SECOND FRONT

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MICRO PROSE®

Manual version 1.05

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INTRODUCTION

Welcome.

The Second World War is well represented in computer and tabletop war games. There are hundreds, if not thousands of titles from which you can choose. We are, therefore, pleased that you have chosen to give Second Front a try. The war was a crusade against evil, but even among the victorious allies there was a great deal of discord. The Soviets, feeling that they had suffered the brunt of Nazi aggression, constantly clamored for a "second front." It is from this call that the game takes its name.

Second Front presents a tactical level view of combat that lies between a first person shooter and a strategic clash of nations. You will make decisions and order your units to perform certain tasks, which have a chance at succeeding.

The forces available to you range from single leaders to squads, guns and vehicles. Single leaders help you in directing attacks and keeping the assault from bogging down. But like any low-level commander, you will have to think on your feet and make changes because "no plan ever survives contact with the enemy."

SF allows you to control infantry units at the squad (6 to 12 soldiers) level, with smaller teams to perform scouting missions or man heavy weapons like machine guns (light to heavy), anti-tank weapons and satchel charges.

Guns and vehicles are also available. The performance of all the guns and vehicles have been meticulously researched and documented as you can see in our garage. The SF garage is where you can learn about all the details of vehicles, their history, armor, weapons and mobility, as well as how you can expect them to perform against enemy vehicles.

Second Front includes a number of linked-scenario campaign games which will allow players to fight their way through the hedgerows of Normandy and the shattered ruins of Stalingrad. You will not only have to meet the objective of the immediate scenario, but manage your resources for the next scenario as well. Map making capability will allow an extremely wide variety of actions from the jungles to the deserts (with expansions).

The community of SF players have a role in development as well, using the built in map and scenario editors.

Second Front's developers come from a background of table top gaming where community-developed products drive the game forward and keep it going long after release. As such, we are developing a flexible system which allows players to create their own maps and scenarios and will be able to make these available to the community keeping the game fresh and new.

Second front is also a development in progress. We begin with the major combatants and will add more minor nations' militaries as we go along. Map making capability allows creating European battlefields and will expand to include jungle and desert battlefields.

We dedicate Second Front to the greatest generation of men and women that fought against fascism, as well as the innocent victims caught up in the national war machines of the Axis. Let us not forget their sacrifice.

QUICK START

Once you have started the game, you will be at the main menu.

The opening menu shows a number of menu items on the right side.

PLAY	Enter submenu to select a core scenario to play.
CONTINUE	Load the most recent Autosave from the last scenario you were playing.
CONTINUE SAVED GAME	Enter submenu to select a previously saved game to load and play. (Your scenarios are automatically saved after each turn)
WORKSHOP	Enter submenu to select a Steam Workshop scenario to play.
PLAY MY SCENARIO	Enter submenu to select a scenario you created to play.
EDIT MAP	create and/or change your own maps – see details in the Map Editor section.
EDIT SCENARIO	create and/or change your own scenarios – see details in the Scenario Editor section.

EDIT CAMPAIGN	Create and/or change your own campaigns – see details in the Creating a Campaign section.
GARAGE	an overview and comparison of all the vehicles available in the game, see details in The Garage.
OPTIONS	General options menu for sound, graphics and UI preferences.
QUIT	Quit to desktop.

Game Controls

THE GAME PLAY INTERFACE

Wind Direction

Compass

Fatigue Level

Ammo Level

LOS Tool

Rotate Map

Switch Levels

Phase Display

Next Phase

Assault on Ravenoville
Jun 6 1944 Turn 2

VPs 0

American

German

Move & Fire Phase

Clear

Bocage

Deselect

Move

Lt. Muir 8

Elite 8

Elite 8

Reinforcement
Entry Hex

Victory Point
Location

Out of LOS
(dark)

Unit Flag

Infantry Unit

Movement
Buttons

Selected Units
controls

In LOS
(light)

Once you have loaded a scenario to play and entered the game you will see the game play interface similar to that shown on the previous page. The majority of the space is the map for the scenario showing the locations and units involved. There are some specific information items around the edge of the screen described below.

Across the top we have the **Wind Direction** and **Compass** indicators showing which way the wind (if any) is blowing, and which edge of the map is to the north. Wind direction affects smoke drift.

In the center, is the scenario conditions summary, showing the **fatigue** and **ammo** levels for both your forces (on the left) and the AI force (on the right). Between these are the scenario Name, date, and current turn.

Next is the **LOS tool** which you can use to check the LOS from any hex on the map. Hexes visible from that location will be light, and those out of LOS will be dark.

The two **arrows** will rotate the map 90 degrees left or right letting you change your viewpoint. This can also be done with the Q and E keys.

The building in the top right changes to switch which building levels are currently visible, allowing you to see inside buildings. This can be cycled by clicking on the building or by pressing the Tab key.

The **phase display** shows the currently active phase of the game turn. The phases cycle each turn with the player and the AI alternating taking actions. More details in the Game play chapter.

You end your actions for a phase by clicking on the **Next Phase** button (or by pressing Enter). This will progress the game to the next phase.

Indicated across the bottom from the left is an example of a **reinforcement entry location**. You can click on the arrow to see which units will arrive at the location and when they will be available. Note that units entering can't exceed stacking limits so you may need to move units before others will arrive.

Victory Point Locations mark the locations you are fighting the AI for control of. The Location flag shows the national symbol for the side currently controlling it. For a building to change control, all locations of that building need to be free of enemy units. More details on victory locations are in the game play chapter.

Line of Sight (LOS) is indicated on the map for the currently selected units (or using the LOS tool) by making hexes out of LOS darker, while those in LOS are lighter in color, allowing rapid identification of hexes visible to the unit.

All units are marked with an on-map **flag** above them. This flag is used to show many things about unit status including morale and pin status, which support weapons are carried, and even the level of a building the unit is on. The unit flag marked above is for the infantry unit indicated.

When **moving your units**, after selecting them (by left clicking on them), moving the mouse pointer around will show you various bits of information, and the movement buttons. These allow you to select the type of move you want your unit to use (in this case, the red running icon or the white walking icon). The type of move has several impacts on the unit, as discussed in the game play chapter.

Lastly, we have the **counters** for the currently selected units. You can left click on one unit to select it and deselect the others, or right click to deselect specific units. Only the selected units will move (or fire) when you give an order.

Phase Panel

LOS Tool
Player's Force
Victory Goals
Victory Points
Options
Player
Computer

VPs 0 — American — German

Move & Fire Phase

Range: 5, 18.12.0

Clear
Bocage

Surrender Scenario
Player Help
Switch Levels
Rotate Map
Temperature
Phase Display
Hex Information

The Phase Panel has several parts – some already described, so we will look at the new parts here.

The **Player** and **Player's Force** items show you what nationality your forces are in the scenario. The **Computer** item shows the nationality of the computer's forces. The Player and Computer items are highlighted when that side is active during a phase. In this image, the American side is highlighted.

Victory Points shows your current score in the scenario. Depending on the scenario, this can include points for VP locations, casualties, or units exited from the map.

The **Victory Goals** button brings up the victory goals dialog showing you what your objectives are to win the scenario. More details on this dialog are explained in the chapter on winning.

Victory Goals

★ → ✚ **Capture the Victory Location**

Capture the Victory Locations before any of them gets to zero points. VP locations lose 10 points a turn you do not control them. The computer will try to recapture VP locations until your infantry force is at least 1.5 times as strong as the computer's infantry force.

🏆
⬛ you have captured 0 of 3

✅ 1.3 of Enemy Infantry Force

Continue

Surrender Scenario button brings up a dialog to let you give up on a scenario when you feel that you can't win.

Player Help brings up an in-game guide to various elements in the game.

Temperature shows the environmental conditions of the scenario. This affects the spread of fire.

The **Hex information** shows the terrain in the hex the mouse pointer is over, as well as any hinderances in the hex and (in the box above) the coordinates of the location pointed at.

A QUICK TURN

The basic way to play Second Front is to left click on a unit (or stack) to select it, move the mouse to where you want them to do something, right click to fix the target location, and then left click on the specific action icon you want them to perform.

In the Move and Fire phase, you can click on empty hexes to get movement and related commands, or on an enemy unit to get combat options available. Enemy units may fire on your moving units during this phase.

You perform the desired actions for each of your units, then advance the phase to the Fire phase. In this phase, the non-moving side gets to fire its units at eligible targets.

Once that has been completed, all broken units **!!** of both sides will attempt to escape to safety if possible during the Escape phase.

Following this, the player gets the opportunity to advance any unbroken and unpinned infantry units 1 hex. No enemy fire during this move, and it is also the only time units can enter a location containing enemy units triggering Close Combat (CC). If any CCs have been triggered, they are resolved in the CC phase after the Advance phase. Otherwise the CC phase is skipped.

The player turn then ends with both sides performing the recovery phase – broken equipment will attempt to be repaired, broken units will try to rally, and pinned units will become unpinned.

Then the phases are repeated with the player and computer switching activities – the computer can move and shoot, and you can only shoot. At the end of the computer's recovery phase, the turn will end, and VP locations will be adjusted in value depending on scenario type.

This cycle continues until one side wins or is completely eliminated. For more detailed information, read on.

GAME PLAY

SCENARIOS

Second Front depicts battles from World War II using scenarios. These battles are represented over a series of turns following the sequence of phases. Turns follow one another until a winner is determined.

Scenarios can be started in several ways. A new scenario can be played using either of the **Play** menus or the **Workshop** menu. A saved game can be resumed using either the **Continue Saved Game** menu or by the **Continue** menu item to resume playing the last scenario you were playing from its most recent autosave.

The **Continue Saved Game** menu opens the following dialog shown on the next page. The contents of this dialog are described below.

The **Play My Scenario** dialog is similar and differences will be noted below. The main difference is that the Play My Scenario dialog only shows any scenarios you have created.

Starting a scenario from either play dialog or the workshop menu will delete any existing saved games for that scenario.

On the left we have a list of saved games showing the turn number of the save and the scenario name (autosaves occur after the computer finishes its turn). On the Play My Scenario dialog, the list shows the available scenarios (no turn number).

The selector at the bottom of the scenario list allows you to choose between single scenario battles and campaign battles fought over several maps. See [Playing a Campaign](#) for details on campaigns.

The **delete** button (Continue saved games only) lets you delete a saved game permanently.

On the right portion of the screen, the selected save/scenario name is displayed at the top, along with the scenario description, map snapshot and date. Under this is displayed the player forces (as of scenario start, or the surviving forces in a saved game) and the computer forces. Also shown is the Fatigue level and ammo supply level set for the scenario.

Clicking the **Play button** will load the save/scenario and display the loading screen showing the scenario details and description. Choosing to **Continue** from the main menu also jumps to the load screen and shows the same information. When finished loading, click the continue button to begin playing.
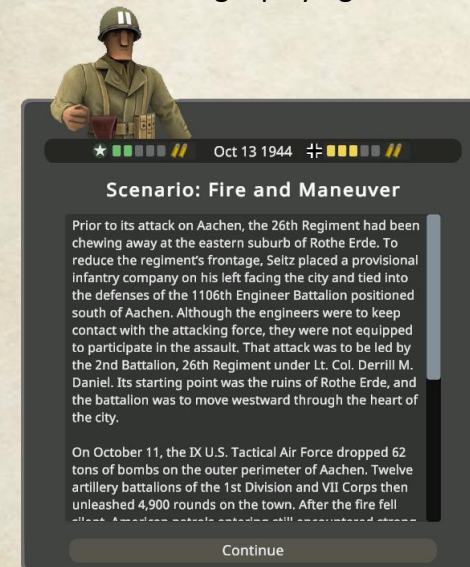
This will bring up the typewriter screen showing the scenario location and date, then fade to the game play screen.

