

THEATRE OF WAR 2

KURSK 1943

1C COMPANY

speedtree

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INSTALLATION & GAME START

SYSTEM REQUIREMENTS

Minimal System Requirements:

- Operating system: Windows XP or Vista
- CPU: Intel Core 2 Duo or AMD Athlon64 X2 (2,4GHz or better)
- RAM: 2GB
- Graphics: nVidia GeForce 6600 or AMD Radeon X1900 with 256MB RAM or better
- Sound card: DirectX 9-compatible
- DVD-ROM drive
- Free space: 3.5GB
- DirectX 9.0c

Recommended System Requirements:

- Operating system: 64-bit Windows Vista or Windows 7
- CPU: Intel Core 2 Duo E8400 or AMD Phenom II X550
- RAM: 4GB
- Graphics: nVidia GF 8800 or AMD Radeon HD 4850 with 512MB RAM or better
- Sound card: DirectX 9-compatible
- DVD-ROM drive
- Free space: 3.5GB
- DirectX 9.0c

The game operation on notebooks is not guaranteed!

INSTALLING THE GAME
Insert the Theatre of War 2: Kursk 1943 DVD into the DVD drive. If Autostart is enabled, you will see the start menu. Otherwise, run Autorun.exe from the root folder of the game disc.
Select "Install" in the start menu to run the game installation wizard that will guide you through the installation. Follow the on-screen instructions.
During the installation, game files will be copied to your hard drive, and a corresponding program group will be created in the Start menu. It will contain shortcuts to run or remove the game, browse related Web resources, or read this document.

RUNNING THE GAME
When the installation is completed, run the game by selecting the Theatre of War 2: Kursk 1943 shortcut in the game program group (1C Company\Theatre of War 2: Kursk1943 by default).

REMOVING THE GAME
To remove the game, click the Uninstall Theatre of War 2: Kursk1943 shortcut in the game program group in the Start menu. You can also use the uninstall feature of the autorun menu appearing when you the game disc into the DVD drive (if Autostart is enabled).

QUICK START
New or existing campaign:
Main Menu > Campaigns > Select a campaign > Select a battle.

Multiplayer LAN game:
Main Menu > Multiplayer Game > LAN > Create a server or join a game.

Internet game:
Main Menu > Multiplayer Game > Internet > Join an existing game or create your own server.

GAME INTERFACE

MAIN MENU
Main Menu Options:
- Campaigns — Here you can start a campaign to play as Soviet or German forces, as well as continue the existing campaign or load a saved campaign game;
- User Campaigns — This button will be enabled if you create your own campaign using the campaign editor or install a custom campaign created by other players;
- Battles — This section will let you select a single battle (not part



of a campaign) or load a saved game;
- Multiplayer Game — Click this to proceed to LAN or Internet game options;
- Mission Generator — Here you can create a simple scenario or even a campaign with a few mouse clicks;
- Encyclopedia — Launches the built-in encyclopedia of equipment used in the game;
- Settings — Lets you proceed to game settings;
- Credits — Shows a list of all project participants;
- Exit — Exits the game.

More detailed information about the aforementioned menu items is provided below.

CAMPAIGNS

In Theatre of War 2: Kursk 1943, you can control the units of German division Grossdeutschland or the forces of the Soviet 67th Guards Rifle Division and 3rd Mechanized Corps, which participated in the defensive stage of the battle at the south face of the Kursk Salient. There are two campaigns – German and Soviet, with the time period from July 5 to 10, 1943:

- **Fiery Salient** (forces of the Soviet 6th Guards and 1st Tank Army, July 5-10, 1943)
- **Operation Citadel** (German division Grossdeutschland Kampfgruppe, July 5-10, 1943)

Each campaign puts you in charge of a typical military unit of that period. Each soldier and officer is a personality with unique characteristics and skills which can change during the campaign.



Select the campaign you would like to play, and click Continue. If you have already completed some missions of the selected campaign, you will be able to start the next mission, or load a saved game. If you haven't yet fought a single battle of this campaign, you will be taken straight to the preparations for the first mission (i.e. the Log, see Battle Preparations for more details).



Missions unavailable for the moment are marked with a lock icon and cannot be selected. Each campaign consists of several battles and develops gradually. If you have enabled "**Ignore Campaign Fail**" in the game settings, the next battle will be available even if you lose the previous. Otherwise, you will only be able to proceed if you win the previous battle. Note however that losing a battle most likely means losing most or even all veteran units and equipment. These losses may significantly increase the difficulty of further battles, so you should think twice if you want to proceed after losing.

- **Saves** - This tab shows the list of saved games, including autosaves.

- **Continue button** - Clicking this button located in the bottom right part of the screen loads the selected saved game (button caption changes to "Load" in this case) or a campaign mission (loads an autosave at the beginning or at the end of a battle).



USER CAMPAIGNS
This screen shows the list of custom campaigns that may have been created using the campaign editor by you or other players.

BATTLES
Clicking this button takes you to a selection of single missions (if there are none, the button is disabled). Here you can also see missions you have created in the editor or auto-generated. If you saved a game earlier, you can load it from "Saves" tab.

ENCYCLOPEDIA



This section provides historical background about all the military equipment present in the game. It offers characteristics for each unit, history of its creation and use, and a detailed 3D model. Using the corresponding buttons underneath the 3D view, you can zoom in or out, rotate automatically or manually, and even open/close hatches and doors.

If you move the mouse cursor over the unit weapons list, you will see it's the corresponding stats. To find out more info about the ammo types used right-click on the empty slot to the right of the weapon. This will open a list of all available ammo types and their standard loadouts. If you click with the left mouse button on the gun icon, you will hear the sound of its shot; if you click on the shell or cartridge icon you will hear the hit sound or the explosion.

SETTINGS

The game settings screen is there to help you adjust various options like graphics quality, sound, controls, and certain gameplay tweaks. It consists of several tabs that present all available settings.

There are three buttons at the bottom of the settings screen:

- **Main Menu** returns to the main menu.
- **Apply** applies changes you have introduced. Attention! Do not forget to click this button to apply any new settings. Otherwise, all changes

will be discarded as you leave the settings menu.
- **Restore** reverts all settings to default.

Graphics
The settings presented in this tab affect game performance the most.



You can set graphics quality either by selecting a pre-defined detail level ("High", "Medium", "Low" or "Custom"), or by adjusting certain quality options manually. In the latter case, the detail level will automatically switch to "Custom".

Advanced Graphics Options:
- **Resolution** — A drop-down list of available display resolutions. Changes to this option require you to restart the game.
- **Grass Detail** — A drop-down list of available grass quality options.
- **Water Detail** — A drop-down list of available water quality options: "High" (water reflections enabled), "Medium" (water reflections disabled), "Low" (non-transparent water).
- **Model Quality** — A drop-down list of available texture and object quality options. Select "Low" if your PC has a small amount of RAM or video card memory. Select "Very Low" if your PC has a slow video card.
- **Effects** — Lets you select normal or better effects for fire, smoke, dust, etc.
- **Shadows** — A drop-down list of available shadow quality options.

It also lets you disable shadows entirely (in some battles, during dull weather, shadows might be less visible). Enabling better (anti-aliased) shadows may affect game performance.

- **HDR** — High Dynamic Range. This mode requires a video card with Shaders Model 3.0 support.
- **Hardware Mouse Cursor** — Lets you switch between hardware and software rendering of the mouse cursor. In the former mode, the mouse cursor is most smooth, so you should only switch to software rendering if you experience any problems.
- **High Landscape Detail** — Lets you change the landscape rendering quality.
- **High Sky Detail** — Lets you change sky and clouds rendering quality. During certain battles, depending on the weather, there may be no clouds anyway.
- **Ambient Occlusion** — Screen Space Ambient Occlusion (SSAO). When enabled, this mode makes shadows softer and more natural. It also adds shadowing to room corners, behind track wheels, etc. Enabling this mode may affect game performance.
- **Hide Bodies** — If enabled, this option will remove dead bodies over time. Otherwise they will remain lying on the ground and this may affect game performance by the end of a mission. In multiplayer games, this option is set server-side: if it's enabled on a server, dead bodies are removed in client games as well, otherwise dead bodies remain. When a dead soldier is removed, his equipment (weapons, ammo) remains.
- **Show Roads** — Lets you enable or disable high-quality rendering of roads.
- **Show Vehicle Motion Effects** — Lets you enable or disable rendering of track marks, engine effects and dust clouds raised by moving vehicles.

Sound



This tab offers the following options:

- **Volume sliders** allow you to decrease or increase the general sound volume (Volume) or adjust the volume of music, effects and speech separately.
- **NOTE!** By default the volume settings of music are disabled in the game. You can play your favorite music tracks during the game. To play the tracks in the main menu, encyclopedia, game setting menu, copy the tracks into the folders <Game folder> \Music\Menu. To play your tracks during the game copy them into <Game folder> \ Music\Game. The game will play the files in any format supported by DirectShow codices installed on your system.
- **Mute** disables all sounds in the game. Note that this differs from disabling the "Use Sound" option in the game settings application. Disabling the "Use Sound" option will prevent the game sound engine from loading in the first place, so you won't be able to enable the sound in-game.
- **EAX** should be enabled if your sound card supports hardware acceleration. This considerably improves sound quality and reduces CPU load. Otherwise (e.g. if you use a motherboard audio codec), this option should be disabled. If you experience any sound problems in-game, you should also disable this option.
- **Invert Stereo Channels** swaps right and left stereo channels. This might come in handy if your speakers are swapped.

Controls



On this tab you can redefine the keys controlling the camera, units and game interface. Controls are provided in table format and divided into the following categories:

- **User** lists unit commands and pause controls (pause is disabled in multiplayer games).
- **Group** lists commands to create groups, add units to groups or quickly select groups.
- **Interface** lists commands that control the game interface in battle.
- **Camera** lists camera controls. In the game you can press keys directly or in combination with Ctrl and Alt keys. One key or a combination of keys can be bound to only one command.

To bind a key to a command, double-left-click the corresponding table cell in the Hotkey 1 or Hotkey 2 column and then press the desired key or combination of keys.

Game



On this tab, you can adjust camera options and enable or disable various interface elements.

- **Tooltip Delay**, use this slider to increase or decrease the delay between moving the mouse cursor over an interface element (e.g. a button) and when its description or a corresponding tooltip appears on the screen.
- **Max. ricochets** per unit, maximal number of ricochets displayed for a single vehicle (see details in the section **Detailed damage info modes**).
- **Max. hit vectors per unit**, maximal number of hits (except ricochets) displayed for a single vehicle (see details in the section Detailed damage info modes).
- **Hit vectors minimal caliber** displays hit vectors of the specified caliber and higher (see details in the section Detailed damage info modes).
- **Invert Mouse Wheel** inverts the mouse wheel (changes its rotation direction value).
- **Autosave**, if this option is enabled, the game will be saved automatically before a mission or on its successful completion.
- **Camera shake** enables or disables camera shaking when near powerful explosions or gunfire.
- **Invert Mouse** swaps the functions of the left and right mouse buttons.

- **Ignore Mission Fail**, if this option is enabled, you will be able to progress further into the campaign even if you lose a battle.
- **SMART pause**, with this option enabled the time in the single-player game will stop automatically in case of critical events (e.g. death of your soldiers, destruction of your vehicles, etc.)
- **Compatibility mode**, this options will clean up the RAM if you enter the menu during the battle or after its completion. This will allow to eliminate the out of memory error which may happen on some systems (especially ones with low RAM and 32-bit OS). Please take into account that the calling in-game menu will take up to several seconds and the saving procedure will last a little bit longer in this mode.

Interface



- **Show Icons**, if this option is enabled, unit icons will be shown above all units. Otherwise unit icons will be shown only above the selected units.
- **Show Selection Indicator** enables/disables the circles around the selected units.
- **Show Target Indicator** enables or disables drawing the small red triangle near the selected unit showing direction to its target.
- **Sector of Fire** enables or disables the display of the sector of fire for a unit.
- **Show blood** enables rendering of blood in the game.

- **Show Commander's Influence** shows area of commander's influence on soldier's morale in the game.
- **Line of sight** enables or disables drawing the line of sight for a unit when it receives an attack order.
- **Detailed Minimap Projection**, if this option is enabled, the minimap camera projection will show battlefield terrain features.
- **Show enemy type**, if this option is disabled, all enemy infantry icons are the same and you can tell machinegunner from AT soldier only by looking at weapons in their hands (it results in increased realism, especially in multiplayer).
- **Show cursor distance**, if this option is enabled, distance in meters between the selected unit and a point under mouse cursor is shown near the cursor.

Camera



This tab controls various camera parameters. It offers the following options:

- **Camera Mode** defines the way you move (rotate) the camera. There are two ways available: RTS Mode (the camera rotates around a spot or an object in the centre of the screen) and Free Mode (the camera rotates around its centre).
- **Camera Min Height** sets the minimum height which the camera can descend to (1-230 meters).
- **Camera Max Height** sets the maximum height the camera can

ascend to (up to 250 meters).

- **Scroll Speed** sets camera scrolling speed (when the mouse cursor touches the screen edges).
- **Keyboard Move Speed** sets the speed of scrolling the camera using keys.
- **Keyboard Rotate Speed** sets the speed of rotating the camera using keys.
- **Mouse Rotate and Move Speed** sets the speed of moving and rotating the camera using the mouse.
- **Zoom Speed** sets mouse wheel sensitivity when zooming the camera in/out.

CREDITS

Clicking this button will display the game credits. Left-click to speed up scrolling, right-click to slow it down. Click and hold the mouse wheel to pause scrolling.

BATTLE PREPARATIONS

No sensible commander will lead his soldiers to battle without planning his actions in advance. Real commanders of the World War II didn't have this luxury sometimes, but you do have it in the game, so you shouldn't disregard it.

So, you have started a campaign (let's suppose you've started the Soviet campaign and its first battle, Southern outskirts of Cherkasskoe).

DIARY (MISSION DESCRIPTION)

After selecting a battle (a single battle or as part of a campaign), you see a screen describing the current situation at your sector of the front as well as an overview of the offensive operations of both sides.



Here you can read about the situation on the front at the moment of the upcoming battle and select the difficulty level for the battle you're about to fight.

Difficulty Level

Before each battle you can set the level of realism and thus the difficulty of your mission. There are three difficulty levels you can choose from:

1. **Novice** — Your forces inflict more damage to and receive less damage from the enemy; morale can be enabled or disabled.
2. **Regular** — Weapon characteristics and inflicted damage correspond to real world values; morale can be enabled or disabled.
3. **Veteran** — Enemies are somewhat more accurate than on **Regular**; you can not disable soldiers morale; weapon characteristics and inflicted damage correspond to real world values. In addition, damaged parts of enemy vehicles are no longer visible in popup information side-panel.

Unchecking the '**Morale**' option will switch off morale modeling in the upcoming battle.

