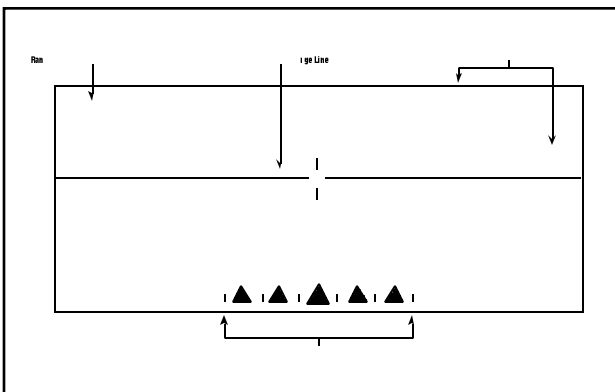


US Sight Picture Diagram

The first indicator is the **Azimuth Indicator**, located along the top of the American sight and the bottom of the German sight. These markings are used to judge the proper bearing for your shot. The central marker is used, in most cases, and represents the actual gun bearing. The markers to either side of the central marker are used for leading targets.

The second indicator is the **Range Line**, consisting of a single line which divides the sight from side to side. The range line is an indication of the gun's current elevation. At most battle ranges you use the Range Line in conjunction with the Range Indicators described below.

The final indicator is the **Range Indicator**, located along both sides of the gunsight. Both gunsights, American and German, have three sets of Range Indicators, one for each ammunition type, HE/Spgr, AP/Pzgr39 and HVAP/Pzgr40. Each set of Range Indicators is based on the trajectory of the specific ammunition type.



German Sight Picture Diagram

These three markers, the Azimuth Indicator, Range Line and the Range Indicators are used to estimate the impact point of the main gun round. In a perfect world, these indicators could almost guarantee a hit on the first round. In real life, this perfect solution is affected by two major factors, the trajectory of the round, and the motion of both the firer and the target.

Trajectory is a term which describes the round's path from firing to impact. It is subject to many factors, including muzzle velocity, gravity, the aerodynamics of the round, and atmospheric conditions. All of these factors result in the round following an arched path instead of a flat path. This must be taken into account when firing at targets. For AP and HVAP/APCR ammunition, the path can be treated as a flat trajectory at short ranges, approximately 300 to 500 yards. Beyond that distance you must anticipate the drop of the round and aim over your target. HE ammunition has a more pronounced arc to its trajectory.

The gunsights in WW II tanks use the Range Line and Indicators to compensate for the trajectory of the round. The indicators are used by aligning the Range Line with the correct Range Indicator for the current Ammunition type. This will place your round close to your target. Further adjustments should be made from this impact point.

You must compensate for vehicle motion. The motion of your own vehicle affects both the vertical and horizontal aim point of your gun. The greater the motion the greater the effect. In addition, the terrain can greatly increase the effects of movement. The cumulative effect is that it is almost impossible to hit a target from a moving tank. This accounts for the need to stop your vehicle in order to fire.

Target motion is not as easy to correct. On the other hand, target motion does not have as great an effect on the targeting problem as your own vehicle's motion. Since you can not make the enemy stop his vehicle you must compensate for its motion. This is the purpose of the Azimuth Indicators on the gun sight. These indicators allow you to track a target and determine the proper amount to lead the vehicle.

Most versions of the M-4 Sherman tank did possess a rudimentary gyro-stabiliser for their main guns. This stabiliser only functioned in the vertical plane and was rarely used. The crews did not trust this device, and considered it dangerous if engaged while moving over rough terrain. In addition, it increased the loaders difficulty in loading while on the move, slowing the rate of fire.

One gunnery field expedient was the use of the coax machine gun as an aiming aid. At close range, 100 to 200 yards, the coax MG had roughly the same trajectory as an AP round. A good gunner could use the coax MG to fine tune his aim while waiting for the loader to load the next round.

Tactical View

The Tactical View presents a view of your tank from an imaginary "chase vehicle" located behind and slightly above your tank. Only the Driver controls are active in Tactical View.

KEYBOARD COMMANDS

This section outlines the keyboard commands available during combat. A few of these functions are not accessible in any other manner, while the majority of these commands can be duplicated either on screen, or with a mouse or joystick. The commands are grouped by general function. The Tank Commander and Gunner functions are only active in their respective 3D View windows. The Driver functions are active in any view, if the vehicle is available for player control.

TANK COMMANDER CONTROLS

- F4 **Shift Position** moves your viewpoint to the command tank of the currently selected platoon; you now control this vehicle. However, you're character is still considered to be in your original tank, and therefore, suffers the fate of that vehicle. If the selected unit is not a tank, tank destroyer or assault gun, the 3D View is limited to the Tactical view. In addition, only the controls which are normally active in this view are available.
- F5 **Return to Character** moves your viewpoint to the original command vehicle. This is the vehicle commanded by your active character.
- F6 **Center on Tank** centres the Zoom Map on the vehicle you currently control.
- F7 **Command Unit** activates the Unit Data Display for your command unit. The display depends upon your command level. If you command the battalion, the display for the HQ company appears. If you command a company, the company HQ platoon display is shown.
- F11 **Assets** opens the Unit Data Display for all off map artillery and air assets. This display allows you to call in any available artillery or air support.
- Enter or Spacebar **Fire Gun**, when in Command Open 3D view either key fires the Tank Commander's machine gun.
- B **Binocular View**, when in Command Open 3D view this key toggles between normal vision and binocular magnification.
- E **Move To**, activates the Move To function from the current units Platoon Dialog.
- T **Target**, activates the Select Target function from the current units Platoon Dialog.

Keypad (In order to use keypad commands NumLock must be on.)

- [1] **Rotate View Left - Slow** , when in Command Open or Closed view, this key rotates your viewpoint counter-clockwise at slow speed, allowing fine aiming control.
- [2] **View/Machine Gun Down** , when in Command Open or Closed view, this key lowers your view point and the aim point of the commander's machine gun.
- [3] **Rotate View Right - Slow** , when in Command Open or Closed view, this key rotates your viewpoint clockwise at slow speed, allowing fine aiming control.
- [4] **Rotate View Left** , when in Command Open or Closed view, this key rotates your viewpoint counter-clockwise at normal speed.
- [6] **Rotate View Right** , when in Command Open or Closed view, this key rotates your viewpoint clockwise at normal speed.
- [7] **Rotate View Left - Fast** , when in Command Open or Closed view, this key rotates your viewpoint counter-clockwise at maximum speed.
- [8] **View/Machine Gun Up** , when in Command Open or Closed view, this key raises your view point and the aim point of the commander's machine gun.
- [9] **Rotate View Right - Fast** , when in Command Open or Closed view, this key rotates your viewpoint clockwise at maximum speed.

DRIVER CONTROLS

- [D] **Driver Control** turns the computer driving control on and off. When the computer is driving, the driver key commands are inactive. Computer control is indicated by the flashing "AUTO" in the upper right corner of the 3D View window. The tank must be under player control for the designated controls to function. See command and control for more details.
These functions are not active under Computer Driving Control.
- [H] **Hull Facing** orders the driver to turn the hull to align with the current facing of the turret or commander view. If the vehicle is moving, it continues to do so in the new direction.
- [1] **Driver Turn Left 60°** orders the driver to change course by 60 degrees to the left.
- [2] **Driver Turn Left 30°** orders the driver to change course by 30 degrees to the left.
- [3] **Driver Turn Left 15°** orders the driver to change course by 15 degrees to the left.

-  **Measured Speed** orders the driver to move forward at a slow, methodical speed, or about 25 to 33 percent of your vehicle's maximum speed.
-  **Systematic Speed** orders the driver to move forward at an average speed, or about 50 percent of your vehicle's maximum speed.
-  **Rapid Speed** orders the driver to move forward as fast as possible at 75 to 100 percent of your vehicles maximum speed.
-  **Driver Turn Right 15°** orders the driver to change course by 15 degrees to the right.
-  **Driver Turn Right 30°** orders the driver to change course by 30 degrees to the right.
-  **Driver Turn Right 60°** orders the driver to change course by 60 degrees to the right.
-  **Stop/Halt** orders the driver to immediately stop the vehicle. Current hull facing is maintained.
-  **Reverse Move** orders the driver to move the vehicle backward in the direction opposite of the current hull facing. Tank can reverse at slow speed only.
-  **Forward** orders the driver to move the vehicle forward in the direction of the current hull facing. Unless a speed is ordered, the driver defaults to 50 percent of maximum speed.
-  **Back** orders the driver to move the vehicle backward in the direction opposite of the current hull facing. Tank can reverse at slow speed only.
-  **Turn Left** orders the driver to turn to the left. The turn continues while the key is held down. Once the key is released, the vehicle continues to move forward in the current direction.
-  **Turn Right** orders the driver to turn to the right. The turn continues while the key is held down. Once the key is released, the vehicle continues to move forward in the current direction.

GUNNER CONTROLS

Keypad (In order to use the keypad commands, NumLock must be on.)

-  **Traverse Turret Left - Slow** , when in the Gunner 3D view, this key traverses the turret counter-clockwise at slow speed, allowing fine aiming control.
-  **Depress Gun** , when in the Gunner 3D View, this key lowers the aimpoint of the currently selected gun.
-  **Traverse Turret Right - Slow** , when in Gunner 3D view, this key traverses the turret clockwise at slow speed, allowing fine aiming control.

- [4]** **Traverse Turret Left** , when in the Gunner 3D View, this key traverses the turret counter-clockwise, at normal speed.
- [6]** **Traverse Turret Right** , when in the Gunner 3D View, this key traverses the turret clockwise, at normal speed.
- [7]** **Traverse Turret Left - Fast** , when in Gunner 3D view, this key traverses the turret counter-clockwise at maximum speed.
- [8]** **Elevates Gun** when in the Gunner 3D View, this key raises the aim point of the currently selected gun.
- [9]** **Traverse Turret Right - Fast** , when in Gunner 3D view, this key traverses the turret clockwise at maximum speed.
- [Enter or Spacebar]** **Fire Gun** fires the main gun or coax machine gun (whichever is selected, see the Main-Coax switch). You can not fire the main gun unless it is loaded. If the gun is not ready, the ready light is off and you'll get a "still loading" message from the loader.
- [A]** **Ammunition Select** cycles through the different ammunitions types for the main gun. The key cycles through the choices in order, High Explosive (HE/Spgr), Armour Piercing (AP/Pzgr39), and Special Armour Piercing(HVAP/Pzgr40).
- [M]** **Main/Coax Gun Select** toggles the gunner's weapon controls between the main cannon and the coaxial machine gun.
- [R]** **Realign Turret** rotates the turret or commander view to align with the current hull facing.

3D VIEW WINDOW CONTROLS

- [F1]** **Commander Open 3D View** changes the 3D View window to Command Open Mode.
- [F2]** **Commander Closed 3D View** changes the 3D View window to Command Closed Mode.
- [F3]** **Gunner 3D View** changes the 3D View window to Gunner Mode.
- [F8]** **Tactical View** changes the 3D View window to Tactical View Mode.
- [F9]** **Window Control Bar** opens the Window Control Bar across the top of the screen. Clicking on this button will bring the designated window to the front of the screen.
- [F10]** **View Toggle** toggles the 3D View window between normal and 512 x300 size screen.
- [F12]** **Icon Toggle** toggles the unit icon representation between Symbolic and Military Icons on the Zoom Map and the Control Bar.

GENERAL CONTROLS

- [Alt] [E]** **Battle Briefing** opens the Battle Briefing for the current combat.
- [Alt] [C]** **Command Dialog Control** allows the player to disable specific Commander Dialog Messages.
- [Alt] [D]** **Digital Sound On / Off** toggles the digital sound effects on and off. This command is not active during Battles.
- [Alt] [E]** **End Game** ends the current battle and calculates victory based on the current situation.
- [Alt] [J]** **Calibrate Joystick**, when beginning the game, or if you notice problems with your joystick, pressing this combination will calibrate the joystick.
- [Alt] [M]** **Music On/Off** toggles the background music on and off. This command is not active during Battles.
- [Alt] [P]** **Pause** allows you to pause the game at any time. Notification of the pause appears, and nothing happens (in the game) until you release the pause. To restart the game, click on the **Continue** button in the small pause menu.
- [Alt] [Q]** **Quit to DOS** allows you to quit **AtR** at any time. A dialog box appears presenting two options. You can **Exit to DOS**, which ends your session of **AtR**. (If you are in the middle of a battle, the battle is not saved when you select this option.) You can choose **Cancel** which returns you to **AtR**.
- [Alt] [S]** **Sound Control** allows you to change the settings of all sound effects during battles.
- [Alt] [V]** **Set Video Mode** allows you to change the detail level of the Sky and Ground. Lower detail levels will allow the computer to run faster, but will affect the visual appeal of the 3D window.
- [Alt] [W]** **Reset Windows** resets all screen windows to their default sizes, locations and settings during combat.
- [X]** **Normal Time** returns the game to real time, i.e., 1 sec=1 sec.
- [Z]** **Accelerate Time** accelerates the time scale of the simulation, reducing the playing time required for your units to cross large areas to arrive in combat.

COMMAND AND CONTROL

In **1944 Across the Rhine**, you are not just responsible for doing the most possible damage with your tank, but you are also responsible for commanding other units. It is through the proper command of all of your assets, not by the individual actions of your tank that battles are won.

This section of the manual describes the Command and Control functions which enable you to communicate with, manage, and issue commands to all of your company and platoon level formations. As a simple platoon leader, your influence over a battle is limited. Your platoon automatically mirrors your actions and you are not required to issue orders directly to the individual vehicles. It is only when you assume responsibility for other formations, platoons and companies, that the importance of command and control becomes critical.

You control your subordinate formations (companies and platoons), not specific individual vehicles and units. The computer controlled "commanders" of these units then attempt to carry out these orders to the best of their ability. You must rely upon your subordinate commanders to "control" the situation.

Detachments

Platoons are always considered to be attached to their parent company unless they are engaged with the enemy or detached by you. Once a company in contact with the enemy reaches an appropriate range based on its current order, the company engages the enemy. At this point all subordinate platoons in the company are given independent orders and begin to fire at the enemy. Once combat is concluded, the remaining platoons in the company reform around the current headquarters unit and are again controlled by the company orders.

You can detach platoons from companies based upon your current command level. Platoons are detached in battle through the Platoon Data Display described below. Platoons can also be detached in the Battle Builder or during Pre-Battle preparations as described above. Company headquarters units can also be detached in this manner. The HQ unit is controlled as a normal platoon while detached; however, when an HQ section is returned to company control, the company reforms around the HQ section in its current location.

Player Control of Headquarters Units

When you control a vehicle, that unit remains attached to its parent company while the computer driving control is active. You still have full control of commander and gunner controls. When the computer driving control is disengaged and the unit is driven manually, the platoon becomes detached from the parent company. When computer driving control is re-engaged, your vehicle will attempt to rejoin its parent company. This allows you to move between critical areas of the battle without leaving stranded and inactive vehicles behind. You can detach and drive headquarters units as well as non HQ platoons.

When a player controlled HQ unit is returned to computer control, the rest of the platoons in the company will move to the HQ unit and reform around it. This reform action does not take effect if the remainder of the company is engaged in combat, in which case the company will reform at the end of combat.

CREW DIALOGS

During game play you hear messages from your crew concerning target sightings, vehicle status and progress reports. There are three distinct voices, which represent the general crew, the gunner and the loader. Once you are familiar with the voices you can immediately distinguish who is talking.

General Crew messages include the following:

- **"Tank to front (rear/left/right)"** indicates that a member of the crew has sighted an enemy tank unit in the indicated direction. Enemy forces are classified as tanks if they are tanks, tank destroyers or assault guns. The called direction is based on your tank's current hull facing.
- **"Vehicle to front (rear/left/right)"** indicates that a member of the crew has sighted an enemy vehicle unit in the indicated direction. Enemy forces are classified as vehicles if they are armoured cars, half tracks, trucks, jeeps or other miscellaneous vehicles. The called direction is based on your tank's current hull facing.
- **"Leg to front (rear/left/right)"** indicates that a member of the crew has sighted an enemy infantry unit in the indicated direction. Enemy forces are classified as infantry if they are dismounted or leg infantry or if they are towed anti-tank or anti-aircraft guns. The called direction is based on your tank's current hull facing.

Loader messages include the following:

- **"AP ready"** indicates the main gun is ready to fire and is loaded with an armour-piercing (AP/PzGr39) round.
- **"Special ready"** indicates the main gun is ready to fire and is loaded with a special armour-piercing (HVAP/PzGr40) round.
- **"HE ready"** indicates the main gun is ready to fire and is loaded with a high explosive (HE/Spgr) round.

Gunner messages include the following:

- **"Main ready"** indicates that the gunner has switched guns from the coax machine gun to the main cannon, which is loaded and ready to fire.
- **"Coax ready"** indicates that the gunner has switched guns from the main cannon to the coax machine gun, which is loaded and ready to fire.
- **"Firing"** indicates the gunner has fired the main gun.
- **"Hit"** indicates the shot has hit the intended target.
- **"Missed"** indicates the shot has missed the intended target.

COMMANDER DIALOGS

All computer controlled commanders subordinate to you give updates on the status and situation of their units. The reports are sent for any significant event, such as contact with the enemy or reaching a destination, as well as periodically, such as "holding" or "in route."

The Dialog Box consists of a commander's photograph, a message text box and accompanying digitised speech if this feature is active. There are different commander photographs for each level of command represented, one for the battalion commander, one for the company commanders, and one for platoon commanders. This allows you to immediately recognise the level of the command communication.

The accompanying digitised speech is an abbreviated version of the overall message, but the speech does contain all pertinent information. The text is always present, even when the speech is active. The text window remains visible for a few seconds or you can turn it off. This is accomplished through any mouse click on the window.

The actual messages received depend upon the current command level of your character. Platoon commanders see all status messages and order changes for all platoons in your company. Company commanders see all status messages and order changes for all companies in the battalion and for your subordinate platoons. As battalion commander, you see all status messages and order changes for all companies and assets in the battalion, plus all the platoons in the Battalion Headquarters Company.

These messages are your subordinates' and NPC commanders' method of communication with you. You communicate with them through the Unit Data Display windows.



Platoon Commanders



Company Commanders



Battalion Commander

UNIT DATA DISPLAY WINDOWS

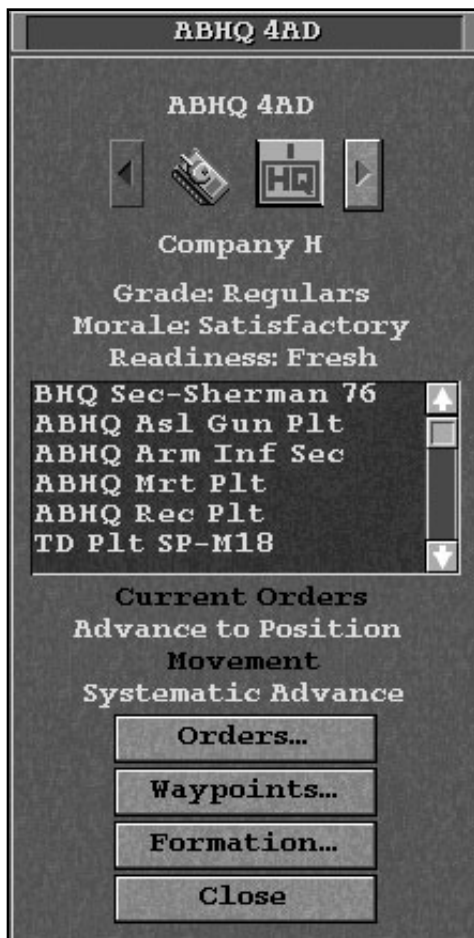
The Unit Data Display windows are accessed by clicking on the unit icon on the Zoom Map or by double clicking on the unit icon in the Command Bar. The Data Display window is available for companies or platoons. If an order is given to a company, you do not have to give an order to that company's platoons, the NPC company commander takes care of that. If you choose to give a platoon orders different from the rest of the company, that platoon becomes detached from the rest of the company.

Company Data Display

The Company Data Display window contains the information you need as either the company or battalion commander to control this unit and to judge the combat effectiveness and current status of the company.

The top of the window displays the title of the unit being shown. This title is the same used throughout the game, for example, "ABHQ Sherman 76," for the Armoured Battalion Headquarters of a 76mm gunned Sherman unit.

Below the title, both the Symbolic and Military icons of the company are displayed. To either side of these icons are arrow buttons which allow you to cycle the window through the companies in the battalion. Companies are displayed in the same order as the Display Bar of the Command Bar.



Company Data Display

Below each icon is the name of the company. This is the identification letter used to identify this company in your current organisation.

The next three lines display the current status of the company. The **Grade**, **Morale** and **Readiness** of the unit do not change during the game. These statistics are your best source for judging what your units are capable of during the battle. (See the Units Statistics section of Chapter 4, Battle for details.)

The next section of the Data Display is a list of the company's subordinate platoons. The list can be scrolled using the standard scroll bar to the right of the list. You select platoons by clicking on them with the mouse. When selected, the Zoom Map centres on the selected platoon and zooms to the platoon level scale. In addition, the platoon is now selected for command and function purposes. The platoons are listed in the same order they are presented on the Command Bar.

Below the platoon listing, the company's current Combat and Movement Orders are listed. (See Orders Menu, below, for details.)

The final section of the display consists of four Command Menu buttons. The first opens the Orders Menu, the second button opens the Waypoints menu, the third opens the Formation menu, and the fourth is used to close the Data Display window.

Platoon Data Display

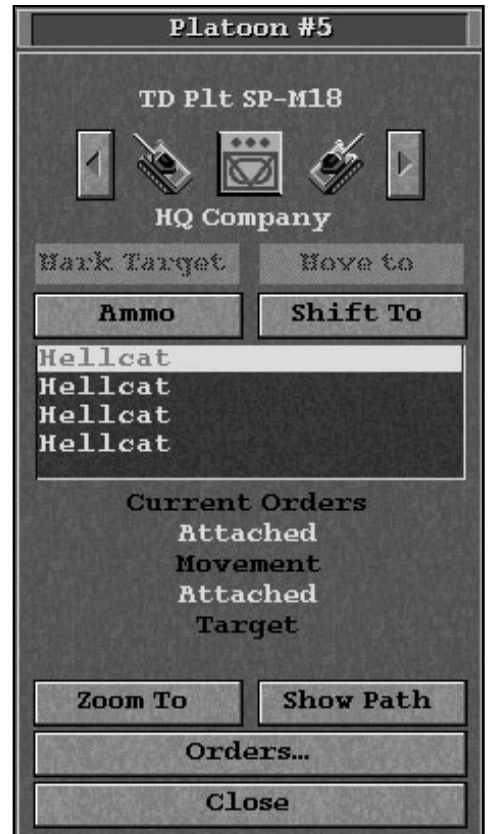
The Platoon Data Display is similar to the Company Data Display. The widow Title Bar contains the platoon numerical designation within the company. The top of the window displays the title of the platoon being shown. This title is the same used throughout the game, for example, "BHQ Sec-Sherman 76", for the Battalion Headquarters Section of a 76mm gunned Sherman Headquarters company.

Below the title screen both the Symbolic and Military icons of the platoon are displayed. To either side of these icons are arrow buttons which allow you to cycle the window through the platoons in the company. Platoons are displayed in the same order as the Display Bar of the Command Bar. Below the icons are the name of the parent company.

Below the unit listing are two buttons, **Move To** and **Mark Target**. These buttons allow the player to control the actions of the platoon in combat. Once the platoon is engaged with the enemy, these buttons become active. They are only active if the platoon is engaged.