Continue Saved Game Dialog

Saved Scenarios in progress

Scenario Date

Scenario Name

Remaining Player Units

Ammo Level

Scenario Description

Fatigue Level

Turn of Save and Scenario Name

Load Scenario

- 1 The Ford ★
- 4 the two bridges
- 1 the two bridges
- 2 the two bridges
- 3 the two bridges
- 1 Attack and Defend ★
- 1 Berlin Tram Station
- 1 Church 3 ★★★
- 1 All Aboard
- 1 Cross Roads 2 ★
- 1 The Dike
- 1 The Farmhouse
- 1 Le Chateau ★★
- 1 Buffalo Soldiers ★
- 1 Attack at dawn ★
- 1 Awakening of Spring ★
- 1 Barrikady ★
- 1 Beating Back the Beast
- 1 Blood and Steel
- 1 Bloody St Bart
- 1 carentantest1
- 1 Crisis Hour ★★★
- 1 Crossing the Creek

Single Scenario
Campaign Scenario

Delete

Back

Play

Blood and Steel

Jun 25 1941

In the opening days of Germany's invasion of the Soviet Union, the triangular area bounded by the cities of Lutsk, Rovno, and Brody was the scene of a bitter struggle. Army High Command plans called for a rapid thrust to the Ukrainian capital of Kiev, after which German forces would swing southwards and trap the bulk of the forces of the Southwestern Front. With the terrain dominated by forests, hills and swamps, the important road nexus of Lutsk became a prime objective. While General Kirpinos, the Southwestern Front command, was ordered to counterattack immediately, the Germans attacked Lutsk at dawn.

German (Player)

Turn: 1 — PzKpfw IV E — 58% — 14 — 3

Turn: 2 — Pzkpfw IIIH — 58% — 13 — 3 — 50mm

Turn: 1 — 1Lt.Koch 8 | Pfc.Meier 8 | Cpl.Hartmann 8 | LMG 2 | T.N.T | 2x MMG | Regular 6 — 10

Turn: 2 — Sgt.Krueger 8

Russian

KV2 — 9 — 2 — 152mm short

GAZ 4m AA — 25

76.2mm 34-K — 7x — 76mm very long

Turn: 1 — BT7 A — 21 — 76mm short

BT7 m37 — 23 — 2 — 45mm

Mj.Antonev 8 | 1Lt.Zarkov 8 | ATR | LMG | 4x HMG | Regular 6 — 2 | Regular 6 — 6 | Crew 6 | Crew 6

Return to Main Menu

Play Scenario

Delete selected Scenario

Remaining Computer Forces

Scenario Type Selector

WORKSHOP SCENARIOS

Choosing to play a workshop scenario opens the workshop screen:

Full Word Search

Sorting Options

Recorded Scores

Unsub Scenario

Subscribed Scenario

Scenario currently not subscribed to

This screen shows available scenarios on the Steam workshop for Second Front. The search box does a full word search on scenarios including name and description. The Sort by list gives some options for sorting the scenarios.

Scenarios are listed on the left including the Workshop picture, the name and a description as well as some details about number of subscribers and rating.

The icons on the scenario picture show the type of scenario from attack ⊕→⊛ , defend ⊕]⊛ , breakthrough ⊕⇉⊛ , or campaign ⊕⌇⊛ .

The ✖ lets you unsubscribe from a scenario, while the ➕ lets you subscribe to a scenario. You must subscribe to a scenario before you can play it, afterwards, you can click on ▶ to play.

After clicking on a scenario in the list (anywhere on the description), the current scores will be shown on the right panel.

After clicking on a ▶ to play a scenario, you will see a similar loading screen as above, showing scenario information, and the Continue button to play when done loading.

PLAY SCENARIO

Choosing a scenario from the Play menu brings up a screen showing a number of scenarios included with Second Front selected for each nationality and opponent pair, as well as a set of bootcamps (tutorials).

These scenarios have been selected to give a range of difficulty, eras and challenges and are organized by the nationality the player's forces will be.

The scenarios are arranged in difficulty on each tab from easiest to hardest, top to bottom. On each set of scenarios, the first 2 scenarios are unlocked. The next four are unlocked by winning the first 2. The second group of four are unlocked by winning any four of the first 6, and the last group of two are unlocked by winning any eight of the first ten scenarios.

Clicking on a scenario box will show a picture of the battlefield and the scenario name. A detailed description and the scenario location and date are available on the description tab. After winning the scenario, the aftermath will also be visible on this tab.

The Forces tab will show you both the player and computer forces available in the scenario, including reinforcements and when they arrive.

Forces Tab

Description Tab
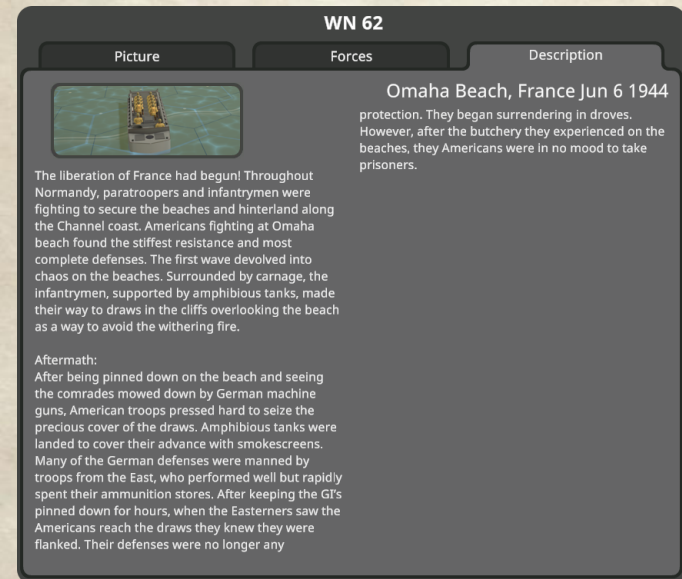
Clicking on Cancel at the bottom will take you back to the main menu, while Play will take you to the loading screen again, where you click Continue after the load is complete to begin playing.

BOOTCAMP

Second Front has a number of bootcamps included to help you learn how to play the game as well as teach some tactics and game mechanics. These appear on the last 2 tabs of the Play dialog.

The first tab contains bootcamp scenarios to teach infantry play. The second tab covers play using vehicles and guns.

When playing a bootcamp, read the scenario description to see what it is intended to demonstrate. In a bootcamp, you will get a screen giving more specific instructions for the scenario.
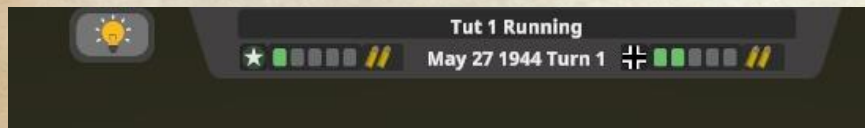
You can re-open the tip dialog by clicking on the lightbulb button. It may appear in other scenarios to provide a hint of how to play the scenario.

To get the most benefit from bootcamp, you should attempt them in ascending order of scenario number (from top to bottom).

PAUSE MENU

Second Front can be paused during play by hitting the Esc key to bring up the Game Paused menu.

Continue takes you back into the game to resume playing.

Quit Game quits the current scenario and returns you to the main menu. Your score will not be recorded, and the scenario is not Saved. If you have completed a game turn, there will be an autosave file from that point, but not at the point you quit.

Options brings up the game options menu.

Load opens a dialog with the current existing saves for the scenario you are playing to allow you to load a previous turn.

Manual will open this document.

Scenario brings up a dialog showing the scenario description and forces for each side.
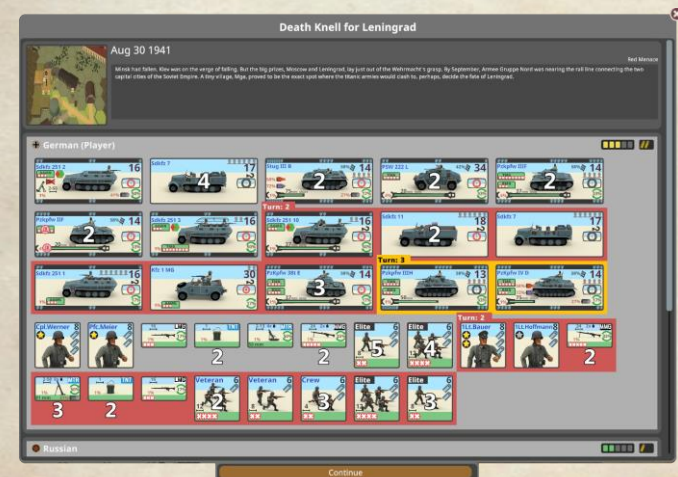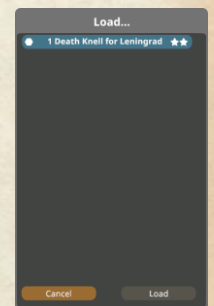
Playing the Game

Once your scenario (or saved game) has been loaded, you will be at the main interface. This is where all the action will take place.

Turns and phases

Second Front is a turn based game and each game turn encompasses a player turn followed by a computer turn. Each of these turns are divided into phases.

The phase display indicates that you are playing the Americans, while the computer defends with the Germans. It also shows the current phase – American Move & Fire Phase.

These are the **Phases** in order of appearance:

Your Move & Fire Phase

This is where most of your action takes place. Units have their full movement allowance during this phase. You can move and fire. But after firing with a unit, you cannot move that unit.

The enemy can fire on your moving units when they are in his LOS (Line of Sight). This will interrupt your movement, but you can continue if you survive the enemy fire.

Enemy Fire Phase (automatic)

All enemies that can still fire (have not expended their fire capabilities during your Move & Fire Phase) will probably fire at your units in LOS. No movement occurs in this phase.

Escape Phase (automatic)

Broken ‼ units of **both sides** will attempt to escape to (relative) safety. The outcome of the fire in the above 2 phases for Infantry could be combat results like kill, KIA, pin and broken. **Broken** units (with ‼ or ! on their flag) cannot be selected and must be rallied before they regain their abilities. When broken units cannot escape, they surrender and are removed from the game.

Your Advance Phase

Your Infantry may move one single hex in any direction, even into an adjacent enemy occupied hex. This initiates close combat. There is no firing during the Advance phase.

Vehicles cannot move, but may rotate their turret and open/close their hatch.

Melee Phase (automatic)

Close combat takes place In all hexes containing units of both sides. This is resolved automatically and can last more than one turn if units from both sides survive. These hexes are marked bright red. Units in close combat are locked in melee and cannot be selected.

🔄 Recovery Phase (automatic)

All units of both sides lose their PIN status. Broken Leaders of both sides will try to rally themselves first. Thereafter unbroken Leaders will automatically try to rally broken friendly infantry in their location. Malfunctioned equipment such as MG, mortars and ordinance will automatically have an attempt made to repair. During your player turn recovery phase, one broken unit without a leader will attempt to rally. The unit that has the best chance makes this attempt, and occasionally this can result in leader creation.

Now your turn is over and sides are switched. The enemy now performs the same phases as above.

➡️➡️⊙ Enemy Move & Fire Phase (automatic)

The enemy will move and fire his units. Your units will automatically fire on his movement.

⊙ Your Fire phase

Now you can fire all your units that did not use up their fire in the Enemy Move & Fire Phase. No movement in this phase.

‼️ Escape phase (automatic)

Same as above, **broken** units of **both sides** will escape to (relative) safety.

➡️ Enemy Advance Phase (automatic)

Enemy units may move one single hex in any directions, also into your units.

🔄 Melee phase (automatic)

Same as Melee Phase above.

🔄 Recovery phase (automatic)

Same as Recovery Phase above.

At the end of the computer's recovery phase, the end of game turn actions occur. These include autosaving the game, checking for victory and adjusting VP location values.