Proceeding to Battle

Before you proceed to battle, we recommend that you inspect your troops: the order of battle as well as available reserves. You might

want to change the order of battle or specific soldiers according to your experience and tactical skills.
At the bottom right of the Mission Description screen are two buttons: "Order of Battle" and "Start Battle". The latter will let you launch the battle immediately with the default task force and reinforcements, while the former will allow you to change it by means of available units - it takes you to the Order of Battle screen described in the next section.

ORDER OF BATTLE
Besides knowing the basic military tactics for attacking and defending as well as a thorough knowledge of weapon characteristics, the key to successfully complete a combat mission is to correctly and skillfully assign your crews and squads according to their skills and the mission at hand.
There are two parameters that limit the composition of your task force in the game: maximum strength (amount of unit slots available) and total point value. Both parameters depend on certain battle conditions. The maximum task force strength may be limited by either the total maximum amount of units allowed (of any type), or the maximum amount of units of a specific type (e.g. up to 4 infantry units and up to 2 tanks).
However, different tanks may greatly differ in terms of combat performance, so all units also are assigned corresponding costs in "command points". The more powerful equipment you want to use the more command points you will have to spend.
The Order of Battle screen has three tabs: **Task Force, Reinforcements** and **Staff**. On the Task Force and Reinforcements tab, you can call up units from the reserves, while on the Staff tab you can assign individual soldiers to specific crews and squads.

Captured Equipment (Trophies)
All enemy equipment your troops control by the end of a battle (at least one your soldier mans it) is automatically captured and you may keep it as a trophy.
Unlike your own equipment, trophies cannot be repaired and their ammo cannot be replenished. You can use a captured trophy in the next battle, but keep these restrictions in mind. If you assemble troops for a quick battle or the first campaign mission, there will be no trophies.

Task Force



The **Task Force** screen is divided into three main parts: **Reserves, Deployment** and unit info panel. Certain units have tactical numbers displayed instead of their names to make units of the same model more distinguishable.

Both task force lists (reserves and deployment) can be sorted by unit type, name or cost by means of the "Sort By" interface element. If you want to filter out all units except for specific types, you can use the filter buttons in the center of the screen.



Click these buttons to filter out all units except the ones you need.

This tab shows your active units for the upcoming battle: armor, infantry, etc. Reserves for your army are limited. The number in the upper right corner of vehicle image or an infantry unit defines the total amount of military units of this type at your disposal.

It means that if there are 3 armored cars BA-10M in your reserves and you take all three of them into the battle and lose, you will have no more armored cars of this type anymore. The reserves are replenished only if new regiments of your army arrive to your area. The Red Army will be receiving more or less steady reinforcements, while the Wehrmacht will have no reinforcements at all, the German commander will have to battle all five days only with the troops he had when the battle started.

You can move the troops from the reserves to task force for next battle only if the limit of command points is not exceeded. The amount of remaining command points is shown in the **Balance** field between the reserves and your army panels:



You can remove personnel or equipment or replace it with units from the reserves list, as long as you do not exceed your command points. While the command points system allows for a flexible Order of Battle, there is one restriction: certain units cannot be moved, as your high command may consider them vital for the mission or won't give them to you now. Such troops are marked as blocked: they have red labels with X mark. In some missions your troops may receive specific tasks (e.g. defense or recon), thus the amount of available units of certain types may be limited.

For example, your superiors may consider three tanks to be enough because the larger force may attract unwanted enemy attention, possibly preventing you from fulfilling your intended mission. In this case, if you already have a tank deployed, two remaining empty cells will be marked with armor icons:



If you can take one unit type out from several possible, the empty cell will be marked with all of the possible types (for example, armored car OR mortar OR AA gun OR howitzer).



When you already have the maximum amount of units of the same type in your Task Force, or if you lack any more command points, you will be offered to remove a unit of this type if you try to add another. In this case units you cannot add will be marked in red.

There are eight 82mm mortars in the reserves, but you can not add another mortar into the Task Force, therefore its label is red.



Unit Description

When you move the mouse cursor over a unit, its description is shown at the bottom of the screen, this is the main information panel. This panel is used throughout the entire game, from encyclopedia to battles. It’s described in detail in the chapter Main information panel. For now, it’s enough to know that here it shows a description of the selected unit, including its default crew.

If you click an icon of a gun with the left mouse button, you will hear

the sound of its shot, if you click an icon of a projectile or a cartridge - a sound of impact or explosive. If you click a soldier with the left mouse button, you will hear a shot sound of his primary weapon.

Moving Units Between the Reserves and the Deployment tabs:

Method 1

1. Select (left-click) a unit to move;
2. Click either (only one of these will be enabled, depending on unit location).



Method 2

Double-left-click a unit you want to move.

Method 3

Drag a unit to a new location (move the mouse cursor over a unit, click and hold the left mouse button to drag it).

If a replacement of this unit is allowed, it will be added to the Deployment tab or the reserves, respectively.

Note that all infantry soldiers and officers as well as weapon crews are armed according to their respective table of organization and equipment (TO&E). If you move a sniper to a grenade launcher position, he will change his rifle to a grenade launcher.

Remember that only experienced soldiers can use military equipment to its full effect. Even the best, most heavily armored and armed tank won't do much good if manned by a novice crew.

For first engagement take as many as possible ZIS-3 guns, two or three 45mm guns M-42, two 82mm mortars, a mounted MG and the maximal number of infantry detachments for the first battle at the edge of Cherkasskoe. However you can press the Default button and a custom set of troops will be selected for this battle.

Reinforcements



On this tab you will need to select (the same way as on the Deployment tab) the troops, which you may summon as reinforcements during a battle. Take into account that you will be able to call for them some time later after the battle start and will have to spend Victory points for it (see chapter **Victory points**), thus you should not rely on the reinforcements too much at the battle start. For example, choose guns SU-12M and landlease tanks M3c from USA. You can not have Soviet tanks T-34 and KV as reinforcements, since 1440th Self-Propelled Guns Regiment and 245th Separate Tank Regiment, which participated in the counterattack near Cherkasskoe on July 5, didn't have them.

Staff



On the right part of this screen you see the list of units that are currently selected on the **Task Force** and **Reinforcements** tabs, including crews. To the left are units left in the reserves. Using these lists you can swap any soldiers.

For example, to move a good gunner from a light tank in the reserves to a heavy tank you want to use in the next battle, drag its icon (by clicking and holding the left mouse button) over the icon of the current gunner assigned to this heavy tank. This way you can assign the best crews to the best tanks, according to skills of the soldiers (e.g. assign a soldier with the highest driving skill to the driver position, a soldier with most experience to the commander spot, etc.). The importance of the various crew skills for accomplishing certain tasks is described in the chapter **Characteristics and Skills**.

Renaming units

Take into account that you can rename any unit or even a soldier. This is useful, if you want to quickly find it in the heat of a battle. To do this, click a vehicle name in the main information panel or in the Staff list with the left mouse button. For example, you can give a tank the name of its commander.



Let's give this tank the name of it's commander.

When you are finished assembling your army and ready to start your mission, click **Start Battle**.

MISSION LOADING SCREEN

Loading all the mission data takes some time, during which you will see the mission loading screen. In its center, a progress bar (a red circle) is gradually drawn around the image. When the circle is complete, the mission has been fully loaded.



There is also a Cancel button. Use it or press Escape if you have changed your mind about fighting this particular battle. Finally, there is always a hint shown at the bottom of the screen. The hint may contain useful gameplay pieces of advice or interesting historical facts.

CONTROLLING THE BATTLE

There are many interface elements present on the screen during a battle:



1. Victory points counter (see **Victory Points**).
2. The Menu button (see **In-game Menu**).
3. Objectives button (see **Objectives**).
4. The Tactical Map button (see **Tactical Map**).
5. Statistics window.
6. Time controls (pause, half-speed, normal speed, double speed) and mission timer.
7. Camera control button.
8. Unit group indicators.
9. Recent orders and messages (see **Mission Orders and Important Messages**).
10. Unit icons.
11. The minimap (see **Minimap**).
12. Reinforcements, artillery or mortar support, and air support buttons (see **Support and Reinforcements**).
13. Buttons that enable weapon pick-up panel or display unit characteristics and messages.
14. The main information panel (see Main Information Panel).
15. The weapons list of a currently selected unit.
16. Popup information panel.

17. Order buttons (see **Issuing Orders**).

SETUP PHASE

In most battles, when the mission has been loaded, the game is paused and you have time to deploy your troops (and sometimes fortifications) as you deem necessary.



The deployment area in which you can place your units is marked by a grid of grey perpendicular lines.

Take a good look at the location you have to fight on. The game is paused in this mode, and the battle won't start until you press the red button at the top of the screen.



While a mission briefing may contain an approximate line of enemy attack (if you are to defend), or the location of enemy defenses (if you are to attack), not everything may go as planned. You have to come up with the optimal deployment of your troops as you will never have enough of them. It's especially vital to deploy troops correctly if you defend, as you may not have time for this once the battle has started.

To move a unit, left-click its icon or the unit itself, hold the mouse button and drag the unit to the required spot.

You can also move groups of units. To do this, you can

- click and hold the left mouse button and move the mouse to select a group of units with a green rectangle;

- double-left click a unit to select it along with his entire squad;
- left-click a unit while holding Ctrl to select it along with all units of the same type;
- left-click multiple units while holding Shift to select units of different types.

The same rules apply to selecting units during a battle.

When a group has been selected, move it just like a single unit by left-clicking a unit (or, a unit icon) that belongs to this group and dragging it to the required spot while holding the mouse button. To rotate a unit or a group just right-click in the right direction.
When defending, you will sometimes have a chance to deploy fortifications as well: anti-tank hedgehogs, barbed wires, pillboxes, gun or tank entrenchments. In this case you will see green objects marking the spots for possible emplacements. You can move them within the deployment area and rotate them in the right direction.



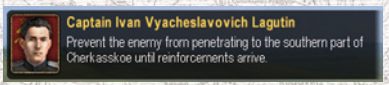


For example, to move the pillbox you see in the above image, point the mouse cursor at it, click and hold the left mouse button (the pillbox will turn red) and move the mouse, the object will move depending on the mouse direction, you can move the object using the samemethod.

When you have finished deploying your troops and fortifications, click the red button 

at the top of the screen to resume the game and start the battle.

MISSION ORDERS AND IMPORTANT MESSAGES



On the left of the screen is an area where your mission orders and other important messages are shown.
Each message features the speaker's portrait and text. It fades out over time, but you can also close it manually with the RMB click the portrait. If you left-click the portrait, the Objectives screen will open.

VICTORY POINTS



In the upper left corner of the screen there is counter of the **victory points**. These victory points are given for the elimination of the enemy manpower and warfare, as well as for the fulfilling of High Command orders during a battle. You can spend them for reinforcements, air support, artillery fire, etc, but the more victory points you have at the mission end, the higher will be the estimate of your military skill (see **Combat Statistics**).

CAMERA CONTROL BUTTON

This small button toggles three camera modes for a selected unit. Click it with the left mouse button to change.



Default mode – camera is unit-independent.



Camera is attached to unit, but you can change its distance and position.



Camera jumps to eye view of the selected unit.

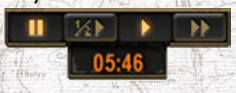
TIME CONTROLS





These buttons are located at the top of the screen in single-player games. Note that they are replaced by the button in the deployment phase. You can pause (button "▌▌") a single-player game at any time for as long as you want. You can also run the game at half speed ("½▶"), revert speed to normal ("▶") or double it ("▶▶").

If you have to hold out and defend for a specific time or complete some other limited time task during a battle, the remaining time will be shown below the time controls.



UNIT GROUP INDICATORS



These small buttons depicting numbers from 1 to 10 ("0" is shown instead of "10") are shown in the upper right corner of the screen during battles or during deployment phase.

They are initially disabled, as there are no groups by default at the start of a mission.

To create a group, you need to select some units (during an ongoing battle or Setup) and press Ctrl+0 to 9. This will create a group with the corresponding number and activate the group indicator. There can be 10 groups in total, numbered from 0 to 9.

After that, you can select the group when needed by pressing 0 to 9 on the keyboard or by left-clicking the corresponding indicator.

MINIMAP



The minimap is located in the bottom left corner of the screen.
It shows all your troops (blue), your allies (dark yellow) and enemy forces (red) as detected either by you or your allies. Infantry units are represented by squares, while equipment is shown as circles. Neutral units (e.g. unmanned guns) are marked grey. The current camera field of view is shown as a white triangle, while the deployment area (in the setup phase) is shown as green lines.
The playing area within which you can move your troops is colored, while black and white boundaries are inaccessible, the player troops can not move there.
If any critical event happened, its source is pulsing on the minimap for some time, attracting your attention. In case of an ordinary message (for example, a soldier or a vehicle is reporting about an attack), these waves are blue, if the event is critical (e.g., your tank is eliminated), it is red.

POPUP INFORMATION PANEL

The game offers a popup information panel displaying the primary characteristics of equipment controlled by you or, perhaps even more important, by other forces, including the enemy. This data is shown in the right part of the screen when, your mouse is over enemy unit, in the place where all characteristics of projectiles, cartridges, and units is shown, when you hover the mouse over them in the main information panel.



As in other instances, armor thickness is traditionally shown in millimeters and the speed is the maximal unit speed. In addition, the maximal penetration values of the current ammo loaded in your unit main gun are shown here in red lines (angles between gun of your unit and actual armor sheets on the enemy unit are not taken into account). This information, while brief, may help you take the right decisions when combating enemy tanks.
Note that if you are playing on Novice or Regular difficulty level, you will have additional information – damaged parts of enemy vehicles will be highlighted red on the image at the top of this panel. On Veteran level this damage information is disabled.

ISSUING ORDERS

All orders in the game are passed to your subordinates by means of order buttons and the interactive mouse cursor. The cursor changes its shape depending on which actions are possible for the selected unit. Order buttons are located in the bottom right corner, and which orders are available depends on the selected unit type.



Soldier orders



Vehicle orders

As you can see in the above images, the icons showing a Shield and a Submachine gun are highlighted, meaning that the corresponding orders are active at the moment: the soldier or vehicle are in defensive mode, and the soldier will pick up the best weapons and ammo he finds on the ground, or dead bodies, automatically.

Let's take a look at the complete list of available orders, left to right and top to bottom.

As a rule, issuing an order requires left-clicking the order button and then a spot on the ground or a unit (friendly or enemy). However, there are some exceptions.



1. Stop. Orders the unit to halt any activities (moving, attacking, area fire, assaulting, etc.). If no other orders are issued, the unit will witch to the defensive mode automatically after a while (see below). This order is carried out as soon as it has been issued.