The **Move To** button allows the player to give a platoon instructions to move to a specific point on the map during combat. Open the platoon data display with the subject platoon in the Zoom window. Clicking on the **Move To** button, changes the mouse cursor into a waypoint marker. Now click on the location you wish the unit to move to. Only one location may be set. Turn the **Move To** function off by clicking on the button again. Platoons continue to fire normally while moving. However, they will stop moving toward their destination if any new enemy units present themselves. Once the location is reached, the platoon will remain in place for up to one minute before returning to computer control, unless it is given another **Move To** command.

The **Mark Target** button orders the platoon to engage a specific designated target during combat. Open the platoon data display with the subject platoon in the Zoom window. By clicking on the **Mark Target** button, the mouse cursor changes into a target marker. Now click on the enemy platoon you wish the unit to engage. If the platoon cannot damage the selected target or there is no valid line of sight, a



Platoon Data Display

warning message appears and another target must be selected. Only one target per platoon may be designated. Once designated, the platoon will continue to engage the target until it is destroyed, line of sight is lost, or another target is designated. Turn the Target function off by again clicking on the **Mark Target** button.

Below the **Move To** and **Mark Target** buttons are two additional buttons, the **Ammo** button and the **Shift To** button. The **Ammo** button opens the Platoon Ammunition Status window. This window contains the platoon designation, name and icons. Below the platoon icons is a list of the shots remaining for that platoon for each of the ammunition types. The platoon automatically chooses the proper type of ammunition to use. You can only choose the type of ammunition to use for the platoon you are directly commanding, as described in the section on Gunnery. If the Ammunition Reality option is disabled, all ammunition types will state "Full."

The **Shift To** button shifts the player's 3D position to this platoon. This button functions identically to the **[F4]** key, but does not require you to select the platoon in the control bar. Like the **[F4]** key, the **Shift To** button moves your viewpoint to the command tank of the currently selected platoon; you now control this vehicle. However, you're character is still considered to be in your original tank, and therefore, suffers the fate of that vehicle. If the selected unit is not a tank, tank destroyer or assault gun, the 3D View is limited to the Tactical view.

The next section of the Data Display is a list of the Platoon's active subordinate vehicles or squads. Once a unit has been put out of action it is removed from the list. The list can be scrolled if necessary, using the standard scroll bar to the right of the list.

The next section of the display consists of two Command Menu buttons. The first opens the Platoon level Orders Menu, the second is used to Close the Data Display window.

Under the Subordinate Unit list, the platoon's current **Combat** and **Movement** Orders are listed (see Orders Menu, below). If the platoon is under the control of its parent company, both the Combat and Movement Orders are listed as "Attached."

The next entry on the Platoon Data Display lists the Current **Target** of the platoon. This is the target judged by the platoon as its most appropriate target, or the target chosen by the player through the **Mark Target** button.

Below this entry are two buttons, the **Zoom To** and the **Show Path** buttons. The **Zoom To** button centres the zoom map on this platoon. The **Show Path** button displays the current path of the platoon as a yellow line on the Battlefield Map. The path remains displayed until the Platoon Dialog Display is closed or another platoon is selected.

COMPANY ORDERS MENU

The command and control functions are divided into two categories of commands, *Combat Orders*, and *Movement Orders*. These commands control a company's behaviour until changed by you or by a game event. Many of the Combat Orders require a specific Movement Order, but a Movement Order can never dictate a specific Combat Order. There is a certain finesse in the application of these commands.

Combat Orders

Combat Orders control the company's behaviour in the presence of the enemy. The orders are generally divided into offensive and defensive oriented commands. The trigger event for Combat Orders is *Contact* with an enemy force. Without this contact, the company will not initiate its Combat Orders. Until contact is reached, the company continues to be controlled by its Movement Order and proceeds to its destination.

There are 12 Combat Orders, six offensive in nature, two concerning movement, and the final four which are defensive.

Assault

A very aggressive, mobile attack style. When contact is made with the enemy, the company will close to short range and engage the opposing force until the attacker reaches its Break Point, described in the section on Cohesion, below. In addition, the engagement is maintained until the enemy withdraws, or you change your company's orders. Once contact is made the unit's original Waypoints are dropped, and new Waypoints may be given after combat. If the enemy withdraws, the assaulting unit pursues. If contact is not regained or the company reaches its destination without contact, it assumes a Counterattack Order. A company given an Assault Order must also be given an Advance type Movement Order.

Sustained Attack

A less aggressive, mobile attack style. When contact is made with the enemy, the company will close toward the enemy and engage the opposing force until the attacker reaches its Break Point, the enemy withdraws, or you change your company's orders. If the enemy withdraws it is pursued for a short period of time. If contact is not regained or the company reaches its destination without contact, it assumes a Deliberate Defense and Hold Position Order. A company given a Sustained Attack Order must also be given an Advance type Movement Order.

Advance to Contact

A non-pursuing attack style, in which the purpose is to make contact with the enemy and then hold position. When contact is made with the enemy, the opposing force is engaged at long range until the Break Point, the enemy withdraws, or you change your company's orders. If the enemy withdraws, it is not pursued. If contact is lost or the company reaches its destination without contact, it assumes a Deliberate Defense and Hold Position Order. A company given an Advance to Contact Order must also be given an Advance type Movement Order.

Probe

A non-pursuing, less aggressive attack style, the purpose of which is to make contact with the enemy and then resist further contact. When contact is made with the enemy, the opposing force is engaged more aggressively than with Break Contact Orders—somewhat equivalent to Delay Orders. Contact is maintained until the Break Point, the enemy withdraws or you change your company's orders. If the enemy withdraws, it is not pursued. If contact is lost or the company reaches its destination without contact, it assumes a Break Contact Order. A company given a Probe Order must also be given an Advance type Movement Order.

Counterattack

A company with this order has the appearance of a defensive position, but is actually poised for an attack. The unit holds its position until contact is made. When contact is made with the enemy, the opposing force is engaged until the Break Point is reached, the enemy withdraws or you change your company's orders. If the enemy withdraws, it is pursued for a short period of time. If contact is not regained the unit stops and returns to its Counterattack Order. Leg Infantry and static Anti-tank Guns continue to hold position and do not pursue the enemy. No Waypoints are used for a Counterattack. A company given a Counterattack Order must also be given a Hold Position Movement Order.

Delay

A company with this order has the appearance of a defensive position, but is actually prepared to fall back. The unit holds its position until contact is made, at which point, the opposing force is engaged until the Break Point is reached, the enemy withdraws, or you change your company's orders. If the enemy withdraws, it is not pursued. If contact is not regained the unit stops and returns to its Delay Order. Leg Infantry and static Anti-tank Guns continue to hold position and do not pursue the enemy. No Waypoints are used for a Delay. A company given a Delay Order must also be given a Hold Position Movement Order.

Advance to Position

A company with this order moves to a specific point on the map. The company advances until the destination is reached or contact is made. Upon contact, the opposing force is engaged until the Break Point, the enemy withdraws, or you change your company's orders. If the enemy withdraws, it is not pursued. If contact is lost, the company resumes movement along its original path. Upon reaching its destination, the company assumes a Deliberate Defense and Hold Position Order. A company given an Advance to Position Order must also be given an Advance type Movement Order.

Bypass

A company with this order concentrates on moving to a specific point on the map. The company advances until the destination is reached or contact is made. Upon contact, the opposing force is engaged much less aggressively than with Advance to Position, until the Break Point, the enemy withdraws, or you change your company's orders. If the enemy withdraws, it is not pursued. If contact is lost, the company resumes movement along its original path. Upon reaching its destination, the company assumes a Deliberate Defense and Hold Position Order. A company given a Bypass Order must also be given an Advance type Movement Order.

Break Contact

A company with this order has the appearance of a defensive position, but is actually prepared to fallback. When contact is made with the enemy, the opposing force is engaged less aggressively than with Delay Orders. Contact is maintained until the Break Point, the enemy withdraws, or you change your company's orders. If the enemy withdraws, it is not pursued. If contact is lost, the company assumes a Break Contact Order.

Concentrated Defense

This is an aggressive defensive style in which the defending company holds its current position. Upon contact, the company will hold fire to let the enemy close in and then defend its ground until it breaks, the enemy withdraws, or its orders are changed. When contact is lost, the company maintains its Concentrated Defense Order. A company given a Concentrated Defense Order must also be given a Hold Position Movement Order.

Deliberate Defense

This is a less aggressive defensive style in which the defending company holds its current position. Upon contact, the company defends its ground until it breaks, the enemy withdraws, or its orders are changed. When contact is lost, the company maintains its Deliberate Defense Order. A company given a Deliberate Defense Order must also be given a Hold Position Movement Order.

Withdraw

This order is used to voluntarily or involuntarily exit companies from the combat area. Companies that have reached their Break Point involuntarily assume a Withdraw Order, which you can not change. Any company given a Withdraw Order by you can have that order changed. If in contact, the company moves directly away from the enemy until contact is broken. The company then continues to move toward the nearest board edge.

Movement Orders

The different types of Movement Orders control the speed at which a unit moves while carrying out its Combat Orders. There are four possible Movement Orders.

Measured Advance

A slow, methodical move toward the Destination Point. With Measured Advance, the unit advances at a slow speed until it reaches its Destination Point, at which time the unit assumes a Hold Position command.

Systematic Advance

A standard move toward the Destination Point. With Systematic Advance, the unit advances at normal speed until it reaches its Destination Point, at which time the unit assumes a Hold Position command.

Rapid Advance

A fast move toward the Destination Point. With Rapid Advance, the unit advances at maximum speed until it reaches its Destination Point, at which time the unit assumes a Hold Position command.

Hold Position

No movement, the unit remains in place. Hold Position can not be combined with some Combat Orders.

Below the Orders and Movement section are two buttons which accept any changes or exit this menu with no changes. Both buttons return you to the Company Data display.

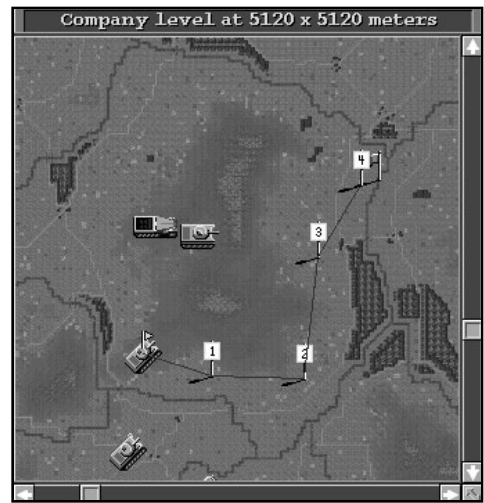
Waypoint Selector

Almost all of the possible company orders require the units to move to a location on the map. This location is specified by setting Waypoints for the unit. If the Waypoints are not set by you, the computer selects one for the unit. Waypoints can also be assigned to detached platoons.

The final Waypoint is called the Destination Point. This is the final location the unit moves to. In addition, up to three additional Waypoints, called Transitional Points, can be added.

The Waypoint Selector is accessed from the Company Data Display. The Waypoint Selector contains three buttons, and is used in conjunction with the Zoom Map. The bottom button, **Clear All Waypoints**, deletes all current waypoints for the selected company. The **Accept Waypoints** button closes the selector and activates the waypoints currently displayed on the Zoom Map. The **Cancel** button closes the selector without making any changes.

To set waypoints, use the mouse. Click on the selected location on the Zoom Map. A yellow and white sign with the number of the Waypoint appears. Waypoints are numbered in order from the first selected to the last (1, 2, 3, 4). This sign is connected to your unit with a thin red line, which represents the general path your unit will take to the Waypoint. If you select another Waypoint the path is traced from your last Waypoint to the new one. You can remove your highest numbered Waypoint by right clicking anywhere on the screen. The last Waypoint selected, (i.e., the highest numbered Waypoint) is the Destination Point.



Zoom Map With Waypoints

Formation & Frontage Orders

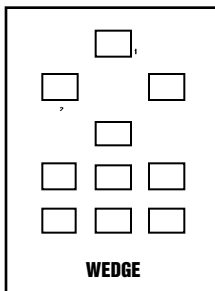
Formation and Frontage control the layout and distribution of each company. Both Formation and Frontage are exclusively company level concerns. All platoons/sections are considered to employ generic formations best suited for their current position in the company formation and their current mission.

Company formations are influenced by the type of terrain the company is traversing. The computer will change the company Formation and Frontage as needed to navigate through the terrain. For example, you can place a unit into a Wedge formation, if the unit is currently in restrictive terrain, it cannot change into a Wedge until the terrain is cleared. Also, if the same unit, in Wedge, attempts to traverse a restrictive area, such as a bridge or town, the computer will order the company to change into a narrower formation, such as a Column. Once the obstacle has been negotiated, the computer will order the company back into its original formation.

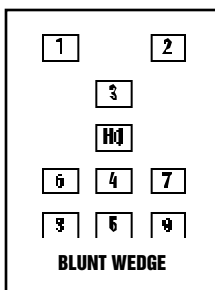
Formations

The Formation of a company determines the deployment locations for its subordinate platoons/sections. As each company can have up to ten total platoons/sections assigned to it, (one HQ platoon and one to nine other platoons/sections), each formation has assigned locations for ten platoons/sections. If fewer platoons/sections are assigned, the higher numbered locations are not filled; for example, a company with only six platoons/sections would have the HQ position and positions 1 to 5 filled. If a platoon is knocked out of action during a battle, the higher numbered platoons are bumped up to fill in the location. The platoon position number is determined by a number of factors including its current combat strength. In general, the lower numbered platoons are in the main contact positions, while the higher number platoons tend to be in safer locations. Therefore your main combat elements are in the lower numbered positions.

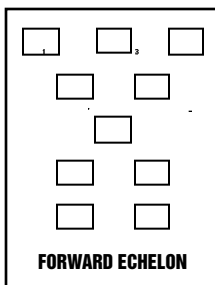
There are eight available formations.



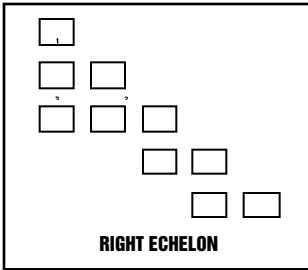
Wedge: The most commonly used formation, it allows for reasonable movement efficiency, while elements are positioned for quick combat response. Wedge is a good conservative choice for offensive operations.



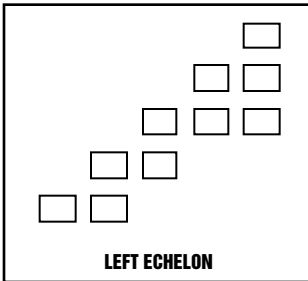
Blunt Wedge: A variation on the wedge concept, it has all the movement efficiency of the Wedge formation, but takes a slightly more aggressive posture. Blunt Wedge is a good mid-range choice for offensive operations.



Forward Echelon: Another variation on the wedge concept, it maintains the movement efficiency of the Wedge formation, but takes a very aggressive posture. The combat elements are all positioned forward which leaves them susceptible to attacks from the rear. Forward Echelon is a good choice when head-to-head encounters are expected.

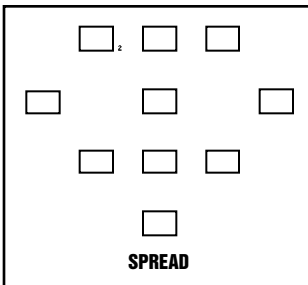


Right Echelon : Primarily a defensive formation, it emphasises strong protection to the right; the left side remains open. Movement is difficult since its center axis is offset to the right. Use is a roll of the dice. If the opposition approaches from the right, or even the front, the company is positioned and prepared to strike. The left is another story altogether.

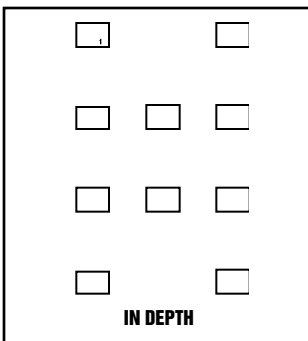
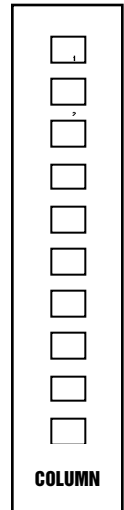


Left Echelon : Primarily a defensive formation, it emphasises strong protection to the left; the right side remains open. Movement is difficult since its center axis is offset to the left. Use is a roll of the dice. If the opposition approaches from the left, or even the front, the company is positioned and prepared to strike. The right is another story altogether.

Column: The most efficient of the movement oriented formations, the efficiency gained by its narrow structure allows a company to easily navigate around and through obstacles. However, this same narrow structure exposes the entire formation to flank attacks. This formation should not be employed when combat is imminent.



Spread: Purely a defensive formation, movement is awkward at best. Its extremely wide footprint makes it a good choice when horizontal coverage is desired.



Indepth:

Another primarily defensive formation, movement is not as awkward as a Spread formation; however, it is still difficult in any but flat, open areas. The Indepth formation is a more resilient defensive formation than Spread, but covers a narrower area.

Frontage

Unit frontage determines the interval between platoons in a given formation. This in turn determines the density of fire and area covered by the company. There are three possible frontages.

Standard	This places the company in its normal interval and frontage. Standard frontage is the default for most orders.
Narrow	Narrow frontage halves the distance between platoons. This provides for a greatly enhanced density of fire but makes the unit more vulnerable to artillery and air attack. In addition, the narrow frontage reduces the area covered by the company and its firepower.
Wide	Wide frontage doubles the platoon intervals. This allows the company to cover a greater amount of area but with less concentrated firepower.

PLATOON ORDERS MENU

Combat Orders control the platoon's behaviour within the larger picture of the company order. Computer controlled companies automatically give their platoons orders to best carry out the current company order. In some cases, you can give a platoon an order. In such a case that platoon becomes detached. Detached platoons reduce the cohesion level of both the platoon and its parent company. Recon and anti-tank gun platoons can be detached without penalty.

Platoons which are still attached to their companies can not be given orders. When the Orders Menu is opened for any attached platoon, the **Reform** and the **Waypoint** buttons are inactive. You can detach the platoon by clicking on the **Detach & Give Orders** button located at the bottom of the menu. This detaches the platoon, sets the platoon to a default order of "Advance to Contact" and "Measured Advance," and activates the **Reform** and **Waypoint Selector** buttons. This default order can be changed as normal. In addition, the **Detach & Give Orders** button becomes inactive. If you wish to order the platoon to rejoin its company, you can click on the **Reform** button. The **Okay** button exits the Orders menu and activates any new orders. The **Close** button exits the menu without changes.

Platoon Movement Orders are the same as those described above under Company Orders. Platoons are not given Formation or Frontage Orders. Platoon Waypoints can be assigned to detached platoons only.

ASSET CONTROL MENU

"Battalion Assets" is a collective term for off map artillery and air support. The Asset Control Menu can be accessed by pressing **[F11]** or the **Assets** button on the Command Bar. When active, the menu contains three sections, one each for Artillery, Fighter-Bombers and Recon Aircraft. Each section shows the asset type icon, and includes up to four buttons, labelled 1 to 4. One button is shown for each available asset of that type. If no assets are available or all available assets are currently recovering, the Asset menu is inactive. It will become available once an asset is ready for use.

When using artillery and fighter-bombers, you should take care that your units are not near the target markers, or moving toward them. There is an intentional delay from the time you request the attack until the attack actually begins, which represents the time needed for either the artillery battery to receive the mission and prepare to fire or for the fighter, orbiting in a "cab rank" off map, to receive the mission and arrive on map. Both types of support fire are neutral, meaning they attack units near the target point regardless of nationality. Artillery units can not see what they are shooting at, and rely upon the person calling for the fire (you) to ensure that there are no friendly units in the area. Fighter pilots by the same token can not reasonably identify the nationality of tanks or infantry while flying over the countryside at almost 200 miles an hour.

Control of Assets is determined by the setting of the **Assets** reality option. When this is set to **Full Control**, you bear sole responsibility for calling in attacks by the assets assigned to your force. If this is set to **Historical**, you have control of assets based upon your current command level. Battalion commanders control all assets. If your character is only commanding a company or platoon, the computer controlled commanders also call in fire missions. Always use the **Historical** setting at the Battalion command level.

Both sides can have up to four artillery assets each. Up to four of each type of aircraft is also allowed, but only one side is allowed aircraft. If a battle gives both sides aircraft, the Americans receive their aircraft and the Germans do not. This reflects the overwhelming air superiority the Allies enjoyed in Northwest Europe.

Artillery

Each artillery asset represents roughly a battery of artillery in support of your battalion. Each of these assets has a numbered button. The colour of the number indicates the status of the asset. White means the unit is available for use, red means the unit is committed, and yellow indicates that the unit is recovering. Each artillery asset can be used multiple times.

To call fire from your off map artillery, select one of the available white numbered buttons. Your cursor changes into a targeting reticle. With this reticle, click on the location you wish the barrage to center on in the Zoom Map. You can change the zoom factor of the map if needed. When you select your barrage point, an artillery icon appears. If you wish to remove the target marker before you proceed, right click on it. After you have closed the Asset Menu you can not change the barrage location. If you select a red numbered asset button the Zoom Map centres on the target marker.

Shortly after you have placed the target marker, that artillery asset begins its barrage. Some time is required for you to call in fire and for the battery to receive the mission and begin firing. The battery might not be on target at first, but will correct itself as the barrage continues. The barrage lasts for only a few minutes, then the battery requires another few minutes to prepare for the next mission. Once the unit is again available for use, the Asset button number changes back from yellow to white.

Stationary units hit by artillery fire will displace to another nearby location to avoid further artillery casualties. Leg infantry and static AT guns are an exception to this rule. These units are considered to be dug in when stationary and therefore, have better cover if they remain in place.

Fighter-Bombers

Each fighter-bomber asset represents a section of aircraft using bombs, rockets and guns in close support of your battalion. Each of these assets has a numbered button. The colour of the number indicates the status of the asset. White means the unit is available for use, Red means the unit is committed. Each fighter-bomber asset can be used *only once*.

To call for your air support, select one of the available white numbered buttons. Your cursor changes into a targeting reticle. With this reticle, click on the location you wish the attack to center on in the Zoom Map. You can change the zoom factor of the map if needed. When you select your barrage point, a fighter icon appears. If you wish to remove the target marker before you proceed, right click on it. After you have closed the Asset Menu you can not change the attack location. If you select a red numbered asset button the Zoom Map centres on the target marker.

Shortly after you have placed the target marker, that fighter section asset begins its attack run. Some time is required for you to call in fire and for the aircraft to receive the mission and arrive on the table. The attack only lasts a couple of minutes. After the attack is concluded, the button is no longer accessible, since fighter-bomber attacks can only be used once.

Reconnaissance Aircraft

Recon aircraft are small, unarmed, light aircraft used to spot hidden enemy units. They are most useful if you have the Intelligence Option set to **Limited**. In **Partial** intelligence games the recon aircraft are somewhat useful, while in **Full** intelligence games they have absolutely no effect.

Recon aircraft do not receive a target point. When ordering them, you are asked to select Waypoints for their path over the battlefield. This process is identical to that used for selecting Waypoints for ground units. You can select up to four Waypoints. After reaching the final Waypoint the aircraft turns and leaves the map.

Any enemy unit which has not been located and is near the flight path of the Recon Aircraft—will be spotted and its icon placed on the map. The icons remain on the map as long as the Recon aircraft is in use. If the units are not in detection range of a friendly unit when the recon aircraft leaves the map, the icons are again removed. After the Recon aircraft leaves the map the button is no longer accessible, recon aircraft can be used *only once*.