Saving the game

Second Front does not have a manual save function. Instead it autosaves the game at the end of every game turn, after the computer's player turn. This is the only way to save the game when playing. You can load a saved game from the start menu - it will appear with the scenario name and turn number of the save.

When the save is made, it will be flashed on the screen to let you know that it has been done.

Winning the Game

In each Recovery phase, Second Front checks to see if a victory has been achieved. Victory conditions vary depending on the scenario type you are playing. After the computer's recovery phase, Second Front also saves the game.

You can see your current status at any time by clicking the Victory Goal button. This will bring up the Victory Goal window, describing what your goals are for the scenario, and how close you are to achieving them.

The dialog will show the conditions that need to be met for victory and will show either a red box or a check mark for each condition.

The red box indicates the condition has not been met yet.

The green check-marked box indicates the condition has been met.

Campaign Scenarios

Your final score for a campaign is determined by adding together the score you obtained in each scenario of the campaign. You can score points even if you lose a scenario. In each scenario of a campaign, you score points based on the scenario type of the scenario as explained below. More details on campaigns in the Campaign chapter.

Attack Scenario

For an attack scenario, **each VP location not controlled by your forces loses 10 points** of value at the end of each game turn. If any of them get to 0, you lose the scenario. If you control all locations, the computer may try to counter attack and regain control. It will do this until your forces exceed the ratio shown (default 1.5x) to its forces.

Defend Scenario

For a defend scenario, the **VP location will lose 10 points of value at the end of each game turn you control it**. If it gets to 0, you win. You can also win if the computer forces are too weak relative to your forces. The computer will surrender if your forces are greater than the shown ratio (default 1.5 times) as strong as its forces are.

Breakthrough Scenario

In a breakthrough scenario, your goal is to exit units before you run out of time. Depending on the scenario, you may need to exit vehicles, infantry or both. The dialog will tell you which units count for exit points. Selected units will show their exit VP beside their counters in the lower right corner.

Exit VP value **4VP**

Force Strength Points (For Attack and Defend scenarios)

Force strength points are calculated using the following:
Infantry:
   Squad or crew = 2 points
   Half-squad = 1 point
   Leader = 1 point plus 1 point per gold star.
Guns and Vehicles:
   no points

Winning

For all scenarios, a check is made to see if you have won, or if the computer will surrender at the end of each player turn. If neither of these have occurred, then the game proceeds to the next player turn, starting again with the **Move and Fire** phase. If the scenario hasn't ended after the computer player turn, the game advances to the next game turn and it becomes your **Move and Fire** phase again.

Interacting with your units

Out of LOS   In LOS   Selected Units

Movement Range Outline   Selected Units

If you select a hex with one of your troops with LMB, the hexes this unit can see are marked in brighter color. This shows the **Line of Sight (LOS)** of this unit. The darker hexes are out of LOS. If none of your units are selected, all hexes in LOS of the selected hex are shown in brighter color. LOS is required to fire a unit – you can only fire when the target is in the firer's LOS.

The white outline (**Movement Range**) shows the maximum distance your selected units can move. This is determined by the units MP (the number in the upper right corner of their counter), the cost of the terrain, and any modifiers such as leadership.

The hex occupied by the selected unit(s) is highlighted with a yellow hex outline.

Moving the mouse inside the Movement Range will show the movement buttons close to the mouse position. RMB on such a hex will make the movement buttons active and will fix their position above the hex, so you can left click one of them to initiate the move.

Similarly, when there is an enemy in the hex (in LOS, and in fire range) the fire buttons will become available.

If you left click (instead of right clicking), the buttons are not activated and your units are deselected.

To sum that up:
Left click to select,
Right click to activate the action buttons,
Left click one of the buttons to perform that move or fire action.

Visible Enemy Location Count

When you select your units by LMB on their respective hex on the map, their counters will show up in the bottom right corner to show details. Also when you hover the mouse over your units or enemy units, their counters will show up in the top left corner of the game screen.

Sometimes you will see a red number beside your counters. This indicates the number of locations with enemy units your selected units could fire at from their current location.

When selecting your units there are several ways to alter the current selection, depending on the units in the location.

Infantry Only

If there are just infantry units, a single left click selects them all. Using the counters in the lower right corner, you can then left click on one to select only it. Right clicking selected counters unselect whichever one was clicked. Right clicking on an unselected counter selects all counters again.

Gun (and crew) or vehicle only

In a location containing a gun and its crew, or a vehicle, a single left click selects the unit (vehicle or gun and crew).

Infantry (non crew) and Gun (with crew)

When both infantry and a crewed gun are present, the first left click selects the gun and crew. The second left click selects all units and allows the infantry units to help push the gun to a new hex. The third click selects just the infantry units.

Infantry and vehicle

If the infantry are not passengers, the first left click will select the vehicle. The second click will select just the infantry and the third will select just the vehicle again. Infantry that are passengers can't be directly selected.

In all cases, if you have units selected, left clicking in another hex without first right clicking will deselect all units. Right clicking will bring up the action buttons available in the target location.

Interacting with units in buildings

Buildings can have multiple floors – up to 3 floors. It can become a challenge both to determine which floor a unit is on, and selecting the unit you want (to either target or use).

You can use the Tab key or click on the building in the top right of the screen to cycle through which floors are displayed. This will let you see into the building, but units on hidden floors wont be visible.

You can determine which floor a unit is on by looking at its flag on the map. There is a color coded hexagon outline around each location with units in a hex. Different floors have different color hexagons, and the flag of a unit on a floor gains a border on the top, left and right sides matching the color of the floor highlight hexagon.

Only infantry and smaller guns can enter buildings, and guns can only be on the ground floor). Entering a building costs 2 MP, but changing floor costs only 1. Moving a gun into a building has a lower chance of success the bigger the gun is.

Vehicles can only enter some buildings such as factories and train stations if they have a large vehicle sized door with a road depiction leading to them.

If a building has been rubbled, all floors above the rubble level in that hex can not be entered. Note that a rubbled building still affects LOS like a normal building. Buildings can be rubbled at the start of a scenario, or when hit by large (>70mm) weapons.

Movement

Movement of units in Second Front works similarly for all units, however there are some differences so we will examine each type separately.

Stacking Limit

The stacking limit is enforced for each side at all times. In each location there can be up to 3 troops of any type, 2 soldiers (Leader, Hero, or Sniper), and 1 gun or vehicle. Two crews or half-squads equal a squad.

Vehicles can only enter ground floor of buildings with vehicle doors, and only small guns can enter ground floor of buildings.

Infantry movement

Infantry movement in Second Front is fairly simple.

Walking infantry units get 4 movement points per turn. Single soldier units get 6. When units move with a leader, they get 2 bonus MP if they start the turn and stay with the leader, as the leader is there to make them hurry and direct them in the fastest route possible.

Running infantry units gain two additional movement points in their movement turn. Running incurs a penalty for exhaustion. After running, the unit will not fire as well and will not perform as well in a melee/close combat. Units cannot run two turns in a row.

Crawling infantry units can move to an adjacent location, moving only a single hex (or changing a single floor in a building). Crawling gives a unit some advantages over regular movement when being fired on, and the unit may be able to retain concealment status. This move is similar to the advance move except you can't enter a location occupied by an enemy unit.

Advancing infantry units can move to an adjacent location (even if enemy occupied) in the *Advance phase*. Potentially, a unit could move 9 hexes in a single turn using leadership bonus and running followed by an advance.

Destination

Once you have selected an infantry unit to move, in addition to the changes in the view mentioned above, moving the mouse pointer around within the move range outline will draw a white arrow showing the path the unit(s) will move in. This path will be the shortest to the destination. Beside the arrowhead the Action buttons will be shown for the allowed options.

If you don't want your unit(s) to move on the indicated path, you may want to move in shorter segments to give more control of the actual path. This is something you will probably want to do to avoid enemy fire in unfavourable locations.

When you have the mouse pointer in a hex you want to move to and have an acceptable path, just right click to make the action menu active and then left click the desired option.

Note that if you break your move into parts to control the path, you will be limited to the type of move that you selected for the first segment for the remaining segments.

You can fire at any point during your move at an eligible target (firing process described later) – but this will end that selected units movement. You can move and then fire, but cannot fire and then move. Unlike other firing, throwing TNT does not end the unit's move.

Passengers

Infantry can mount 🔼 or dismount 🔽 from a transport. It costs 25% of the mounting and transporting units' movement points to board a vehicle, and the vehicle must be stopped. If the boarding units move to the vehicle's location, the vehicle's MP will be reduced by the percentage of MP the boarding units used.

Dismounting a unit consumes one quarter of your units' movement points, so both units may be able to expend additional movement points after dismounting. The transport unit can also expend movement points before dismounting passengers, as long as enough are left for the dismount.

Mounting as a passenger dismantles all support weapons that can be dismantled. While passengers, infantry units can use any LMG (or equivalent) support weapons they are carrying. German MMG and HMG function as LMG while dismantled. LMG used by passengers do not get reloads.

Riders on a tank are a special case of passengers. They have no protection against incoming fire. Riders must bail out if they suffer a pin result or fail a morale test. They are also forced to bail out if the tank rotates it's turret. Bailing out forces the unit to take a morale test. Riders can't fire any weapons. Otherwise they function as passengers on other vehicles.

Terrain

Terrain will affect your movement as different types of terrain have different movement costs. For more details on terrain effects, see the chapter on **Terrain**.

Support Weapons

Encumbrance affects infantry movement by increasing costs to move. This is caused by the support weapons a unit is carrying. Some are large and hard to move and restrict movement.
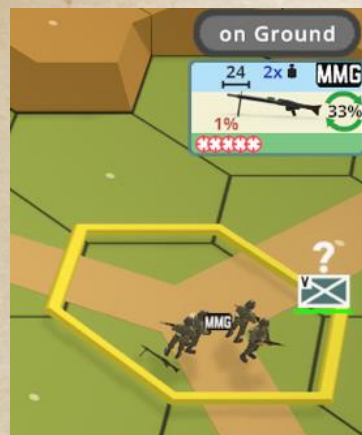
A unit can pick up a support weapon from the ground to use and carry it. The unit needs to enter the hex where the support weapons is to pick it up. You pick it up by having an eligible unit selected and then clicking on the weapon picture under the "On Ground" indicator on the right edge of the screen.

Moving to a support weapon and then picking it up ends the unit's movement. If the unit started in the same location as the support weapon, then it can move after picking up the weapon.

Support weapons may also be dropped 🖐 if no longer needed, or if you want to transfer them to a different unit. Transferring requires the current unit to drop it, and the desired new owner to pick it up.

Soldiers can carry one light SW, while troops can carry 3 SW. Half-squads and crews can fire one SW, while squads can fire two SW.

To move with bulky support weapons, you may be able to dismantle 🛏 them. Most weapons are not functional when dismantled, and will need to be assembled ⚠ to be used. A weapon can be moved after assembling or dismantling, but cannot be moved and then assembled in the same phase.

Assembling/dismantling can also be done in the advance phase. If done first, the unit can move afterwards. And during the Fire phase you may also assemble/dismantle support weapons.

Recombining

When you have 2 half-squads of the same quality in the same location as a leader, you can recombine them into a full squad at no cost in movement points. A squad is always stronger than the 2 half-squads – having more firepower, better morale, and rallying easier. A leader can do this at any point in his move, and in the advance phase both before and after advancing.

Enemy Fire

Note that it is possible that an enemy unit can fire upon you at any point of your movement path. If a known enemy unit could fire on your unit, one or both of these icons will be shown beside the move action buttons. Fire during a unit's move will only affect the moving unit(s).

This icon indicates the target is walking or running (not crawling). This is triggered whenever you move by walking or running.