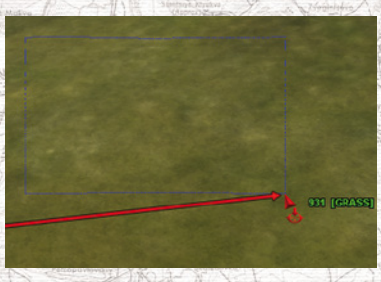


2. Attack. Orders to attack, or advance to attack. It also marks the target. You can also issue this order by selecting a unit or a group, and right-clicking on an enemy unit. If the unit needs to advance to be able to execute the attack then the selected unit(s) will move in the needed direction and stop to attack the enemy, if any. Infantry units move at the double or by bounds.

Attention! This order is affected by behavior identifiers: maneuvering and firing modes.



3. Area Fire. Orders to attack the selected location or position. Whether enemy units are present there or not, your units will fire their primary weapons as ordered. When issuing this order note the shape of the mouse cursor: means that the selected unit can fire at the selected spot from its current location using currently loaded ammo. The HE projectiles can be fired in a curved trajectory for this order. You can indicate not only a point, but a whole area as a target. Move the mouse while issuing an order and hold down the RMB. The indicated zone will be selected with a red line:





Attention! This order will be carried out even if the firing mode is set to "hold fire".
Attention! Infantry units will remain in their current stance (prone, sitting, and standing).



4. Assault. Orders to break through to a target or position. This is the default order issued with the RMB click, if no other orders are selected. While advancing, troops will fire during short stops (or on the move, provided that they are experienced enough). In this mode vehicles will crush enemy infantry and guns that are in the path. Infantry units move at the double or by bounds.
Attention! This order is affected by maneuvering and firing modes.



5. Move. Orders a unit or a group to advance to the selected spot as quickly as possible.
Attention! While moving under this command, troops won't pay attention to the enemy and will advance to the selected spot as quickly as possible. Infantry units will move on the double.



6. Ambush. This order is available only for infantry units. While in ambush, soldiers won't open fire until the enemy gets within 50-100 meters or only when the ambush is revealed otherwise. Soldiers that are ordered into an ambush will search for nearest cover and do their

best to hide (go prone behind rocks, hide in bushes, etc.). While in ambush, soldiers will attack with grenades, if they have any.
Attention! This order is affected by behavior identifiers: maneuvering and firing modes.



7. Scout. This order is only available for infantry units. Soldiers will crawl to the selected spot. Similar to the Ambush order, they won't open fire at enemy units within 50-100 meters or until noticed.
Attention! This order is affected by behavior identifiers: maneuvering and firing modes.



8. Retreat. Orders units to retreat. Vehicles will back up to the selected spot, executing short halts to fire. Infantry units will move by bounds and return fire.
Attention! This order is affected by the selected firing mode only.



9. Defend. This order is active by default when no other orders have been issued, or all orders have been fulfilled. If a friendly unit is targeted by this order, it will be defended by the selected unit. When ordered to defend and there is a threat, infantry units will try to find some cover automatically.
If you target a spot on the ground, the selected unit will turn in that direction. If a unit cannot turn, but has a turret, it will turn its turret in the selected direction. Therefore, this order is important because it allows turning guns (e.g. tank main gun) in the direction of a threat. To do that, first, select the tank main gun on the main information panel by left-clicking it, then left-click the order button and then right-click in the needed direction.
Note that you can also rotate the selected unit by clicking and holding right mouse button for at least 1 second on a ground at desired direction.
Attention! This order is affected by behavior identifiers: maneuvering and firing modes.




10. Attach / Detach. Orders to attach or detach the selected gun to or from the selected vehicle (to attach a gun, select the towing unit, left-click the order button and right-click the gun). Guns are automatically detached from destroyed or immobilized vehicles. If the order button is disabled, this vehicle cannot tow guns.



11. Smoke Screen. This order is enabled if the selected soldier has smoke grenades or the selected tank or gun can be loaded with smoke shells. This order is similar to Area Fire, but implies the use of smoke ammo. Carrying out this order, a soldier will throw a smoke grenade at the selected spot and a tank will shoot a smoke shell, if available. Then the unit will switch to defensive mode automatically. Smokescreens remain on the battlefield for a certain time, blocking lines of sight.

Units can see through the smoke in immediate (5 meters) area around them. This means that unit located inside the smoke screen close to it's edge can see what's going on outside, while the enemy will see them only at 5 meters.



12. Disembark. Orders crews to bail out, or orders transports to unload their passengers. For transports, the first click unloads all passengers; the second click unloads the crew. You can unload specific soldiers as well, by left-clicking their icons. To select multiple soldiers, hold Shift.



13. Maneuvering Modes. This button toggles various unit movement modes, tailored to different combat situations. To perform this action for the selected units, right-click to open the list of modes and choose a mode by left-click. To switch Hold Position on/off, left-click the mode icon.



• **Free.** This is the default for all units.

a) Vehicles will move if enemies are detected within a distance of 100-200 meters and there is no line of fire from the current position.

b) Infantry units will look for cover when threatened; tanks will crush entrenched infantry units, etc.

c) When assaulting, vehicles without turrets will turn in the direction of spotted enemies. When attacking, units will chase enemies located within 300 meters, if there is no line of sight from the current position.

d) Infantrymen stay or move depending on current situation.



• **Crouch.** Infantry will crouch or crawl (depends on current situation).



• **Sneak.** Infantry units will crawl. Unlike the Scout order, soldiers do not change their stance to standing when you give another order (e.g. Assault). This mode affects infantry only.



• **Hold Position.** Units will hold their current position.
a) When assaulting, vehicles without turrets won't turn in the direction of enemies.
b) When attacking, vehicles won't chase enemies if there is no line of sight from the current position.
c) Vehicles and field guns won't turn in the direction of enemies, and fire only at targets within their sectors of fire. Tanks, however, will turn turrets without turning hulls.
d) Infantry won't move to cover.
Attention! Infantry units will run away from grenades or tanks regardless of the selected mode.



14. Firing Mode. To set a firing mode for the selected units, right click to open the list of available modes and choose one by left-clicking.
To toggle Hold Fire on/off, left-click the mode icon.



• **Free.** This is the default for all units. The target point is automatically selected by the unit depending on the circumstances (e.g. if only the turret of an enemy tank can be seen above a stone wall, it will be chosen as a target automatically).



• **Aim at Turret.** Units will aim at vehicle turrets or soldier heads.



• **Aim at Chassis.** Used to immobilize enemy vehicles. Units will fire at vehicle tracks or wheels or at the legs in case of infantry targets.



• **Suppress.** Units will fire at random spots near the target. Useful to shell areas (e.g. dispersed infantry units, guns or other soft targets) with high-explosive rounds, or when the exact target location of the enemy is unknown. This mode is also suited for heavy machine guns.



• **Hold Fire.** Units won't fire at enemies, unless you issue an order to attack (e.g. by selecting the unit and right-clicking an enemy).



15. Formation. Toggles between various formations of a combat team that can consist of vehicles, infantry or both. This button is enabled only if 2 or more units are selected. Similar to maneuvering or firing modes, you can switch formations by either left-clicking the button,

or with the RMB click and selecting a mode from the list. You can choose between 4 formations. To do that, select one and then issue an order to move, sneak, assault or attack. When you deselect the units, the formation will revert to the default (Line). To avoid this, create a numbered group (see Unit Group Indicators) and change its formation. It will remain in effect when you select it by pressing its corresponding number.



• **Line.** Units form a line. This is the default formation. Note that the formation icons indicate the location of units within a mixed group. Tanks and other vehicles are shown as diamonds, while infantry is shown as circles. So, in a line formation, tanks will be in the front line, while infantry (and unarmored vehicles) will trail behind.



• **Column.** Units will march in file.



• **Free.** Units will keep their current positions and distances. You can create your own formations using this mode.



• **Wedge.** Units will assume a wedge formation.



16. Auto Pick Up. When this button is highlighted, soldiers will pick up weapons, ammo and grenades from dead bodies automatically.

This mode is enabled by default for all soldiers. If soldier has ran out of ammo for his heavy weapon (machinegun, AT rifle or AT grenade launcher) and there is another soldier with such ammo close by (a couple of meters distance), first one will automatically take the ammo from second.

Changing Unit Distance in a Formation

Units assume a new formation only after you select a target waypoint. After reaching it, the units will face the selected direction and keep the specified distance between each other.

To do that:

1. Select a group of units.
2. Select a formation (or leave it as is).
3. Select an order from the order panel (otherwise the Move order will be issued by default).

4. Select a spot on the ground where the group will assume a new formation and move the mouse cursor over it.
5. Click and hold the right mouse button and move the mouse until the direction and distance between units is as you want it.
6. Set the formation by releasing the right mouse button.





Interactive Cursor

When hovering over ground or an enemy unit, the mouse cursor will provide you with important information. Also, one of your units must be selected.

The distance in meters from the mouse cursor to the selected friendly unit will be shown next to the cursor if you hold it still for a second. This behavior can be turned off in game options (Show cursor distance).



The distance from the selected M3c tank to the cursor is 29 meters.

If you're issuing an order to attack (e.g. fire at an area or target), the cursor shape will indicate if the selected unit can fire at this target/area from the current position with the currently loaded ammo in its primary weapon.



This is a cursor shape in case you can hit this target or a point on the ground.



This is a cursor shape in case you can not hit this target or a point on the ground.

Aside from using the order panel, you can control your troops by means of the interactive cursor via so called "default orders". You can issue a default order when:

- the selected unit or group can attack the target (the pointer will change to )
- the selected unit or group can move to the spot (the pointer will remain )
- the selected soldier or unit can capture enemy equipment or crew unmanned equipment (the pointer will change to )
- the selected soldier or unit can occupy a trench (the pointer will change to )

The Complete List of Cursor Shapes


The primary cursor shape. It's also shown to indicate the destination when issuing a default movement order to units or groups.


Indicates that the action cannot be performed.


Attack target. The cursor takes this shape when the selected unit or group can attack the target you're pointing at, or when you click Attack on the order panel. If the selected unit cannot fire its primary weapon at the target from the current position, the cursor will change to 


Attack area. The cursor takes this shape when you click Area Fire on the order panel. If the selected unit cannot fire its primary weapon at the target from the current position, the cursor will change to 


Assault target or area. The cursor takes this shape when you click Assault on the order panel. If the selected unit cannot fire its primary weapon at the target from the current position, the cursor will change to 



Scout. The cursor takes this shape when you click Scout on the order panel.



Retreat. The cursor takes this shape when you click Retreat on the order panel.



Defend target. The cursor takes this shape when you click Defend on the order panel and select a friendly unit. When over the ground, the cursor will change to , as this will mean an order to face in the chosen direction.



Capture target. The cursor takes this shape when the selected soldiers can capture or crew the target.



Occupy trench. The cursor takes this shape when the selected soldiers can occupy a trench.



Capture building. The cursor takes this shape when the selected soldiers can capture the targeted building.



Attach/detach gun. Enabled only for vehicles in combination with towed (non-self-propelled) guns. The cursor takes this shape when you click Attach/Detach on the order panel.



Air support. The cursor takes this shape when you specify a target area for air support.



Artillery support. The cursor takes this shape when you specify a target area for artillery support.



Smoke screen. The cursor takes this shape when you issue an order to set up a smoke screen.



Drag. The cursor takes this shape when you drag certain elements (e.g. units between the reserves and the deployment tabs).



Move camera down.



Move camera left.



Move camera down and left.

Move camera up and left.

Move camera right.

Move camera down and right.

Move camera up and right.

Move camera up.

TACTICAL MAP

If you enable the Tactical Map by clicking  ,the camera will be located over the battlefield and directed vertically and downwards. Zooming in and out is performed in a usual way with the mouse wheel.



This way you can see the entire battlefield as on a map (if you zoom out enough) and will keep the full control over the troops. In this mode the game looks as a classical wargame – map, unit icons and a little more to give full scope for a tactical genius.

OBJECTIVES SCREEN

The orders of high command are listed here along with their status. You can get to this window, if you press button  on the main battle screen. The amount of victory points you are going to receive for the orders completion is shown next to the order text (or already received, if the task is completed).



STATISTICS

At any moment you can view the statistics of yours and your opponent losses per troop type from the beginning of the battle and the victory points given to you and your enemy.



Note that the cost of called reinforcements, artillery and air strikes is deducted from final score.

IN-GAME MENU



If you press Esc during the battle or during the setup phase or click in the upper left corner  of the screen, you will see the in-game menu that lets you save or load games, restart the current battle, change game settings, or quit.

MAIN INFORMATION PANEL

The contents of the main information panel depend on the selected object. It can be a soldier, a tank, a self-propelled gun, a towed gun, an armored car or a passenger car. The panel is shown both during battles and also on other game screens, including the encyclopedia.
In all cases the panel looks nearly the same, but with certain exceptions: controls for selecting ammo type, weapons and opening the trophy panel are only available during an ongoing battle.

SOLDIER INFORMATION PANEL



The soldier information panel displays soldier characteristics, skills, weapons, ammo as well as wounds and morale. On the left side of the panel you will see the soldier's image and in the background his home country flag. Below the image is the name of the soldier. If a soldier has been wounded, the incapacitated part of his body will be marked red. Wounds greatly hamper the combat efficiency of a soldier (see Impact of Wounds on Soldier Characteristics and Skills).


Soviet soldier with a body wound

In the centre of the panel you will find detailed soldier information, including his rank, current action (e.g. attacking, defending, panicking), weapon type (e.g. machine gun, rifle, etc.), total anti-tank and regular grenades, including smoke grenades. To the right are the soldier's characteristics: Experience, Accuracy, Scouting, Driving and Gunner (see Characteristics and Skills). Below are the awards the soldier received for past battles (move the mouse cursor over an award for more information about it).
Whether a soldier acts alone or as part of a squad or crew, his weapons are located in three slots (two for small arms, and one each for the 3 different grenade types). A soldier can carry ammo and grenades in his backpack (for information on capturing trophies and weapons, see Trophy Panel).



One of soldier's slots is taken by a SVT-40 rifle, the second one is vacant. In the third slot are two grenade types, one of which is selected for attacking (until the soldier runs out of these grenades). In the same way you can select a primary weapon for the soldier to use.

You can order the soldier to use only one weapon by selecting it (left-click a weapon or a grenade). To deselect left-click the selected weapon or grenade again.



Reloading a weapon takes time, usually a few seconds. During this time, a corresponding indicator is shown as overlay over the ammo slot. When the grey bar has disappeared, the weapon is ready to fire.

When you move the mouse cursor over a weapon or ammo (Mosin rifle in this case), an additional panel will appear to the right, showing the characteristics of the weapon and loaded ammo.





This panel shows the following characteristics of a weapon and loaded ammo:

- weapon or ammo image, weapon name;
- rate of fire in rounds per minute;
- reloading time in seconds;
- ammo name;
- initial ammo velocity in meters per second;
- maximum range;
- dispersion in angular minutes (depends on weapon and ammo type);
- penetration (depends on range for the given ammo type).





If you move the mouse cursor over a grenade, a similar information panel will appear, though it will provide fewer characteristics.