Cohesion

Cohesion, which is determined by many different factors, represents a company's ability to continue fighting in combat. There are two key elements of Cohesion, the Cohesion Point and the Break Point. Their relationship controls the behaviour of each company. As events take place in battle, they add or subtract from a unit's current Break Point. The Cohesion Point is the Break Point at which formations are less able to execute commands. Units tend to automatically assume more of a defensive posture and have the possibility of losing all cohesion and moving to retire from the battlefield.

Different companies within a battalion can have different cohesion levels. The companies can start a campaign with equal cohesion levels, but this can change as units experience different degrees of combat, see their commanders promoted or lost in combat, or any other experience that significantly affects a group of men in combat.

Cohesion can have a profound effect on the play of the game. For that reason it is an optional element. If the Morale Option is disabled, Cohesion is ignored by the computer.

Morale

Battlefield commanders have no way of determining the exact psychological status of their units. Therefore, they must instead pay attention to the unit's Morale. Morale is a descriptive term used to convey the overall status of your unit's cohesion. Morale is described as being *Superb*, *Outstanding*, *Satisfactory*, *Fair* or *Poor*, in order from best to worst.

You should be concerned with a company's Morale at all times during combat. Admittedly, a company with superb Morale needs less attention than one with poor morale. The Morale is displayed in the Company Data Display. When all is well the Morale is listed in white letters. When the current Break Point nears the Cohesion Point, the morale grade changes to yellow, and when the Break Point equals or exceeds the Cohesion Point the morale listing changes to red to indicate that the unit is in danger of breaking. If a company breaks, it immediately assumes an involuntary Withdraw Order and follows that command.

Grade

A company's Grade is totally different from a company's Morale. Where Morale is a measure of the company's relative stability in the face of the enemy, Grade is a measure of skill and training. All units start with a particular grade. Higher grade units usually have a higher Cohesion Point and Break Points. In addition, combat experience can generate an increase or a decrease in a unit's grade, depending upon particular events. Grade is described as being *Elite*, *Veteran*, *Seasoned*, *Regulars* or *Green*, from best to worst.

Readiness

A company's Readiness directly affects its Cohesion. Readiness is not only a measure of the units readiness for combat, it is also a measure of its current fatigue, and a significant measure of a company's ability to stand in action over a long period of time. Even a highly experienced, elite company is affected by fatigue. During Campaign games, it is critical for you to monitor the readiness state of your units and to rest those showing signs of fatigue. A company's readiness is described as being *Fresh*, *Tired*, *Weary*, or *Fatigued*, in order from best to worst.

ENDING THE BATTLE

There are several ways to end a battle, and you should carefully consider which method to use. The first method is pressing **[Alt] [Q]**. This exits the game to DOS, without saving the results of the battle. Pressing **[Alt] [E]** on the other hand, has the computer compare the remaining enemy forces to your own and assign the objectives you hold accordingly. As you will notice, this formula will greatly impact your chances of victory.

In addition, the battle can end when a series of criteria have been met by one or both sides. If this occurs, a dialog box appears. This box states what has caused the situation and gives you the choice of ending the battle or continuing the fight.

You are given the option to end the battle if all of the companies of one side, are destroyed, have exited the map, or have either voluntary or involuntary Withdraw orders. If at any time all companies are stationary, you are given the opportunity to end the battle. This option is also presented if all of your units are stationary and you control one or more objectives.

You can continue the battle even if all the forces of one side are dead or have exited the map. This allows you the opportunity to explore the map without being pestered by enemy tanks.



A pair of Panthers await the next American attack.

It does not matter if you've won every battle time and again to the point where all challenge is gone or if you just don't like the way the battles are set up. At some point, the built-in situations in **1944 Across the Rhine** will fail to spark the excitement you seek. With the Battle Builder you can make your own fun. You can not only modify the pre-existing battles, but you can also design your own, possibly re-creating any of the thousands of historical battles that we couldn't include.

To begin designing your own battles, select the **BUILDER** option from the Main Menu.

The Battle Builder is one of the tools the designers used to generate the numerous missions that come with the game. It's included in **1944 Across the Rhine** so that you can expand your gameplay horizons. You sit down in the designer's chair and make up your own scenarios.

SAVING AND TRADING BATTLES

In addition to the several battles provided in the game you also have the ability, through the Battle Builder, to trade battles with friends. Battles can be easily transferred between machines.

AiR comes with a utility that allows you to save the battle without finding each file associated with the scenario. The command is called *packscen*. To transfer a game you must be in the game directory (the default directory is **C:\MPS\1944**). Type **PACKSCEN** followed by the name of the battle you wish to transfer. For example, if you have a battle named *Battle of the Bulge* that you wish to share with a friend, you would type: **PACKSCEN BATTLE OF THE BULGE** , all of the scenario files are then condensed into one file, named after your battle's title with the suffix **.BTP** . In the example above your battle would be saved as *THEBULGE.BTP*. Now copy this file to a disk and give it to your friends.

To load a battle into a different machine, copy this same file into the directory containing **AiR**. The files should be copied while you are in DOS. You must then *unpack* the file using the command: **UNPACK THEBULGE.BTP** . The scenario is now available on the new machine.

Unpack copies the battle set-up, briefing and map, the American battalion, and the German battalion. You can find the name of the loaded battle in the Battle Builder by opening the Options command under the Options menu. The window has the battle name in the top shaded box and the battle filename on the bottom line of the window.

CUSTOM BATTLE BRIEFING

The normal pre-battle briefing is generated by the computer from the basic battle setup. If, on the other hand, you wish to create your own briefings, you can do so. All of the historical battles included in the game have their own special briefings, giving background information not normally included in the computer generated briefing.

A custom briefing can only be modified after the battle has been completed in the Battle Builder. To modify the current briefing, you must first exit **AiR** and use your computer's built in text editor or word processor to edit the current briefing. Save the file as DOS text, using the name of your battle plus the suffix **.TXT**. For example, if you have a battle named **MYBATTLE** that you create a custom briefing for, you would save the briefing with the name **MYBATTLE.TXT** . The file should be located in the directory with **1944 Across the Rhine** . The briefing should be no more than one half page, or one screen.

BATTLE BUILDER MENU

The options on the main Battle Builder Menu are fairly straightforward; they are:

- New: Create a new battle. Clicking **New** opens the title box. Enter any desired title. Press Enter or click **New** again to continue.
- Load: This option allows the modification of an existing battle. All elements, with the exception of the battalion template, and the basic options (i.e., battle type, battle map, etc.) can be modified. All commands and options function in the same manner as with the **New** option. Upon completion, select **Exit** to return to the Main Menu. You are prompted to save prior to exiting.
- Delete: This option allows the deletion of previously built battles. Care should be taken when selecting this option.
- Duplicate: This option opens a copy of the selected battle. This allows you to modify the battle without changing the original.
- Exit: Return to the Main Menu and discard any unsaved work.

Below these active buttons is a list of existing battles. You can select one of these battles to Load or Delete by clicking on the battle name. In addition, Help text appears along the lower title bar of the screen. You can only work with one battle at a time. If you load a previously saved battle without saving the changes to the battle currently loaded in the Battle Builder, the unsaved work on the current battle is lost.

BATTLE BUILDER MENU BAR

The menu bar is located at the top of the screen. Most of the menu options are not active at this point in the selection process. The **Exit** button on the File menu will return to the Main Menu. Help text appears along the lower title bar. Click on a button on the bar to open the commands under that heading. To select a command click on its button. To close an open menu item, click anywhere on the screen not covered by the open menu. The following is a list of the menu items accessible from the menu bar, with a brief description of each item's function.

File

- New/Open battle Returns you to the Battle Builder Menu screen.
- Exit Returns you to the Main Menu. Your current battle is *automatically saved* prior to exiting.

Options

Show Military Icons	Toggles between displaying Symbolic and Military Icons in both the Organisation Screen and on the Zoom Map. Only companies, platoons, and sections are affected by this command. Individual vehicles and squads are always represented by symbolic icons. This is only active in the main section of the Battle Builder.
Overlay	Toggles on or off the blue and orange set up overlays in the Map window, allowing you a clearer view of the full map.
Contours	Displays contour lines around hills on the Map window. These lines outline each elevation change, allowing an enhanced view of the placement of hills. This option toggles on and off.
Edit American Stats	Only active in the main section of the Battle Builder. Opens the Stats window for the American force allowing you to edit the statistics.
Edit German Stats	Only active in the main section of the Battle Builder. Opens the Stats window for the German force allowing you to edit the statistics.
Options	Allows you to view and edit the Battle Set Up Options for loaded battles. Only active in the main section of the Battle Builder. Also displays the filename of the loaded battle.
Generate Description	Creates a generic Battle Briefing file to serve as a basis for a personalised battle briefing. The briefing is saved as a text file which can be edited using any standard wordprocessing program. The file name will be created in the directory with your game and will consist of the last eight letters of your battle name plus a <i>.txt</i> suffix. For example, if your battle is titled " <i>Battle of the Bulge</i> " your briefing would be titled <i>thebulge.txt</i> .

Organisation

American	Makes the American Organisation screen the active screen in the main section of the Battle Builder.
German	Makes the German Organisation screen the active screen in the main section of the Battle Builder.

Map

Show Map	Makes the Map screen the active screen in the main section of the Battle Builder.
View All	The normal magnification of the Zoom Map. All of the playing area is visible on the Zoom Map.
4x Scale	Increases the magnification of the Zoom Map in the main section of the Battle Builder by 4x.
8x Scale	Increases the magnification of the Zoom Map in the main section of the Battle Builder by 8x.
16x Scale	Increases the magnification of the Zoom Map in the main section of the Battle Builder by 16x.
32x Scale	Increases the magnification of the Zoom Map in the main section of the Battle Builder by 32x.
64x Scale	Increases the magnification of the Zoom Map in the main section of the Battle Builder by 64x.

Unit

The commands under the Units menu control which of the numerous unit types are displayed in the Organisation screens of the Battle Builder. The command definitions below give only the general definition of unit types. A complete listing is provided in the Appendix.

Tanks	Lists all fully armoured, turreted, fighting vehicles.
Tank Destroyers	Lists all vehicles classified by their army as tank destroyers or assault guns.
Armoured Infantry	Lists all infantry units mounted in armoured vehicles.
Motorised Infantry	Lists all infantry mounted in trucks.
Leg Infantry	Lists all infantry without transport. Take care when using these units as they are not very mobile and are best used in defensive positions.
Anti-Tank Guns	Lists all towed anti-tank cannon. Take care when using these units as they are not very mobile and are best used in defensive positions.
Reconnaissance	Lists all reconnaissance assets.

Anti-Aircraft	Lists all anti-aircraft units, both towed and self propelled.
All Tanks	Lists all tanks and tank destroyers.
All Infantry	Lists all armoured, motorised and leg infantry units.
All Misc	Lists all anti-tank, reconnaissance and anti-aircraft units.
All Units	Lists all available units.
Assets	Lists all off map support units, such as heavy artillery and fighter bombers.

BATTALION SELECTION

After you select a new battle, the Battle Builder Battalion Selection screen appears. This lists all of the US and German battalions included in **Air** plus any previously created battalions. These battalions serve as templates for your battalions. They can be employed as is, or modified to a large extent in the main Battle Builder. You can also name the battalions for easy recognition or unique identification.



Battalion Selection Screen

You must select both an American and a German unit for your battle. You should consult the Organisation of Forces chapter for a detailed explanation of the different battalions listed on this screen.

Hidden Battalions are computer controlled units that are randomly generated prior to each Battle. To select the basic units for this battle, click on the line of the unit you wish to use.

For easy recognition you should name both of the selected units. This is accomplished by clicking on **Unit Name** at the bottom of the dialog box. A name for each of the US and German battalions can be

entered. Enter the desired name for the battalion. Click **OK** to continue. If you do not wish to name the unit, the Battle Builder randomly generates a name.

Click on **OK** to proceed. Click **Exit** to return to the Main Menu. Help text appears along the lower title bar on the screen.

BATTLE OPTIONS

After you have chosen your forces, the Battle Builder Options screen appears. The basic components of the battle are selected at this point. The terrain or battle map, attacking side, type of battle, season/weather, and time of day for the battle are set. The options, along with their default settings, appear in the left hand section of the dialog box. A representation of the battle map appears in the right hand section of the battle map. Click **OK** to accept the listed options and continue. Click **Exit** to return to the Main Menu. Help text appears along the lower title bar on the screen.

This screen only appears for new battles, if you load a saved battle you go directly to the main Battle Builder. For a loaded battle, you can not change the Terrain or Type of Battle. You *can* change the Battle Conditions by selecting **Options** under the Options menu of the Main Menu bar.



Battle Options Screen

TERRAIN

Click **Terrain** to select a new battle map. The Terrain Selection dialog box opens to display the terrain options. These options determine the predominate, not the exclusive, terrain on the battle map. The terrain type choices are; *Flat, Hilly, Forest Flat, Forest Hilly, Urban, and Hedgerow.*

Colours are use to depict terrain types on the battle map. Solid dark patches are forested areas. Gray muted areas are hills. Blue lines are streams, and blue patches are small lakes. The gray and brown lines are roads and paths respectively. White patches along the roads are urban areas.

The colour bands on the map indicate the deployment areas for the US and German forces. US forces deploy into the blue banded area. German forces deploy into the gold banded area. These bands change width and position depending on the Battle Type. The bands can be toggled on or off by clicking the **Overlay** button. This allows you a clear view of the terrain types on the map.

BATTLE TYPE

Click **Battle Type** to select a new battle type. The options include *Engagement, Assault, Delay, and Counterattack.* These are the same battle types described in the Battle Selection section. (See Chapter 4, Battle for details.)

Click **Attacker** to choose the attacking side. Note that Engagements treat both sides as the attacker, so the **Attacker** button is not active if Engagement is selected.

BATTLE CONDITIONS

Click **Season** to select from *Spring*, *Summer*, *Fall*, *Winter (Heavy Snow)* or *Winter (Light Snow)*.

Click **Time of Day** to select from *Day*, *Dawn*, *Dusk* or *Moonlight*.

Click **Weather** to select from *Clear Skies*, *Overcast Skies*, *Raining* or *Snowing*. The availability of rain or snow is dependent on the current Season setting.

BATTLE BUILDER

BATTLE BUILDER MAP SCREEN

The Battle Builder Map screen appears after you have accepted your battle options for a new battle, or directly from the Battle Builder menu if you load a saved battle.



Battle Builder Map Screen

Battle Map

The Battle Map selected on the options screen is displayed at the lower right with the appropriate colour bands.

Zoom Map

The map on the left is a full size Zoom Map of the Battle Map. Click on **Map** at the top of the screen to control the map zoom mode. The map can be zoomed to 4x, 8x, 16x, 32x, and 64x (see Battle Builder Menu Bar, above, for details). VIEW ALL is the full

size or 1x mode, which is the default setting for the Zoom Map. When zoomed in, move around the map by using the scroll bars or by clicking at a point in the Map window at the lower right corner. The white rectangle indicates the area viewed in the Zoom Map. The Map window is not affected by the zoom commands.

Map Objects

The Map Objects window at the upper right displays the objects and forces that can be added to or deleted from the battle map. In addition to the object list there are two buttons, **Add** and **Delete**. Click on either button to activate it.

Add places one of any object on any location you select on the Zoom Map. You must first activate the **Add** function, then select the type of object to place by clicking on its name in the object list. Finally, click on the location you wish the object to be placed on the Zoom Map. You do not have to activate the **Add** command for each object, it remains active until you deactivate it or select **Delete**.

Some objects have a specific facing, e.g., Pillboxes. These objects are rotated by right clicking on the icon. Each right click rotates the object 90 degrees clockwise. Some objects have terrain limitations. Any time you attempt to place an object in a prohibited terrain, a dialog box appears describing the terrain limitations of the object. You can add multiple items to the Map following the directions above.

Delete does not require an active object type. When active, **Delete** removes any object on which you click in the Zoom Map.

The following objects can be added or deleted from the map:

Objectives	Two to four random objective flags are already placed on the map for all battles except Delay battles. The objective flags are displayed as neutral in Engagement situations. The flags display possession in Assault and Counterattack situations.
Bridges	The map, by default, places an intact bridge at each location where a road crosses a stream. You can change the intact bridge into a destroyed one by adding a destroyed bridge in the same location as the bridge you wish to replace. Each location where a road crosses a stream must have either an intact or destroyed bridge, therefore you can not Delete a bridge.
Bunkers	Bunkers are large, heavily fortified, defensive emplacements containing both machine guns and anti-tank guns. They are always assumed to belong to the German force. Bunkers can be placed in any location, even behind the American lines so take care in placing these objects. Facing can be rotated 90 degrees clockwise by right clicking on the icon. You are limited to 15 total bunkers, pillboxes and gun houses. These may be in any combination.
Pillboxes	Pillboxes are smaller versions of bunkers, and in general contain smaller or fewer weapons. Otherwise pillboxes are the same as bunkers. Facing can be rotated 90 degrees clockwise by right clicking on the icon. You are limited to 15 total bunkers, pillboxes and gun houses. These may be in any combination.
Minefields	All minefields are German in origin, however, any unit moving through a minefield (except Engineers)—despite nationality— has a chance of being damaged or destroyed by the mines. You may place any number of minefields, however, only eight may be active in any one battle. When there are more than eight minefields, the computer selects which are active.

Gun Houses	Gun Houses, which conceal anti-tank guns, are always assumed to belong to the German force. Gun Houses can be placed in any location, even behind the American lines so take care in placing these objects. Facing can be rotated 90 degrees clockwise by right clicking the icon. You are limited to 15 total bunkers, pillboxes and gun houses. These may be in any combination.
Roadblocks	Roadblocks have no inherent defensive abilities but are neutral fortifications that are used to prevent travel along a road or path.
Cows	Each time you add a cow, you place a single animal. You can add multiple cows in the same location to place a small herd. Cows do not move during the game.
Combat Units	Every company or platoon sized unit from both sides is listed in the objects list. You are not required to place any units. Any company you place is located in this position every time the battle is played. Any platoon you place is automatically detached from its parent company as described in the Combat System section of Chapter 4, Battle. If the combat forces are not placed, the battle system places the forces based on the battle criteria. This placement can be different each time the battle is played, giving slightly different setups each game.

All of the menu options are active at this point. The menu options include general file actions and actions specific to the Battle Builder. Click on **File** to access the general file commands.

Click on **Options** to access the general battle options. Select **Show Military Icons** to switch the combat icons from symbolic to standard military nomenclature. Pressing **[F12]** also toggles these icons. Select **Edit American Stats** to view the US battalion statistics. *Ammo* and *Fuel Avail* are the only values that can be modified at this point. *Ammo* represents the amount of ammunition, as a percentage of a full load, that the battalion carries into the battle. *Fuel Avail* corresponds to the amount of Fuel Needed. If the available fuel is less than the required fuel, you must specify units to sit out the battle (see Rest). **Grade** is an aggregate value of the total force. **Morale** is an aggregate value of the total force. **Points** are the total point value of the force.

BATTLE BUILDER ORGANISATION SCREENS

Click **Window** to switch between the US and German forces, and the Map window. Select **American** to view the US force organisation. Select **German** to view the German force organisation.

The organisation is displayed in a hierarchical tree with the battalion at the top; the battalion's member companies appear directly below the battalion box.

Stats

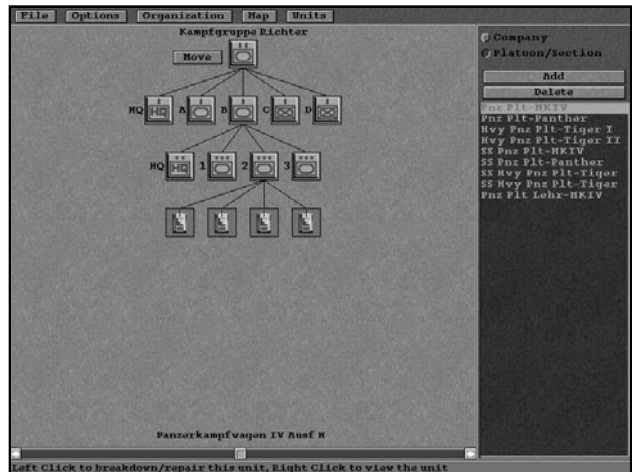
Right click on a battalion icon to open its Stats window. Right click on any expanded company to open its Stats window. This information is essentially a duplicate of the battalion statistics described earlier.

The Battalion Stats window shows the cumulative statistics for the battalion. The first three

entries concern Ammo availability for the battalion. The first entry indicates the amount of ammo each unit will carry. This value is controlled by clicking **Ammo**. This button cycles between 0, 25, 50, 75, and 100 percent ammo loadouts. If the Ammo option is disabled, all units' ammo loadouts are 100 percent. The second entry lists the total number of ammo loads required by the battalion for the currently selected ammo loadout value. The third entry lists the total number of available ammo loads. In the Battle Builder, this number defaults to a value equal to a 100 percent loadout for the battalion. You can edit the amount of available ammo by highlighting it, then typing in a new value.

If the **Ammo** option is enabled you can set the **Ammo Loadout** of all the units in the battalion. There are three possible ammo loadouts. The **Standard** loadout includes a balanced number of armour-piercing and high explosive rounds. The **Anti-Armour** loadout includes a larger number of AP rounds at the expense of HE rounds. This loadout should be taken if you expect to engage large numbers of armoured forces. The **Anti-Infantry** loadout reduces the number of AP rounds and increases the number of HE rounds. This loadout should only be taken if you are expecting to fight large numbers of enemy infantry, with only small numbers of tanks.

The next two entries concern the Fuel available to the battalion. The first line lists the amount of Fuel required by the battalion and the second line lists the amount of Fuel available to the battalion. The amount of available fuel can be edited by highlighting it, then typing in a new value. Setting the Fuel Available lower than the Fuel Needed will force that side to Rest units during the battle (see Campaign



Builder Organisation Screen

Section for details).

Grade and Morale are the next two entries. These values can only be changed in the Company Stats window for each company in the battalion. The values listed in the Battalion Stats window are the overall values for the battalion, derived from the values of the companies.

Finally, the total Point Value of the battalion is displayed. The point value is a sum of the point values of all units and assets in the battalion, and is dependent upon the Grade and Morale values of all units. This number is critical in designing balanced games. The following table lists the recommended percentages for each type of game. The point total of the attacking player is always considered to be 100 percent. The point total for the defender is a percentage of the attacker's point total. For example, if the attacker in an Assault game has a force of 4000 points, the defending force should have between 2400 and 3200 points, or 60 to 80 percent of the attacker's total force.

<u>Battle Type</u>	<u>Attacker</u>	<u>Defender</u>
Engagement	100%	100%
Assault	100%	60 - 80%
Delay	100%	55 - 75%
Counterattack	100%	90 - 130%

In a counterattack battle, 40 percent of the defending force should be set up as the defending force, and the other 60 percent as the counterattacking force.

The Ammo and Fuel statistics for each individual company appear in the Company Stats window. These values are not adjustable at this point, and are listed as an aid in determining which units to Rest or what ammo loadouts to use.

It is through the Company Stats window that Grade and Morale can be set.

Grade options include from best to worst: *Elite*, *Veteran*, *Seasoned*, *Regulars*, and *Green*. **Morale** options include from best to worst: *Superb*, *Outstanding*, *Satisfactory*, *Fair*, and *Poor*. Click on the appropriate button to cycle through the options until you find the level of your choice.

Points displays the total point value of the company and is used in determining the total battalion point value.

Right click on any expanded platoon or section to open its Platoon Stats window. This window lists the Ammo, Fuel and Points data for the Platoon or Section; none of this information can be changed.