This icon indicates the target is moving in clear terrain without any kind of cover

The combination of both can be deadly and can KIA your complete moving stack of Infantry. Be careful where you move in stacks.

Note these icons are not shown for a hidden or concealed unit that could fire on your unit, so their absence does not guarantee a safe move.

If the computer does fire on your moving unit(s), your move is interrupted. If your unit breaks ‼ or is pinned ❗, it cannot move any farther. Also, if a unit is moving with a leader and the leader pins or is broken that unit can continue moving, but cannot take advantage of the leader's movement bonus. For a number of reasons, this means that it frequently makes sense to move units one at a time, even if that means giving up the leader's movement bonus.

After surviving all fire in a hex unbroken and unpinned, the unit(s) can continue moving to the same or a different destination.

Vehicle movement

Vehicle movement is similar to infantry movement with a few significant differences.

Vehicles have differing numbers of movement points, and expend them based on the terrain they are crossing, the vehicle type and status. Similarly, they can be fired on while moving by the opponent forces.

Details on the vehicle types and terrain effects are covered later in [Vehicles](#) and [Terrain](#).

The first consideration when moving your vehicles is if the crew should be exposed or not. Crew exposed vehicles may be able to move faster on roads (depends on type).

The button up action switches the crew from exposed to covered, protecting them from rifles and MGs.

The unbutton action converts the vehicle crew from covered to exposed, making them vulnerable to rifles and MGs.

When moving the vehicle, you will get action buttons to move and stop at the destination. The left one for buttoned up, the right one for crew exposed. When choosing this, the vehicle will stop in the destination hex and turn off it's engine.

You will also get the option to move and remain moving in the destination hex. Again, the left one for buttoned up, the right one for crew exposed. Choosing either of these will leave the vehicle's engine running. This gives the advantage that you don't need to start the engine again to move (which costs a movement point) at the disadvantage that your shots will have a large penalty applied to their chance to hit.

When moving a vehicle, the hex vertex you select for the destination hex determines the facing of the front of the vehicle's hull.

Turreted vehicles may also change their turret facing by pointing at a hex that shows the turret action icon and then right clicking to activate the action buttons and left click the turret icon. The turret will then rotate to include the selected hex in the front arc of the turret.

Hull Front
Turret Front
Hull and Turret front
Engine on
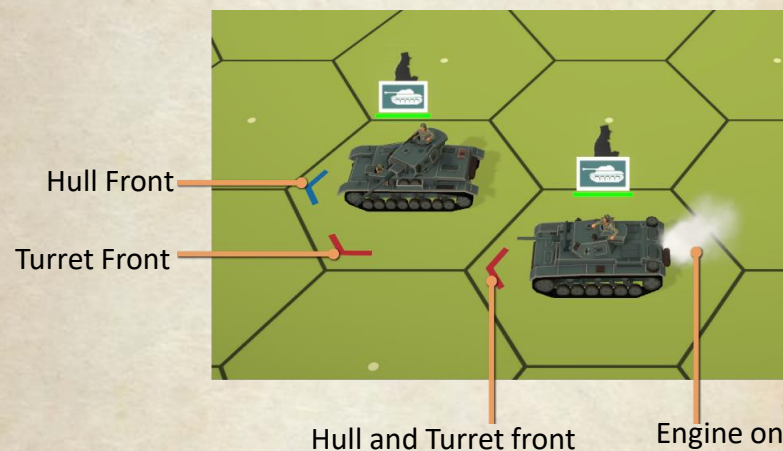
When the turret and hull have the same front facing, you will see just a red arrow in the vehicle's hex (like the tank on the right above). When they are in different directions, the red arrow indicates the turret front and the blue arrow indicates the hull front (like the tank on the left above).

Also shown in the picture above, the tank on the left ended its move by turning off its engine, while the tank on the right still has its engine running. This is indicated by the smoke coming out the back of the right tank.

Gun movement

Guns can be pushed depending on their size as indicated by the number x weight in the upper right corner of their counter (7 in the example below).

 Heavy guns need to be limbered to be moved – this will be indicated by the limber action symbol appearing when you point the mouse at them.

 To be able to fire a limbered gun again, it will need to be unlimbered. Limbering or unlimbering a gun consumes the actions for that gun for the turn.

 A gun can be pushed using the selected units, again as walking or running like an infantry move. The difference is that pushing a gun has a chance of success and is not certain. The heavier the gun, the lower the odds of success. Also the terrain will impact success – easiest along a road, hardest pushing into woods or buildings.

 A failed push attempt will leave the pushing units tired with a shovel and pick axe symbol over them, and also mark them with a green push attempt icon on their counter (units can gain up to two of these by repeated attempts). This gives them improved odds of pushing the gun next attempt. The tired status makes the units unable to fire for the rest of the turn.

Note that even in a successful move, the pushing units will be marked as tired and unable to fire.

Some guns are heavy enough that they just can't be moved in the timeframe of a battle.

When initially positioned, guns gain the benefit of sandbags to protect them from fire. This is rated as good cover. However, the sandbags are permanently lost if the gun is moved.

The chance of success for moving a gun is shown for each hex in the path to the destination beside the action buttons.

Some guns are still able to fire when limbered, but most can't fire.

Combat

Firing on the enemy in Second Front works similarly for all units under your control. In your **Move and Fire phase** and your **Fire Phase,** you select your firing unit(s) and then select the target unit.

Selecting the firing units works as described above in the **Interacting with your Units** section. When you have an eligible unit selected, possible targets for that unit will get a red hex outline to highlight them. This highlight considers the current arc of a gun, as well as hinderances that reduce weapon effectiveness. Only targets that the selected unit have a chance to affect will be highlighted.

Giving the fire order works much like giving move orders. You mouse over the desired target and possible actions will be displayed beside the mouse pointer. Right clicking will activate the action buttons, and then you select the desired fire action to actually initiate the attack.

While the action buttons are displayed, you can point at each to get a pop-up displaying the possible results of that shot. This display is context sensitive to the actual shot being attempted and will reflect the actual shot details. These dialogs will be explained in the section for each different shot type below.

Infantry units can fire their inherent firepower only once per fire phase, while support weapons, guns and vehicle mounted weapons may all have multiple shots – see Rate of Fire below.

Units can automatically fire multiple times during the opponent's Move and Fire Phase. Infantry can fire up to twice on moving enemies – once at up to full range and full firepower. The second time is only possible at the closest visible target, using reduced firepower and only up to half range.

All other weapons can potentially fire during the enemy Move and Fire phase multiple times – depending on them maintaining rate of fire. This fire is not under the player's control, it is performed automatically.

During the **Escape Phase**, units may fire an unlimited number of times on any unit attempting to escape in their LOS provided the firing unit is not pinned or running, the target is in clear terrain, within half range, and there is no hinderance. In this case the "shots" are treated as morale tests on the moving units, and are performed automatically.

In the Melee phase, automatic combat is resolved between the units in the same hex. This may result in no effect, one side or the other being eliminated, or both sides suffering casualties. There is also the chance for one side to ambush the other

Line of Sight

An important concept in Second Front is Line of Sight (LOS) and Line of Fire (LOF). LOS is shown on the map by marking hexes lighter in color when in your LOS. If no units are selected, the map shows the combined LOS of all your units. If any units are selected, the map will then show highlights based only on what those selected units could see.

No units selected:

LOS with unit selected:

LOS represents where your units can see – even if hindrances would make a shot impossible. LOF is limited to those hexes the selected unit can actually hit – and this includes current arc effects of both vehicle hulls, and turret/gun arcs.

Concealment represents the situation where you only know the approximate location of an enemy unit and not the exact location. Other enemy units may be visible out of your LOS, but they will gain concealment at the end of the turn if they remain out of LOS. Concealed status makes units harder to hit when they are fired on.

 An enemy unit with concealment is represented by a flag with a "?" on it instead of the normal unit flag.

Any of your units with concealment status will also be marked with a "?" - both over their unit flag, and over their counter when selected.

Concealed markers

Concealment is lost when the unit fires. Performing any of the following in LOS of enemy units all cause concealment to be lost: walking or running (anywhere), or crawling into a clear hex with no hinderance to the LOS. Concealment can also be lost due to being fired upon if the fire is not a "miss" result.

Additionally, units may be hidden – not visible on the map to you until they take an action that makes them lose this status. For infantry, this loss occurs similarly to losing concealed status. Guns can also be hidden, but may be able to fire several shots before losing hidden status.

Keep in mind that just because you can't see any units in an area, it does not guarantee that the area is safe to run in. Additionally, an important concept to remember is that if you can see the enemy unit, it can see you (LOS is reciprocal).

LOS and Terrain

Most terrain features occupy the entire hex – and not just the depiction. Hexside terrain features only affect the hexside they are on. The [terrain effects chart](#) will specify more details.

In short, terrain that is blocking (like a building or forest) blocks LOS through the hex – but not into or out of the hex. Any LOS that goes along a hexside that has blocking terrain on one side of that hexside is not blocked. It is only blocked if both hexes adjoining a hexside are blocking terrain.

You can see that the forest near the top is visible to the selected unit because the LOS is only along hexsides of the intervening woods.

Some kinds of terrain does not block LOS, but does contribute hinderance that degrades the shot – and if enough is present, it blocks the LOF. Grainfields, swamps, brush and smoke all contribute hinderance that may block LOF. Even though these terrain types don't provide cover, their hinderance effect can make fire against units behind them not possible.

Hexside terrains such as walls or hedges block same level LOS through or along them, but again not into or out of the adjacent hexes. They can also provide defensive advantages such as blocking hull hits (walls), or giving some level of cover. The black wall hexsides of bunkers and rowhouses block all LOS and fire through them.

Height also has an effect on LOS. Being higher up enables you to shoot over the walls and hedges, and prevents hinderance terrain like grainfields from blocking LOF. This means that a wall that is not adjacent to the target can be seen over, allowing you to shoot at the target with no effect to your shot. And because LOS is reciprocal, that HMG nest in the upper floor of a building can see your moving troops over a large area. Be careful.

Exploring Enemy LOS

There are a couple ways to explore enemy units LOS. If all your units are deselected, you can move the mouse over an unconcealed enemy unit. This will highlight all hexes where the enemy unit can fire on.

 Alternatively, you can use the LOS tool (press "F" or click on the icon). This will show you the LOS from whatever hex location you put the mouse pointer in until you left click, press "F", or click the icon again.

Firing with Infantry

When firing with infantry units, you can select which units in a location you wish to fire with. You can choose to use support weapons or the infantry units weapons (and in some cases both). This is determined by which units you have selected, and which action button you use to initiate the attack. Usually, it is better to fire all units in a location at once unless only some of them have a negative multiplier.

When you right click on the target, you will be presented with a variety of action buttons representing the possible types of shots you can use.

	Fire all selected Infantry and MGs at an adjacent target. *Good aiming.*
	Fire all selected Infantry and MGs at medium range (up to half).
	Fire all selected Infantry and MGs at long range (greater than half). *Very poor aiming.*
	Fire selected MGs only.
	Fire selected Sniper. *Good aiming.*
	Throw TNT into an adjacent hex.
	Fire flamethrower.
	Fire HE with a mortar.
	Fire Smoke with a mortar.
	Fire an AT weapon using High Explosive Anti Tank.
	Fire an AT weapon out a Door (avoids backblast, ground level only). *Poor aiming.*

When you have left clicked to activate the action buttons, you can put the mouse pointer over each one and get a summary of the potential of the shot.
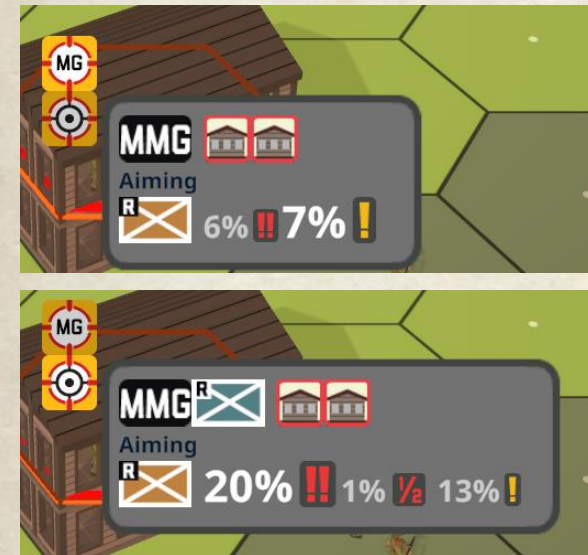

When looking at the shot summary panel, you can mouse over the various icons to get a tool tip telling you what they represent. You can see an in-game summary of these icons in the player help. They will be explained in the section on resolving fire below.