Sometimes you may need to change the loaded ammo type, e.g. to penetrate a lightly armored car with armor-piercing rounds. To manually change the ammo type, you just need to select it.



Right-click the current ammo to the right of the weapon.



You will see available ammo that is suitable for the given weapon along with amount of clips and rounds per clip. Left-click the ammo to select it and close the ammo list. If you have changed your mind, just left-click the cross icon.



After you have changed the ammo type, the weapon and ammo will be marked dark yellow, indicating that only the current ammo will be used. It will be loaded into the weapon as soon as the previously loaded clip runs out.

If you select multiple soldiers, the main information panel will show data about the entire group (see Infantry and Equipment Group Summary).

Capturing Trophies and Changing Soldier Weapons

During a battle, infantry soldiers can pick up weapons and ammo from dead bodies or from the ground (e.g. if you have dropped some to arm another soldier or to share ammo).

To open the trophy panel, click at the top of the soldier information panel - button  is only enabled if an infantry soldier is selected.

Located above the information panel, the trophy panel shows items lying within 5 meters from this soldier.

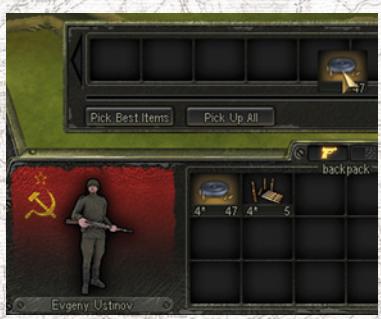
This panel might also come in handy in situations when you need to give ammo to another soldier. In a squad that includes a machine gunner, there is always another soldier carrying additional machine gun ammo (if he's still alive). Note that if soldier ran out of ammo for his heavy weapon (machine gun, AT rifle or AT grenade launcher) and there is another soldier with such ammo close by (a couple of meters distance), first one will automatically take the ammo from

second, if the Auto Pick Up feature is enabled.
Let's say that the machine gunner has run out of ammo and his assistant needs to give him some clips (without the use of Auto Pick Up feature). Select the assistant and click to open the trophy panel. If there are no weapons lying around, the panel will be empty.





Now drag DP magazines from assistant's backpack to the ground. To do that, left-click the ammo in the backpack, hold the mouse button and drag the ammo to the trophy panel. Then release the left mouse button.



As there are 4 magazines in the backpack, you will have to specify the amount in a small window that will appear. Either click the controls or type in the value. Then click OK. Drop all magazines to the ground and click Close on the trophy panel, or just deselect the assistant.



Now move the machine gunner within 5 meters of the dropped ammo and he will pick up it automatically provided that Auto Pick Up is enabled. Otherwise, you will have to pick up the ammo manually by clicking "Take All". But if there are many different items on the ground and you only need the ammo of a certain type (and you don't want to type in the amount manually), drag the ammo while holding Ctrl.

So, you'll have to move the machine gunner to the ammo, open the trophy panel and drag the ammo to his back pack while holding Ctrl. This will automatically select the maximum amount in the window that appears, so you will only have to click OK.



As soon as the soldier has ammo, he will reload the weapon and start using it. You can also drag grenades from the backpack to the grenade slot in weapons list; if the soldier has more than three types of them (only up to three types of grenades are shown in the weapons list simultaneously and can be used by soldier). To do that, just drag the needed grenade icon to the already occupied grenade slot in weapons list.

VEHICLE INFORMATION PANEL



The left part of this panel shows an image of the vehicle and in the background its home country flag. The name is shown below the image.
Any damaged parts of a vehicle (gun, tracks, etc) are marked red. If the engine or transmission are broken, the entire hull is marked red.

The following damage types are shown on the vehicle image:



1. chassis (tracks or wheels on either side; if only one wheel is damaged, preventing the car from moving, all are marked red)
2. engine and transmission (hull is marked red)
3. turret (all turret weapons cease functioning)
4. main gun
5. bow machine gun

If you move the mouse cursor over the vehicle image or click  at the top of the information panel, the vehicle characteristics (armor, crew size, speed) will be shown in-stead of the crew data. Unit tactical number is shown on the top of this vehicle characteristics panel.

The maximum speed is achieved only on roads and with a very high **Driving skill** of the driver. On other surfaces the effective speed can vary greatly.
Armor thickness is indicated in millimeters separately for hull and turret:



The bottom armor is important for withstanding mine damage.
The centre of the panel shows the icons of all crew members marked by the respective symbols. If a crew member has been killed, his icon is removed. Dying crew members are shown using grayed out icons. Wounded crew members have the corresponding parts of their bodies marked red. Wounds greatly hamper combat efficiency (**see Impact of Wounds on Soldier Characteristics and Skills**).
Crew member icons also show their location inside the vehicle and tell you about their personal weapons and grenades.

The top part shows the crew member roles:
- commander (service cap; this icon also has a golden outline);
- driver (steering wheel);
- gunner (aiming sight);
- loader (three shells);
- machine gunner (machine gun).

Personal weapons are shown below the roles. (Tankers usually carry submachine guns or pistols). Anti-tank and anti-personnel grenades are indicated at the bottom, meaning that the given soldier has at least 1 grenade of this type. Finally, crew member names are shown at the very bottom.





A T-34 tank crew. There is no commander, his functions are performed by a gunner.

If you hover the mouse cursor over a crew member, you will see detailed information about him in an additional panel to the right.

If some crew members are missing, the vehicle will not perform effectively, requiring more time for various actions. For example, the gunner may have to load the gun as well as aim and shoot, thus lowering the rate of fire. In addition, lack of crew members will adversely effect the vehicle ability to spot enemies even at point-blank range (each crew member has it's own viewing devices, ranging from simple slit to high-ratio optical sights, so if crew member is dead, nobody will use his viewing instruments). This is explained in detail in **Visibility and Audibility** chapter.

It is vital to assign soldiers and officers with highest corresponding skills to the roles they can perform best.

- The Commander should always be an officer or a sergeant, as leadership skills are important. The higher the commander's Experience, rank and amount of awards, the more assured (and less susceptible to panic) he is. This is important, because if the commander has panicked, other crew members can hardly keep their heads. If a commander observes the battlefield with the naked eye (in case of field guns, open-top self-propelled guns or armored cars), his Scouting skill lets him notice targets at longer ranges. A commander should also have Driving or Gunner skills to be able to replace crew members killed in battle.
- The Driver should be a soldier or an officer with the highest Driving skill. A high Driving skill will improve vehicle maneuverability, speed and cross-country ability and will improve pathfinding. If all crew members have zero Driving skills, there's no one to drive and the vehicle will not be able to move at all. Driving captured foreign vehicles requires at least 50 points in Driving skill.
- The Gunner (in early tanks and armored cars this position is often combined with the Commander) should have the highest Gunner skill. If all crew members have zero Gunner skills (e.g. if the original gunner has been killed), there is no one to shoot and the vehicle won't be able to fire its main gun. Firing from captured foreign vehicles requires at least 50 points in the Gunner skill.
- The Machine gunner should have a high Gunner skill as he is to fire the mounted machine gun at infantry and lightly armored targets.

During a battle, crew members will take their places automatically according to their skills. E.g. the soldier with the highest Gunner skill will sit on gunner's place, etc. The right part of the panel shows vehicle armament. The list shows up to three guns or machine guns, though their amount can be higher. Other weapons of the vehicle (if any) will function normally, but would not be shown here. When a gun is damaged or its ammunition was depleted and it cannot fire, its image is darkened and you can't change its ammo type or perform other actions.



In the shown list of T-34 weapons there is a 76mm turret gun, which has 9 AP shells (amount of projectiles of other types are not shown here), a coaxial gun and a damaged bow MG. There are 43 magazines for MG left, 63 rounds left in the currently loaded magazine.

If you move the mouse cursor over a listed gun, e.g. the tank's main gun, another panel will appear in the right part of the screen to show you the characteristics of the shell that has been (or is being) loaded.

This panel shows the following information:





- gun and shell images indicating projectile type (armor-piercing, high-explosive, composite, smoke (see Shell Types);
- gun name;
- rate of fire in shells per minute;
- reloading time in seconds;
- name of the shell that has been (or is being) loaded;
- initial shell velocity in meters per second;
- maximum range in meters;
- dispersion in angular minutes;
- loaded shell type and characteristics;
- penetration in millimeters (depends on range; normal penetration for the current gun and shell at 0, 100, 500, 1000, 1500 and 2000 meters).

After a shot, the loader (if alive) - or the gunner - loads a new shell or magazine.
This usually takes a few seconds and depends on several factors (shell weight, vehicle, skills, wounds and morale). As a rule, it takes more time to reload a tank gun due to restricted space in the fighting compartment. When a gun is being reloaded, you can see a progress bar on the shell or magazine image. When it disappears, the gun is ready to fire again.



A HE round is being loaded into 76mm gun of T-34 tank (80 rounds are left, including it).

The gunner will automatically select the shell type depending on circumstances. If the primary (most dangerous) target is a tank or other armored vehicle, he will order to load an armor-piercing shell (or composite, or high-explosive – this depends on a number of factors). If the primary target is not armored – e.g. an anti-tank gun or infantry – he will order to load a high-explosive shell. However, sometimes you need to fire a certain shell type, e.g. if your tank crews are seeing some infantry and are firing at them with high-explosives, but you know that a tank will arrive soon as well. Even a short pause might become fatal in this case: your tank will most probably fire the previously loaded high-explosive shell that won't scratch the enemy tank, then the crew will need some time to load an armor-piercing shell. This may be enough for the enemy tank to destroy yours, so it may be a good idea to load an armor-piercing shell in advance.

To manually change the loaded shell type, do the following:



Right-click the current shell to the right of the gun.



This will show a list of shells remaining for the use with this gun. Left-click a shell type to select it and close the shell window. If you have changed your mind, left-click the cross icon.



The selected gun and shell will be marked in dark yellow, indicating that only the selected shell type will be used (HE shells are loaded into 37mm gun of M3c tank in this example).

The gun and shells will be deselected automatically when there are no more shells of this type. To manually deselect them at any time, left-click the shell image. This will entrust the gunner again with the selection of the shell type depending on target.

PASSENGER AND TOW VEHICLE INFORMATION PANEL



If a selected vehicle (armored or unarmored car or truck) can transport passengers in addition to its own crew, then the information panel shows additional cells indicating any current passengers. If you move the mouse cursor over a passenger, you will see his description on an additional panel to the right.

The left part of the panel shows an image of the vehicle and in the background its home country flag. The vehicle name is shown below the image. Any damaged parts of a vehicle (gun, wheels, tracks, etc) are marked red.

If you move the mouse cursor over the vehicle image or click at the top of the information panel, the vehicle characteristics (armor, crew size, passenger capacity and maximum speed) will be shown instead of the crew and passenger data.





Some vehicles can also tow artillery. For such units, the button is enabled on the order panel, the process of attaching/detaching is described in the chapter (see **Issuing Orders**).





An AT gun is attached to a ZiS-5 truck (you can learn its name if you hover the mouse cursor of the gun icon).

MESSAGE PANEL

All important messages you receive during a battle are also displayed on the main information panel. In order to browse through them you have to deselect any units first. If none of the units is selected, you will see a list of messages instead of the information about the current unit. Each message is provided with the time of its receipt, icon of the message type or unit type (soldier, commander, tank, AA gun, etc.), soldier or vehicle name, and the message text.

On the left of the panel there are three message filters. The tank icon filters out messages from soldiers or vehicles. If you press it with the left mouse button, it will light out and the messages from soldiers or vehicles will be hidden.



The exclamation mark icon filters out system events, e.g. saving or loading games.



Finally, the envelope icon filters out mission relevant orders and other important messages.



You can toggle these filters on and off in any combination.



If a unit or a group is selected, you can also set it so that you just see messages related only to this unit or group. To do this, click a small icon with a text image at the top of the panel.

GROUP SUMMARY

When you select a group of units, the information panel shows a summary of all units in this group.



In case of vehicles or guns, it shows the crew member data (actual / total), name and type.

In case of infantry, it displays wounds (marked red), names and the following symbols (top to bottom):

- primary weapon;
- current action (shield stands for defense, arrow for movement, sight for attack, running man for a panic);
- anti-tank grenades;
- anti-personnel or smoke grenades.

Squad commanders are also marked with a golden outline.

AIR AND ARTILLERY SUPPORT, REINFORCEMENTS

CALLING FOR AIR SUPPORT

You can call for three types of air support: ground attack aircraft, fighters and bombers. However, you cannot control them directly, you just specify an area of operation for them. Air support availability always depends on battle conditions or sometimes the combat tasks.

The amount of calls for each type of air support depends on the battle conditions (other tasks the aircraft have to accomplish) and available resources. Each call for support spends a certain amount of victory points, which in their turn are added for successful operations, therefore you will not be able to call for air support at the very battle start or when the battle goes wrong.

Each aircraft type has its own weapon characteristics which define its accuracy and hit dispersion (these also depend on ammo type). This applies to all military equipment in general. Thus, aircraft can miss or fail to destroy any enemy targets due to their weapons and ammo type.

Ground Attack Aircraft and Bombers

You can call for ground attack aircraft and bombers by means of respective buttons above the main information panel:



Call for ground attack aircraft



Call for bombers

The bottom right corner of the button displays the amount of victory points required for a call. If there is no number shown, the call will not spend any victory points. After you click the call button, you have to specify an area of operation with a RMB click on the battlefield, the aircraft will forward into the area specified.



After that the button will display the time left till the aircraft leaves the area you specified.

Ground attack aircraft and bombers carry different weapons and automatically select targets based on their armament type.

Ground attack aircraft equipped with **machine guns** will fire at the following targets (sorted by priority):

1. AA guns;
2. artillery guns;
3. heavy MGs;
4. vehicles;
5. light tanks and armored cars (including open-top);
6. infantry formations located in the task area;
7. medium tanks;
8. other targets.

The **automatic guns loaded with HE and AP** projectiles will fire at

1. AA guns;
2. artillery;
3. medium tanks and self-propelled guns (armor-piercing shells will be used);
4. tight infantry formations of 5 or more men (fragmentation shells will be used);
5. light tanks (armor-piercing shells will be used);
6. armored and unarmored cars;
7. heavy machine guns;
8. other targets.

Many ground attack fighters and all bombers also carry bombs to attack the following targets (sorted by priority):

Light and standard bombs
1. antiaircraft guns and heavy artillery guns;
2. other artillery guns, including open-top self-propelled guns;
3. light tanks;
4. medium tanks;
5. tight infantry formations of 5 or more men;
6. other targets.

Heavy bombs
1. antiaircraft guns and heavy artillery guns;
2. tanks and all self-propelled guns;
3. other artillery guns;
4. infantry squads of 10 or more men;
5. other targets.

Light anti-tank bombs will be deployed against a heavy armor units first of all.

Fighters



Fighters will patrol the specified area for a certain time, attacking enemy aircraft. Fighters do not attack ground targets. After you click the call button, you have to specify an area of operation with a RMB click on a spot on the battlefield.