Organisation

Right click on any company to expand it into its sections and platoons. Right click on any platoon or section to expand it into its individual units. Right click on any individual unit to open the Data Viewer. In the Organisation window, the data viewer display is limited to the descriptive level, which describes the unit and gives organisational and tactical information. Click on the button at the upper left to close the window.

Unit Composition

The composition of the battalion forces is also modified on this screen. Adjacent to the battalion symbol and on the control panel at the right side of the screen are controls for modifying the battalion. Use the control buttons **Platoon/Section**, **Company**, **Add**, **Delete** or **Move** to reorganise the battalion. To activate these functions, click on the desired button.

There can never be more than six total companies in a battalion. A company cannot contain more than ten platoons or sections. The Headquarters Company (the formation with the "H") is an exception, it cannot contain more than eight platoons or sections.

Data Viewer

Right click on any individual unit to open the Data Viewer. The data viewer is displayed in three levels. The default level describes the unit. (Click on the button at the upper left to close the window.) Click on the button at the upper right to expand the Data Viewer to the second level. This level shows the same information as level one, plus a rotating view of the actual unit. The same two buttons are active, plus there is an extra button at the upper right corner to return the view to level one. Clicking the multi-colour button at the upper right corner opens the Data Viewer to the third and final level. This level presents a 3D picture of the unit. Use the controls below to vary the direction and altitude of the unit, magnify the view or change the screen to examine either the previous or the next unit. There is also a black and white picture displaying the actual unit, as well as the original description from level one.

Modifying the Battalion

The **Move** button works exactly as described in the Pre-Battle Organisation section. To move a platoon or section (there is no need to move a company), activate the button and click on the section or platoon you wish to move and then click on the destination company. The headquarters platoon/section can not move and the numerical platoon/section limit still applies.

The Units window on the right side of the screen lists the formations which can be added to the battalion. Click on the **Platoon/Section** button or **Company** button to view platoon/sections or company level formations. Click on **Units** to select the type of units to activate.

To **Add** a platoon/section or company, activate the **Add** function and select the desired unit from the displayed list, then click on the formation icon or the formation to receive the addition unit. Remember that platoons/sections are added to companies and companies are added to the battalion.

To **Delete** a platoon/section or company, activate the **Delete** function and click on the unit to be deleted. You can delete any normal company or platoon, including those originally assigned to the battalion. You must have the **Platoon/Section** button active to delete a platoon or section. You must have the **Company** button active to delete a company. You can not delete individual combat units or vehicles. Deleting the headquarters platoon/section of any company deletes the entire company. The Battalion Headquarters Company can not be deleted.

To **Disable** one or more elements of a platoon, expand the target unit until individual vehicles and squads are shown. To disable any vehicle or squad click on its icon. A second click will return the vehicle or squad to operational status. This command allows you to field understrength units in battles you create. When part of a platoon has been disabled, the point value, fuel and ammunition costs for that unit are automatically recalculated.

SAVING THE BATTLE

Once the map is acceptable and both sides' forces have been properly organised, you need to save your battle. Every time you choose to exit the Battle Builder your battle is automatically saved. Once saved, the battle can be played by selecting it from the list presented under the BATTLE command of the Main Menu.



Battle planning and tactical development is the key to victory.

How does one determine if a fighting force is superior to its opposition? Some say this can be done by measuring the number of victories each has gained. However, winning is not the only measure of fighting potential. Numerically inferior, qualitatively superior forces have been defeated by larger, inferior forces. Superior forces have also lost battles when possessing greater numbers. There are factors that go beyond the win-loss ratio. It has been well stated that "Though military excellence is inconceivable without victory, victory is by no means the sole criterion of military excellence."

There is no question that excellent armies do exist. This fact has been proven many times throughout history. No one would argue the fact that the legions under Caesar or the army under Napoleon were unquestionably superior fighting forces. Although these are clear-cut examples, most are not this easy to identify or evaluate.

Pre-modern warfare is somewhat easier to evaluate in that the armies were similarly equipped. Generally speaking, a sword is a sword and a musket is a musket. Modern armies are dominated by the technology of warfare. High-tech weaponry is the current vogue. Modern armies seem unable to function without the most advanced tank, missile, or aircraft.

Superior equipment can go a long way in offsetting quantitative inferiority; however, it can not counterbalance poor leadership or a lack of fighting potential. This has been demonstrated a number of times in recent history. The Israelis defeated well-equipped, numerically superior Arab armies in two major conflicts—the 1967 Six Day War and the 1973 Yom Kippur War. It was also demonstrated again in the recent Gulf War. The allied force, albeit a well-equipped one, crushed an experienced, numerically superior Iraqi army.

To measure the quality or fighting potential of any army is a difficult task at best; one must look beyond the obvious elements and dig deeper—to the roots of what makes up an army. How did the US Army stack up against the German Army? Many a study and historical treatise has been written on this very subject.

Noted historian and military analyst Colonel Trevor N. Dupuy (USA, ret.) developed a number of mathematical models comparing the performance of the US Army, the British Army, and the German Army during WW II. These models accounted for such factors as number of troops, equipment, terrain, offensive/defensive posture, casualties inflicted, and the presence of air power. Without exception, the German Army emerged as the superior fighting force.

The early war was not a case of a superior-equipped army defeating a numerically and qualitatively inferior force. The German Army of 1939 was not prepared for war. Its equipment was mostly outdated, outnumbered, and logistically ill-prepared. The army never overcame its dependence on horse-drawn transport, even to its surrender in 1945.

Yet, this army defeated France in only six weeks and required just five months to reach the outskirts of Moscow. The Allies needed four months to recapture France, and it took the Russians two and a half years to recapture their lost territory. Colonel Dupuy summed it up by stating:

The record shows that the Germans consistently outfought the far more numerous Allied armies that eventually defeated them. On a man-for-man basis, the German ground soldiers consistently inflicted casualties at about a 50 percent higher rate than they incurred from the opposing British and American troops under all circumstances. This was true when they were attacking and when they were defending, when they had local numerical superiority and when, as was usually the case, they were outnumbered, when they had air superiority and when they did not, when they won and when they lost.

What's the point, you might ask. The Allies won and the Germans lost. Why analyse and re-analyse the same situation? The Allies undoubtedly possessed the superior force. What else could matter? After all, victory is everything— isn't it?

THE US ARMY

"True democratic societies do not easily embrace the concept of a strong military." "Military values are generally at odds with the ideals held by any democracy." "The military is foremost a challenge to peace, an unnecessary drain on resources, and an inherent threat to the life and liberty of all citizens." These statements reasonably reflect the opinions of the majority of Americans before WW II.

In the years preceding the war, the reform-minded US could not embrace the military, yet a defensive force remained a necessary evil. Officers were accepted as significant members of society; however, enlisted men were considered freeloaders and felt the brunt of the negativism toward the military. Needless to say, this low prestige did not attract the bulk of the civilian population into recruitment offices.

The US looked to material superiority, rather than brute fighting power, to overcome quantitative inferiority. Commanders in the US Army took a "scientific" or managerial approach to command and leadership. They emphasised teamwork over individualism and placed importance on doctrine, planning and control. Commanders gave precedence to organisation and logistics over the operations of battle.

The overall inexperience of the command level officers and the NCOs (non-commissioned officers), added to the fact that this was a civilian army, dictated this approach and necessitated a greater degree of supervision than is typical in armies. In order to avoid confusion, adherence to plans was a must.

Knowledge of military principles held the prominent position in US leadership doctrine. Independent action held a lesser role, and discipline received only cursory mention. Loyalty to superiors was expected from subordinates. This explains some of the reluctance of action demonstrated by US officers.

Fraternisation between officers and enlisted men was strictly forbidden. This philosophy was reinforced by military structure and was mandated by regulations, causing a significant gap between the ranks. Officer-enlisted relations were such that during and just after the war, nearly 80 percent of US enlisted men considered their officers aloof and interested in their own welfare above that of their men.

The management of US leadership led to a system that attempted to plan and lay out every movement before a situation arose. US commanders tended to issue very specific commands to their subordinates. This limited the lower level commanders' freedom to act solely on the basis of the situation, and often resulted in predictable responses. Surprise and improvisation were not considered all that important.

Prior to the outbreak of the war in 1940, the US Army numbered just 20,000 regular officers. Many had received their training from the two service academies. These four year programs divided their subject matter about equally between general, technical, and professional military training. These programs developed officers who were excellent managers, trained to get things done quickly.

Officers who received their training from Officer Candidate School, as opposed to the service academies, spent from seven to nine months in training. This was divided between basic training (the same as for enlisted men), officer candidate preparatory school, and finally officer candidate school. The final segment was specialised by branch of service. Upon completion of officer training, the new 2nd Lieutenant entered a reserve or pool. As appropriate vacancies opened, the newly trained officers were posted.

By the end of 1943, the officer ranks had increased to 600,000, including flight officers. (Note that the present-day Air Force was a branch of the US Army during WW II—the Army Air Corps.) In 1940, officers accounted for approximately six percent of the army's total strength. By the end of the war in Europe, the number had risen to almost ten percent.

Officers accounted for just under six percent of the casualties suffered by the US land forces, this being consistent with the proportion of officers. As the war progressed, an officer had a less than even chance of falling in combat.

The total number of Army officer casualties totalled just over ten percent. This difference is accounted for by the higher percentage of Army Air Corps losses. In that branch, officers represented almost 20 percent of the total strength. In flight crews, the proportion rose to 40 percent in B-17s and B-24s and even much higher in fighter aircraft.

In spite of the imposed separation between officers and enlisted ranks, military pay was basically equitable. The US Armed Forces used a uniform compensation system based on rank and length of service. Marine Corps troops were compensated at a slightly higher rate.



The crew of a US M1 57mm Anti-Tank Gun in action against German forces.

The pay differences between US officers and enlisted men was not as substantial as in the German system. For example, a major's base pay was just over twice that of an NCO. Enlisted men also had a whole series of allowances that were not available to officers. The standard general allowances for housing and duty area existed for all ranks. However, those associated with foreign

service were smaller than similar allowances in other armies. Therefore, US soldiers were less inclined towards overseas duty.

Pay tends to be a more important incentive in peacetime. After all, there are few places to spend money in a war zone. The recognition of heroic deeds is what drives soldiers to high levels of performance. This is accomplished through decorations and awards. General George S. Patton explained it best:

The results of decorations works two ways. It makes the men who get them proud and determined to get more, and it makes the men who have not received them jealous and determined to get some in order to even up. It is the greatest thing we have for building a fighting heart.

The US system of recognition differed from the German system in two key areas; the various awards and decorations were neither interrelated nor cumulative. The US also placed far greater emphasis on meritorious service in non-combat situations, whether of a singular or ongoing nature.

The Medal of Honour (MoH), the highest US decoration, was awarded just 293 times to Army personnel. The next highest decoration, the Distinguished Service Cross, was awarded 4,434 times. Both of these decorations were only awarded for heroism in action. It is readily apparent that it was extremely difficult to receive the Medal of Honour. This had been the case since the decoration was instituted during the US Civil War (a few problems occurred during the Civil War, when the medal was awarded to entire regiments, but these were later corrected). Many recommendations for the award were reduced to the Distinguished Service Cross at higher commands. Most MoH awards were posthumous.

The third highest decoration, the Distinguished Service Medal, was awarded for service of great responsibility—a non-combat award. The number of awards totalled 1,439. The Silver Star, fourth highest overall and third highest combat award, totalled 73,651. Fifth overall, the Legion of Merit, awarded for meritorious service, was given 20,273 times.

The emphasis on meritorious service favoured the officer corps. As a result, officers received just under half of all the top five awards. Of the top three combat awards, officers received just over 30 percent. All in all, over 100,000 of the top five decorations were awarded, a number equal to approximately 33 percent of the number of soldiers killed in action. Considering just the three awards for heroism, the total is approximately the same as 25 percent of the number of soldiers killed in action.

Soldiers received 293 of the 433 Medals of Honour awarded during WW II. One unit and one individual stands out in particular—the 3rd Infantry Division and 1st Lieutenant Audie Murphy. When one considers the limited number of medals awarded and the great number of men in uniform and divisions in the field, the exploits of Lieutenant Murphy and the 3rd Infantry Division are quite astounding.

Of the 293 Medals of Honour, 34 were awarded to men of the 3rd Infantry Division—almost 12 percent. Of those 34, 14 were awarded to the 3rd Infantry Division's 115th Infantry Regiment alone—Lieutenant Murphy's unit. Other awards were granted in similar numbers, making the 3rd Infantry Division the most highly decorated US unit of the war.

Of the most highly decorated, Lieutenant Murphy emerged as not only the preeminent hero of WW II, but the most highly decorated soldier in US military history. In 1945, receipt of the Medal of Honour marked Lieutenant Murphy's twenty-eighth combat decoration. In addition to the Medal of Honour, he received the Distinguished Service Cross, two Silver Stars, the Legion of Merit, two Bronze Stars for Valour, three Purple Hearts, and ten Campaign Ribbons. One more award, possibly his greatest, awaited Lieutenant Murphy—surviving the war.

Though the US award system strived to recognise the contributions of soldiers, military discipline was certainly slack at best. Of the 4 million men who served in the European Theatre of Operations, few more than 22,000 ever appeared before a military court. Charges against officers were consistent for their numbers, but their odds of conviction were half those of enlisted men.

Of the total number of cases brought to trial, just 441 resulted in men being sentenced to death. Of that total, 70 were executed for their crimes. It is interesting to note that only one soldier was executed for a military offense—desertion; the remaining 69 executions were for civilian offenses.

It could be for that reason that US desertions far exceeded the German totals. For the year 1944, 45 soldiers in 1,000 deserted. By 1945, this number had increased to 63 in 1,000. It might have been the perception of vast resources or the distaste at the prospect of convicting its own soldiers, but the US military justice system was unwilling or unable to effectively police its ranks.

Many would describe the US Army as average at best. That statement may or may not be fair, considering what was really accomplished. In just three short years, the US Army grew over thirty-fold to nearly 8 million men. It developed the equipment and systems to move those men thousands of miles into action against formidable foes. These men had been nothing more than civilians before the war—not professional soldiers. Yet these civilians managed to defeat two of the most highly regarded military powers of the century.

If anything, inexperience was the Army's greatest shortcoming. The rapid expansion necessitated by a two-ocean war did nothing to mitigate this problem. The Army had cadres of limited experience and little time to train new ones. As a result, centralisation and concentration on the mechanics of war became the easiest paths.

This focus on mechanics had both advantages and disadvantages. The US Army was the first truly mechanised army in history. The infantry in armoured divisions was fully equipped with half-tracked transports, and the infantry divisions could, if necessary, usually transport their entire combat strength in trucks. All artillery and logistics support was motorised, giving front line divisions an even greater mobility advantage. This was far superior to the approach taken by the Germans, whose infantry generally walked and whose artillery and logistics depended greatly upon horse-drawn vehicles. In spite of what might be thought, US units were no more "fat" than their German counterparts. The US logistical systems were the envy of all those who came into contact with them.

Still, this focus on the mechanics and the scientific aspects of warfare overlooked the most important element—the fighting man. US soldiers were considered no more than an extension of their machines. US commanders lacked an appreciation for some of the finer and more subtle points of strategy that were not lost on their German adversaries. Many American junior commanders preferred to depend on overwhelming artillery and air power to force positions in what the Germans came to call a "*Materialschlacht*." While in the long run this was successful, at the tactical level, it had a tendency to blunt the aggressiveness of many American units, who would stop at the first sign of resistance and call for support. This allowed the Germans to defend areas with a few heavily armed troops and delay an American advance.

The centralised bureaucracy created a rear area heavy with manpower of all ranks and generated the massive amount of paperwork necessary to manage this monster. The bureaucracy maintained its mass even at times when front line units were starving for manpower. Too often administrative efficiency was held paramount over all else.

The fact still remains that the US soldier emerged as the victor. A cautious reserve held him firmly on course. However, victory at any means was not acceptable. Brutality was reserved for those who were willing to wage war on the innocent. The US soldier was welcomed with open arms by both the liberated and the vanquished. He conquered his enemies without a pretentious repertoire—just style. His honour carried him to the final victory.

THE GERMAN ARMY

The German national character in the years preceding the Second World War has often been described as a collection of ruthless, violent automatons ready to blindly follow the first despot to surface; a chained, maddog prepared to strike at anyone foolish enough to cross its path; poised to start a war at the smallest provocation.

While this is very colourful and useful press for propagandists, it is not exactly the truth. Everyday life in post-WW I Germany was in no way a perfect existence; Germany certainly had its share of problems. The German people were also bitter at the restrictions imposed by the conditions of the Treaty of Versailles which marked the end of WW I. While the social structure in Germany was different from that of the United States, the Germans of the time were not an overtly violent people by nature.

A comparison of Germany and the United States in the late 30s supports this position. In one year, Germany, with a total population of 68 million, had just over 500 homicide cases. In a similar period, The United States, in just 1,100 of its cities, with a combined population of approximately 38 million, had 1,200 homicide cases. While homicides are not the sole measure of a proclivity to violence, this example does raise some interesting questions.

The leaders of the post-WW II western alliance (the Soviet Union had a much different philosophy) possessed a much clearer understanding of the roots of war than their WW I counterparts. Their primary objective was rebuilding the devastated German and Japanese nations. They realised that a nation without a common national cause or an oppressor on whom to focus their hate is less inclined to collectively rise up and take on the mantle of war. Unfortunately, the victorious post-WW I nations were more interested in reaping retribution from Germany and placing them under their boot heels. They paid sorely for that decision.

In the pre-war years and before, the German Army had continually benefited from strong support from the populace. Service was considered a responsibility—the basic duty of any individual. Shirking this responsibility or receiving a dishonourable discharge had severe consequences on a person's civilian career. A soldier, especially an officer, was considered the paragon of society. This is not to say that the German soldier, or officer for that matter, lived in the lap of luxury. Pay was poor by civilian standards. Most soldiers had to rely on family members to eke out a basic existence.

In spite of this shortcoming, or maybe because of it, the ranks of German officers drew very heavily from the upper class and Prussian-German nobility. The manpower demands of WW I, and subsequently WW II, reduced the nobility's percentage of the total officer corps. During WW II, the German leadership in particular did all they could to reduce the influence of the nobility on the officer corps. The nobility was viewed as the antithesis of the new German "democracy." The door to the officer corps was open to all those possessing the required attributes; it was no longer a closed society. Still, the nobility remained a dominant element in the corps. The percentage never dropped much below 20 percent.

True leadership, not authoritarianism, was expected from German officers. The gap that separated the officers and other ranks of the old Imperial Army of WW I had been eliminated by WW II. Officers were expected to lead from the front and to lead by actions rather than words. Social fraternisation with the enlisted ranks was encouraged, and officers trained and lived with soldiers of all ranks. Post-war interviews found that enlisted men held their NCOs and company-grade officers (captains and lieutenants) in the highest regard.

Contrary to certain popularly held beliefs, the German Army did not expect or encourage blind obedience from its soldiers. Independent action was expected from subordinates. Commanders told their subordinates what to do, not how to do it. Within the framework of a particular situation, the subordinates had the freedom to exercise their judgment as to the methods employed. For any degree of success, this required a strong commonalty in thinking. This was attained only through training and experience.

One of the extraordinary features of the German soldier was his initiative. While the Germans depended above all on brilliant small unit leadership, they had fewer junior officers in proportion to enlisted men than the Allied armies. This resulted in German NCOs and even other ranks taking for granted that if officers were killed, the NCOs would take charge and carry on.

German officers received extensive training; there was no *Wunderkind* in the German officer ranks. Training was fairly comprehensive. A period of 14 to 18 months was required before commissioning. Battlefield commissions just did not happen. Active service was regarded as the best training. Soldiers would usually see at least six months of service before being posted for officer training. Upon completion of officer training, they were often returned to their own units.

The ranks of German officers as a whole were much smaller than their US counterparts. The officer ranks averaged only three percent of total Army strength. This was somewhat higher in 1939 than 1945. In keeping with the German philosophy of "no officer is better than an incompetent officer," the officer ranks dwindled. The army was severely short of officers at war's end. In May 1944, there were approximately 13,000 officers missing. Hundreds of battalions were commanded by majors, captains, and even senior lieutenants (a battalion would normally be commanded by a lieutenant colonel). The Germans did not promote formation commanders based on the paper requirements of the formation. More often than not, the commander served in the role but maintained his current rank.

Their general lack of numbers did not mean that the German officers were a pampered group, living it up in the rear areas. The esprit-de-corps of the German officer corps would never have tolerated that type of behaviour. This supposition is supported by statistics of the casualties suffered by their ranks. For the nearly six years of war, officers accounted for just over four percent of the total casualties. At just about any point during the war, an officer had almost twice as much chance of falling in combat as any other soldier.

Life in the German Army was severe but fair. Commanders had a sincere respect for the problems of soldiers of all ranks, but this was a two way street—a complete commitment was expected from all soldiers. Differences between the ranks were fairly substantial; for example, a major's base pay was over three times that of an NCO. On the other hand, the system was structured to compensate the lower ranks with the most pay potential as a percentage of the base rate. This related to allowances for various situations, housing, combat, duty area, etc. An NCO serving in North Africa could increase his base pay by over 50 percent, while a major's base pay was increased somewhat less than 20 percent.

Between the old army and the new, there was a clear differentiation between rewards and military justice. The German Army's management of decorations in WW I was fairly poor. The number of awards was limited, awards for front line and rear area service were not clear, and officers received separate awards from enlisted men. An enlisted man could not receive the highest decoration—the *Pour le Merite* (the Blue Max).

Since most of the new army's high command had seen service during the first war, they recognised and easily recalled these shortcomings. The Iron Cross, Germany's most historical decoration (it was founded during the Napoleonic era) was re-instituted in two classes (1st and 2nd). These were awarded only for wartime service.



A German JagdPanzer 38(t) Hetzer moves up to the front. Note its low silhouette in reference to the motorcycle nearby.

Two new classes of decorations were created to expand the number of potential awards—the Knight's Cross, in five classes, and the German Cross, in Silver and Gold. There was a significant gap from the Iron Cross First Class to the Knight's Cross. The German Cross bridged the gap between these two awards. The Silver version was only awarded for non-combat service; the gold version was awarded only for combat service.

In contrast to the US system, German decorations were cumulative. A soldier could not be recommended for an award if he did not already possess all of the previous awards. Additionally, only one of each decoration was awarded. While maintaining a degree of uniformity, this method did have its drawbacks. Heroic actions of equal significance were not always rewarded equally. The system was designed to recognise the contribution of the combat soldier and actually favoured the enlisted ranks. Non-combat service to the Fatherland was important, but was relegated to a secondary role.

While the actual number of awards increased as the war progressed, this was a result of more combat situations, and consequently an increase in the number of casualties. As the war went on, the requirements for the awards were actually made more difficult. Of the five highest awards, the series of the Knight's Cross, only 5,740 were awarded in the German Army, approximately 0.3 percent of the number of soldiers killed in action.

The German military justice system was designed to maintain the discipline necessary to preserve cohesion throughout the ranks. It was severe by US standards, though its application was consistent for both officers and other ranks. As was the case with the US system, officers had fewer charges brought against them and less prospect of conviction than enlisted men.

The total number of convictions, and specifically death sentences, was much greater than for the US Army. Somewhere in excess of 11,000 soldiers were executed for all offenses, including both military offenses and crimes against the civilian population. Desertion in the face of the enemy was the largest single category.

Throughout the war, the German Army averaged approximately eight desertions per 1,000 soldiers each year. This rate was much lower in the early war years than at the end. The highest rate of desertion was during 1944, when it reached approximately 22 desertions per 1,000 soldiers. At its peak, the desertion rate was much lower than that of the US Army.