Some support weapons are capable of reloading to take multiple shots in a fire phase. This is indicated on the support weapon counter as explained below in the section on units.

Firing with Guns

When firing gun units, you can select the crewed gun in a location you wish to fire with. Depending on the ammo available to the gun, and the target type (infantry or vehicles) there are many possible actions that can appear. Guns can only fire in their covered arc. Firing is otherwise similar to firing infantry support weapons, including the chance for additional shots (ROF).

When you right click on the target, you will be presented with a variety of action buttons representing the possible types of shots you can use.

	Rotate the covered arc of the gun. This does not use a shot.
	Fire HE (High Explosive) ammo.
	Fire AP (Armor Piercing) ammo.
	Fire HEAT (High Explosive Anti Tank) ammo.
	Fire Smoke Grenade.
	Fire HE unaimed (less effect, but better chance to hit infantry in cover).

Many guns have limited ammo of the various types (and some types may not be available at all). The chances for a gun to run out of ammo is affected by the ammo supply level of their force in a scenario. Low ammo supply increases the chance that ammo runs out, while high ammo supply reduces the chance to run out of ammo.

When you have left clicked to activate the action buttons, you can put the mouse pointer over each one and get a summary of the potential of the shot.

When looking at the shot summary panel, you can mouse over the various icons to get a tool tip telling you what they represent. You can see an in-game summary of these icons in the player help. They will be explained in the section on resolving fire below.

The panels display different information depending on target type (Infantry or vehicle) and shot type. These will be explained in detail later.
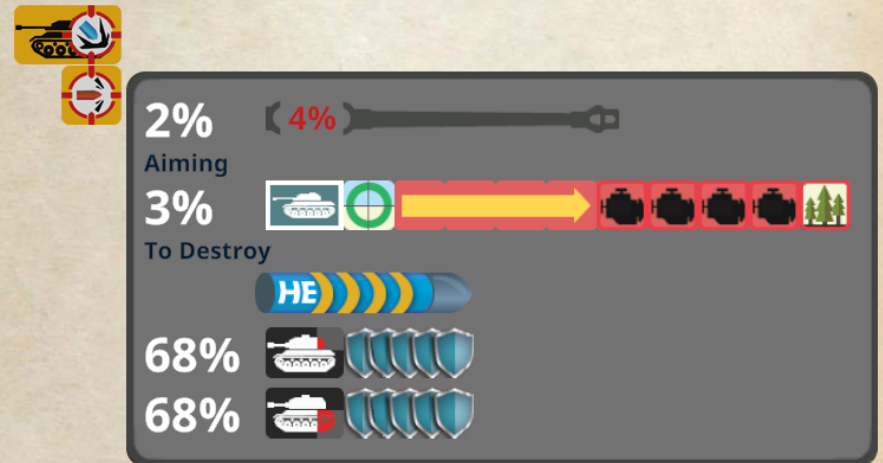
Firing with Vehicles

Firing with vehicles is similar to firing with guns, except that vehicles usually have multiple weapons including the main gun and machine guns. Some vehicles are unarmed and cannot fire.

The process for firing vehicles is the same as for guns – select the firer, rotate turret if needed, select target then select shot type from the action buttons. **Note** that some vehicles weapons require the crew to be either exposed or buttoned up to use – this is detailed in the unit notes section below.

	Change turret facing to cover the selected hex.
	Close (left) or Open the vehicle hatch.
	Fire all eligible machine guns that can hit the target hex.
	Fire AAMG (Anti Air MG, all directions if crew exposed).
	Fire BMG (Bow MG, hull front only)
	Fire RMG (Rear MG, turret rear arc only).
	Fire TMG (turret MG, turret front arc only).
	Fire all passengers and their selected LMGs.
	Fire Smoke grenade.
	Fire Smoke Dispenser (deploys smoke in Vehicle's hex).
	Fire Flamethrower.

	Fire HE unaimed (less effect, but better chance to hit infantry in cover).
	Fire HE (High Explosive) ammo.
	Fire HEAT (High Explosive Anti-Tank) ammo.
	Fire AP (Armor Piercing) ammo.

Similar to using guns, when you have left clicked to activate the action buttons, you can put the mouse pointer over each one and get a summary of the potential of the shot. They look the same as those for gun shots or infantry fire shots if using MGs or flamethrowers.

Some vehicle weapons are potentially capable of multiple shots in a fire phase. Some weapons also have limited supply of ammo – works the same as for guns with limited ammo. Both of these are indicated on the vehicle counter as explained below in the section on units.

Passengers (and not riders) in a vehicle can fire their firepower and any LMG they may be carrying. German HMG and MMG are treated as LMGs while dismantled, so they could be fired by passengers too.

Resolving Ordnance Fire (Hitting the target)

The firing of guns is a two step process. First the shot is checked to see if the target was hit. Then, after a hit, the effect of the shot is determined. This includes attacks against any target when using ordnance, vehicle guns (excluding machine guns) and some support weapons (MTR and anti-tank SW).

There are a lot of multipliers that affect the chance for a shot to hit its intended target. You can see the list in game using the player help under "Gun Fire". These multipliers are shown as symbols with red or green frames. Green frames mean it is favorable to the firer. Red frames mean it is detrimental to the firer. The number of boxes in the multiplier represent how strong the effect is, with each single box being approximately equal effect.

Multipliers based on Firer include:

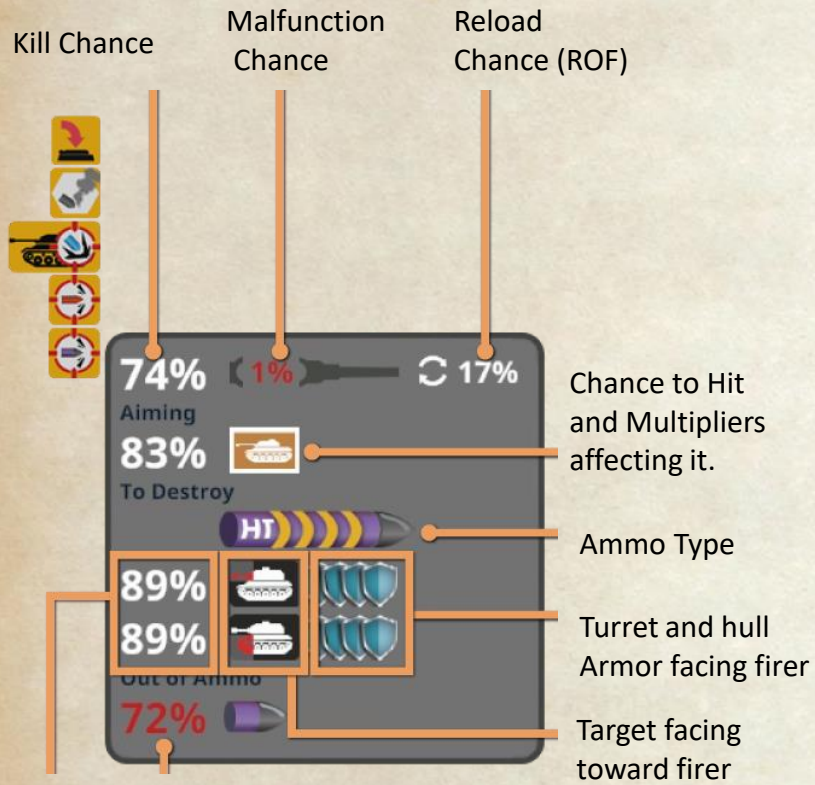|	
	Moved to a new hex this turn. *Extremely poor aiming.*
	Firing while Engine on. *Extremely poor aiming.*
	Firing with Closed Hatch. *Poor aiming.*
	Wounded Crew. *Up to 3 times, poor aiming each one.*
	Pinned Gun Firer. *Very poor aiming.*
	Fired on hex 1 time. *Good aiming.*
	Fired on hex 2 or more times. *Better aiming.*
	Range one shot. *Better aiming.*
	Range two shot. *Good aiming.*
	Fire an AT weapon out a Door (avoids backblast, ground level only). *Poor aiming.*

Target based multipliers include:

	Target is Walking. *Good aiming.*
	Target is Running. *Good aiming.*
	Target is moving in open ground (no cover and no aim hinderance). *Good aiming.*
	Target Vehicle is Moving (Engine on). *Very poor aiming.*
	Huge Target. *Better aiming.*
	Big Target. *Good aiming.*
	Normal Target. *No effect.*
	Small Target. *Poor aiming.*
	Very Small Target. *Very poor aiming.*
	Long Range (> half max). *Very poor aiming.*
	Target Concealed. *Very poor aiming.*
	Target is gun in Sandbags and no other terrain applies. *Good cover.*

The terrain in the target's hex, as well as any terrain hinderances will also affect the chance to hit the target. See the terrain chapter for the details.

Resolving Ordnance Fire – the Shot Panel vs Vehicles

Example shot panel when firing at a vehicle:

Kill Chance

Malfunction Chance

Reload Chance (ROF)

74% ⟨ 1% ⟩ ↻ 17%

Aiming
83% 🛡

To Destroy
HT

89%
89%

Out of Ammo
72%

Chance to Hit and Multipliers affecting it.

Ammo Type

Turret and hull Armor facing firer

Target facing toward firer

Chance shot will penetrate armor.

Chance that the current shot is the last for this ammo.

The **Kill Chance** shows the odds of the shot destroying the target given the chance to hit and the chance to penetrate shown in the bottom of the panel.

Malfunction Chance shows how likely your gun is to break when attempting the shot.

Reload Chance is the possibility that you will get to take another shot with the gun in the same phase. This is based on the gun size and how rapid it is able to shoot. If nothing is shown here, then the gun does not have a chance to reload.

Under the **Aiming** heading, you see the chance to hit, the target type of the selected target and any multipliers affecting the shot.

The **To Destroy** section shows the ammo type being used, plus penetration multipliers for AP ammo. The more yellow arcs shown on the ammo type indicator, the higher the penetration capability of the ammo being used. Under this is shown the penetration chances for the selected target accounting for the shot range and facing of the target.

Penetration chance is the probability that a hit will get through the target's armor and destroy it. Shots that don't penetrate can occasionally still cause damage ranging from immobilizing the target to stunning the crew. Its also possible the shot can hit a wall in front of the target, preventing damage.

The **target facing** the firing unit is shown by the red spot on the black and white vehicle images to the right of the penetration chance. The right end of this section shows the **target's armor** strength that will be used against the shot.

For units with limited supply of some ammo, the **Out of Ammo** section will be showing indicating the chance that the current shot will use the last round of the selected ammo type.