CALLING FOR ARTILLERY AND MORTAR SUPPORT

Artillery and mortar support is provided by regimental artillery and mortar batteries situated in the rear. You cannot control these guns directly, you can just specify a target area for them.

Duration and power of artillery and mortar attacks depend on the side you play for (and this, in turn, implies type and amount of artillery pieces and mortars in supporting batteries). If you have a chance to call for artillery or mortar support, you will see the following buttons above the main information panel.



Call for artillery



Call for rocket artillery

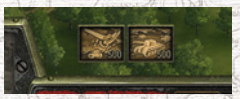


Call for mortars

After you click the call button, you have to specify a target area with the RMB click on the battlefield. Depending on the location of the supporting battery, shells may need some time to reach their destination. So if you need to attack a moving target, be sure to specify an area ahead of it.
Aside from high-explosive shells, batteries can also fire smoke shells or mines. You cannot manually select the projectile type, as it depends on battle conditions.
Note that each call for artillery support will cost a certain amount of victory points just like air support, therefore you will not be able to call for artillery at the battle start or if everything goes wrong.
You can indicate not only a point on the map, but a whole area. To do it you just need to select the desired area with a mouse holding down the RMB, when you issue an order.
Unlike with air support the numbers on the artillery buttons indicate the amount of projectiles, which still can be fired. As batteries fire in volleys, a certain amount of shells will be fired almost simultaneously (according to the amount of guns or mortars). Then the battery guns will reload and fire a new volley. If the target has been suppressed and there is no need to continue, you can click the corresponding call button again to stop the attack. You will be able to fire remaining shells later at other targets.
Due to shell trajectory limitations, it is hard for artillery to hit a target located right behind or on a far slope of a high hill. Mortars are less susceptible to this due to higher shell trajectories.

CALLING FOR REINFORCEMENTS

During a battle you will usually have a chance to call for reinforcements (as a rule, it costs a certain amount of victory points) from the troops, which you have selected before the battle at the screen Reinforcements or which assigned to you automatically, if you didn't visit the Formation screen in process of combat preparations.
Reinforcements can arrive to the battlefield and enter the action either under your command or following the orders of their commanders, but usually you will have a chance to call for reinforcements at the moment you need fresh forces. Alike air support and artillery buttons the buttons over the main information panel serve this goal. If a call for reinforcements will cost you victory points, the required amount will be displayed at the button.



The composition of reinforcements will differ; the button image will indicate their type:

Button image	Reinforcements composition
	Tanks and other combat vehicles
	Infantry
	Artillery
	Mixed (e.g. tanks and infantry, infantry on APCs, etc.)

CHARACTERISTICS AND SKILLS

A good leader always cares about the soldiers under his command, and pays attention to their characteristics, battle stats and skills. All soldiers you command have certain characteristics and skills that affect their actions in battle, whether they fight alone or in groups (crews, detachments). As you have no direct control over air support aircraft and artillery and mortar batteries, you have no access to their characteristics and cannot affect the development of their skills.

CHARACTERISTICS AND SKILLS DESCRIPTIONS

The combat skills of a soldier can change with the experience gained only at the end of a mission, given that the soldier survived and has accumulated and undistributed experience points. You can invest these points into skills on the Staff Skills screen (see below).

Driving directly affects the ability of a soldier to correctly control vehicles in combat. This skill affects:

- abilities to driving a vehicle (required skill level > 0);
- maneuvering in combat;
- use of higher gears on paved roads and slopes;
- stable and smooth driving;
- smooth driving allowing fire on the move (> 80);
- ability to use captured vehicles (> 50).

Gunner directly affects the ability of a soldier to accurately aim heavy weapons (tank guns, artillery, heavy and mounted machine guns). This

skill affects:
- firing accuracy (> 1);
- aiming speed;
- reaction to changes in combat situation;
- correct identification of the most dangerous enemy;
- firing accuracy on the move;
- ability to use captured equipment (> 50).

Scouting directly affects the ability of a soldier beyond military vehicles: to observe, remain unnoticed, and fire sniper weapons. This skill affects:
- range at which soldier can detect and identify enemy targets;
- ability to remain unnoticed with enemy nearby using terrain features and natural obstacles skillfully;
- handling sniper weapons and firing aimed shots;
- probability to inflict critical hits in a hand to hand combat;
- for commanders, detecting range of open-top targets like SPGs, (e.g. Wespe), field guns and howitzers.

Accuracy directly affects the ability of a soldier to hit his target when firing small arms (including light machine guns, but heavy MGs). Use of a **sniper rifle** adds 15 points to soldier's Accuracy.

Non-combat characteristics that directly affect the combat actions of a soldier include health, morale and leadership.

Health is the primary characteristic defining the amount of direct hits or secondary damage factors any soldier can withstand.
The maximal (initial) **Health** value is the same for all soldiers and does not depend on which side they fight for, their combat specializations and combat unit. In battle, health can only diminish due to damage. When soldier Health value reaches zero, he dies.

Morale is the key characteristic defining the reaction of solders to issued orders and changes in the combat situation, as well as their ability to fight. It grows influenced by positive factors (visible friendly units, especially armored ones located at a close range, proximity to officers, view of killed and destroyed enemies and units) and decreases with negative ones (visible enemy units, especially armored ones at a close range, view of killed or destroyed friendly units, lack of ammo, etc.). When soldier morale drops very low, he starts panicking. Since panicking friendly soldiers seriously affect morale of their comrades nearby, panic in critical situations may spread like increasing wave. Seeing panicking officer is especially devastating for soldiers' morale.





Icons of panicking soldiers are underlined with red color. Commander icons grew red.

The initial (maximum) value for **Morale** is the same for all soldiers independent on the side they fight for, their specializations, army formation, etc. Unlike Health, the Morale value of a soldier can regenerate at a certain speed depending on the combat experience, rank, awards, as well as awards of the soldiers around him, including his troop commander.

Officers boost Morale of nearby troops at a certain range around them; the range depends on officer rank. The visual presentation of commander's influence can be disabled or enabled in Game options (it is shown for a currently selected officer).



Experience directly depends on the amount of battles a soldier has participated in. In terms of numbers, novices have 25 experience points, regular soldiers have 50 points, veterans have 75 points and elite soldiers have 100 experience points.

IMPACT OF WOUNDS ON SOLDIER CHARACTERISTICS AND SKILLS

- A critical hit to any body part of a soldier results in death.
- A headshot has a 25% chance to contuse and temporarily (up to 30 seconds) deafen a soldier, preventing him from hearing enemy movements. Additionally the skills Accuracy, Driving and Gunner skills drop by 25% after the first headshot and by 50% after the second (given the soldier is still alive).
- Accuracy, Driving and Gunner skills drop by 15% after the first torso hit, by 25% after the second and by 50% after the third.
- Reloading time increases by 50% after a hit in the hands. Also, Accuracy drops by 15% after the first hit, by 25% after the second and by 50% after the third.

- After a hit in the legs a soldier can (move but only with crawling), and still can fight.
- Wounds lower soldier morale (depending on their severity).

AFTER-BATTLE STATISTICS

After the battle you will see a screen with the after-battle statistics. It features the losses of your and enemy troops for each army type, additionally the losses of your and enemy allies are displayed. The destroyed enemies and points gained for execution of commander tasks are added to victory points, the value of losses, price of reinforcements, air strikes and artillery supports are subtracted.



Your rating depends on the final sum of victory points (field Results):

Amount of points	Rating
> 5000	OVERWHELMING VICTORY
From 3000 to 5000	Unconditional victory
From 0 to 3000	VICTORY
Victory with negative points	Pyrrhic victory
From 0 to -3000	DEFEAT
From -3000 to -5000	CRUSHING DEFEAT
< -5000	TOTAL DEFEAT

INCREASING COMBAT SKILLS

After a battle all soldiers automatically receive experience points, their amount depends on their actions in the past battle.

This is a good time to check on your surviving soldiers, review their achievements and allocate gained experience. If you have won a battle, you can promote them in rank, award, develop their skills and namely **Accuracy, Scouting, Driving** and **Gunner**.



The **Staff Skills** screen reflects a typical situation after a battle and lets you see all your army, including infantry and crews that have survived.

If a tank has been destroyed or abandoned, its crew member will be listed in the Crew section. Before the next battle you can assign soldiers to other tanks or vehicles, according to their skills.

If you click a soldier with the left mouse button, you will see his description on the left (name, rank, experience, awards, amount of destroyed and captured equipment during the past battle) and will be able to develop his skills, award or promote.

Allocating Gained Combat Experience

The basic indicator of soldier efficiency is the amount of experience points he has gained in combat. These points are received for actions that help to accomplish the mission task as well as other efficient actions at the battlefield such as destroying enemy units and warfare, capturing trophies, etc.

The available combat experience can be allocated with the help of "+" and "-" buttons on the left of the screen. Awards and higher ranks increase the morale, the development of skills affects the soldier characteristics as follows.

Action Affects

Action	Affects
Increasing **Accuracy** skill	Use of small arms
Increasing **Scouting** skill	Use of sniper weapons, camouflage, observation
Increasing **Driving** skill	Driving all military vehicles
Increasing **Gunner** skill	Firing heavy weapons: tank guns, artillery guns, self-propelled guns, heavy machine guns

Automatic Allocation of Gained Combat Experience

This feature is provided to simplify the allocation of experience points. There are four buttons under the list of units: Auto-Assign and Clear, Save and Load. You can automatically develop the skills of all soldiers with the help of these buttons.

Click Auto-Assign to automatically allocate the skills only of a selected soldier use the same buttons on the left of the screen. Buttons Previous and Next will help you to cycle through all soldiers.

The Clear button cancels the automatic experience allocation for all soldiers or for the selected soldiers.

The automatic experience allocation follows certain rules, which also make sense for manual allocation.

1. If a soldier has an especially high skill that is higher than of any other soldier, this skill will be raised even higher. Having soldiers with maximum skills is useful because it allows you to assemble special-purpose squads or crews, with every member having the relevant skills maxed out.
2. If a soldier has no skills, they will be raised in the following order: Gunner, Driving and Scouting.

Repairing and Rearming Vehicles

During a battle, vehicles can be damaged or run out of ammo. It is impossible to repair a vehicle or replenish its ammo on the battlefield. Vehicles can only be repaired after a battle (if it has not been destroyed completely), which happens automatically in between battles.

During a battle your soldiers may capture abandoned enemy equipment. You will be able to use it in future battles, but you won't be able to repair it or replenish its ammo. It makes sense to use

trophies until there is ammo for them. Then they become useless and you might as well abandon them.
To restore a vehicle, you need to have a direct control over it at the moment the mission ends, i.e. there should be at least one crew member inside.
If your tank has been damaged, but not destroyed during a battle and its crew has escaped (or has been killed) and you would like to have this tank available in future battles, make sure that a soldier gets inside to capture the vehicle before the mission ends. This vehicle will then be completely repaired after the battle, and its ammo and crew replenished.

Reinforcing and Rearming Infantry
Each and every soldier can be reequipped with any small arms he can find on the battlefield, i.e. if your tank is hit and the crew leaves the vehicle, the tankmen can be armed with additional weapons (they are generally only lightly armed). Each killed soldier leaves all his personal gear nearby: light machine guns, grenade launchers, carbines, submachine guns, grenades, and pistols.
It is impossible to change the equipment of soldiers before a mission.
High command provides you with fully staffed troops with preassigned roles (**Machine gunner, Grenade launcher operator, Anti-tank rifleman, Sniper**, etc.). The only thing you can do is to assign a more experienced soldier to a given position so that he can cope with his role and equipment better. It is impossible to compose a squad of 10 snipers, as there can only be 1 sniper in a squad according to mission orders.
The same applies to other military roles. Infantry squads cannot be reinforced during a battle; this can only be done between missions (this happens automatically). You can assign any soldier under your command to an infantry squad.
Any soldier, an infantryman, a tanker, or a gunner, can be entrusted with any role: operating a tank, firing a gun or driving a truck. This soldier will cope with his role either good or bad, depending on his personal skills. But if his Gunner skill is zero and he occupies the gunner position in a vehicle, that vehicle won't fire at all. By the same principle, vehicles won't move at all if the driver has a zero Driving skill. Note that driving captured enemy vehicles requires at least 50 points in Driving.

VISIBILITY, AUDIBILITY AND FIRING

VISIBILITY AND AUDIBILITY
The game models realistic visibility of different objects based on landscape features, obstacles and vegetation. The visibility range

of an infantry soldier depends on his experience and **Scouting** skill – the higher the skill the further he can see in his field of view.
Officers carry binoculars, which they use periodically. The viewing angle is substantially narrowed when using binoculars, but they can see more with it.
Soldiers inside tanks use optics that has advantages and drawbacks. On the one hand, the tank gunner uses a magnifying sight which lets him see much further. On the other hand, he cannot see anything outside the field of view of his sight. The field of view of the tank commander is usually wider, allowing him to point out spotted targets to the gunner; he also looks in different directions, choosing them randomly to spot enemies. But the magnification of the commander optics is usually lower than the gunner's. A driver can only look in front of him through a narrow slot or simple optics, which reduces his visibility range and field of view comparing to an infantryman in the field.
The fields of view and magnification of all optics used by all vehicle crews in the game are modeled basing on a historically accurate research. Each crew member has several viewing instruments and uses them one at a time (for example, driver can look forward and then look through the side slit, if any).
The visibility of open-top vehicle crew members located in open turrets equals that of an infantryman.
The profile of an object mostly depends on its angular size. For example, infantry is far less visible than tanks. Other factors affecting object profiles include the following:

- A crouching soldier is less visible than a walking man. A prone soldier is even less visible.
- A moving unit is more visible. This applies to both vehicles and soldiers.
- A firing unit is far more visible than a non-firing.
- The visibility of a soldier is affected by his Scouting skill. The higher it is the less visible the soldier is (and the better he notices enemies at the same time).
- In trenches and buildings infantry is less visible than in the open.

When you select a unit, you can see what it sees. Detected enemies are marked by bright symbols. Enemies detected by other friendly units are marked by darkened symbols. Sometimes none of your soldiers can see an enemy unit, but can hear it.
For example infantry will usually hear a tank with operating engine from a few hundred meters away, even if this tank is behind numerous obstacles. Such enemy units are marked by the corresponding symbols (tank, car, soldier, etc.) in round brackets. In addition, the same symbols represent units which just disappeared from sight.