The German Army was built as a fighting force. A German soldier did not fight for an ideology, he fought for what soldiers have fought for throughout time—a perceived common and just cause. The army was built around the individual soldier; its doctrine, organisation, and administration were structured with this in mind. All aspects of the Army were designed to produce, reward, and manage fighting men. Fewer resources were committed to rear area functions. The most capable men served at the front.

The German commanders avoided "scientific" methods. Soldiers were trained to develop solutions to problems, not to offer a preset response to a recognised problem. Subordinates had a duty to make independent decisions and the authority to carry them out.

The German Army was capable of tackling any situation, at any odds, yet possessed an unfortunate degree of blind brutality. As a pure fighting force, it is very difficult to find its equal during this century.

THE DIVISIONS

Armoured and Panzer units, or tanks in general for that matter, have always been the awe-inspiring force of the battlefield; the possibility of an encounter is frightening in its own right. These are the units of which the stories are written—the modern knights of the battlefield. One could be given the impression that they won battles single-handedly.

These forces undoubtedly carried combat to the opposition, driving warfare to the next level. They were the shock troops—the exploitation factor. Punch an opening in the line and watch the armoured forces pour through. Without these forces, mechanised warfare remains just a concept. Nevertheless, on the basis of sheer magnitude, they represented only a small, yet extremely significant, portion of the total forces in the field.

AIr is a simulation of armoured combat, yet mention must be made of the most dominant force—the legions of infantry. These lowly ground-pounders personified combat during the war. Armour was the cavalry sweeping in to save the day, but the infantry held the ground and absorbed the enemy assaults. They were referred to by many different names, some not so complementary.

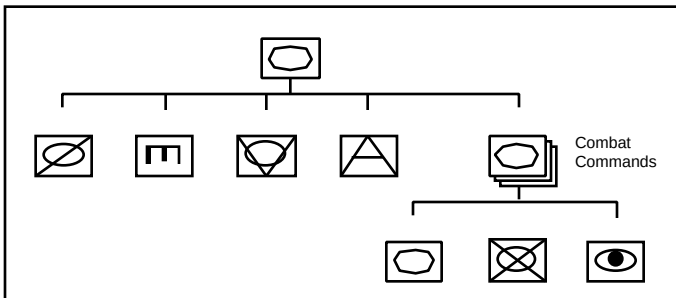
Many specialised infantry units were formed, tested, discarded or modified in some way. In the long run, the infantry arm of the army fundamentally existed in two primary types: traditional infantry and airborne troops. The German counterparts, *Infanterie*, *Grenadier*, *Pioneer*, *Volksgrenadier*, and *Fallschirmjäger*, performed similar roles.

The armour and infantry branches fought as a combined-arms force. One could not be successful without the other. While the infantry was the most numerous by far, the armoured divisions served as the spearhead for all of the major offensives and were at the forefront of all major actions. Any way you slice it, the armoured divisions were not alone.

THE US ARMoured DIVISION

When the US entered the war in 1941, the armoured division took its pattern from the 15 November 1940 Table of Organisation and Equipment (TO&E). This organisation called for a single armoured brigade of 368 tanks in two light and one heavy armoured

regiments. The division also fielded a single armoured infantry regiment of three battalions. Reconnaissance, field artillery, engineers and the other support elements (military police, medical, signals, ordnance, and maintenance) rounded out the division structure. In total, the authorised strength was set at 12,697 personnel.



US "Light" Armoured Division, 1944

The armoured division TO&E was reorganised on 1 March 1942. This new structure became known as the "heavy" armoured division. The 1st "Old Ironsides," 2nd "Hell on Wheels," and 3rd "Spearhead" Armoured Divisions went into action under this new structure. This TO&E called for 232 M4 Sherman medium tanks and 158 M5 Stuart light tanks in two armoured regiments, each with one light and two medium tank battalions. The armoured infantry regiment still fielded three battalions. The field artillery component was reduced to three battalions. Again, reconnaissance, engineers and other support elements rounded out the division structure. In total, the authorised strength was 14,488 personnel. Even though the combat battalions were organised into regiments, they tended to fight in Combat Commands, as was the case with the final "light" armoured division.

Both the 1940 and 1942 TO&Es were considered too tank heavy. There were only 2,600 infantrymen in the "heavy" division's armoured infantry regiment. These divisions were much more effective when working in conjunction with other infantry formations. A further reorganisation was undertaken to improve this deficiency and make the armoured divisions more self-sufficient fighting units.

The reorganisation of 15 September 1943 marked the last substantial change during the war. This created the most common divisional structure which became known as the "light" armoured division. All of the armoured divisions, with the exception of the 2nd and 3rd, converted to this new structure. The 2nd and 3rd Armoured Divisions retained the "heavy" division structure throughout the war.

The "light" armoured division structure dropped the regimental association completely. This new division fielded 186 M4 Sherman tanks and 77 M5 Stuart light tanks in three armoured battalions. The armoured infantry support still came from three armoured infantry battalions, but these battalions were no longer organised in a regiment. This one-to-one ratio of armour to infantry resulted in a more desirable balance. Reconnaissance, field artillery, engineer and other support elements were still included. The total authorised strength was 10,937 personnel.

The "light" division's basic command element consisted of three Combat Commands—CCA, CCB, and CCR (reserve). Each combat command generally fielded one armoured battalion and one armoured infantry battalion plus support elements. Intended to mimic Germany's dynamic *Kampfgruppen*, these combat commands ultimately evolved into quasi-brigade commands. The member battalions were seldom transferred to other commands; the commanders were reluctant to release their battalions. They only wanted battalions experienced in fighting in support of one another. This reluctance was in direct conflict with the whole *ad hoc* concept of the *Kampfgruppen* or combat command.

Tank destroyer and anti-aircraft units were not integral to the armoured division's TO&E. However, these critical elements were in most cases permanently attached to the divisions. In practice, at least one tank destroyer battalion of 36 M10, M18, or M36 tank destroyers and an AAA auto-weapons battalion of thirty two 40mm guns and 32 multiple-barrel .50-cal machine-gun carriages were available.

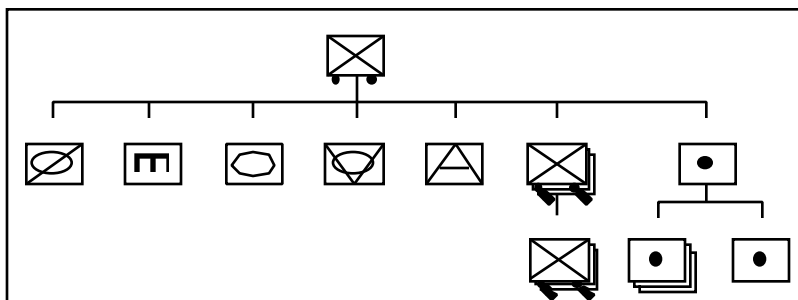
The tank destroyers proved their worth on many occasions. Forced to serve tactically as tank units, they more than compensated for the limited anti-tank capability of the M4 Sherman's 75mm gun. The arrival of greater numbers of 76mm armed Shermans reduced the demand on these units.

Due to the limited number of German close-support aircraft, let alone the Allied air superiority, anti-aircraft units spent most of their service cannibalised of their transport and personnel. The self-propelled units were able to provide effective ground support fire with their automatic weapons.

At any time, 80 to 90 percent of the division's vehicles were nominally fit for service, the remainder being mechanically out of service or in the process of replacement, having been destroyed in combat. While the typical US armoured division was tactically inferior to the German Panzer division, it more than made up for this deficiency in superior numbers and equipment.

THE US INFANTRY DIVISION

Prior to the outbreak of the war, the infantry division was organised along the "square," a four regiment design. This concept embraced the massed force doctrine of World War I. In 1939, the infantry division was reorganised along the "triangular" concept, in which all formations from squad to regiment were based on steps of three. German influence again played a strong role in this reorganisation. By 1942, the new triangular organisation had become the standard.



US Infantry Division, 1944

The TO&E of 15 July 1943 was the standard that governed the infantry forces in Europe. An infantry division fielded three infantry regiments of three battalions each.

Reconnaissance, field artillery, engineers and

other support elements rounded out the division structure. In total, the authorised strength was 14,253 personnel.

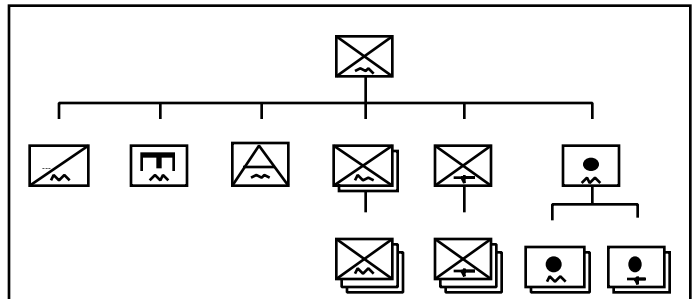
The infantry division was by no means an armoured formation, but it still possessed a potent armoured punch. It normally had one or more standard tank battalions permanently attached. These battalions were as a rule pure 75mm armed Shermans, not mixed 76mm and 75mm formations. It was felt that the Sherman 75 provided superior HE fire support than that of the Sherman 76. A tank destroyer battalion was also attached to the division. Most of these were M10s, but a few tank destroyer battalions still fielded the much less effective M5 76mm towed anti-tank gun.

The infantry was designed to be a dedicated fighting machine. While possessing all of the basic components, it relied upon the higher echelon commands to provide the bulk of the support and specialised forces. Even so, with its intrinsic motor transport, plus corps and army level motor assets, the infantry division achieved a degree of mechanisation rarely realised even by the German's supposed mechanised units.

At the close of the European war, the American Army in Europe had 52 infantry divisions in the field, as compared to 16 armoured divisions. Looking at this, one could say the armoured divisions were only a sideshow. If casualties incurred were the only measure, the infantry divisions by far bore the brunt of the fighting in Europe. Of the 506,581 US casualties, the infantry divisions (including airborne) incurred 449,772 of them, 89 percent of the total. (Casualties include those soldiers killed or wounded.)

THE US AIRBORNE DIVISION

Initially, airborne units were not classified as standing formations. The plan was to add air assets to standard infantry forces and attach parachute-qualified troops as necessary. By 1942, it had become apparent that division-sized, permanent formations would be required. The first two divisions formed under the new plan were the 82nd "All American" and the 101st "Screaming Eagles." Major General Omar Bradley was the 82nd's first division commander. Five airborne divisions were eventually raised; all but one served in the European Theatre.



US Airborne Division, 1944

The airborne division was modelled after the standard triangular infantry division, but on a smaller scale. The division fielded one infantry parachute regiment and two infantry glider regiments, with three battalions each. The infantry division's 105mm artillery pieces were replaced with the lighter 75mm pack howitzers. These guns were air-dropped in sections and assembled once on the ground. Contrary to popular belief, the majority of the division's airborne troops landed via gliders—not parachutes. The airborne division's authorised strength was set at 8,505 personnel.

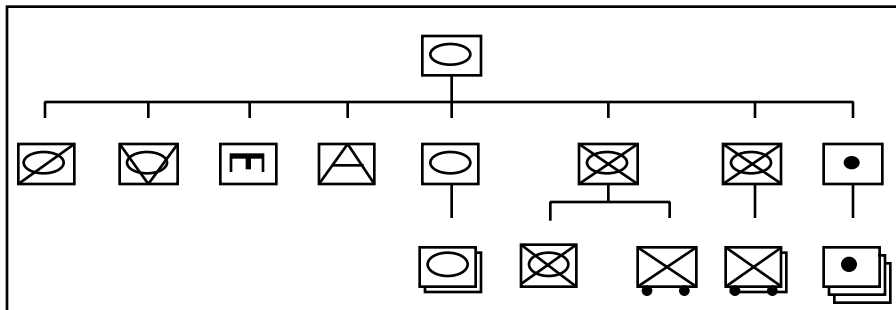
The 82nd and the 101st Infantry Divisions were continually in an overstrength state, usually having one or more infantry parachute regiments and other units permanently attached to them. By the end of 1944, the airborne division TO&E was officially reorganised, the strength being increased to 13,906 personnel. The division now officially fielded two infantry parachute regiments and only one infantry glider regiment.

THE GERMAN PANZER DIVISION

The mere mention of the German Panzer division struck fear into the heart of the average allied soldier. The Panzer's reputation was not a propaganda official's spin on the truth; this reputation had been earned in France in 1940, in North Africa in 1941-43, and continually on the Russian steppes. The Panzer division was all it was

purported to be.

By the summer of 1944, however, the Panzer division was a scant shell of its once glorious self. The



The German HEER Panzer Division, 1944

formation of additional divisions, combat losses, and five long years of war had taken their toll. The Panzer divisions had experienced an erosion from which they could not recover. The degradation was not just a matter of equipment shortages, many divisions' manpower reserves were exhausted.

Rather than replenish the existing divisions, the German high command felt the need to form more divisions. While this might have looked good on paper, it drained a supply network already stretched to its limit. These new units were just shells of divisions. It was bad enough that the bulk of the fighting was on the Eastern (Russian) Front, but by this point in the war, the SS units were receiving first choice when it came to resources. The *Wehrmacht* units had to beg, borrow, and steal whatever they could get their hands on.

Like its US counterpart, the Panzer division evolved through a number of organisational changes. First formed in 1935, the Panzer division went to war in 1939 fielding over 400 light and medium tanks in two armoured regiments of three battalions each. The division also fielded two *Panzergranadier* regiments and support elements. The majority of the tanks were Pz Kpfw Is and IIs, the rest being early model Pz Kpfw IIIs and IVs. Each Panzer company contained 32 tanks.

Experience garnered from the Spring offensive in France and the formation of additional Panzer divisions established the late 1940-pattern Panzer division as a single Panzer regiment. This brought the designated strength down to approximately 200 tanks.

In 1941 and 1942 the number of tanks per regiment was again reduced. The Pz Kpfw Is were withdrawn from service and the Pz Kpfw IIs were relegated to liaison and reconnaissance roles. The Panzer company was reduced to 22 tanks. Each battalion now fielded one Pz Kpfw IV company; the remaining two companies were equipped with Pz Kpfw IIIs.

The 1944-pattern Panzer division fielded 103 tanks in one Panzer regiment of two battalions. One battalion was comprised of 52 Pz Kfpw IV tanks, while the other had 51 Pz Kfpw V Panther tanks. The division also fielded two Panzergrenadier regiments; one was classified as armoured, while the other was motorised. Each Panzergrenadier regiment fielded two battalions. Although classified as armoured, only one of the two battalions in the armoured Panzergrenadier regiment was actually armoured; the second battalion was motorised. The division's one-to-two ratio of armour to infantry was excellent. In total, the authorised strength was 13,725 personnel.

The Panzer division's support elements were comprehensive. In addition to the standard support elements (military police, medical, signals, ordnance, and maintenance), the division fielded particularly potent engineer, reconnaissance and AAA battalions.

The *Panzer Aufklärung Abteilung* was well-trained and well-equipped with heavy as well as light armoured cars, infantry support, and anti-tank weapons. It was a particularly elite unit. Very often, this was used as the divisional reserve, lead, or rear echelon battalion.

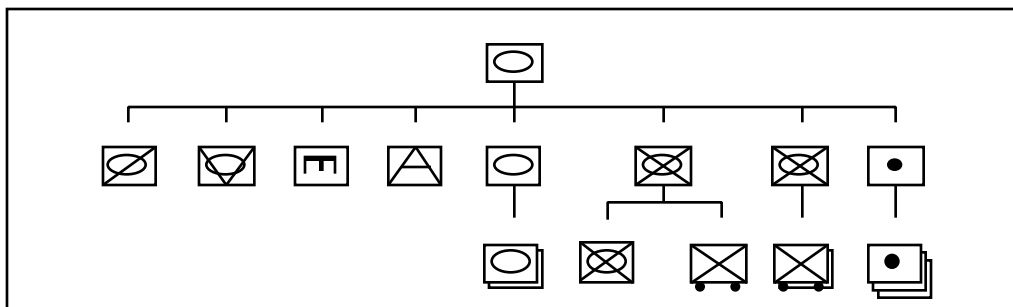
The division artillery regiment was not as powerful as its US counterpart. Its three battalions totalled 42 gun tubes, as opposed to the US armoured division's 54, although a portion of this shortfall was made up in the magnitude of available firepower. In the Panzer division, 18 of its gun tubes were 150mm howitzers; all 54 in the US armoured division were 105mm howitzers. As far as mobility, the US armoured division was far superior. Only one of the three German battalions (18 gun tubes) was self-propelled; the other two used motor-drawn towed guns. All three US artillery battalions were self-propelled.

The Panzer division also included an intrinsic anti-tank battalion. This unit was somewhat stronger than the US tank destroyer battalion. It was made up of 31 tank destroyers or assault guns and 12 towed anti-tank guns.

Typically, in the time period covered by **AiR** there were (at least in theory) 24 *Wehrmacht* and one *Luftwaffe* (the *Hermann Göring Panzer Division*) Panzer divisions. There were also a number of temporary or "on-paper only" Panzer divisions formed during this period. These formations had no real impact on the war.

THE GERMAN WAFFEN-SS PANZER DIVISION

The Waffen-SS was the combat arm of the *Schutzstaffel*—the elite guard of the Nazi party. While not technically part of the *Wehrmacht*, these units did fight alongside their *Wehrmacht* comrades throughout the war. These men were true soldiers, not to be confused with the sinister death-camp guards or the black-suited thugs poised to spirit away family members in the dead of night. Still, admission into this contingent required a certain mentality bordering on blind fanaticism.



German WAFFEN-SS Panzer Division, 1944

A portion of the incredible successes accredited to these formations must be attributed to the preferential treatment they received in equipment and supply allotments. This is not to say that these formations lacked drive and panache. In fact, they were highly successful, though sometimes overly brutal in their style. They often served as the "fire brigades," leading attacks, filling the gaps, and drawing the toughest assignments. They might have been pampered prima donnas, but they were expected to deliver results on demand.

Like its *Wehrmacht* counterparts, the SS Panzer divisions evolved through a number of organisational changes. Most were formed as motorised regiments, expanded to motorised divisions, and finally upgraded to Panzer divisions. The first and premier division was the *Leibstandarte*. It acted as a personal guard to the Führer, enhancing its Praetorian Guard image. Along with the *Das Reich* division, it formed the crack I-SS Panzer Korps.

These divisions' basic structure included more tanks and combat vehicles than that of the Panzer division, although the organisational structures were essentially identical. Only two *Wehrmacht* formations rivalled them in sheer magnitude—the *Panzer Lehr Division* and the *Großdeutschland Panzergrenadier Division*.

The standing organisation called for 126 tanks in a single armoured regiment of two battalions. One battalion was equipped with Mark IVs, the second battalion—Panthers. The division also included 31 assault guns or tank destroyers and 12 towed anti-tank guns in an organic anti-tank battalion and 22 assault guns in an additional assault gun battalion.

The division also fielded two Panzergrenadier infantry regiments, but these formations each boasted three battalions, instead of the usual two found in a Panzer division. Each regiment included an armoured Panzergrenadier battalion. The division's one-to-three ratio of armour to infantry was excellent. It was also very common to find an attached heavy tank battalion of 45 Tiger I or Tiger II tanks. In total, the authorised strength was set at 17,262 personnel.

The SS Panzer division's support elements were as comprehensive as those of the Panzer division. In addition to the standard support elements (military police, medical, signals, ordnance, and maintenance), the division fielded particularly potent, engineer, reconnaissance, and AAA battalions.

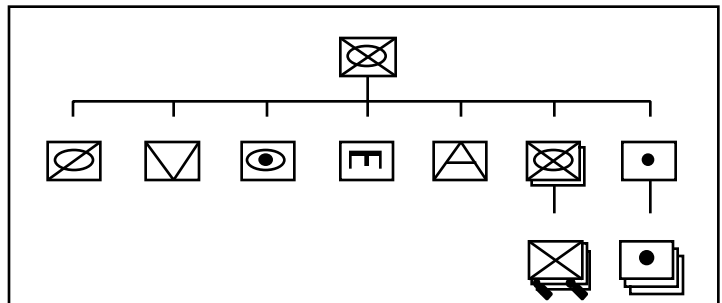
The division artillery regiment was more powerful than its Wehrmacht counterpart. Its four battalions totalled 54 gun tubes. The division also included a separate battalion of 150mm or 210mm rocket projector artillery. In the artillery regiment, the first three battalions matched the Panzer division's structure. The fourth battalion fielded twelve 170mm heavy guns. The SS Panzer still lacked any real degree of mobility for its artillery. Only one of the three battalions (18 gun tubes) was self-propelled; the other three were motor-drawn towed guns.

Typically, in the time period covered by **AiR**, there were seven SS Panzer divisions. These were the *1st SS – Leibstandarte Adolf Hitler*, *2nd SS – Das Reich*, *3rd SS – Totenkopf*, *5th SS – Wiking*, *9th SS – Hohenstaufen*, *10th SS – Frundsberg*, and *12th SS – Hitler Jugend*. Most served the majority of their time on the Russian Front. However, during certain periods of the Western Campaign, a number were available, and saw action against the Western Allies. This was particularly true during the Battle of the Bulge in which five of the seven divisions saw action.

THE GERMAN PANZER GRENADIER DIVISION

Formed to parallel the Panzer divisions, the Panzergrenadier divisions were reorganised from motorised infantry divisions. The German command recognised that the motorised divisions required semi-armoured status if they were to effectively perform their role.

The Panzergrenadier division's two Panzergrenadier regiments each had three battalions, instead of the two found in a Panzer division. Both regiments were motorised. The Panzer regiment was replaced by a single tank battalion or, as was the case later in the war, an assault gun battalion. The



The German Panzergrenadier Division, 1944

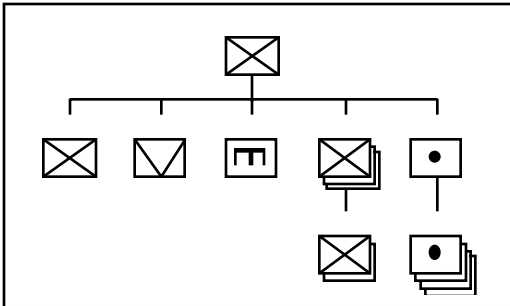
division retained the organic anti-tank battalion of 31 vehicles. Its artillery regiment was a duplicate of the Panzer division's. Otherwise, its structure was very similar to that of the Panzer division. In total, the authorised strength was 13,876 personnel.

With its larger complement of infantry, the Panzergrenadier division was better suited for defensive operations (a common occurrence for the German forces at this point in the war) than the Panzer division. Facing similar shortages to the other types of units, especially in transport vehicles, these units still remained effective infantry forces.

Mention must be made of the Wehrmacht's premier division, the *Großdeutschland* Panzergrenadier Division. While officially classified as a Panzergrenadier division, its standing complement of tanks and armoured units was by far more powerful than any *Wehrmacht* Panzer division. Its force composition rivalled that of the SS Panzer Divisions. Most historians consider this division the most effective of all German Wehrmacht and SS divisions.

THE GERMAN INFANTRY DIVISION:

The German infantry division of 1939 established the framework that set the standard for many other nations. It followed the "triangular" structure, fielding three regiments of three battalions each. Each battalion contained three combat infantry companies and a single heavy weapons company. Each regiment also fielded an infantry howitzer company, the "13th" company, and an anti-tank company, the "14th" company. Reconnaissance, field artillery, engineers and other support elements rounded out the division structure. The authorised strength was 17,200 personnel.



German Infantry Division

This division's degree of mechanisation was sparse by US standards. In this it was more similar to the British infantry division. Transport was reserved for HQ and logistical elements. Mass transport was provided by rail or from the higher command transport pool.