Resolving Ordnance Fire – the Results vs Vehicles

The results of a shot vs a vehicle will be shown in the lower left corner. Clicking on the result bubble will put a highlight over the hex the target occupied.
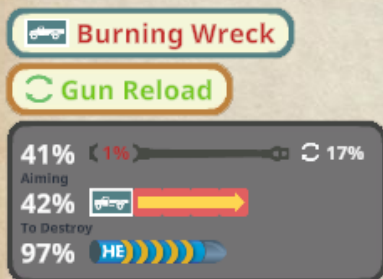
Result bubbles generally show the icon of the affected unit, and what the effect was. Results that affect the firer will show a different symbol depending on the result. Some results show the location of the vehicle hit – hull or turret, and some results are only possible against some locations.

Results will show if the gun received a reload, if a malfunction occurred, and the effect to the target.

If the target is not destroyed, the firing unit will gain a bracketing bonus to the next shot at that target hex, up to a limit of 2 times. This will apply even if the next shot is due to reload.

Shocked vehicles button up, and can perform no other action until recovered. They will attempt to recover in each Recovery phase until their fate is determined. Possible outcomes are:
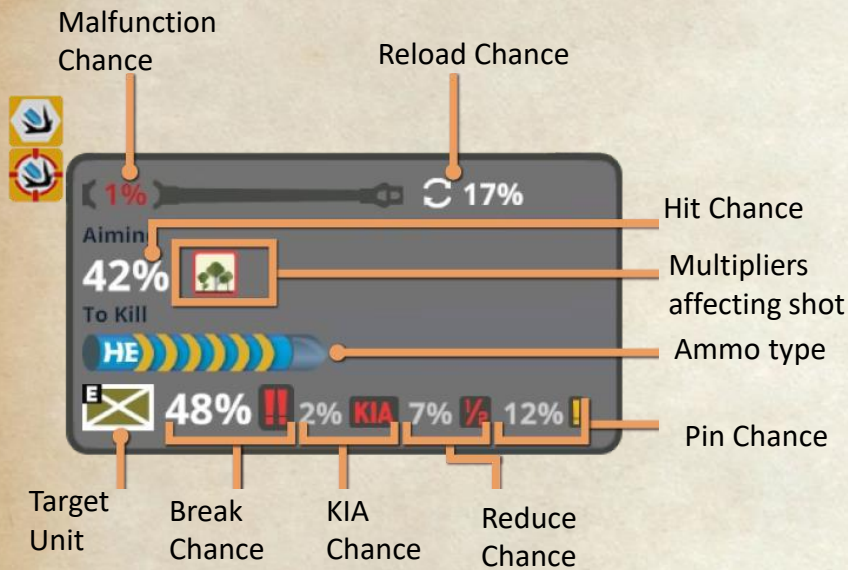- Recover, leaving a crew wound that causes bad aiming.
- No change - try again next recovery phase
- Destroyed - crew was killed. Vehicle is eliminated.

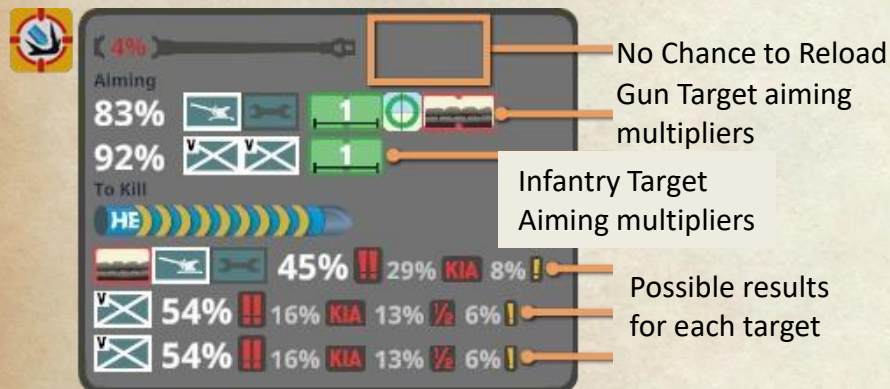Possible results that can show up include:

Result	Description
? Miss	The shot failed to hit the target
Hull Hit Wreck / **Turret Hit Wreck**	The shot hits the vehicle and turns it into a wreck. Crew survival is possible. The location of the hit is shown as hull or turret.
Turret Hit Burning Wreck / **Hull Hit Burning Wreck**	The shot hits and turns the vehicle into a burning wreck. Crew survival is not possible. Creates Smoke and can kindle the terrain.
Hull Hit Immobilized	The shot hits the hull of the vehicle and the damage immobilizes it.
Turret Hit Stunned / **Stunned**	The vehicle crew is **stunned**. Stops and closes the hatch. Can not be activated. In the Recovery phase, the stun is removed and leaves the crew with bad aiming after recovery.
Turret Hit Shocked	The vehicle crew is **shocked**. Stops and closes the hatch. Can not be activated. See details at bottom of previous page.
Ricochet	The shot hits but was unable to penetrate the Armor of the target.
Crew Survives / **Passenger Survives**	The vehicle was wrecked, and the crew or passengers survived. It is possible for both to survive.
Wall	A hull hit was achieved, but was blocked by a wall in the target location.
100%	The vehicle was captured in Close Combat. *See Close Combat section for details.*

Resolving Ordnance Fire – the Shot Panel vs Infantry

Example shot panel when firing at a single infantry unit:

Malfunction
Chance

Reload Chance

Hit Chance

Multipliers
affecting shot

Ammo type

Pin Chance

Target
Unit

Break
Chance

KIA
Chance

Reduce
Chance

Example panel with multiple targets in the location (only differences are shown):

No Chance to Reload
Gun Target aiming
multipliers

Infantry Target
Aiming multipliers

Possible results
for each target

Malfunction Chance shows how likely your gun is to break when attempting the shot.

Reload Chance is the possibility that you will get to take another shot with the gun in the same phase. This is based on the gun size and how rapid it is able to shoot. If nothing is shown here, then the gun does not have a chance to reload.

Under the **Aiming** heading, you see the chance to hit, the target type of the selected target and any multipliers affecting the shot.

The **To Kill** section shows the ammo type being used. The more yellow arcs shown on the ammo type indicator, the more powerful the shot – largely determined by gun size.

The possible results for each target take into consideration the multipliers affecting each unit (for example, only the crew of a gun can benefit from sandbags). Each result line shows any target specific multiplier, the target icon, and then the possible results of a hit.

Each result line shows the approximate percentage of each outcome on the target in the form of "Chance % Result icon". For example, 54% ‼ means the target has a 54% chance of being broken from the shot. The details and meanings of these are explained in the Combat results section below.

Resolving Infantry and SW Fire – Shot Multipliers

Shots by infantry firepower and support weapons are subject to many of the same multipliers as ordnance. There are a few multipliers that affect only infantry and SW fire.

Firer based multipliers:

	Moved to a new hex this turn. *Very poor aiming.*
	Pinned Firer. *Very poor aiming.*
	Running Firer. *Poor aiming.*
	SMG Bonus. *Good aiming after moving.*
	Leader Bonus. *Good aiming.*
	Leader Bonus. *Better aiming.*
	Leader Bonus. *Excellent aiming.*
	Poor Leader. *Bad aiming.*
	Hero Bonus. *Good aiming.*
	Fire adjacent target. *Better aiming.*
	Long Range (over half of max range). *Very Poor aiming.*
	Sniper Bonus. *Better aiming if sniper firing alone.*

Firer based multipliers apply if any firing unit qualifies. For example if any firer has running, then it applies to the shot for all units. Target based multipliers apply to specific targets that qualify for them. For example, only the gun crew can benefit from sandbags.

Target based multipliers:

|	
	Target is Walking. *Good aiming.*
	Target is Running. *Good aiming.*
	Target is moving in open ground (no cover and no aim hinderance). *Good aiming.*
	Target is Vehicle Crew. *Good cover.*
	Target is gun in Sandbags and no other terrain applies. *Good cover.*
	Target Concealed. *Very poor aiming.*

The terrain in the target's hex, as well as any terrain hinderances will also apply multipliers to the firepower of the shot. See the terrain chapter for the details.
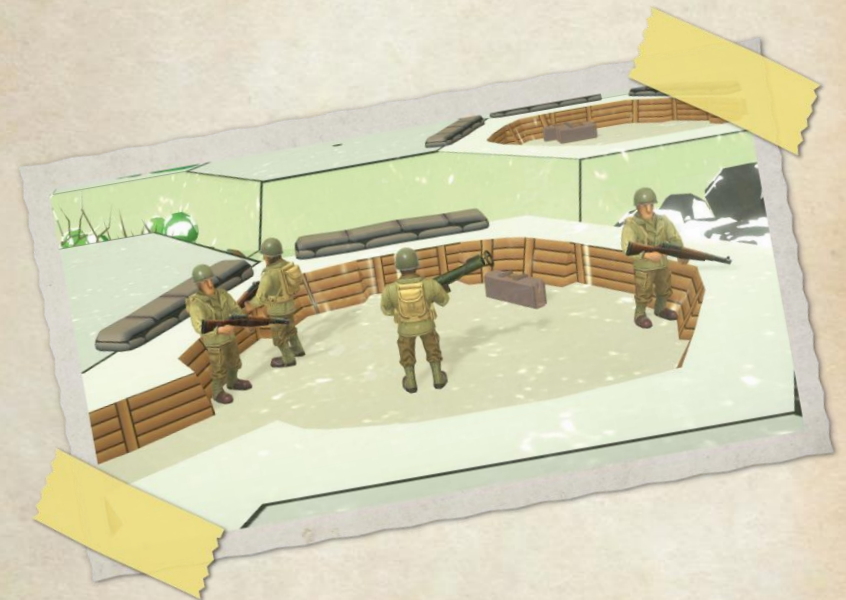
Resolving Infantry and SW Fire – Shot panel

The shot panels shown for infantry and support weapon fire on infantry targets are similar. Support weapons that act like ordnance are shown like the gun fire panels depending on their target.

Using a flame thrower you will get this type of panel:
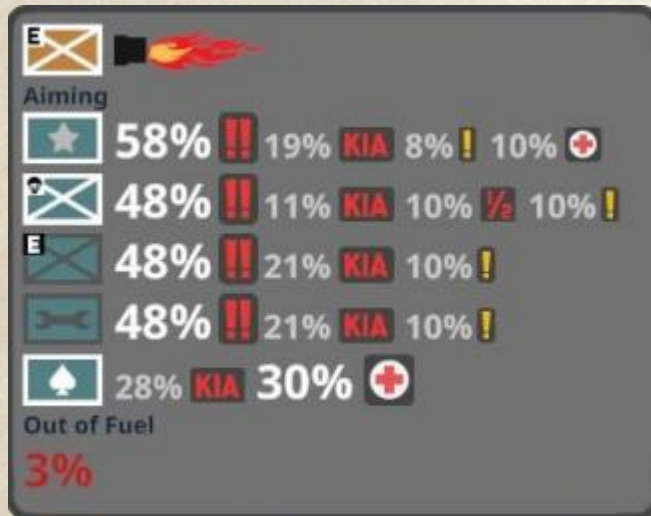
It shows the possible results vs each unit, and in addition it shows the chance for the FT to run out of fuel after the shot. For all other Infantry fire, the panel will look as below:
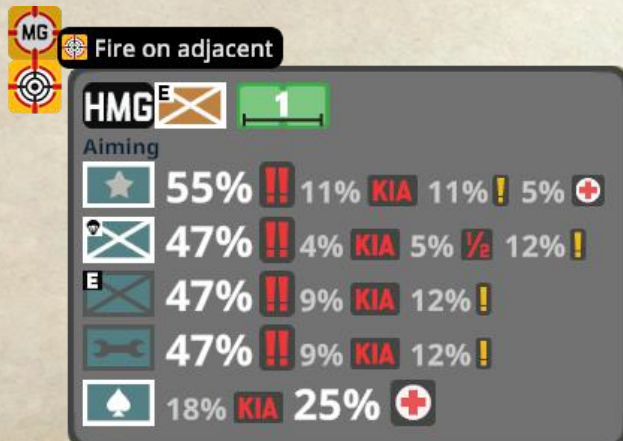
When using TNT, you throw it during your move and fire phase, and you can then move away if you have MP left. It will detonate later in the player turn at the start of the Escape phase.