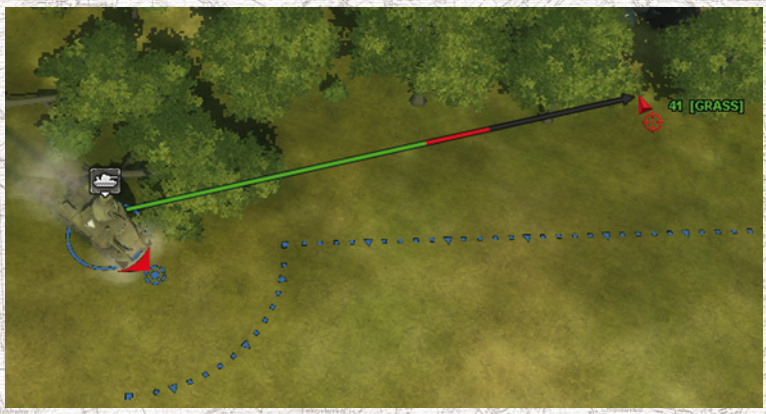
You can hardly determine the exact location of these enemy units, therefore the true location of an enemy may differ from the location shown by these symbols.

Different as infantrymen, the vehicle crews don't hear anything due to the noise produced by the engines of their vehicles and other factors.

LINE OF SIGHT

A unit can detect (see) an enemy only if there is a direct line of sight between them, e.g. no obstacles are in the way such as terrain features, buildings, other units and so forth. Tree trunks also block the view.

The line of sight is visible on the screen whenever you order a unit to **Attack, Area Fire** and **Assault**. It is drawn from the selected unit to the mouse cursor (provided that it is enabled in the game settings). This is a very convenient tool for quickly assessing the area that a unit is able to see. This line changes from red to black if the spot is not visible to the selected unit. The line is green near the unit; its sight penetrates through the vegetation. In the same time this vegetation will hide this unit for a distant observer, it means that placing a gun or a tank behind this bush, you can make an ambush (provided that the cover is big enough to shield it and the unit will not disguise itself with an early fire).



In combat, you have to often carefully keep an eye on the precise location of your units on the battlefield. Often units cannot see each other due to landscape features blocking their lines of sight.

AIMING AND FIRING

The weapon itself determines its accuracy first of all. Some weapons

are less accurate by design, especially at long distances – pistols and submachine guns, for example. Others may be effective even at long distances due to good optics or other characteristics, such as large-caliber guns and sniper rifles, for example. For some weapons, you can aim as much as you want and still will not be able to hit your target accurately.

Additional Aiming Factors

Firing accuracy is affected by **Gunner** (for all arms) and **Accuracy** (for small arms) skills. If the target is located behind obstacles, it is less visible (as its visible angular size is smaller). Aiming at a barely visible unit located behind a row of trees is much harder than firing at the same unit in plain view in the open. At the same time, the firing unit can be located behind trees and still have a clear shot. If the target is moving, or if the weather is particularly bad, accurate aiming can be even more difficult.

Gunners adjust their aim for every shot based on the result of their previous fire. They can also see the results of their firing. This enables gunners to find the range, meaning that a unit firing at an immobile target is going to be more and more accurate with every shot.

Below are the key factors to be considered when estimating the chances of hitting a target.

Factor Affects	**Factor Affects**
Gun characteristics	Initial shell velocity
	Shell deviation from point of aim
Shell characteristics	Shell velocity
	Shell effective range
	Shell deviation from point of aim
Target range	Shell deviation from point of aim
Target is moving	Impossible to find the range
Shooter is moving	Impossible to find the range
Range has been found	Increases hit probability with every shot
Point of aim	Defines the center of the shot dispersion cone
Gunner skill	Defines the radius of the shot dispersion cone

The aiming procedure looks basically as follows:

1. Gunner checks the situation on the battlefield and selects the most dangerous target he sees (either by himself or with the help of the information received from friendly units).
2. The point of aim is selected (based on orders from the player and the commander):
   - Center of the visible outline of the target;
   - Center of the visible outline of the selected part of the target (turret or upper part; hull or middle part; chassis or bottom).
3. The gun is aimed at the target and the point of aim.

4. Depending on the Gunner skill of the gunner, the gun is aimed at the target within a certain radius from the point of aim selected by the commander.

The aiming accuracy error is taken into account.

5. The gun is fired.
6. The shell starts its flight:
   - The flight path is adjusted based on dispersion of the given gun and shell.
   - If there are no obstacles, the shell impacts at the destination.

If the shell meets an obstacle (another target, vegetation, building, etc.), it interacts with its surface (see **Shell Ballistics** and **Damage**).

7. If the target has not been destroyed and both gunner and target are immobile, he adjusts his aim based on the observed results of the first shot. While the range is being found, the aiming error decreases with every shot.
8. If the target is destroyed, the gunner starts a new firing cycle.

Firing Accuracy

Accurate aiming alone doesn't guarantee a hit. A projectile can deviate from its trajectory and miss the target due to aerodynamic effects. Different shell types have different dispersion patterns. In general, armor-piercing (AP) shells have the lowest dispersion, while high-explosive (HEAT) shells have highest dispersion. The reasons are different muzzle velocities and shell design.

Line of Fire

To actually fire at an enemy, a unit needs a line of fire. This imaginary line (in fact, an arc because of gravity) connects the firing unit with its target. It has to be free of obstacles – terrain features, buildings and other units (including friendly).

If there is no line of fire, a unit won't hit the target. A unit may see a target but still not be able to hit it. For example, a machine gunner, who has spotted a target while standing, will need to lie prone to fire, and that might hide the target from his view. In other situations, a unit may not be able to elevate the gun to aim at a target located on higher ground; or to depress it far enough to aim at low ground.

There is a simple way to determine if a unit can or cannot fire at a target from its current position. If the mouse cursor is red, the selected unit can fire the shell currently loaded into its main weapon at this target. If the mouse cursor is grey and crossed-out, the unit cannot fire at the target. This is an especially useful tool for area fire as well.



If the cursor looks like this the target can be fired at from the current location.



If the cursor looks like this the target cannot be fired at from the current location.

Sometimes it is possible to shoot even when the target is not in line of sight. E.g. you can shoot through walls, tree trunks, etc.

Firing arcs

All shells and bullets in the game are affected by gravity force. For this reason lines of fire are parabolic. If a gun allows to fire at high angles, it can fire in high arcs.

E.g. if you fire a shell at a low initial velocity, you can hit a target hidden behind a hill that is impossible to hit with usual grazing fire. Howitzers and mortars fire in high arcs.

Certain guns, like the German leIG 18, have wide barrel angle ranges. In a nearly vertical position they turn into almost a mortar. These guns also fire high-explosive shells at a low initial velocity. All this allows hitting targets located behind obstacles as close as a few hundred meters away.

Note that a gunner calculates the shell trajectory for the currently loaded shell and you cannot reload the gun without firing it first. So if a howitzer is not already loaded with a high-explosive shell, it won't be able to fire a high arc and will have to first fire a grazing shot at a target in line of sight (e.g. by means of Area Fire), before you can manually change the shell type to high-explosive (and you should in fact do that BEFORE firing the old ammo, see **Vehicle Information Panel**).

SHELL BALLISTICS AND DAMAGE

UNIT STRUCTURE

The game accurately models the historical designs of World War II military warfare. In particular, this means that units are modeled according to historically accurate blueprints. Inflicted damage calculations take the following features into account: ballistics, hit angle, armor thickness at the hit location, shell drag on armor, cumulative effects, detonation, shock waves, secondary effects, ricochets, counter-HEAT screens, ammo rack detonation, ignition. These factors are described below in more detail.

Each unit has external (visible) and internal (invisible) parts. For example, a tank turret or a car wheel are both external parts. The engine is an internal part. The same applies to crew members – a gunner of an anti-tank gun is an external "part", while a tank driver is an internal "part". Each unit in the game has its own unique system layout which comes into play when damage is calculated after a hit. Some parts, including internal systems, may be armored. Certain vehicles have armored compartments.

Each system can be damaged separately of others. For example,

a tank with a damaged turret can keep firing its machinegun; an armored vehicle with damaged wheels cannot move but can keep firing its weapons. Damaged parts are marked red on the information panel.

Damageable Parts:

1. chassis:
   - transmission,
   - engine,
   - wheel or tracks;
2. turret;
3. guns;
4. machine guns;
5. crew members.

To immobilize an 8-wheel vehicle moving you have to damage at least 2 wheels on one side.

The location of ammo racks and fuel tanks is also considered. Damaging them may lead to fire, catastrophic detonation and destruction of a vehicle.

Some tanks have better turret armor, some have better hull armor. Correct selection of aim points (see Firing Mode) may make the destruction of enemy vehicles substantially easier.

For example, a Panther tank will be much easier to destroy if you attack it from the sides. Therefore it is crucial to maneuver all the time to hide the weak spots of your tank, or to achieve better hit angles on enemy tanks.

Here are some examples of hits and the inflicted damage:

- a shell hits a wheel or a track: the chassis is disabled on one side;
- a shell hits and penetrates the hull and hits the engine: the engine is disabled;
- a shell hits and penetrates the hull and kills the crew;
- a shell hits the turret and fails to penetrate, but the turret is damaged and the gun becomes inoperable;
- a shell hits the turret and fails to penetrate, but the crew is killed by secondary effects (fragments on the inner side of the armor – called armor spalling);
- a shell hits the engine, causing fire, which in turn ignites the ammo rack and the tank detonates.

If the tracks of a tank are destroyed, the tank does not stop at once but rather makes a turn because of its inertia, and only then stops. Some external parts can be chipped off by a hit.

Some units, especially tanks, are protected by additional screens. Although thin they can effectively protect against hollow charge shells occasionally.

BALLISTICS

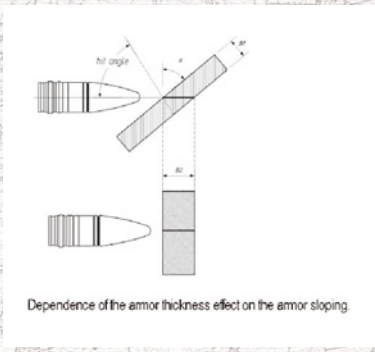
Each type of shell is fired with its own unique speed (called muzzle velocity). Many factors (mainly aerodynamics) influence a shell in flight, causing it to lose speed and, conse-quently, kinetic energy. As a result, the armor-piercing power of kinetic shells (but not hollow charge shells) decreases with distance.

Some shell types (usually solid shot) have particularly high muzzle velocity and/or high mass and can simply penetrate weakly armored objects by sheer force, sometimes even penetrating multiple targets in line. Normally, however, a shell loses the bulk of its kinetic energy after a penetrating hit.

High-explosive fragmentation shells can also penetrate thin armor, but this depends mostly on the mass of the explosive filling inside the shell. High-caliber (HE) shells are deadly to open-top vehicles (as they maim or kill crew). If a shell penetrates, various internal parts – crew, gun, engine, etc. – can be seriously damaged or destroyed.

The game models various types of damage: exploding shell shrapnel, blast damage, kinetic damage. The damage system also tracks direct hits on internal parts of the target (crew members, equipment, systems) caused by penetrating shots. Usually such hits result in the immediate destruction of the system. The amount of damage depends on hit area, vehicle internal structure and impact force. Some parts may suffer no damage at all. After successful hits, depending on the damaged location (e.g. engine or fuel tanks), vehicles can catch fire. A direct hit to the high-caliber ammo rack leads to a catastrophic detonation roughly in 30% of cases. Small caliber ammo won't cause a catastrophic detonation.

ARMOR PENETRATION



Dependence of the armor thickness effect on the armor sloping

When a shell hits a vehicle, the game's damage system calculates the armor thickness at the impact point and compares it to armor penetration capability of the shell. If the shell penetration capability is not sufficient to penetrate the armor, no penetration damage is done. However, if the shell contains explosive filling, its detonation can still possibly damage the vehicle and any objects (including soldiers) nearby.

The damage system takes into account a number of factors when defining the penetrated armor thickness. The first factor is target range. Except for hollow charge shells, the longer the distance the lower the penetration capability.
The second factor is the shell impact angle. It is also very important. This angle depends on two factors: the relative position between weapon and target (the best results are obtained at angles of around 90 degrees).
Some tanks and self-propelled guns have considerably sloped armored plates. So if a shell hits the armor at an angle, the path, which the shell has to follow through the armor in order to penetrate, is extended, and the effective armor thickness increased. When a shell hits at extreme angles, it can also ricochet without inflicting any damage.
Different shell types ricochet at different angles, AP and APHE being most prone to ricochets.
In order to cause a ricochet, however, the armor must be thick enough – a 105mm shell will not ricochet off a measly 20mm of armor for example.
Certain shell types such as APC, APBC, APHEBC, or APCBC feature ballistic caps, which make shells turn upon impact perpendicularly to the armor, thus negating the armor slope effect to some extent. These shell types are better against angled armor plates than shells without caps. Some shells, especially blunt-nosed and sub-caliber shells can break apart at certain hit angles without inflicting any damage to the target. Hollow charge shells that do not rely solely on kinetic energy to penetrate targets are less prone to such effects.

DETAILED DAMAGE INFO MODES

If you would like to see the impact places of rounds and projectiles on the vehicles, you can enable the displaying of impact vectors with the help of F4 key (by default). The amount of data displayed (for example you can show only the vehicle penetrations, etc) will be reduced with each next button hit. If you zoom in the camera onto the damaged unit with this mode enabled, you will see the impact vectors and the information about the projectiles. Additionally the game log at the screen bottom will start showing the messages about the impacts, such as: 'Turret front hit. Minor damage'.
The color of vectors indicates the impact severity: white – ricochets, blue – projectiles destroyed at collision, green – hits, which didn't result in full armor penetration, and red – armor penetrations.
At the impact point of a projectile and armor, the impact angle in degrees is shown as well as the effective (taking into account the angle of hit) armor strength. The projectile caliber in millimeters, its type (e.g. APBC) and designation are also shown.
The maximal amount of vectors displayed for a unit can be adjusted in the game settings (tab **Game**).



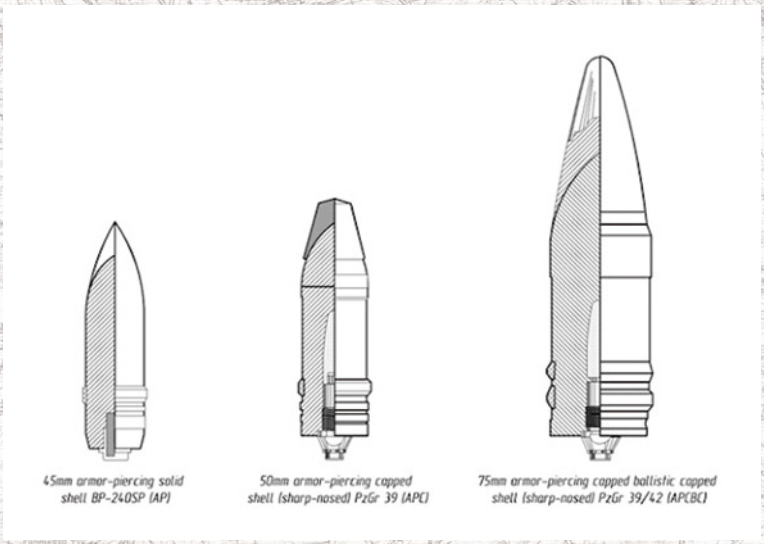
German Panther tank took quite a beating from Soviet ZiS-3 multi-purpose 76-mm guns while advancing, but only few rounds penetrated it's armor (red vectors).Tank seems intact, but an APBC round hit turret right side, went through the turret, most likely killing the commander and loader and retained enough penetration ability to emerge on the other turret side.