Based on the realisation that manpower was in short supply and most divisions were continually under strength, the infantry division structure was revised in the early part of 1944. At this point, the division underwent a fairly radical change.

The infantry regiments now fielded just two battalions. The number of rifle squads per platoon was also reduced from four to three. The overall firepower remained fairly stable, since the number of machine-guns remained unchanged, and the calibre of mortars and anti-tank guns had continually increased. Even though each battalion now contained 10 companies, the infantry howitzer and anti-tank companies retained their traditional 13th and 14th designations.

The Füsilier Battalion, though often called a reconnaissance force, was in all respects the elite unit of the division. It more often than not served as the division reserve, lead, or rearguard force.

The artillery regiment was fairly complete although all guns were essentially horse-drawn. The regiment fielded three light artillery battalions and one medium artillery battalion for a total of thirty-six 105mm and twelve 150mm howitzers.

The 1944 infantry division was much more manageable than its predecessor, given the state of available resources and manpower. With the corresponding support elements reduced to match this new structure, the authorised strength was set at 12,352 personnel.

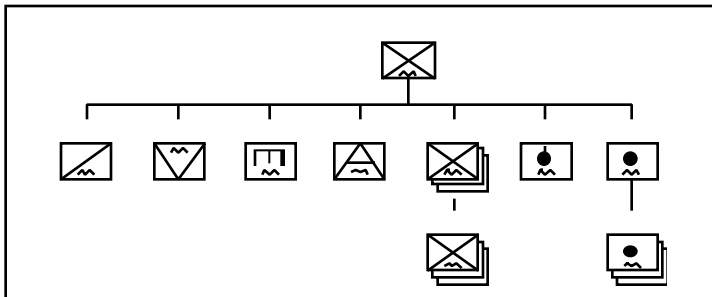
THE GERMAN FALLSCHIRMJÄGER DIVISION

These divisions were *Luftwaffe* formations, but fell under army control when used in ground operations. The German airborne troops were involved in a number of significant operations during the earlier periods of the war. Most notable were the invasions of France, the Balkans, Crete, and Sicily. When the airborne operations were discontinued on any major scale, the *Fallschirmjäger* divisions were maintained as highly effective ground troops. During the later stages of the war, very few of the troops were actually trained for airborne operations. These divisions were particularly elite, and represented the highest quality infantry units.

The division was structured along similar lines as the line infantry division. However, its three *Fallschirmjäger* regiments maintained three battalions each. They featured a greater allocation of machine-guns, but lacked a high degree of heavy weapons. These divisions were envisioned as shock troops or stopgaps. As is the case for most troops of this type, they were not equipped for prolonged engagements.

The reconnaissance unit was a company instead of a battalion, but was otherwise of normal configuration. The artillery regiment fielded three battalions instead of four. This reduced the number of gun tubes to twenty-four 105mm and twelve 150mm. The division did, however, field a heavy mortar battalion of thirty-six 120mm mortars. Other support and logistical elements were of fairly standard configuration. In total, the authorised strength was 15,976 personnel.

In addition to the *Fallschirmjäger* divisions, the *Luftwaffe* also created several *Luftwaffe* Field Divisions, most of which were committed to the eastern front. These units were manned by *Luftwaffe* flight and ground crews and were organised along the lines of a normal infantry division. The *Luftwaffe* Field Divisions on the western front were of average quality, and usually understrength in both men and material.



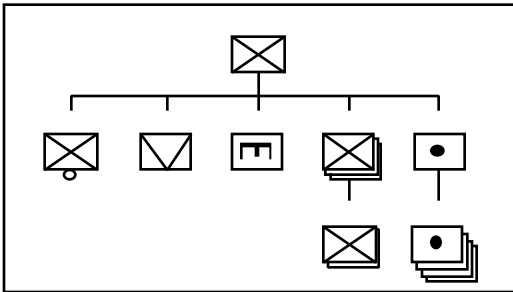
German Fallschirmjäger Division, 1944



A German Fallschirmjäger machine-gun crew poised for action.

THE GERMAN VOLKSGRENADIER DIVISION

This new infantry division structure was first formed in September 1944, after Heinrich Himmler (Chief of the SS, Police, and Minister of the Interior) assumed the duties of Chief of Army Equipment and Commander of the Replacement Training Army. These "People's" infantry divisions were of fairly low quality. They were usually formed from the cadres of the line infantry units destroyed in combat. In theory, the troops from these divisions were interchangeable with the SS divisions, though there is no record of them being used in this way.



German Volksgrenadier Division Diagram

The structure of this division marked a decrease in personnel and an increase in automatic weapons, particularly submachine-guns. The division fielded three Volksgrenadier infantry regiments of two battalions each patterned after the Type 1944 Infantry Division. In this case, Panzerfaust companies replaced the infantry regimental anti-tank units in the "14th" company.

The other main differences from the Type 1944 Infantry Division included:

- the fusilier battalion was reduced to a company sized unit;
- the artillery regiment retained four battalions but one of the 12 gun 105mm battalions was replaced by an 18 gun 75mm howitzer battalion. To facilitate command control, the battalions were reorganised into 6-gun batteries instead of the standard 4-gun batteries;
- the anti-tank and engineer battalions were reduced in strength; and
- the supply and logistical systems were simplified by consolidating the company level units into battalion trains and by the creation of a division level supply regiment.

The authorised strength was set at 10,072 personnel. In spite of scarce resources, 50 divisions were formed. Many never reached full strength or were of dubious quality. Some divisions did perform quite well, though they never attained the level of the line infantry divisions.

THE BATTALIONS

The US Armoured and the German Panzer Battalions were the primary shock elements of the armoured and Panzer divisions. In conjunction with the division infantry assets, these battalions were the divisions' primary fighting force.

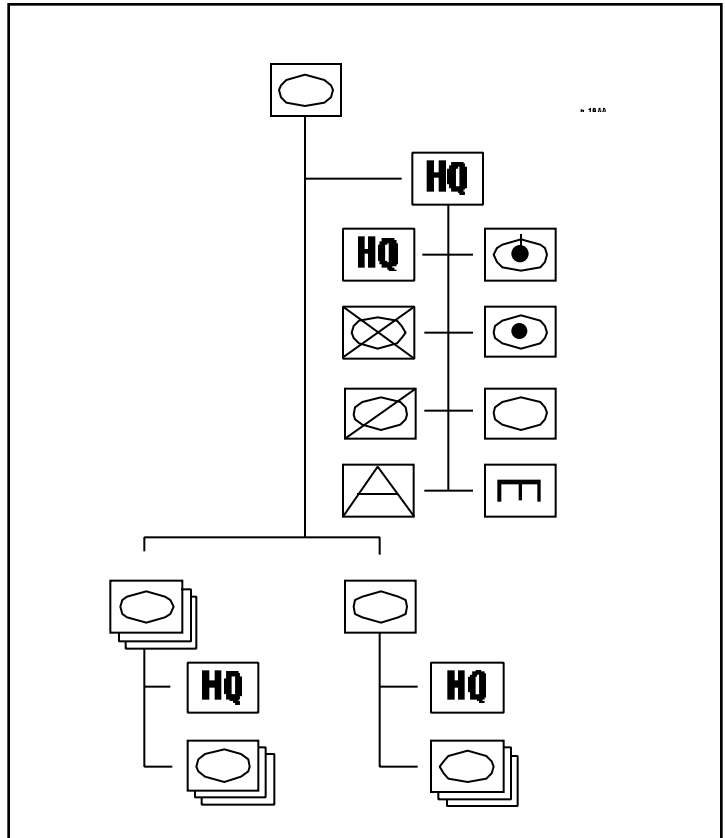
The organisations of these units followed somewhat similar structures. Both were composed of a headquarters company and three or more tank companies, plus a minimum of support units. The tank units were organised as pure units, but seldom fought without infantry attached or nearby.

These battalions seldom went into battle following their paper organisation. Early on, both sides discovered that pure tank units were not at all effective in dealing with opposing infantry forces. The battalions required their own infantry support to deal with this opposition. On the other hand, the pure infantry battalions faced a similar problem when lacking any integral tank units.

This resulted in frequent attaching or swapping of tank and infantry companies between the battalions. When dissimilar companies were swapped between battalions, this reorganisation was referred to as cross-attaching (abbreviated in **AiR** as "CA"). When dissimilar companies were taken from one battalion and attached to another battalion, thereby increasing the strength of the acquiring battalion, this reorganisation was referred to as cross-reinforcing (abbreviated in **AiR** as "CR").

While cross-attaching and cross-reinforcing were effective improvements to the pure battalion structure, it was found that at least a one-to-one ratio of tank to infantry was the optimum configuration. In **AiR** this configuration is referred to as a Task Force if a US battalion (abbreviated "TF"), or a *Kampfgruppe* if a German battalion (abbreviated "KG").

While the standard TO&Es for the battalions are illustrated and discussed in the following sections, these formations are not employed in the campaigns due to their lack of flexibility. Players wishing to employ these formations can easily construct them using the Battle Builder.



The standard TO&E for a US Armoured Battalion in 1994

THE US ARMoured BATTALION

The basic armoured battalion fielded a headquarters company, three medium tank companies, and one light tank company. Both the medium and light tank companies were structured along similar lines. Each fielded a headquarters section and three tank platoons of five tanks each. The headquarters section in the medium tank company fielded two M4 Shermans and one M4 Sherman (105) fire support tank. The headquarters section in the light tank company fielded two light tanks. Therefore, the full-up strength of a medium tank company was eighteen tanks—the light tank company was seventeen tanks.

While not specifically a combat unit on par with the tank companies, the headquarters company still fielded a significant combat force along with the command elements of the battalion and a number of specialised platoons or sections. These specialised units were allocated to the companies as needed or were retained and commanded directly from the headquarters company.

In most cases, the medium tank companies fought cross-attached or cross-reinforced in the same manner as the battalion level forces. The tank companies swapped or obtained infantry platoons from the infantry companies allocated to the armoured battalion.

When the 76mm armed Sherman became available, the tank platoons became mixed formations of Sherman 75s and Sherman 76s. Pure Sherman 75 or Sherman 76 platoons became rare in the tank formations. Pure Sherman 75 platoons were fielded in those tank battalions attached to infantry divisions.

The light tank company had passed its prime as an anti-armour weapon. It no longer served as a front line tank force. Lacking any degree of firepower to tackle German tank units, it served as a reconnaissance or screening unit for the medium tank companies.

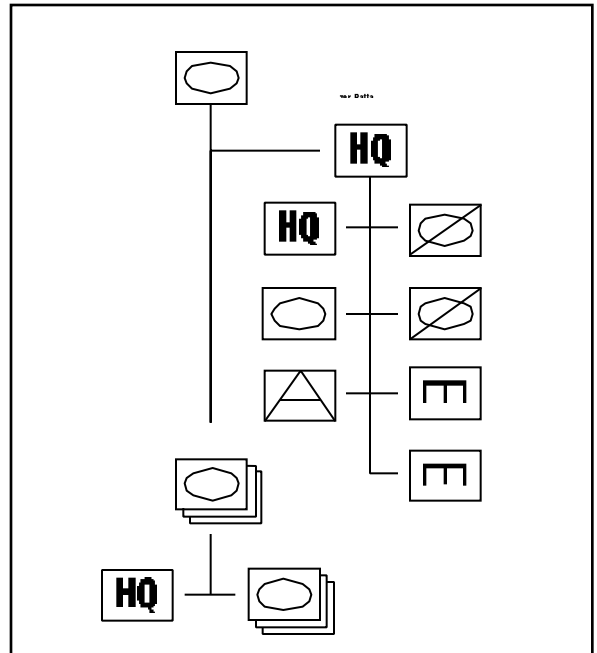
THE GERMAN PANZER BATTALION

The basic Panzer battalion fielded a headquarters company and three tank companies. The tank companies each fielded a headquarters section and three tank platoons of four tanks each. The headquarters section fielded two tanks. Therefore, the full-up strength of a tank company was fourteen tanks.

The headquarters company was structured along similar lines to its US counterpart. It fielded the command elements of the battalion and a number of specialised platoons or sections. These specialised units were allocated to the companies as needed or were retained and commanded directly from the headquarters company.

In most cases, the tank companies fought cross-attached or cross-reinforced in the same manner as the battalion level forces. The tank companies swapped or obtained infantry platoons from the infantry companies allocated to the Panzer battalion.

The tank companies did not as a practice mix the type of tanks in the platoons, or in the battalion as a whole, for that matter. A standardisation was maintained to facilitate maintenance and streamline spare parts management.



The standard TO&E for a German Tank Battalion in 1944.



Every army has a set of plans and procedures that dictate or suggest appropriate actions in the face of the enemy—these are tactics. Tactics are not static sets of rules, but dynamic systems continually modified on a small or grand scale as the situation dictates.

Most tactics are common sense; there is no mystical book that one refers to for the hidden answer to a problem. The effectiveness of tactics lies in the implementation and coordination of the multiple components—combined—arms. There is no single correct answer, warfare is more complicated than that.

If there were only one correct tactic in a given situation, anyone could look it up or plug situations and corresponding responses into a simple matrix calculation. There is usually more than one successful course of action and innumerable incorrect ones. The superior tactician is able to quickly evaluate a situation and then not only choose the *most* correct action, but also implement that action in the most efficient manner.

This premise maintains its validity when applied to many different sized forces. It is certainly applicable for battalion sized and smaller forces. One might think that it is more difficult to command and manage a larger force than a smaller force. That is generally true; however, the decisions made at the smaller level are much more final in nature. If the entire command consists of just a single platoon, an incorrect decision can result in the destruction of the entire unit. A battalion sized formation has more elements, and therefore greater flexibility.

Tactics are normally divided into three primary components: Reconnaissance, Offensive Operations, and Defensive Operations. Two additional categories, while not specifically tactical in nature, are also included to address combat units Morale and Readiness.

The importance of combined arms as the basic tenet of any successful operation can not be over emphasised. What is combined arms? It is a combination of dissimilar but complementary forces that individually have limited or specific strengths and weaknesses, but once combined possess strength beyond their individual capabilities.

The most basic combined arms elements are armour and infantry. Individually they have their inherent capabilities; combined, they complement each other. In a given situation, a combined armour and infantry force is the most effective choice. The addition of the third element, indirect fire support (whether by air or artillery) rounds out the force to its most effective state.

COMMAND

The most successful commanders lead rather than direct their troops in battle. Command is much more than doling out orders by rote from a field manual. Commanders must evaluate the situation and then formulate the best plan of action given the known factors and the available forces in their command.

The different command levels require varying skills. What can be reasonably appropriate for a platoon commander can be inappropriate for a battalion commander. The scope of command differs greatly for these two levels; the higher command levels require a much broader perspective of battle. The platoon commander is concerned with a much smaller area, and his objectives are therefore, much more limited.

PLATOON COMMANDER

This is the lowest possible command level in **Air**. A platoon commander is responsible for his tank and the other vehicles in the platoon. However, the platoon is just one of the formations in a company. The platoon is therefore subordinate to the company. A platoon commander is expected to follow the orders of a company commander. The other vehicles in your platoon remain with your tank at all times; they do not stray, nor can they be detached.

Your tank driver is continually aware of the movement orders for the company and your platoon's proper position in the company formation. As long as the driving controls are set to "AUTO" the driver follows the path of the company and responds to any change in orders. If the "AUTO" driver control is disabled, the platoon is then free to move to any location. At this point, the platoon can detach from the company. The tank driver then follows *your* new orders. Your platoon rejoins the company if you order Reform. Another way to rejoin the company is to re-enable the "AUTO" control.

COMPANY COMMANDER

As a company commander, your scope of responsibility encompasses multiple platoons and/or sections. You now command the company's headquarters section, usually two vehicles. This section is an independent unit in all ways, but your focus must be beyond the limited world of just the headquarters section. You are now responsible for an entire company.

All the functionality described for the Platoon Commander applies to the headquarters section you now command. However, while you are able to manoeuvre independently and basically move off and detach from the company; this would not be a wise move.

Your goal is to employ the company's units in the most advantageous manner. Individually, you must think defensively. Your headquarters section should avoid engagements. Without the headquarters section, the remaining company units are leaderless and less effective. If you are looking for hot action and want to be "in the thick of it," you can jump to another armoured unit using the Shift Position function. Remember that your character remains with the headquarters section, no matter where your attention goes.

You command your company by giving it orders and formation and frontage settings. Your subordinate platoons and sections manoeuvre to carry out your commands. Individual platoons and sections can be detached and given independent orders.

Do not micro-manage the platoons and sections. Allow them to act independently as much as possible. Detach sparingly. Tactics are formulated with the assumption that all positions remain filled. If a platoon is detached, its position is vacant. That could create a gap in the formation.

BATTALION COMMANDER

As the battalion commander, you have responsibility for the entire command. Only your decisions directly affect the outcome of the battle. The battalion is composed of one or more companies and attached units. You now directly command the headquarters section in the battalion's headquarters company. As is the case with a Company Commander, this company is an independent unit in all ways. However, in this case you must look at the entire picture. All the battalion's companies look to you for leadership. There is no one else.

Your goal is to employ the battalion's companies in the most advantageous manner. Again, you must think defensively. Your headquarters section should avoid all engagements. If the headquarters section is destroyed, the companies are leaderless; their effectiveness is reduced. You can still jump to another armoured unit using the Shift Position function and your character still remains with the headquarters section.

You command your headquarters company in the same manner as any other company but on a much higher level. You now command the battalion's other companies and give orders on a much grander scale.

Micro-management is an even greater issue at this level of command. With all of the subordinate units in the headquarters company, as well as the other companies, there is just too much involved to attempt to individually command the subordinate units in each company. Let the companies implement and carry out your orders. If intervention becomes necessary, try to limit the changes to the company level.

COMBAT UNITS

A discussion of combat units can at first seem a waste of time and effort. However, while some points are obvious, others are not. Certain combat units have special capabilities or might possess dual roles. Take a few minutes to review this information. You might learn some key tactical points.

Combat units are generally divided into three broad categories: armour, infantry, and support. Within these three categories are a myriad of unit types and specialised forces, as follows.

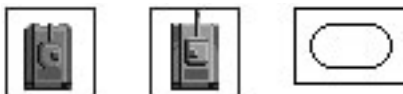
Headquarters are best kept out of harms way. While they are equipped with first-line combat units, they are not intended to fill any combat role. They avoid combat whenever possible. Their purpose is to lead and control the combat action of their subordinate formations. The loss of a Headquarters has far reaching effects on subordinate formations.



Heavy Tanks are best suited to defensive situations or at the spearhead of assaults. As they are not intended to serve in a general capacity, logistical shortcomings limit their versatility. Heavy Tanks are not normally part of the Armoured and Panzer battalions, and they are allocated from higher commands. Examples are the US M4 Sherman Jumbo and the German Pz Kpfw VI Tigers.



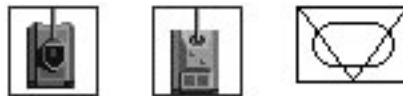
Medium Tanks are the primary fighting element. They serve in all capacities and are the most common unit found in the armoured and Panzer battalions. Medium Tanks are suited to all roles. Examples are the US M4 Sherman 75 and 76 and the German Pz Kpfw IV (Mark IV) and Pz Kpfw V Panther.



Light Tanks once served as front line tank units. By this point in the war, they no longer mount the firepower or armour protection to stand in the front lines. Light Tanks act as screening and reconnaissance units. Their speed is their primary asset. An example is the US M5 Stuart.



Tank Destroyers are, as their name suggests, designed to destroy enemy armour. They also possess anti-infantry capability, but are at their best when opposing tanks. Mounting similar or slightly heavier main guns than their tank stablemates, Tank Destroyers tend to be smaller and faster than tanks; however, they lack the versatility of tanks due to their specialisation. Examples are the US M10 Wolverine and M18 Hellcat and the German STuG 40 and Jägdpanther.



Assault Guns are a variation on tank destroyers. In this case, the units are designed to provide fire support to infantry units. Most Assault Guns possess limited anti-tank capabilities, although some also serve as tank destroyers. Examples are the US M4 Sherman (105) and M8 HMC and the German STuG 42 and SPW 251/9.



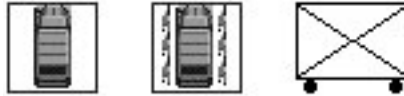
Armoured Cars and Reconnaissance are the modern-day Hussars, screening the main force and scouting out enemy positions. Their role is reconnaissance and nothing more. Though Armoured Cars and Reconnaissance are capable of fighting on equal footing against similar units, front line combat units brush them aside with ease. Examples are the US M8 Greyhound and German PSW 234/1.



Armoured Infantry and Panzergrenadiers are the primary infantry elements in the armoured and Panzer battalions. They are well trained, well armed and highly motivated troops. They travel in armoured half-tracks.



Motorised Infantry and Panzergrenadiers are secondary infantry elements in the armoured and Panzer battalions. They are as well trained, armed and motivated as the mechanised infantry. They travel in trucks.



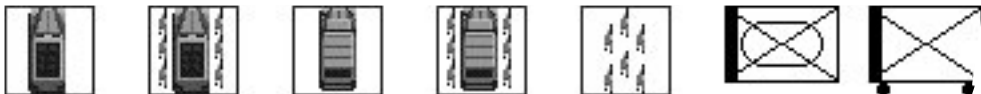
Infantry, Füsiliers, and Volksgrenadiers are not basic elements of the armoured and Panzer battalions, but are no less capable than their mechanised cousins. They travel on foot once in the battle zone.



Engineers and Pioneers are specialised combat troops that can not only serve as line infantry, but are also trained to remove obstacles encountered on the battlefield. Engineers that locate mines or roadblocks have the ability to remove these obstacles from the battlefield.



Heavy Weapons are support elements for the infantry units. Therefore, they are available in armoured, motorised, and leg varieties. Basically, machine gun teams are armed with heavy or sustained fire medium machine guns.



Mortars are the teammates of the heavy weapon units. These mortars are also available as armoured, motorised, and leg units. They are indirect fire weapons. Direct contact with the enemy is to be avoided. Examples are the US M21/81mm Mortar Carrier and German SPW 251/2.



Anti-Tank Guns are the towed counterparts of the tank destroyers. Their size makes hiding a much easier task than it is for the self-propelled tank destroyers. Their vulnerability necessitates cover and concealment. Their use in mobile offensive operations is therefore limited. Anti-Tank Guns are much better suited to defensive operations, where they can lie in wait to strike from cover at unsuspecting tanks. Examples are the US M1 57mm ATG and the German PaK40 75mm ATG.



Anti-aircraft and Flak are weapons purpose-built to counter enemy aircraft. They also possess firepower deadly against lightly armoured and unarmoured ground units. Examples are the US M16 and the German FlakPanzer IV Wirbelwind.



Off-map Artillery are battalion level assets. Their fire missions support offensive and defensive operations. Though, naturally, these are more effective against lightly armoured or infantry units, they also have the capability to knock out armoured units.



A US observation plane flies over an artillery unit on its way to a reconnaissance mission.



The crew of a German FlakPanzer IV Wirbelwind scan the skies for US fighter-bombers.

Aircraft are battalion level assets. Available as reconnaissance or ground attack aircraft, these units can quickly extend the eyes of a force or just as quickly deliver massive destruction. Examples are the US P-51 Mustang and German Fw-190D.



US COMBAT UNITS

Never let it be said that US combat units pale in comparison to their German counterparts. Yes, the American tanks stack up poorly against the German Panthers and Tigers, yet the Shermans were in the line far more often than the German giants. An average tank is still better than no tank at all. Sheer firepower is impressive, but the US logistical advantage is hard to beat.