Fire Results on Infantry

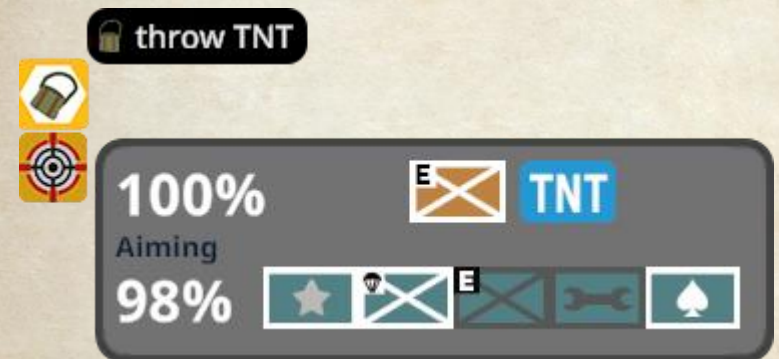The shot panels shown previously show the potential results of fire on infantry targets using percentages and icons. The percentages have been calculated based on the terrain and hinderances of the target location and the LOF to the target. The firepower and any leadership bonus in addition to other multipliers, like short or long range, are all accounted for. In addition the morale rating and any leader bonus of the target is also considered in generating the estimated results. The Fatigue level of the target side affects the results of morale tests with high fatigue increasing chance for bad results, low fatigue reducing the chance.

The result is determined randomly when the attack is initiated. The actual results are then shown in the bottom left corner, after applying all multipliers.

Pointing the mouse at a result icon (above the shot panel) will highlight the hex that was affected. This also works when the computer fires at your units.

The possible results of fire on infantry are detailed here:

Result	Description
Miss	The shot missed the target and had no effect.
(hit/morale)	The shot hit and caused a morale test, but the Infantry stands (survived) the morale test.
Broken	The Infantry failed a morale test and is broken ‼ .
Broken weaken	The Infantry failed a morale test badly and is broken ‼ and reduced in quality. *This happens more often the higher the Fatigue value is.*
KIA	Killed in Action. The Infantry unit is removed from the game. **KIA**
Kill	The squad suffers casualties and is reduced to a half-squad. **½**
Wounded ✚	Wounds the Soldier 🔴. Leaders lose one Star. Heroes lose Hero bonus.
Ok	The Infantry was broken, but rallies to unbroken.
toughen	The Infantry improves to a higher Quality. *If already the highest quality, the Infantry becomes Fanatic.*
toughen + Hero ♠	Toughening and Hero – the infantry improves to a higher quality, and a new Hero is created.
Hero	A new Hero is created.
New Leader	A new Leader is created. *Close Combat result only.*
Pinned	The Infantry unit was pinned ❗.

When a unit is eliminated, any support weapons it is carrying are also destroyed.

A **broken** ‼️ unit will carry light support weapons with it when escaping, while heavier ones will be left behind. If a leader (broken or not) is stacked with an escaping unit, the leader will run with the unit and help to rally it. Broken units with❗do not attempt escape.

A **pinned** ❗unit is unable to move, has reduced firepower and can't get quick reloads. This is removed in the Recovery phase.

Fanatic units have their morale increased and ignore pins. They also never cower, which gives them a little more firepower.

The quality progression of units for toughening and weakening is shown in the units section below. Generally, Troops have qualities ranging (from lowest to highest) of Green, Regular, Veteran, and Elite.

Morale in Detail

Infantry units are subject to morale. This is a rating of how well they perform under fire. The morale level of a unit is indicated on its counter, with the more ▨▨▨ epaulets a unit has the higher its morale, and the less likely it will break from being shot at.

Units can lose morale due to combat effects and this is shown with negative epaulets ◣◣◥ on the unit counter.

Some units have different morale when they are broken – it can be higher or lower. If a squad or half-squad unit fails a morale test by enough of a margin, it will be substituted with a lower quality unit of the same size (weakening). This margin is affected by the current Fatigue of the force. Higher fatigue increases the chance for weakening.

If a squad or half-squad pass a morale test with a good enough result, it can be substituted with a higher quality unit of the same size. It can also generate a Hero in its location.

Crew units are not subject to toughening or weakening, and can't generate heroes.

Leaders and snipers can be broken, and will attempt to rally in the Recovery phase.

Troops units which are already broken that fail another morale test are reduced instead – turning a squad into a half-squad, and eliminating a half-squad or crew.

Broken soldiers that fail a morale test may become wounded ✚. A wounded soldier has an increased risk of being eliminated from subsequent wounds.

♠ ♠ ♠ Heroes do not break – they are wounded ✚ instead. Subsequent wounds may eliminate the hero.

Leaders

A leader's rating can help to both pass a morale test, and to help units rally to recover from being broken. The number of gold stars they have indicates how much they can help (more stars is better). Grey star leaders provide no morale benefit, but can rally units. The leader's rating also affects aiming.

Units stacked with a leader are subject to a morale test if that leader is eliminated or a pin check if the leader breaks, so losing a leader can take out a whole stack.

Routing

Broken units are marked with ‼ when first broken, or if fired upon in a subsequent player turn before they have rallied. All units marked with ‼ will attempt to rout during the Escape phase.

Routing units have 6 MP to use in their escape from enemy units. They will not move closer to enemy units they can see at the start of their rout and will not end adjacent to an enemy unit. If the unit cannot move without moving adjacent to an enemy unit, it will surrender and be eliminated instead.

Units able to rout are moved by the computer towards the closest woods, building or trench location. If there is such a location with a leader in it, the unit will attempt to move there. If the unit starts with a leader in its location, the leader will move with the routing unit.

When the unit reaches the target location and has MP remaining, it may select a new target further way and move towards it for better cover.

Interdiction

Routing units that move in the LOS and within half range of an enemy unit without the benefit of cover or hinderance are subject to interdiction. The routing unit must perform a morale test in each such hex it moves across. Failing this check will break the unit again – reducing a squad to a half-squad, and eliminating a half-squad or crew. This fire can be avoided if the unit uses low crawl to try to escape.
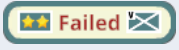
Rally

In the Recovery phase, broken units will attempt to rally if stacked with an unbroken leader. Leaders can self rally, and if they do rally can then rally other broken units in their location. The active player also gets to attempt to rally one unit without a leader. The unit with the best chance is selected for this attempt.

Units that fail to rally are left marked with a ! and will not have to escape next turn unless fired on (gaining a ‼ marker again). Broken units that end the turn in a hex with a flame will be marked with ‼ at the start of the Escape phase so they can attempt to run out of the fire.

Rallied units are returned to normal condition, and suffer no lasting effects from having been broken.

Rally attempt results are shown as follows:

⭐⭐ Rallied ✉	The Infantry rallied with the help of the leader shown (if any).
⭐⭐ Failed ✉	The Infantry failed in its attempt to rally.
⭐ New Leader	The self-rallying Infantry created a new Leader and rallied.

Weapon Malfunctions
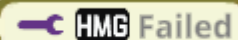
Support weapons, guns and vehicle weapons can all malfunction when being used in combat. When a weapon malfunctions, this result is shown along with the other results of the shot attempt.

⊸C PSK Malfunction

Some weapons are unable to be repaired and are destroyed when they malfunction. Examples of these include flamethrowers and satchel charges (TNT).

Malfunctioned weapons automatically attempt to be repaired every Recovery phase. This will result in the weapon being repaired, no change (failed), or destroyed.

⊸C HMG Repaired

⊸C HMG Failed

⊸C HMG Destroyed

A weapon that fails to repair can try again in subsequent Recovery phases until either it is repaired or is destroyed.

Close Combat

The last form of combat in Second Front is Close Combat. This occurs during the **Melee Phase** when units of both sides are in the same location at the end of the player turn.

Close combat can be between infantry units or with a vehicle on one side. If only infantry units are in the location when advancing your units into the location, you need only order your units to advance there. If there is a vehicle present, the units must pass an anti-tank bravery test (morale test) before they can enter the vehicle's hex and a leader can assist this test.

The close combat panel shows the chance to pass the bravery test, and then the probably results. In the above example, the two Russian units have a 17% chance to win, while the German defenders have an 83% chance to win.

The results can be anywhere from elimination of all units on one or both sides to no effect, leaving the units locked in melee and the hex marked in red.

 If an empty, unarmed, unarmored vehicle is stopped in a hex alone, it can be captured by advancing a unit into its location. Otherwise close combat occurs between the infantry and the vehicle.

When advancing into a hex with enemy infantry not in clear terrain, ambush may be possible.

Potential Ambush is indicated by the Ambush section at the top of the CC Panel. This shows the chances each side has to obtain an ambush. A side ambushing the enemy gets to attack first with a bonus to aiming, and may eliminate the enemy without the enemy getting a chance to make an attack in the close combat. Ambush can only occur in terrain that is not clear.

Any concealed unit increases the chance for their side to ambush the enemy, while any running unit decreases the chance. Leaders and Heroes also contribute to the chance for an ambush to succeed. Green troops are more easily ambushed.

When resolving CC with infantry only, the firepower determines the chance for success. Machine guns do not count, and a soldier has one firepower. The combat is resolved simultaneously, so it is possible for both sides to be eliminated.

Against vehicles, combat is resolved sequentially with the strongest infantry group going first, followed by the vehicle, and then all other infantry groups. An infantry group is up to one troop and one soldier. Attacks against vehicles are improved for each of the following that apply:

- No manned MG (must not be malfunctioning, and able to be fired if not in CC).
- Open Topped
- Stunned

If forces of both sides survive in a location, all non-vehicle units are all locked in **Melee** and can not exit the location. Other units can not fire into a melee location, but units can advance into the combat to try and help their side win. Vehicles may leave a melee location in their move and fire phase.
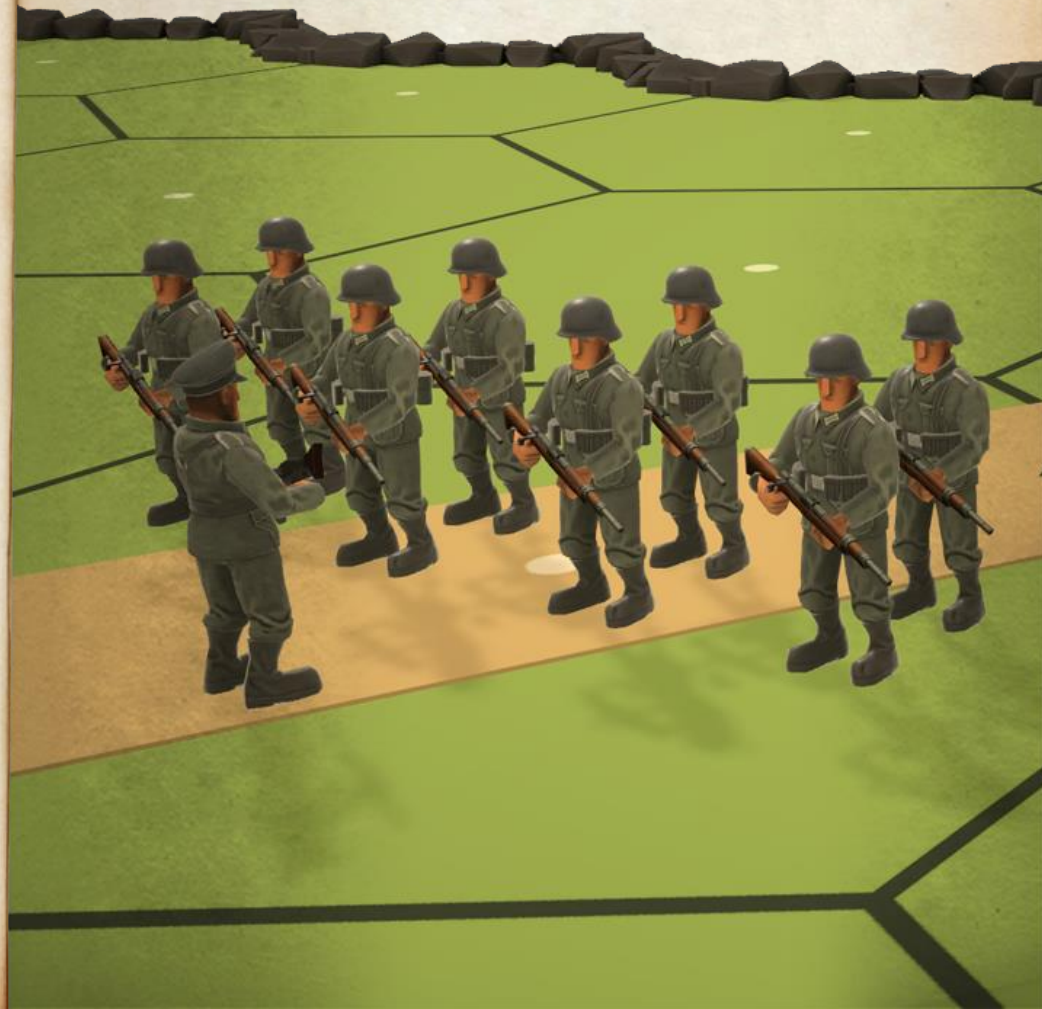
Units