SHELL TYPES

The game models most of the shell types of the Second World War.

AP (Armor-Piercing)

A solid (no explosives inside) armor-piercing shell with a shaped nose, sometimes with a ballistic cap. After armor has been penetrated, damage is inflicted in the following way: the fuse detonates the charge which shatters the case and scatters hot, sharp fragments of projectile case and armor (shrapnel) at high velocity. Shells of this type were easy to produce, reliable and had a rather high penetration capability. They were especially effective against homogeneous armor. But they also had certain drawbacks in comparison with APHE (which contains explosives): low behind armor effect, high chance of ricochets against sloped armor and low efficiency against case-hardened and cemented armor. During World War II, such shells were often fired from small-caliber autocannons. AP shells were common in the British Army, especially during the early stages of the war.



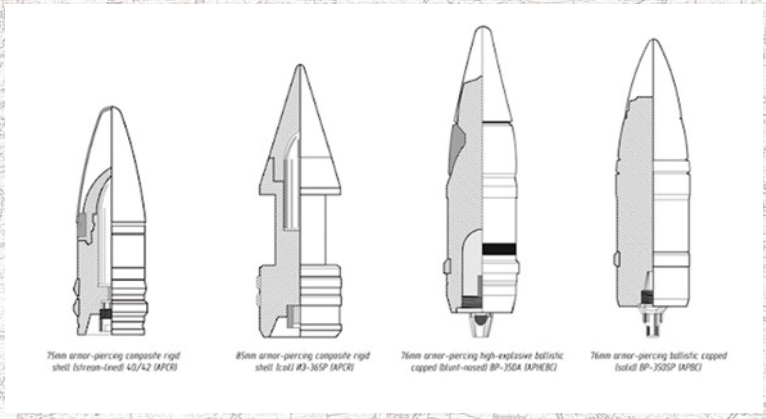
APHE (Armor-Piercing, High-Explosive)
A sharp-nosed armor-piercing projectile. Very similar to an AP shell, but equipped with a tail chamber filled with explosives in the form of TNT or a fire-bar element and tail fuse. After armor has been penetrated, the shell explodes, damaging crew and vehicle systems. In general, this projectile had most of the advantages and disadvantages of regular AP shells. The difference was in significantly improved interior (behind-armor) effect and weaker penetration capability (owing to smaller mass and shell hardness). Moreover, tail fuses were poorly developed at the time, which sometimes caused shells to explode too early, sometimes before actually hitting a target.
Sometimes a fuse simply failed to explode after penetration. When such a shell hit the ground it usually didn't explode at all. APHE shells were very often used in heavy artillery, as their relatively heavy weight could compensate for the disadvantages.
Light artillery pieces were also equipped with APHE shells due to their low cost and simple production. Soviet, German, Polish and French artillery systems used this type of projectile.

APBC (Armor-Piercing, Ballistic Cap)
A solid (no explosives inside) flat armor-piercing shell with a ballistic cap. This type of shell was specially designed to penetrate strong case-hardened and cemented armor. Such shells destroyed highly fragile case-hardened armor layers with capped noses. Other advantages included good efficiency against moderately sloped armor.

These shells were easy to produce. The drawbacks of APBCs were their lower effect against homogeneous armor and excessive "shell drag" (usually accompanied by shell destruction) when hitting heavily sloped armor. Moreover, these shells didn't have any explosives lowering their penetration efficiency. Solid blunt-nosed AP projectiles were used only by the USSR starting from the middle of Word War II.

APHEBC (Armor-Piercing, High-Explosive, Ballistic Cap)
An armor-piercing shell with a blunt nose and explosive filling. It is similar to APBC; the main difference is a special tail chamber with explosives and a tail fuse.
Advantages and disadvantages of such shells were similar to those of APBC. One improvement was that such shells exploded inside the target after armor has been penetrated. In essence, these shells were blunt-nosed APHE shells. APHEBCs were used only by the USSR as basic armor-piercing shells during the whole wartime period. At the beginning of the war, Germans used relatively thin cemented armor and thus APHEBC efficiency was satisfactory. In 1943, Germans implemented thick homogeneous armor thus reducing APHEBC efficiency. Later, at the end of the war Russians developed and adopted new sharp-nosed shells.

APC (Armor-Piercing Capped)
A sharp-nosed shell with an anti-armor cap and usually with explosive filling. Basically, this was an APHE shell equipped with a flat anti-armor cap. Thus it combined the best features of sharp-nosed and flat shells: the flat cap prevented it from bouncing off sloped armor and slightly "normalized" the shell, effectively destroying any case-hardened layer of armor. The cap also protected the shell nose. APC shells were effective against homogeneous, casehardened and sloped armor. Their drawback was that flat caps hampered



the aerodynamics, thus decreasing accuracy, velocity and penetration capability at long range, especially for large-caliber shells. Therefore, use of these shells was restricted to small-caliber guns. APCs were used in German 50mm anti-tank and tank guns.

APCBC (Armor-Piercing Capped Ballistic Capped)
Sharp-nosed armor-piercing shell with a ballistic cap. It usually had an explosive filling and a tail fuse. However, the British Army sometimes used solid projectiles of this type. Essentially, these were APC shells equipped with ballistic caps. The latter drastically improved shell aerodynamics. On hitting a target, the cap wrinkled easily, thus not reducing the shell's armor-piercing capability. Due to their high efficiency against plate armor of various types and slope angles, APCBCs were the top performers among the AP shells during World War II. These shells had been often used by the U.S., Germany and Great Britain since 1942 - 43. They nearly replaced all other types of armor-piercing shells. On the other side, they were complex to manufacture and cost dearly. For this reason, the Soviet Union failed to launch a mass production on its own during the war.

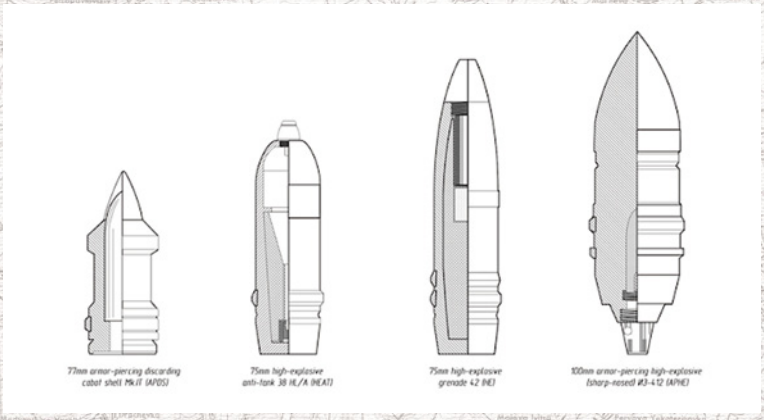
APCR (Armor-Piercing Composite Rigid)
The APCR (sub-caliber) projectile had a complex structure. It included two parts: an armor-piercing core of high-density material such as tungsten carbide, and a "sabot" made of lighter material (e.g. aluminum alloy). When such a shell hit a target, the sabot was shaved off and the harder penetrating core pierced the armor. Such shells had no explosives, damaging targets by core shrapnel and hot armor fragments.
APCR projectiles were considerably lighter than standard AP shells. This provided for rather high muzzle velocities. Use of composite shells improved armor penetrating abilities of existing guns. With APCRs, even older guns could destroy advanced military hardware. At the same time, composite shells had some drawbacks. Their shape resembled a coil (there were some streamlined shells, but they were rather rare) that decreased aerodynamics. These light shells were losing their speed very quickly. This affected armor-piercing capability at long range, decreasing it even below that of standard armor-piercing shells.
Sub-caliber shells had poor efficiency against sloped armor, as the hard but still fragile penetrating core was easily broken by bending stresses. The interior effect of these shells was lower than that of regular AP caliber shells. Sub-caliber composite shells were ineffective against armored targets with skirt armor. APCRs were expensive and complex to manufacture. Besides, the lack of tungsten materials hindered their production. Over time popularity of APCR shells diminished. At the end of the war they were only used against heavily armored targets at short range. German troops were the first

to use small numbers of composite shells during the French Campaign in 1940. When they faced heavily armored Soviet tanks in 1941, they widely adopted sub-caliber shells, which considerably improved armor-piercing capability of their tanks and artillery. However, the shortage of tungsten forced Germans to curtail APCR production in 1944. Most shells produced during the war had a small caliber (37-50mm). Trying to duck the tungsten issue, Germans produced Pzgr. 40 (C) shells with steel penetrating rods and Pzgr.40 (W) shell sabots, but without cores.
The USSR launched the mass production of APCR shells in early 1943. Russian 45mm shells were based on captured German ammunition. The lack of tungsten also limited APCR production, so troops received APCR shells only in case of tank attack threat. Higher command demanded a report for each APCR shell used in combat. Composite shells were also used by Allied troops during the second half of World War II.

APDS (Armor-Piercing Discarding Sabot)
A composite shell with a discarding sabot. Once outside the barrel, the sabot was discarded by aerodynamic effect. The remaining shell core had very good aerodynamic characteristics and was able to retain high armor-piercing capabilities at long range. APDS performance resembled that of AP shells, but at a much higher velocity.
APDS shells had the best armor-piercing capabilities, but were very expensive and complex to produce. The British Army adopted APDS shells in late 1944. Upgraded shells of this type are still in the inventory of various military forces.

HEAT (High-Explosive Anti-Tank)
A hollow charge projectile that functions in a different way compared to other shells (standard armor-piercing and composite shells). A hollow charge projectile consists of a thin-walled steel shell filled with powerful hexogen explosive or a TNT-hexogen mix. It has a cup-shaped hole on the front with a metal coating (usually copper).
It is also equipped with a sensitive nose fuse. When such a shell hits armor, its charge explodes. Shell metal melts and jets forward at a very high speed. The interior effect is ensured by this cumulative jet and metal fragments. The penetration capability of this shell does not depend on the speed of the projectile and remains equal at all ranges. HEAT shells are relatively simple in production, as no special metals are required. Hollow charge projectiles can be used against infantry and against artillery similar to HE fragmentation shells.
During the war, HEAT shells had many disadvantages. The production technology was not fully tried and tested, so penetration rates were relatively low (at roughly the level of standard penetration rates for this shell caliber or a little higher) and unstable.
Shell rotation (wobble) at high muzzle velocities prevented the cumulative jet from bursting effectively. As a result, HEAT

shells had low muzzle velocity and were inaccurate at anything but short ranges due to the aerodynamically non-optimal nose cones. Additionally, their detonation fuses were very complex to manufacture, as they had to be highly sensitive (for shells to explode quickly enough) and yet reliable (to prevent shells from exploding inside the guns). The Soviet Union managed to develop an effective detonating fuse of this kind only in the late 1944. Mass production of HEAT shells required large quantities of hexogen. Hollow charge projectiles were used mostly by the Germans. They used HEAT shells with 75mm guns in the summer and autumn of 1941. Soviet HEAT shells were based on captured German samples. Hollow charge projectiles were included in the inventory of 75mm guns and howitzers. Allies used HEAT shells mainly with heavy howitzers.
Use of HEAT shells during World War II was rather limited (compared to nowadays, when hollow charge projectiles form the basis of most tank ammo racks). They were essentially used to help out guns with low muzzle velocity and low armor-piercing abilities (e.g. regimental guns and howitzers) against tanks. At the same time, all opponents used various types of hollow charge projectiles, such as grenade launchers, aerial bombs and hand grenades.



HE (High-Explosive)
An HE fragmentation shell has a hard thin-walled steel or semi-steel case filled with explosives (usually TNT or ammonium nitrate) and a nose fuse. Compared to armor-piercing shells, HE shells were not equipped with tracers. When such a shell hits a target, it explodes, damaging the target by shrapnel and shock wave. There are two types of effect: immediate fragmentation and delayed mining (which lets the projectile dig into the ground). HE shells were mainly used against infantry under cover and in the open as well as artillery, fortifications (trenches, pillboxes) and unarmored or weakly armored

vehicles. Heavily armored tanks and self-propelled guns were well protected against high-explosive shells. But heavy HE shells could still break armor plates, block turrets, disable exterior systems and also inflict concussion wounds on the crew.

Smoke

Smoke shells are similar to high-explosive shells in terms of design, but are filled with a smoke-forming agent instead of explosives (most often its red phosphorus).

A smoke shell has a nose fuse. Such shells are meant to create smoke screens, help adjust targets or serve as signals. On explosion, a dense cloud of white smoke is created, its size depending on the shell caliber. Cloud durability depends on various factors, but usually it lasts for up to a minute. Because of this, smoke screens have to be maintained for longer periods of time by constant shelling. Smoke shells are very valuable during offensives, as well-placed smoke screens greatly hamper or even prevent observation and aimed fire by enemy, thus allowing your troops to pass through dangerous areas with little to no casualties.

As a last resort (when there are no other shells), smoke shells can be used to fire at unarmored or lightly armored vehicles.

SMART-PAUSE AND ITS CUSTOMIZATION

You can enable or disable the smart-pause in the game settings (Game tab). If this mode is enabled, the critical events such as (death of your soldier or vehicle destruction) will automatically pause the game and deliver the camera to the place of the event.

There is a file messages.xml in the folder Data\Ai. You can edit it, if you would like to change the standard behavior of the smart pause. You can set up the reaction to the following events:

Command_Incomplete	Order can not be executed and is being cancelled
Soldier_Death	Death of a soldier from the unit you are commanding
Soldier_Under_Attack	A soldier from the unit you are commanding is under attack
Soldier_No_Ammo	Soldier has run out of ammo
Soldier_No_Weapon	Soldier has no arms
Soldier_No_Point_In_LOF	Soldier can not target
Soldier_In_Panic	Soldier is in panic
Vehicle_Death	Tank or a car is fully damaged
Vehicle_No_Crew	No crew in a car or a tank
Artillery_Death	Gun or mounted machinegun is destroyed

Artillery_No_Ammo	Gun or mounted machinegun have run out of ammo
Artillery_No_Point_In_LOF	Gun or mounted machinegun can not target
Tankman_Under_Attack	Tank or car are under attack
Tankman_No_Ammo	Tank or another military vehicle have run out of ammo
Tankman_No_Weapon	All weapons of tank or another military vehicle are damaged and firing is impossible
Tankman_Damage_Engine	Tank or another military vehicle can not move due to chassis damage (engine, transmission, track or wheels)
Tankman_Blocked	Tank or another military vehicle have stopped before an obstacle
Tankman_In_Panic	Crew member is panicked
Tankman_No_Point_In_LOF	Gunner of tank or SPG can not target
Driver_Not_Skilled	Driver skill is insufficient (for your armored cars you require Driver skill 1, for enemy vehicles – 50)
Shooter_Not_Skilled	Gunner skill is insufficient (for your armored cars you require Gunner skill 1, for enemy vehicles – 50)
Tankman_Stucked	Vehicle has bogged down in mud
Artillery_Stucked	Gun has bogged down in mud

The reaction to events is set up with the help of <Reaction> string in the corresponding section. The following reactions are possible:

NONE – nothing happens
PAUSE – game pauses automatically
MOVE – camera instantly moves to the source of the event, game doesn't pause
PAUSE_AND_MOVE – camera instantly moves to the source of the event, game doesn't pause (default mode of smart-pause).