Against the Mark IV, the Sherman is equal or marginally superior; all other German tanks are a problem. Avoid head-to-head armoured clashes; the loss potential is just too great. Flanking attacks are the preferred options. The more Sherman 76s the platoon fields, the better. Most tank platoons are mixed on a two-to-three or three-to-two ratio of Sherman 75s to Sherman 76s.

The Sherman Jumbo is a welcome addition when it is attached; let it lead the column into action. These tanks have the ability to flush out German tanks and actually survive the encounter.

The Tank Destroyers have excellent firepower. Unfortunately, they are only available in limited numbers. Their speed is also a decided advantage. Take care with the M18 Hellcats; they can be extremely fast, but their armour is fairly weak—they must hit and run. Skip the towed tank destroyer units. They lack mobility and are vulnerable to just about anything the Germans field.

The US armoured infantry's firepower is less than that of the German infantry. Each platoon also fields three squads to the German's four. That places the unit at a slight disadvantage; the platoon has one less squad to absorb damage. The infantry support units in the armoured formations is not quite as capable as their German counterparts. The German assault guns tip the balance in their favour.

The M8 Greyhound is a stable and reliable vehicle, if not that glamorous. The Jeep equipped recon units are at a real disadvantage. Poor firepower and a total lack of armour hinders them.

The availability of artillery and air assets to back up the US forces make them the envy of the Germans. These added forces help to offset the German qualitative superiority. The fighter-bombers just love to find German tanks waiting to be hammered. To them, a Tiger tank is just another potential scrap heap.



A US Engineer "carefully" works at removing German mines.

National Archives

GERMAN COMBAT UNITS

A sense of invulnerability generally overcomes all those who command the German forces. Resist the urge to fall into this trap. The German units do look good on paper, and (better yet) they are good. However, losses will sap their numbers, and mechanical breakdowns will frustrate even the most unflappable commander. The best advice is to make hay while the sun shines. Minimise your losses while inflicting the greatest amount of damage possible.

The Mark IV is nothing more than a good tank. There is nothing mystical about this tank; the Sherman can face it on equal footing. When it comes to tanks, the Panthers and Tigers are without peers. They should feel free to mix it up with the Shermans with only limited fear. They are not invincible, but as close to it as one can get.

The variety of tank destroyers exceeds that of tank variations. Virtually every tank hull was converted into a tank destroyer or an assault gun. The STuG 40, with its 75mm L/48 gun was the most prolific, but the *Jagdpanther* was by far the most effective. Almost as effective as tanks, these units provide excellent firepower and can fill in for a tank in a pinch. The towed anti-tank guns suffer from the same limitations as the US units. In a defensive situation, they are tough to defeat, but they have no real place in a mobile action.

German infantry is nothing less than excellent—to a point. That statement can seem contradictory, but it really is correct. The *Panzergrenadiers*, standard line infantry, *füsilier*, and pioneer troops are without peers. However, once the crossover is made to the *Volksgrrenadiers* quality declines quickly. Fortunately, the Panzer battalion is not saddled with any of these marginal troops.

German reconnaissance units are on par with other German armoured units. The four-wheeled armoured cars have a long lineage. They have a variety of armaments, all made to complement the others. The half-track equipped recon units are more numerous than the armoured cars but serve adequately.

The Germans certainly do possess artillery support. Like the American artillery, it is a welcome addition to any force. If the German troops see any air support, they'll do a double-take to make sure that it isn't a US fighter-bomber. Once the shock wears off, the aircraft can be employed to good measure.

RECONNAISSANCE

Knowledge is power. The more a commander knows about the enemy's strength, disposition and goals, the lesser threat that enemy becomes, which enables the friendly forces to act from a position of strength. The primary source of this knowledge is reconnaissance. Reconnaissance can take many forms, but the basic concept remains consistent—securing data about the enemy forces and their disposition.

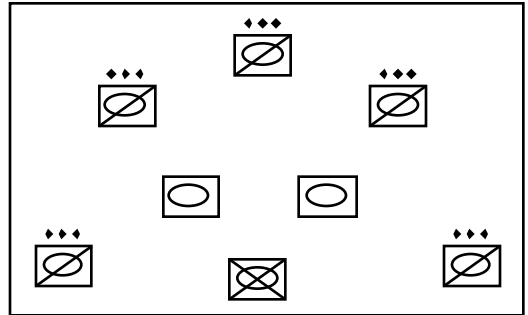
Reconnaissance can be logically divided into three broad categories: Strategic, Operational and Tactical. Strategic Reconnaissance is long ranged and generally air based. It is also supported by operatives placed at key positions near or behind enemy lines. While strategic recon deals primarily in troop strength and movements, it also covers logistical elements, such as, fuel, ammunition, food, etc. normally not considered at the smaller scales. Reconnaissance at this level generally reports on armies and their related elements.

Operational Reconnaissance encompasses the area approximately 20 miles in front of a force. This level is generally division based and is carried out by divisional reconnaissance battalions or squadrons. Operational recon deals with troop strengths and movements of an immediate threat to the division and its attached assets. Logistical elements are not of the same consequence as they are to Strategic Reconnaissance.

Tactical Reconnaissance is the area of concern in **ATR**. This level relates to the immediate battle area and specifically focuses on troops, their strengths and deployments. Logistical elements other than those of friendly forces are of no major concern. A smart commander assumes that the opposing forces are at full or nearly full strength.

If attached to a force on the offensive, the objective of reconnaissance is to determine not only the information on the opposing force, but also the most advantageous paths of advance. For any offensive operation, local superiority is very important. Reconnaissance is a significant tool in gaining local superiority.

If the Intelligence Reality Option is set to Full, there is no real need for any reconnaissance since all the opposing forces are continually visible. Its real application comes when that option is set to Partial or Limited.



Typical deployment of reconnaissance units in support of a company wedge.

GENERAL TACTICS

Reconnaissance forces are trained to act in an independent role. Their combat efficiency is not diminished when they are detached from their parent company. While they have a variety of roles, the most common include:

- Attached to the company they are covering. This way, the company receives immediate notification of enemy contact.
- Deployed on the wings or between the companies—screens the companies and prevents flanking moves or wedge thrusts by opposing forces.
- Deployed ahead of an advancing force—scouts out the opposition, keeping the main companies free to manoeuvre without becoming immediately engaged.

- Deployed at key transition points on the battle map, virtually “parking” in an area—forces the opposing forces to come to them.
- Deployed ahead of defensive positions—gives ample warning of an impending attack. Defensive forces are free to manoeuvre before becoming engaged with the attacking units.

ORDERS

The most common offensive reconnaissance order is Probe, which advances a unit along a path to a designated position. On contact with the enemy, the unit attempts to lose the contact. Break Contact becomes the new order. Probe differs from the defensive orders in that it maintains movement towards an objective position.

The most common defensive reconnaissance orders are Delay and Break Contact.

Delay holds a unit at a position until contact is made. On contact with the enemy, the unit attempts to lose the contact. Delay remains the unit's order. Delay has a greater potential for combat than Break Contact. If little combat is desired, Break Contact is the better choice.

Break Contact holds a unit at a position until contact is made. Once the enemy makes contact, the unit strongly attempts to lose this contact. Break Contact remains the unit's order. Break Contact is less aggressive than Delay. There is more chance of losing contact with this order.

US TACTICAL NOTES

The US Armoured Battalion, whether of the “CA,” “CR,” or “TF” configuration, has limited dedicated reconnaissance assets. The only permanent formation is the Battalion Headquarters Recon Platoon, a Jeep equipped unit. This platoon can operate in an independent capacity without degradation of combat capability.

Cross-reinforced (CR) battalions have the M5 Stuart equipped Light Tank Company available. The Stuart's 37mm cannon is too weak to tackle German tanks, and its HE capability is also too weak to oppose German infantry. The best use for this tank is in a reconnaissance capacity. Detach the platoons and employ them independently as reconnaissance units. This does reduce their combat effectiveness, which was limited in the first place.

In cross-attached (CA) battalions and task forces (TF), the Armoured Infantry Machine gun Sections make for reasonably good reconnaissance units. Never employ the Armoured Infantry Platoons in this capacity. They are too valuable to risk their loss in a chance encounter.

The optimal situation is having Cavalry units attached to the battalion command. These highly trained and capable units are perfect in the reconnaissance role. The most capable units are equipped with the M8 Greyhound Armoured Cars. These quick and agile units can get to areas with very little trouble and get out of problem areas just as effectively.

GERMAN TACTICAL NOTES

The German Armoured Battalion, whether of the "CA," "CR," or "TF" configuration, has only slightly superior reconnaissance assets in comparison to their US counterparts. There are two permanent reconnaissance sections that a commander can employ in an independent capacity. These are half-track equipped formations, and are superior to the Jeep equipped US unit.

In all battalions, the Panzergrenadier Heavy Weapons Gun and Machine gun Sections make for reasonably good reconnaissance units. Never employ the Panzergrenadier Platoons in this capacity. They are too valuable to risk losing in a chance encounter.

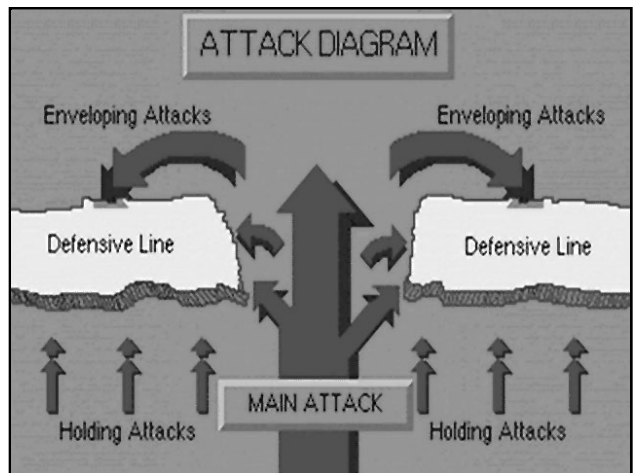
The best situation is having dedicated Reconnaissance units attached to the battalion command, since recon is their role. The most capable units are equipped with the PSW 234 series of Armoured Cars. These quick and agile units can get to areas rapidly and can get out of any trouble just as easily. The PSW 234/2 and PSW 234/3 have superior firepower over their US counterparts. In a clash of recon units, these armoured cars stand a good chance of holding their ground.

OFFENSIVE OPERATIONS

Campaigns are won through offensive operations. The adage that the best defense is a good offense applies to more than just sports. An army must carry the action to the enemy. Holding ground never won a war; it only delayed the inevitable. A winning campaign strategy must be built around offensive operations. This is not meant to diminish the importance of a sound defensive plan. That, too, is important; it is just of secondary importance.

An army stakes its success on taking ground away from the enemy. Its offensive tactics must be superior to the enemy's defensive tactics. An enemy constantly on its heels is not only incapable of forming efficient defensive positions, it also has extremely limited offensive possibilities.

To be successful, an offensive must have or achieve local superiority against the defenders. Rarely are offensive forces capable of taking a defensive position from equal or superior forces. They must defeat the defenders through superior numbers.



The Keil und Kessel theory of an offensive.

A commander can gain a victory against a superior defender by splitting the enemy forces into smaller groups. This way, each smaller group can be defeated individually. Part of the offensive force is used to hold down or distract the defender, while the remainder achieves superiority against a section of the defensive force.

Terrain can serve as strong an advantage for the attacker as it does for the defender. More often than not, the attacker can choose the path of advance. Use terrain to screen the attacking forces and to limit the defenders' routes of retreat or support.

The Germans had a description for this method of attack called: *Keil und Kessel* (Wedge and Cauldron). One or more wedges are driven into the enemy line, while other forces maintain pressure on the entire front. These penetrating forces then encircle the defenders in a cauldron of fire.

For an effective offensive force organisation, a favourable mix of armour and infantry combined-arms is essential. A ratio of at least one-to-one is desirable. You might want an even higher proportion of infantry. Armour cannot be successful alone; without infantry it becomes a blunt sword. Remember, "armour slashes and infantry smashes." Armour creates the gaps in the lines, but it is the infantry that captures the ground. This triumvirate (indirect fire support is the third element) is a basic requirement for any successful operation. Try launching an assault with just armour and observe the outcome. Had infantry outlived its usefulness, it would no longer exist; this is hardly the case.

GENERAL TACTICS

There is no one correct way to organise and execute an offensive. There are, however, certain key elements necessary to maximise the potential for success:

- Clearly understand the basic objective of the upcoming battle. The objectives must be identified and prioritised; not all of them will be attainable. Do not attempt to accomplish too much—live to fight another day. Decimating a force to capture all of the objectives today leaves nothing for tomorrow.
- Secure as much information as possible about the opposing forces. This is achieved through intelligence briefings and reconnaissance.
- Maintain company integrity, i.e., do not detach units (reconnaissance excluded). Platoons and sections are much more effective when attached to their parent company.
- If possible, attack along a narrow front. This concentrates firepower in a small area. Take care, as this tactic exposes the company's flanks.
- If you can win the battle without employing the entire force, rest the unneeded forces. There is no reason to expose them to potential harm and unnecessary fatigue.
- Do not employ marginal formations. If a company is weary or short of forces, rest it. Taking it into battle only weakens the entire force. Let it recover to fight tomorrow.

- Cross-reinforce or cross-attach tank companies, or organise them into combat teams of equal tank and infantry strength.
- Deploy forces in such a manner as to minimise re-deployment.
- Once the plan is established, stick to it unless you are forced to change.
- Achieve qualitative and numerical superiority even if only on a limited scale.
- After a company flanks or bypasses an enemy force, look to its flanks and rear. The enemy might be planning to flank your flankers.
- Know when to abandon an attack and withdraw. There are times when the gains are just not worth the cost of victory.
- In heavy woods, villages, or urban areas, send infantry units in first—even detached. Armour is at a major disadvantage against infantry when the range is short.
- Predictability is the forerunner to defeat. Surprise is a strong ally.

ORDERS

The most common offensive orders are:

Assault is the most aggressive offensive order. Upon contact the unit predominately engages the enemy by closing to short range. After contact is lost, **Counterattack** is then maintained as the new order. **Assault** is basically a fight to the finish. Units with this order have red chips on their shoulder.

Sustained Attack is a less aggressive offensive order than **Assault**. Upon contact the unit engages the enemy at anywhere from medium to short range. After contact is lost, **Deliberate Defense** is then maintained as the new order.

Advance to Contact is a less aggressive offensive order than **Sustained Attack**. Upon contact the unit engages the enemy. After contact is lost, **Deliberate Defense** is then maintained as the new order.

Probe is the least aggressive offensive order. Upon contact the unit tentatively engages the enemy. After contact is lost, **Break Contact** is then maintained as the new order.

Advance to Position is an order to ultimately move to a destination. Upon contact the unit engages the enemy. If contact is lost, the unit continues on to its destination. Units with this order do not avoid a fight, but do continue on to their destination.

Bypass is an order to aggressively move to a destination. Upon contact the unit strongly attempts to lose contact with the enemy. If contact is lost, the unit continues on to its destination. Units with this order attempt to avoid a fight, and continue on to their destination.

US TACTICAL NOTES

The primary US advantage lies in its logistical superiority. The US consistently places more forces in the field than the Germans. This must be capitalised. Replacements are somewhat easier to come by and the supply situation is at least tolerable. The forces are balanced and complementary.

Attacks must be well planned. The German qualitative superiority must never be overlooked. Charging headlong into the fray can spell early defeat. Subtlety goes a long way.

American combat doctrine throughout the war was based on the holding attack. This versatile tactic was used at every level of command, from platoon through Army Group. This allowed replacement officers suddenly forced into higher command responsibility to act quickly and with only minimal adjustment time.

The basic theory of a holding attack required a unit to divide into three elements, a pinning force, a manoeuvre force and a reserve force. This division of forces fit the American organisational structure like a glove.

The pinning force, supported by a majority of the available support weapons, would advance to contact with the enemy, and then hold him in place by fire. The manoeuvre force would attempt to move around the pinned enemy and attack him in his flank or rear. The reserve force was available to reinforce either pinning or manoeuvre force, as needed. This method was best described by General Patton as: "Hold them by the nose and kick them in the ass."

GERMAN TACTICAL NOTES

The Germans must maximise their qualitative superiority, especially before attrition starts to dwindle their numbers. If equipped with Pz Kpfw V Panthers, frontal assaults have a good chance of success. With Mark IVs, it is better to stay to the flanks. German Panzergrenadiers are experienced and seasoned combat veterans. They complement the armour forces on an almost equal footing. They can be considered the equal of the armour units.

Planning is essential to minimise losses. Sharp, quick attacks are the best option. Aggressiveness serves the German commander.

German offensive tactics depend upon a local superiority of forces at the chosen attack point. This central attack point, or *Schwerpunkt* is a narrow frontage, with the other points of the front engaged in feints or pinning actions to draw off enemy reserves. The attack can actually take the form of a *Keil und Kessel* (Wedge and Cauldron) described earlier, or of several other enveloping attack forms.

DEFENSIVE OPERATIONS

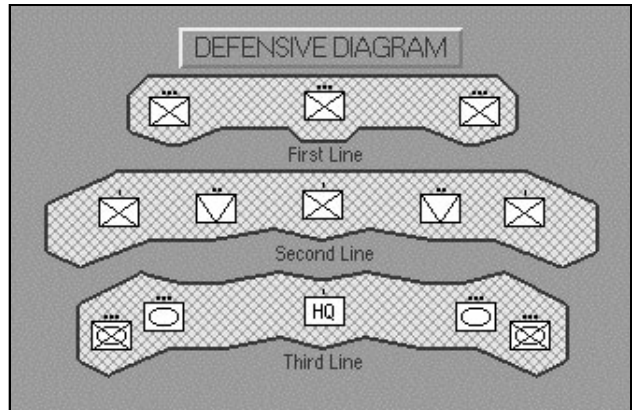
Some consider defensive operations nothing more than a temporary stop, pending the resumption of an offensive. One can consider it safe to take this arrogant position, but the eventual outcome can be somewhat of a shock. As was stated earlier, wars are won through offensive operations. No campaign strategy is complete without strong defensive operations. Sometimes, the most capable forces have periods of defensive operations. The opposition, even if maintaining a defensive posture, can mount offensive operations. Counterattacks must be met with proactive defensive tactics.

Victory is achieved by preventing the attacker from achieving its objectives. It is not a difficult concept; the application is the challenge. Maintaining force integrity prevents the attacker from splitting the defensive force into smaller packets. The defender must identify the main thrust of the attack as early as possible. The feints must be sorted from the main attack.

The defender knows the position of the objective as well as the attacker does. The important question is not the ultimate destination, but the position and direction of the attacker's advance. Defensive forces should be deployed in depth, therefore the defender must determine from where the attacker will advance. It can seem obvious to deploy a long line of forces to intercept the attacker anywhere along the line, but, this does not provide for a quick response. It is much more efficient for relief forces to advance to the front than to move laterally across the front. The attacker deploys forces to preclude lateral movement through its line across the battlefield. It is a much shorter distance to advance forward relatively unimpeded than laterally against potentially strong resistance.

Optimally, forces are deployed in three layers. The forward forces are fast-mobile units. Their main task is to expose the line of advance and force the attacking units to deploy prematurely. These units are not intended to hold their positions. The second line is the interim battle line. Longer ranged weapons are the preferred choice. These units are intended to hold their positions. Units with short ranged weapons anchor the third line. These units are the final battle line. The attacking units that reach the third line are so depleted that the final defensive forces mop them up.

Terrain can serve the defender as it serves the attacker. If conditions warrant, the defender has the advantage of selecting its positions and waiting for the attacking force to advance. This is, of course, dependent upon the disposition of the objectives. The objectives could be positioned in unfavourable terrain. In that case, forces are deployed in an offset position from the objective.



Defense in depth

One element that is common to offensive operations is the requirement of a combined arms force. This factor remains essential. From a defensive standpoint, a ratio of one to two is desirable. In a non-mobile defensive situation, infantry and towed anti-tank guns serve quite well.

GENERAL TACTICS

Some argue that it is easier to defend than attack; that debate continues. There are, however, certain key elements necessary to maximise the potential for success:

- Clearly understand the basic objective of the upcoming battle. Some objectives might be easier to defend than others, some might not require immediate defense due to their remote location, and some should not be defended at all, if the forces required or the potential losses are too great.
- Secure as much information as possible about the opposing forces. This is achieved through intelligence briefings and reconnaissance.
- Maintain a high degree of company integrity. Beyond reconnaissance, some platoons and sections can be detached to occupy the first line of defense. The intent is to rejoin these units as soon as the shooting starts.
- Defend along as broad and deep a front as possible. The gaps should not be so large as to allow the attackers immediate penetration and flank manoeuvres.
- If the battle can be won without employing the entire force, rest the unneeded forces. There is no reason to expose them to potential harm and unnecessary fatigue.
- Do not employ marginal formations. If a company is weary or short of forces, rest it. Taking it into battle only weakens the entire force. Let it recover to fight tomorrow.
- Deploy the forces in such a manner as to minimise re-deployment.
- Once the plan is established, stick to it unless forced to change.
- Know when to abandon a position and withdraw. There are times that the losses are just not worth the cost to hold a position.
- In heavy woods, villages, or urban areas deploy infantry and anti-tank guns; even detached. Armour is at its best when it can take advantage of its long range capabilities.
- Do not employ similar deployments at each defensive position; that makes it far too easy for the attacker to plan an attack.
- Indirect fire weapons are as effective on defense as on offense. A well timed counterattack can disrupt an attack.
- Make the terrain part of the defense. Deploy with advantageous terrain to the flanks or rear. Those positions are then covered.

ORDERS

The most common defensive orders are Concentrated Defense, Deliberate Defense, and Delay.

Concentrated Defense is the most aggressive defensive order. Upon contact the unit aggressively engages the enemy. If contact is lost, the unit stops, reforms and maintains Concentrated Defense orders.

Deliberate Defense is a somewhat less aggressive than Concentrated Defense. Upon contact the unit engages the enemy. If contact is lost, the unit stops, reforms and maintains Deliberate Defense orders.

Delay holds a unit at a position until contact is made. If contact is made, the unit attempts to lose contact with the enemy. Delay is maintained as the new order. Delay has a greater potential for combat than Break Contact. An excellent choice for the first line of defense.

US TACTICAL NOTES

As is the case with offensive operations, the primary US advantage lies in its logistical superiority. The US consistently places more forces in the field than the Germans. This must be capitalised upon. Replacements are somewhat easier to come by and the supply situation is at least tolerable. The forces are balanced and complementary.

Close attention must be paid to the deployment of armour and infantry units; this planning is essential. The German qualitative superiority must never be overlooked. Keep the armoured units prepared to strike where needed.

GERMAN TACTICAL NOTES

This can start to sound redundant, but the German must maximise qualitative superiority, especially before attrition starts to dwindle their numbers. German Panzergrenadiers are excellent defenders. They are at their best when their backs are up against the wall.

The heart of German defensive theory is the counterattack. There comes a moment in every successful attack when the attackers have captured their objective that they are slightly off balance, with much of their momentum blunted and not yet in any type of defensive posture. The Germans attempt to counterattack at this moment of vulnerability. This counterattack attempts to retake the lost ground, in addition to causing a greater loss to the attacking force.

Plan to minimise losses. Allow the infantry to absorb the first attacks and then strike quickly with armour. Break up the attack as quickly as is possible. Numbers might not be available for a prolonged defense.

FORMATION AND FRONTAGE

As a subset to a company's orders, the formation and frontage designated impacts the company's ability to effectively carry out those orders. There is a strong relationship between these elements. Certain conventions should be considered before blindly designating certain combinations.

Frontage controls the area, or footprint, of the company. A *Wide* formation has a footprint twice as large as the same formation with *Standard* frontage, and is four times as large as *Narrow* frontage. There are situations where smaller is better and when the opposite is also true. Basically, if contact is desired, choose *Wide* frontage. When a degree of stealth is desired, choose *Narrow* frontage. Rapid movement also benefits from *Narrow* frontage, but exposes the company's flanks (as explained below). There are 24 possible combinations of frontage and formation. There is no one correct combination. Experiment with the different combinations, and then designate the most effective.

Of the eight possible formation options, the first five are more suited to movement; the remaining three are more suited to defensive situations.

Column is the most efficient of the movement oriented formations. The efficiency gained by its narrow structure allows a company to easily navigate around and through obstacles. However, this same narrow structure exposes the entire formation to flank attacks. This formation should not be employed when combat is imminent.

Wedge is the most commonly used formation. It allows for reasonable movement efficiency, while positioning the elements for quick combat response. A good conservative choice for offensive operations.

Blunt Wedge is a variation on the wedge concept. It has all the movement efficiency of the Wedge formation, but takes a slightly more aggressive posture. This is a good mid-range choice for offensive operations.

Forward Echelon is another variation on the wedge concept. It maintains the movement efficiency of the Wedge formation, but takes a very aggressive posture. The combat elements are all positioned forward. It is susceptible to attacks from the rear. A good choice when head-to-head encounters are expected.

In Depth is a crossover formation—effective in offensive and defensive operations. When on the move, the formation keeps the trail elements from becoming immediately engaged; they are free to manoeuvre into action. Its deep footprint makes it a good choice when depth of coverage is desired. It also positions reasonably strong coverage to the rear.

Right Echelon is primarily a defensive formation. It emphasises strong protection to the right; the left side remains open. Movement is difficult since its center axis is offset to the right. Use is a roll of the dice. If the opposition approaches from the right, or even the front, the company is positioned and prepared to strike. The left is another story all together.

Left Echelon is primarily a defensive formation. It emphasises strong protection to the left; the right side remains open. Movement is difficult since its center axis is offset to the left. Use is a roll of the dice. If the opposition approaches from the left, or even the front, the company is positioned and prepared to strike. The right is another story all together.

Spread is purely a defensive formation. Movement with this formation is awkward at best. Its extremely wide footprint makes it a good choice when horizontal coverage is desired. It is the opposite of In Depth.

MORALE AND READINESS

Those desiring the ultimate in realism should activate the Morale option. Before this step is taken though, stop for a moment to consider the implications of this decision—it can have far reaching effects. When this option is not active (that is the recommended course of action for those new to **AtR**), the play of the combat situations can be radically different.

Morale determines a company's ability or desire to stand and fight. Units are seldom eliminated to the final soldier or vehicle. The company reaches a point where it has had enough and decides to exit from the battlefield. The number of losses a company can absorb before it decides to break and exit varies and is based on a number of factors. These factors include grade, combat experience, nationality, and readiness. Morale is also affected by the events concerning the company commander, his promotion or loss, and the company's performance in combat. The actual act of breaking under fire has a definite impact on a company's morale; it lowers the unit's overall rating.

As a subset of Morale, Readiness is a much simpler concept than the entire Morale process. It is simply a measure of a company's freshness or fatigue. Fresh companies are more combat ready than those weary or fatigued.

Morale can not be controlled, it is more a state of mind than anything else, whereas Readiness is manageable. If a company is weary or fatigued, it should be rested if at all possible. Rest is the only cure for fatigue. A weary company only becomes more fatigued. A few days rest can recover a company to a fresh state.



This German Grenadier, demonstrates a positive determination as he awaits Allied armour.

Bundesarchiv

WEAPONS

Recognising situations and correctly applying the appropriate weapon mix is an essential element of any tactical plan. The best laid plans can be disrupted by making a wrong weapon decision at a pivotal point in a battle. Quick situational recognition and snap decisions secure a positive outcome.

Fortunately, your crew and the crews of the other elements in the battalion are trained to evaluate a given situation and hopefully make the correct weapon choice. You can rely upon your gunner to select the appropriate ammunition or weapon based on the target type. When you occupy the gunner's position, these decisions fall on your shoulders.

A tank or tank destroyer has two primary weapons, the main gun and the coaxial machine gun. The correct application of these two weapons is critical to the success and survival of the vehicle and platoon. The vehicle may also carry a commander's machine gun, finally, a bow-front machine gun is carried, but this is of secondary importance.

The **Main Gun** is the vehicle's primary weapon. This is the weapon of choice for just about all situations. Most fire a variety of shell types. A shell type must be matched with the correct target type or the fire is ineffective. **AP (PzGr39)** and HVAP (PzGr40) are used against armoured vehicles. They can be used against unarmoured vehicles, but the chance of an effective result is minimal. HVAP (PzGr40) should be reserved for the most difficult armoured targets. Since there is only a limited number of these rounds, they should be used sparingly. Each vehicle has only one or maybe two shots available at the most. You would hate to run into a Tiger when all the HVAP rounds have been expended against Mark IVs.

HE (Spgr) is used against unarmoured or lightly armoured vehicles, infantry, anti-tank guns, and structures. Against heavily armoured vehicles, there is virtually no chance of destroying the target. HE (Spgr) also has a much lower muzzle velocity than AP (PzGr39) or HVAP (PzGr40). The chance of actually getting a hit is reduced.

The **Coaxial Machine gun** is the vehicle's most effective secondary weapon. It should only be employed at short range, 500 meters or less, and then only at unarmoured vehicles, infantry, and anti-tank guns.

The **Commander's Machine gun** is an additional secondary weapon. The same rules that govern the coaxial machine gun apply to this weapon. It is somewhat less effective due to free mount (the coaxial machine gun is in a fixed mount along side of the main gun). The vehicle commander is also exposed to enemy fire when operating this weapon.

TERRAIN & CONDITIONS

Terrain and conditions must be viewed as allies. These elements generally do favour the defender, but can be maximised by an attacker to the best advantage.

Terrain acts as a natural barrier and channel to any advancing force. Forces should be positioned to take advantage of these barriers. Rivers and hills are the most formidable. Rivers are crossed only at intact bridges and fords; otherwise, they are impassable. A river to the front or side of a defensive position makes for a strong defensive position. However, a river to the back of a defensive position makes for a death trap. Identify and keep familiar with all the intact bridges and fords in the area near to your forces.

Most hills are traversable, but at what cost? Movement is slow at best when traversing hills. Wheeled vehicles are especially limited. There also exist areas just too steep to traverse. It is usually best to avoid the steeper sections and limit movement to the lowlands. Hills function in a similar manner to rivers. Their position limits movement and areas of advance.

Forested areas and built-up sections have their own unique characteristics. Both limit movement in a similar manner as rivers and hills, but on a much smaller scale. They are also a haven for infantry and anti-tank guns. Armour should generally avoid these areas, leaving them to the friendly infantry units. At short range and in cover, infantry has a decided advantage over armour. It is more difficult to sight enemy units when they are hiding under the cover of a forest or building. Armour must close to short range before sighting the target. Then the infantry unit has the advantage.

The conditions include time of year, time of day and weather effects. The time of year effects are relatively painless until the snow starts to fly. Ground snow is not all that bad as long as it's patchy. When it gets heavy and it's actually snowing, movement becomes difficult. Expect snow or rain during overcast periods. Rain is actually worse than snow. When it rains, it gets muddy. Mud is any vehicle's worst enemy.

The time of day only affects sighting. Sighting is somewhat limited during dawn and dusk and is severely limited during moonlight conditions. Tactical decisions are fairly standard during day, dawn and dusk times. Just be aware that ranges fall during dawn and dusk. Moonlight battles are another story. Sighting ranges are very short. Expect quick, damaging battles. Moonlight actions are not for the weak of heart.



GLOSSARY

- (+) The formation is fielding additional units attached to the standing formation.
- (-) A portion of a standing formation is not currently present or is fielded elsewhere.
- (Sf) Selbstfahrafette. Self-propelled gun
- (t) Tchechoslowakisch. Czechoslovakian
- 1st Lieutenant** In US Army, ranks just above 2nd Lieutenant. Equivalent of German Oberleutnant
- 2nd Lieutenant** In US Army, ranks just above Master Sergeant. Equivalent of German Leutnant
- AAA** Anti-aircraft artillery. Triple-A
- Abteilung** Battalion
- AP** Armour Piercing. Type of shell
- APC** Armour Piercing, Capped. Type of shell
- APCR** Armour Piercing Composite Rigid. Type of shell
- Armoured** When combined with infantry designations, e.g., armoured infantry, indicates transport by armoured half-tracks.

Army Group	A military formation. Composed of two or more armies. Normally commanded by a General.
Army.	A military formation that ranks just below army group in size. Composed of two or more corps. Normally commanded by a Lieutenant General.
Assault Gun.	Fully-tracked, or semi-tracked armoured vehicle with or without a rotating turret. Primarily used to support infantry or other unarmoured units.
ATG	Anti-tank gun
Aufklärung	Reconnaissance Forces
ausf.	Ausführung. Model
Battalion	A military formation that ranks just below brigade and regiment in size. Composed of three or more companies. Normally commanded by a lieutenant colonel or major.
Battery.	Basic artillery element. Composed of two to six gun tubes. Also German basic formation of self-propelled guns.
Bazooka.	Infantry anti-tank weapon of 2.36-inch (60mm) calibre. Fired a rocket-propelled HEAT projectile. Effective range of approximately 100m. Named for a comedic musical instrument resembling a trombone.
Bde	Brigade
Bn	Battalion
Brigade	A military formation that ranks just below division in size. Composed of three or more battalions or multiple regiments. Normally commanded by a brigadier general or colonel.
Brigadier General	In US Army, 1 star General; ranks just above Colonel. No direct German equivalent
CA.	Cross-Attached
Captain.	In US Army, ranks just above 1st Lieutenant. Equivalent of German Hauptmann
CC.	Combat Command
Coax	Coaxial. A weapon, usually a medium calibre machine-gun, mounted in a parallel plane with a main gun. The coax gun moves in conjunction with the main gun.
Colonel	In US Army, ranks just above Lieutenant Colonel. Equivalent of German Oberst

Combat Command	A specialised demi-brigade sized command formation commonly found in US "Light" Armoured Divisions. Three per division: identified as "A", "B", and "R(eserve)". Abbreviated as CCA, CCB, and CCR. Composed of two battalions plus support and attached formations. Normally commanded by a brigadier general or colonel.
Company	A military formation that ranks just below battalion in size. Composed of three or more platoons or sections. Normally commanded by a captain or senior lieutenant.
Corps.	A military formation that ranks just below army in size. Composed of two or more divisions. Normally commanded by a Lieutenant General or Major General.
Coy	Company
CR	Cross-Reinforced
Cross-Attach	The process where two formations trade differing subordinate units on a one-for-one basis
Cross-Reinforce	The process where one formation acquires differing subordinate units from another formation
Div.	Division
Division	A military formation that ranks just below corps in size. Composed of three or more brigades or regiments. Normally commanded by a Major General.
Elements	Only a portion of the unit is present.
ETO	European Theatre of Operations
Fallschirmjäger.	Airborne or parachute infantry
Feldwebel	In German Army, ranks just above Unterfeldwebel. Equivalent of US Technical Sergeant
FlaK.	Fliegerabwehrkanone. Anti-aircraft gun
Flakpanzer	Armoured anti-aircraft vehicle
Formation	The general arrangement or organisation of a company sized formation. Determines the deployment pattern of the member platoons and sections.
Frontage	The width and depth of a formation. Expressed as narrow, standard or wide. A formation's narrow frontage is half that for standard frontage. Wide frontage is twice that for standard frontage.
Füsilier.	In infantry divisions. Reconnaissance, and generally superior quality troops
gal.	US Gallon
Gallon US.	Equal to 3.785 Liters

geländegängiger	Cross-country
General of the Army	In US Army, 5 star General; ranks just above General. Equivalent of German Generaloberst
General	In US Army, 4 star General; ranks just above Lieutenant General. Equivalent of German General
General	In German Army, ranks just above Generalleutnant. Equivalent of US General
Generalfeldmarschall . . .	In German Army, ranks just above Generaloberst. No direct US equivalent
Generalleutnant	In German Army, ranks just above Generalmajor. Equivalent of US Lieutenant General
Generalmajor	In German Army, ranks just above Oberst. Equivalent of US Major General
Generaloberst	In German Army, ranks just above General. Equivalent of US General of the Army
gl.	geländegängiger – cross-country
GMC	Gun Motor Carriage. Tank destroyer
Granatenwerfer.	Mortar
Grenadier	Infantry
Greyhound	Nickname of the US series of M8 armoured cars.
Gun Tube	Individual artillery unit
Half-Track	A partially tracked combat vehicle with standard automotive wheels at the front.
Hauptmann.	In German Army, ranks just above Oberleutnant. Equivalent of US Captain
HE	High Explosive. Type of shell
Heer.	Army
Hellcat.	Nickname of the US series of M18 tank destroyers.
Hetzer	Bushwhacker. Nickname of the German Jagdpanzer 38(t) Tank Destroyer built on the Czech 38 chassis.
HMC	Howitzer Motor Carriage. Self-propelled howitzer
HQ.	Headquarters
HVAP.	Hyper Velocity Armour Piercing. Type of shell
Infanterie.	Infantry
Jackson.	Nickname of the US series of M36 tank destroyers. Named for US Civil War General Thomas "Stonewall" Jackson.
Jäger.	Hunter

Kampfgruppe	Battle Group. An ad hoc battalion sized tank and infantry formation generally fielding a desirable mix of tank, infantry, and support formations.
KG.	Kampfgruppe
kg	kilogram
kilogram	Equal to 2.205 Pounds
kilometre	Equal to 1000 meters or 0.6214 Miles
km.	kilometre
KwK	Kampfwagenkanone – tank gun
l.	liter
Lastkraftwagen	Cargo Truck
le.	leichte – light
leichte.	Light
Leutnant	In German Army, ranks just above Oberfeldwebel. Equivalent of US 2nd Lieutenant
Lieutenant Colonel	In US Army, ranks just above Major. Equivalent of German Oberstleutnant
Lieutenant General	In US Army, 3 star General; ranks just above Major General. Equivalent of German Generalleutnant
Liter.	Equal to 0.264 US Gallons or 0.22 Imperial Gallons
Lkw	Lastkraftwagen – cargo truck
Loadout.	A complete load of ammunition including standard main gun types and machine-gun rounds.
Luftwaffe.	German Air Force
M10.	The US series of Wolverine Tank Destroyers
M18.	The US series of Hellcat Tank Destroyers
M3.	The US series of Half-Track utility vehicles
M36.	The US series of Jackson Tank Destroyers
M4.	The US series of Sherman Medium Tanks
M5.	The US series of Stuart Light Tanks
m.	meter
Major General.	In US Army, 2 star General; ranks just above Brigadier General. Equivalent of German Generalmajor
Major.	In US Army, ranks just above Captain. Equivalent of German Major
Major.	In German Army, ranks just above Hauptmann. Equivalent of US Major

Master Sergeant	In US Army, ranks just above Technical Sergeant. Equivalent of German Oberfeldwebel
Mechanised.	Collective term for forces moved or transported by means other than by foot or animal transport.
meter.	Equal to 3.28 feet or 1.094 yards
MG	Maschinengewehr. Machine-gun
mittlerer.	medium
Motorised	When combined with infantry designations, e.g., motorised infantry, indicates transport by wheeled truck transport.
MP.	Maschinenpistole – Machine pistol (Sub Machine-gun)
Nashorn	Rhinoceros. Nickname of the German Pz Kpfw III/IV (Sf) Tank Destroyer built on the hybrid Mark III/IV chassis.
NCO	Non-commissioned officer
Oberfeldwebel.	In German Army, ranks just above Feldwebel. Equivalent of US Master Sergeant
Oberleutnant.	In German Army, ranks just above Leutnant. Equivalent of US 1st Lieutenant
Oberst	In German Army, ranks just above Oberstleutnant. Equivalent of US Colonel
Oberstleutnant	In German Army, ranks just above Major. Equivalent of US Lieutenant Colonel
OCS	Officer Candidate School
PaK	Panzerabwehrkanone – anti-tank gun
Panther	Nickname for the German series of Pz Kpfw V tanks.
Panzer	Armour
Panzerfaust	Armoured Fist. Recoilless infantry anti-tank weapon; fired a HEAT projectile. Produced in three models: 30, 60, and 100. Designations were roughly equivalent to the approximate range in meters.
Panzerschrek.	Armoured Terror. Officially known as the Raketenpanzerbüchse 54. Infantry anti-tank weapon of 88mm calibre. Very similar in appearance to the US Bazooka. Fired a rocket-propelled HEAT projectile. Effective range of approximately 120m.
Panzerspähwagen.	Armoured car
Personenkraftwagen	Personnel Carrier
Pioneer	Combat engineers
Plkw	Personenkraftwagen – personnel carrier

Platoon	A military formation that ranks just below company in size. Composed of three or more individual units or squads. Normally commanded by a lieutenant or senior sergeant.
Plt	Platoon
PSW	Panzerspähwagen – armoured car
Pz Kpfw IV	The German series of Mark IV Medium Tanks
Pz Kpfw V	The German series of Panther Heavy/Medium Tanks
Pz Kpfw VI	The German series of Tiger Heavy Tanks
Pz Kpfw	Panzer Kampfwagen – tank
PzGr39	Panzergranate. Solid shot; armour piercing shell; AP, or APC. The “39” indicates the year 1939.
PzGr40	Panzergranate. Solid shot; special armour piercing shell; APCR. The “40” indicates the year 1940.
Regiment	A military formation that ranks just below division and brigade in size. Composed of three or more battalions. Normally commanded by a colonel.
Rgt	Regiment
Schützenpanzerwagen . .	Half-tracked armoured personnel carrier
schwerer	heavy
Sec	Section
Section	A military formation that ranks just below platoon in size. Composed of two or more individual vehicles or squads. Normally commanded by a sergeant.
Self-Propelled	Weapon able to move without the aid of external propulsion.
Sergeant	In US Army, ranks just above Corporal. Equivalent of German Unteroffizier
SHAEF	Supreme Headquarters Allied Expeditionary Forces
Sherman Jumbo	The M4A3E2. Up armoured version of the M4 Sherman tank. Utilized as an assault tank. Also known as the “Cobra King”
Sherman	Nickname of the US series of M4 medium tanks. Named for US Civil War General William T. Sherman.
Spgr	Sprenggranate. High explosive shell
SPW	Schützenpanzerwagen – half-tracked armoured personnel carrier
Sqn	Squadron

Squad	Basic infantry element. Composed of seven to twelve men and their weapons.
Squadron.	In the US Army, a military formation that ranks just below brigade and regiment in size. Found in cavalry formations, it is the equivalent of a battalion. A carryover from the old horse-cavalry days.
SS	Schutzstaffel. Protective Guard. A branch of the National-Socialist Party (NSDAP). The Waffen-SS (Armed-SS) was the military arm of this branch.
Staff Sergeant	In US Army, ranks just above Sergeant. Equivalent of German Unterfeldwebel
Strumgeschütz.	Self-propelled assault gun
Strumhaubitze.	Self-propelled howitzer
Stuart.	Nickname of the US series of M5 light tanks. Named for US Civil War General J. E. B. Stuart.
STuG	Strumgeschütz – Self-propelled assault gun
STuH	Strumhaubitze – Self-propelled howitzer
Supply Train	The general term for a formation's logistical support. Does not necessarily refer to railroads. Could be trucks, animal, or any other means of supply support.
TAC	Tactical Air Command
Tank Destroyer	Fully-tracked, or semi-tracked armoured vehicle with or without a rotating turret. Primarily used to hunt out and destroy other armoured units, particularly tanks.
Tank	Fully-tracked combat vehicle with a rotating turret. Multi-role vehicle for support and anti-armour actions.
Task Force.	In the US Army, an ad hoc battalion sized tank and infantry formation generally fielding a desirable mix of tank, infantry, and support formations
Team.	In the US Army, an ad hoc company sized tank and infantry formation generally fielding a desirable mix of tank and infantry platoons and sections.
Technical Sergeant	In US Army, ranks just above Staff Sergeant. Equivalent of German Feldwebel
TF	Task Force
Tiger	Nickname for the German series of Pz Kpfw VI tanks.
Tm.	Team
TO&E	Table of Organisation and Equipment. A listing of the forces and equipment that make up a particular formation.

ton.	Metric ton. Equal to 1000 kilograms or 1.102 US Tons or 0.9842 UK Tons
Troop.	In the US Army, a military formation that ranks just below squadron in size. Found in cavalry formations, it is the equivalent of a company. A carryover from the old horse-cavalry days.
Trp.	Troop
US Gallon.	Equal to 3.785 Liters
Unterfeldwebel	In German Army, ranks just above Unteroffizier. Equivalent of US Staff Sergeant
Unteroffizier.	In German Army, ranks just above Oberschütze. Equivalent of US Sergeant
Volksgrenadier	People's Infantry. Late war replacements for the standard infantry units.
Waffen-SS	The military arm of the SS.
Wehrmacht	German Army
Wirbelwind	Whirlwind. Nickname for the German Flakpanzer IV Anti-Aircraft Tank built on a Mark IV chassis.
Wolverine	Nickname of the US series of M10 tank destroyers.

APPENDIX



Typical Vehicle Headquarters



Typical Leg Headquarters



German Tank



US Tank or Assault Gun



US Tank Destroyer or Assault Gun



German Assault Gun or Tank Destroyer



US or German Armoured Car



US or German stationary Armoured Infantry



US or German stationary Motorised Infantry



US or German Half-Track or moving Armoured Infantry



US or German Truck or moving Motorised Infantry



US Jeep or German Kubelwagen



US or German Mortar Carrier



US Anti-Aircraft Vehicle



German Anti-Aircraft Vehicle



US or German Anti-Tank Gun



US or German Leg Infantry or Support Leg Unit



US Attack or Recon Aircraft



German Attack or Recon Aircraft



German Off-Map Mortar or Howitzer



US or German Artillery Asset



US or German Attack Aircraft Asset



US or German Recon Aircraft Asset



Battalion Flag



Neutral Objective Flag



US controlled Objective Flag or Campaign Entry Point



German controlled Objective Flag or Campaign Entry Point



Waypoint Marker (1-4)



Force Concentration Marker



Minefield



Roadblock



Pillbox or Bunker



Gun House



Suburban Building



Urban Building



Urban Building



Urban Building



Urban Structure



Intact Bridge



Destroyed Bridge



Cow



Artillery Impact Point



Aircraft map reference



Attack Aircraft Point



US or German Company marker (A through J)



US or German detached Platoon/Section marker



US or German Combat Manoeuvre marker



Map reference marker

	US or German Headquarters		US or German Armoured Mortar Carrier
	US or German Tank		US or German Mortar
	US or German Assault Gun		US or German Anti-Tank Gun
	US or German Tank Destroyer		US or German Anti-Aircraft
	US or German Reconnaissance		US or German Fighter-Bomber Aircraft
	US Armoured Infantry or German Panzer Grenadier		US or German Reconnaissance Aircraft
	US Armoured Infantry or German Panzer Grenadier Heavy Weapons	XXXXX	Army Group
	US or German Motorised Infantry	XXXX	Army
	US or German Motorised Infantry Heavy Weapons	XXX	Corps
	US Infantry or German Infantry, Füsilier, or Volksgrenadier	XX	Division
	US Infantry or German Infantry, Füsilier, or Volksgrenadier Heavy Weapons	X	Combat Command or Brigade
	US Engineer or German Pioneer	III	Regiment
	US Airborne or German Fallschirmjäger	II	Battalion
		● ● ●	Platoon
		● ●	Section

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