If you would like the game to pause instead of jumping to the damaged tank, find the section <Message> with the string <ID>Tankman_Damage_Engine</ID> and change the following string <Reaction>PAUSE_AND_MOVE</Reaction> into <Reaction>MOVE</Reaction>:

```
<Message>
  <ID>Tankman_Damage_Engine</ID>
  <Icon>Icon_Engine</Icon>
```

```
    <Object>OWNER</Object>
    <Actuality_Time>60000</Actuality_Time>
    <Actuality>TRUE</Actuality>
    <Livetime_On_Minimap>10000</Livetime_On_Minimap>
    <Priority>80</Priority>
    <Color>GhostWhite</Color>
    <Reaction>MOVE</Reaction>
</Message>
```

TACTICS AND BATTLE TIPS

- A soldier can take cover behind any object, including friendly vehicles or the remains of damaged vehicles. Infantry automatically takes cover behind obstacles, or in buildings and trenches, when there is a sufficient threat, or while in Ambush mode.
- Your soldiers and vehicles can minimize their casualties while closing in with the enemy by using hills or ravines as cover.
- Any sound or action may disclose the location of vehicles or soldiers. A shot gives the enemy a higher chance to spot the shooter, even if the latter is behind cover.
- When the selected unit can hear the enemy (sounds of firing or engines), the enemy symbol will be bracketed. Soldiers inside closed-top vehicles can hear nothing because of their own loud engine sounds. Icons of units which are no longer visible are also bracketed for a several seconds before vanishing.
- If a friendly unit sees an enemy, it will report its location to others. If unit doesn't see enemy unit directly, icon of that unit will be semi-transparent for it.
- Soldiers with a high Scouting skill can remain unspotted even at close range if they move cautiously and fire reasonably. A sniper with high Scouting can inflict much damage to the enemy by moving under cover and changing firing positions in time.
- Weather conditions affect the chances to spot an enemy.
- If your forces are fired upon, but can't see the enemy, order your units with best optics to look at direction of gunfire. Since tank or SPG gunners usually have best optical gear, but their field of view is limited, order them to look at direction of gun fire manually by selecting the main turret gun (left-click so it became selected) and the issue the Defend order to needed direction. Gunner will rotate the turret and look at this direction using his optical sight.
- Officers have binoculars which can also help to see the enemy. They switch between them (magnification) and naked vision (wider line of sight) from time to time.

Deploy Units Before Battle
When you deploy your units at the beginning of a mission, pay special attention to machine guns and fortifications, as you won't be able to change their location in combat. Also pay attention to the sectors of fire of your units. Select each unit and assess their fields of view and fire by checking the lines of sight. You can also lock the camera to a gun (select the gun and press Enter). This will allow to better observe its sector of fire and spot terrain features that decrease visibility. Try to position your guns on rear slopes of hills and ravines to partially hide them and make it harder for the enemy to take aim. Position your commanders close to your troops, as they will positively affect the morale of your soldiers.

Target Priority
While defending or attacking, try to eliminate the most important enemy soldiers first commanders, machine gunners, anti-tank gunners - then focus on the closest remaining targets, as some of them may use hand grenade. Use aimed fire – specify aim points to focus on (turrets or heads; hulls or torsos; tracks, wheels or legs). Note that you can turn the option Show enemy type off in game options menu and all enemy infantry will have the same icons.

Eliminate Infantry Effectively
When firing high-explosive shells at infantry targets it may be better to not aim at individual units, but instead target the ground in front of them by means of Area Fire, and then gradually shifting the target area. This way you increase your chances to hit several enemy soldiers with one hit. If you decide to attack a particular soldier, your aiming should anticipate where the soldier will be, not where he is right now. To eliminate infantry groups, you can also use the Suppress mode, during which the point of aim shifts randomly around the specified spot to cover a bigger area automatically.

Eliminate Vehicles Effectively
To effectively destroy enemy combat vehicles, focus the fire of several tanks, self-propelled guns and other units on one target. After destroying it, shift fire to another target. Keep an eye on the correct shell types. Firing high-explosive shells at closed top armored vehicles will do little good, but this type of shell can easily kill the crew of an open-top vehicle.

Shift Artillery
You can move guns even without vehicles by having their crews push them. The heavier the gun the longer they will be pushing it. Remember that and don't push guns around in vain. Artillery guns cannot cross trenches, you can only push them around.

Use Artillery Effectively
Always keep a few soldiers near your guns and heavy machine guns to be able to replace killed crew members in case of an emergency, and cover them from sudden rear attacks. Unlike tank guns, artillery guns can be fired even by soldiers with zero Gunner skills (though don't expect too good results).

Check Lines of Sight and Fire
If your gun does not fire at an enemy tank, you should check its lines of fire and sight, as well as any possible obstacles. Also check if the gun elevation is sufficient. To do that, you can attach the camera to the gun and look into the direction of fire. Or, you can check the symbol near the mouse cursor while hovering it over the target. Also, try aiming at other parts of the target, for instance, the turret, if your gun is positioned lower than the target. An order to fire at the turret will force the crew to aim higher and this may be decisive. Use this trick when in combat on rugged terrain.

Remember About Officers
An officer may play a crucial role in any battle. Remember this rule when assembling squads. Novices and even more experienced soldiers under dense fire may panic and retreat if no commanders are in the vicinity, while panicking officer is especially detrimental for soldiers morale. He also has binoculars and uses them from time to time, thus being a great spotter.

Use Trenches and Buildings
Entrenched infantry units are better protected from bullets and shell fragments. Buildings also provide good protection, and you can fire guns and machine guns from windows and doorways. But remember that most machine guns have low profiles and can only be put in doorways. Buildings can be destroyed by shelling (but can hardly be destroyed by machine gun fire alone). A collapsed building usually will bury everyone inside.

Use Fighter Aircraft Effectively
After calling for fighter aircraft, you may have to wait until they actually arrive. This time may be enough for enemy bombers and ground attack fighters to attack your troops and retreat. For this reason, you should call for fighters in advance. Do it as soon as you hear the sound of enemy aircraft engines. You may even call for a fighter patrol "just in case", if you can afford it.

Pick Up Enemy Weapons and Ammo
Pick up weapons from killed soldiers: light machine guns, anti-tank rifles, etc. To do that, move close to a body, click the pistol icon above the main information panel and specify the items to take or drop.

Soldiers may also pick up the best weapons and corresponding ammo automatically. You can disable this setting by clicking the bottom right button on the order panel.

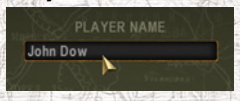
Use Enemy Equipment and Weapons
Captured enemy equipment and weapons cannot be repaired or replenished with ammo. Soldiers do keep such trophy weapons after a battle, but may have insufficient ammo when the next battle starts.

MULTIPLAYER GAME

Theatre of War 2: Kursk 1943 supports client/server LAN and Internet multiplayer games for up to 8 players. A static IP address is required to host a game server, as it must be accessible from Internet.
First of all one of the players should create a game server. After that he proceeds to the multiplayer battle selection screen where he waits for other players to connect. Other players also proceed to this screen after connecting to the server.
Players then choose their army number which also specifies their side and select the units for a battle from a force pool using the command points (or use a default selection of units). An alliance consists of one or several players which are friendly to each other. If players are members of an alliance, their troops do not attack each other, but attack other alliance troops.
In battle, a member of an alliance sees both his troops and the troops of all other alliance members and their combat actions. Different alliances are always enemies to each other. If there is more than one player in the alliance, command points for this alliance are shared between them. Only the host player can select a battle map and start the game. If the host decides to disconnect, the game is over and all the players are kicked to the start menu.
Each multiplayer battle has a brief description. However, certain battles may provide unexpected surprises, e.g. abandoned vehicles in perfect condition that can be used, etc.
When an alliance wins, all alliance members are considered winners, including those who have lost all units.

MULTIPLAYER GAME MENU

Player Nickname



This nickname will be your identification in the multiplayer game.

LAN
Here you can see a list of servers available in your local area network.

This list is automatically updated at set time intervals. The server list contains the following columns:

- Server Name – names of multiplayer games.
- Map – names of maps currently selected on servers.
- Players – the first number is the number of currently connected players.
- Version – version of Theatre of War 2: Kursk 1943. You may only connect to servers that have the same game version as you do.
- Ping – time needed to contact the server in milliseconds. The higher it is the slower the connection is.

Certain servers may be unavailable and grayed out. This means that you cannot connect to this server for some reason. For example:

- your client game version differs from the server game version;
- this server has the maximum number of players connected already;
- you were disconnected from this server and the disconnection time has not elapsed yet (see below).

To connect to a server, select it in the list, and then click Connect. Or you may also double-click the corresponding server name. If you wish to create a new server in your local area network, click Create Game (see below).

Internet

This tab is similar to the LAN tab. You can use it to join a server or create your own (see below). The list of games is updated at set time intervals. If you create an Internet multiplayer game, players from all over the world will be able to see it and connect to it.

Direct IP

Here you can enter the server network name or IP address, and a password (if needed) to connect to this server directly (e.g. if you know the IP address of the host).

Create Game

Both LAN and Internet multiplayer games are created on the Create Server tab.



Enter a game name and select the number of players. You can also define a server password. In this case, all players who try to connect to this server will have to first enter the correct password.

Battle Selection on Server and Client

After you create a new or join an existing multiplayer game, you are taken to the battle selection screen.

This screen consists of the following parts:

- player list (bottom left);
- chat window (bottom right);
- battle list (upper left);
- mission map showing possible army locations marked blue (top centre);
- mission description (top right);
- game type selector, command points counter and time limit selector (top right).

On the battle selection screen, players can, select side (defined by army number) and go to Order of Battle screen to choose units (optional). Only server (host) player can select a battle to be played. For some battles, server player can also specify the time limit or turn it off.

Depending on the mission type, the army selection may define its map location. This can happen, for example, if mission conditions imply that this army has to defend its positions. Note that selecting the game type limits which battles can be selected for playing.



In addition, battle with less maximum players count (shown in the battle list) than was specified during creation of the server can not be selected too.

Available army starting locations are indicated by blue markers on the map, if one moves the mouse cursor over player's nickname in the list. Red markers on the map show starting zones for enemies of this player. Which side the player belongs to depends on the selected army and is indicated by a corresponding flag.

After a player has chosen his army, he may click Ready or edit his army by clicking Order of Battle button first. Note that if there is more than one player in the alliance, command points for this alliance are shared between them.

Initially, the Start Battle button is disabled for the host player. It becomes enabled when all client players have clicked Ready (they don't have the Start Battle button).

The host player starts the selected battle by clicking Start Battle.

In some multiplayer missions, usually Attack-Defend ones, defending players can place their units during setup phase, just like in Singleplayer game. Game will start after all players will click button at the top of the screen 

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For more information on multiplayer games and other frequently asked questions (FAQ), please read the Multiplayer Configuration Readme.mht in the root folder of the game.

CREATING NEW BATTLES AND MAPS

Even after completing the campaigns, the game isn't over yet. You can create simple battles very quickly in the Battle Generator, use the wizard-like Simple Editor or make sophisticated missions in the full-blown Mission Editor. You can also create completely new maps using the Map Builder.

MISSION GENERATOR





The Mission Generator lets you create new singleplayer missions quickly. You can either specify parameters like soldiers experience, weather and others or leave them random.

You can either add a new mission as a single one or create a brand new campaign. To do this you should select the item New campaign in the list of campaigns and indicate the side you will be fighting for. After that you will be able to create missions one after another adding them to the new campaign.

PRIMARY CONTROL KEYS

Space bar: Pause.
Left mouse button: Click a unit to select, click empty space to deselect.
Right mouse button: Issue selected order or move to the specified point if no orders are selected.
Tab: Select the next unit.
Shift - Tab: Select the previous unit.
Backspace: Switch game speed (half, normal, double).
M: Tactical map mode.
F4: Cycle detailed hit and damage info modes.
F5: Quick save.
F6: Quick load the last saved game.

SELECTED UNIT ORDERS

A: Attack target or move in "Attack" mode.
W: Fire at the selected spot.
S: Assault the selected area.
D: Defend the target or turn in the selected direction.
E: Move to the selected spot without firing.
R: Scout (only return fire).
B: Ambush.
F: Retreat (back up).
G: Disembark.
Q: cancel all orders.
Shift + A: Place smoke.
I: Show soldier backpack.
X: Toggle hold fire on and off.
Z: Toggle free maneuver mode on and off.
C: Toggle formation (line, column, current formation or wedge).
V: Enable/disable automatic equipment pick-up by soldiers.
Shift: Hold to issue waypoints.

CAMERA CONTROLS

Mouse Wheel Click: Press and move the mouse wheel to rotate the camera.
Mouse Wheel: Zoom in/out.
Enter: First person view.
Arrows keys (↑↓←→): Moving camera forward, back and to the sides.

CONTROLLING GROUPS

Ctrl + (1–9, 0): Create a group from the selected units and assign it the corresponding number.
1–9, 0: Select a previously created group with the corresponding number.

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Special thanks to the community of the Theatre of War 1&2 forums and all fans of both games.

TECHNICAL SUPPORT

If you encounter problems while installing or playing the game, do the following before you contact us:

- Choose "Run" in the "Start" menu.
- Type «dxdiag» in the dialog window and press "Enter" to run Microsoft DirectX Diagnostic Tool.
- Pass all tests.
- Having passed the tests, press "Save All Information".
- Send the text file obtained and a description of your problem to our technical support.

Information Required

- Game version (installed updates)
- Operating system
- Processor brand, type and clock speed
- RAM volume
- Sound card type
- Video adapter model and parameters
- CD/DVD-ROM drive type
- Mouse type and driver version
- DirectX version
- Detailed description of the problem that you faced

CONTACT

- Via e-mail at: support@1cpublishing.eu
- Please use the e-mail address provided. All support enquires to the company address or phone number(s) cannot be answered by our staff.
- For more information and updates please visit:www.1cpublishing.com
- Official web-site of Theater of War 2: Kursk 1943 http://tow-game.com/
- Visit our discussion forums at http://forum.1cpublishing.eu
- Game uses the technology SpeedTree © 2009 IDV http://www.speedtree.com/

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