Units in Second Front belong to 4 general groups – infantry, support weapons, guns and vehicles. Within each of these, there are many types. These are explained below.

Common to all units is that they are represented by counters in the lower right corner when selected, and by renderings of the unit on the map in 3D. The units on the map have a flag on them indicating the type of unit, any support weapons carried and a few other status effects.

Unit Flag Colors

Background color consistent across all units.

USA   Germany   Russia

Infantry Units

There are 2 major kinds of infantry units – **Troops** are those representing groups of men, and **Soldiers** are those representing a single soldier.

Soldiers

There are 3 types of soldiers available - Leaders, Snipers and Heroes. They are represented on the map by a single soldier figure.

Soldiers have a base of 6 movement points. The 8 shown on their counter includes movement points resulting from running. If not eligible to run (because of running the previous turn), the counter will show the base 6 movement points.

Leaders can be randomly generated when a troop self rallies, while Heroes can be randomly generated as a result of an infantry unit passing a morale test.

Leaders

The morale of a leader represents how well it can handle combat situations, and is used for any morale tests. Good leaders can have from 1 to 4 epaulets, with 4 being the best. Poor leaders have 1 red epaulet, indicating they suffer a penalty to any morale tests for any purpose.

The number of yellow stars indicates the level of leader bonus that a leader has. This bonus is used to rally units, pass Anti-Tank Bravery tests, and help units pass morale tests. The leader bonus can also be applied to the fire of any units that fire with the leader. In all cases, the leader can only affect infantry units in his own location.

Poor leaders with a red star apply a negative bonus to the same things a good leader applies his bonus to. A leader with a grey star has no bonus to apply, but can still rally units in his location.

When a leader moves with other infantry units, those units gain 2 extra movement points if they start and complete their move with the leader.

Snipers

Sniper Bonus — **Sniper** **8** ← **Movement Points**

Max Range — **12**

Firepower

Flag — ⊕

Snipers represent soldiers trained to fire at individuals – seeking out enemy leaders. They have an inherent firepower of 1 and a max range of 12. If they fire alone, they can add their Sniper Bonus (better aiming) to their shot. They target only a single unit in the target location, and with their bonus this can be deadly.

If they fire with other units, they do not get to use their sniper bonus.

Heroes

Hero Bonus — **Hero** **8** ← **Movement Points**

Max Range — **4** — **Morale**
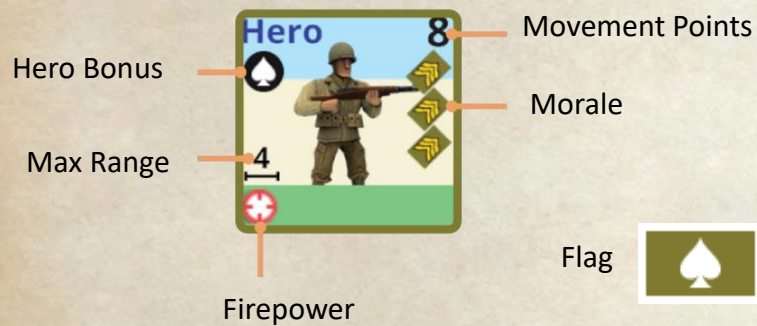
Firepower

Flag — ♠

Heroes are similar to Snipers in that they have inherent firepower and range, but a hero can fire with other units and still use his bonus to affect the shot.

Soldier units and flags on the map

American

German

Russian

There are 3 kinds of troop units - crews, squads and half-squads. Their counters all show the same information.
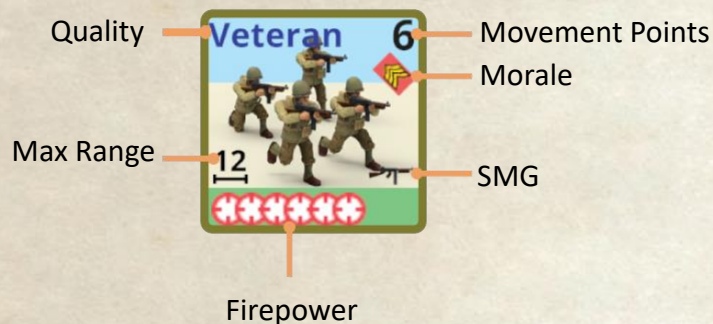
Quality is a rating of the overall combat experience of the unit. The values range from (lowest to highest quality) Green, Regular, Veteran, and Elite. There may be some other quality levels present if a nationality had different troop types that warrant it. For example, German infantry includes 2 types of Elite troops differing in their firepower and range, and Para infantry that have another set of range/firepower/SMG ability.

Crew quality units represent those troops trained to operate heavier weapons and guns. They also represent the crew of a vehicle if it survives the destruction of the vehicle.

There is a half-squad unit that matches each of the full squad quality types. These typically have less firepower, shorter range, and lower morale than their full squad versions. You can recombine two half-squads of the same quality back into a full squad if they are in a location with a leader. For this purpose, the different kinds of squads with the same name, but different appearance of their quality (e.g. the 2 types of German Elite infantry) can not be combined together – the quality must be an exact match.

Like soldiers, the **movement points** shown on the counter does include the bonus for running, or moving with a leader when available.

Morale rating is used for morale tests in all forms, as well as rallying. Some units have a lower or higher morale when broken, and most squads have lower morale when reduced to half-squads.

The **max range** is shown along with the inherent **firepower**. The more crosshair symbols, the higher the firepower. The **SMG** symbol indicates the unit gets the SMG bonus after moving.

Other status effects are shown on the unit counters.

Troop units and flags on the map

American

Green 6	Regular 6	Veteran 6	Elite 6	Elite 6
6	8	12	12	8
G	R	V	E	E

Green 6	Regular 6	Veteran 6	Elite 6	Elite 6
2	6	8	8	6
G	R	V	E	E

Crew 6	Crew 6
2	4
Vehicle   Gun

Russian

Green 6	Regular 6	Regular 6	Elite 6	Elite 6
4	4	8	4	10
G	R	R	E	E

Green 6	Regular 6	Regular 6	Elite 6	Elite 6
4	4	6	4	8
G	R	R	E	E

Crew 6	Crew 6
2	4
Vehicle   Gun

German

Green 6	Regular 6	Veteran 6	Elite 6	Elite 6
6	8	12	6	12
G	R	V	E	E

Green 6	Regular 6	Veteran 6	Elite 6	Elite 6
6	6	8	6	8
G	R	V	E	E

Para 6	Para 6
8	6

Vehicle   Gun

Crew 6	Crew 6
2	4
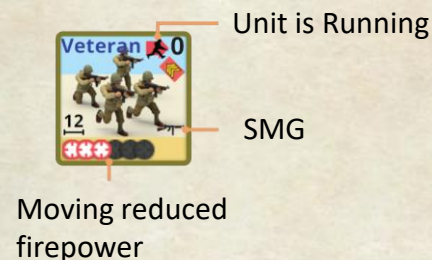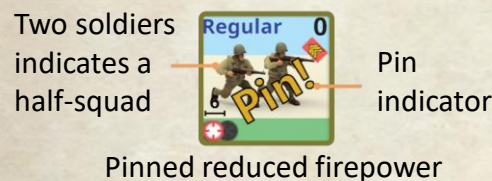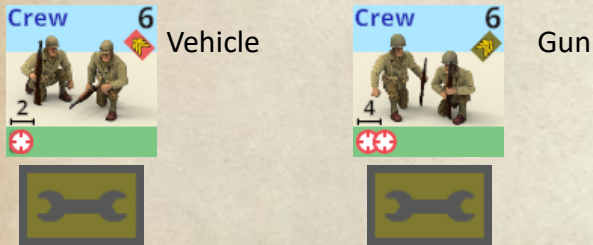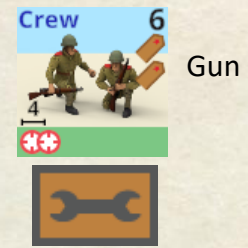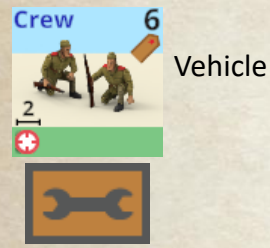
Support Weapons

These represent heavy weapons assigned to combat units. They are represented with their own counters.

Anti Tank Rifle (ATR)

These represent large rifles able to penetrate thin armor that were in general use at the start of the war. They have a max range and malfunction chance.

Range — [12] ATR — SW Type

Malfunction chance — [1%]
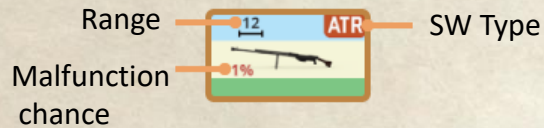
Bazooka (PSK, BAZ, PF)

These weapons represent light anti-tank weapons using HEAT ammo to destroy armored targets. They are generally short range, and can pose a big risk to their users. **Backblast** occurs if fired from an enclosed space like a building, and can cause damage to your units in the location it is fired from. To avoid backblast, you should always go out the door before firing one of these – only possible on the ground floor (and mandatory if firing after moving).

Weight (if > 1)

Range — [4] PSK — SW Type

Malfunction chance — [8%]

0 1x PF
8%

4 BAZ
4%
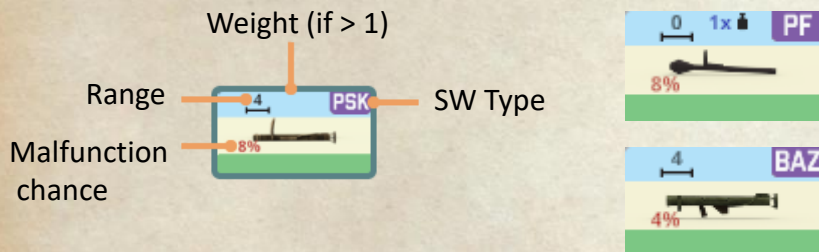
Satchel Charge (TNT)

These represent large packets of explosive which can be thrown into an adjacent hex. They are devastating to anything in the target hex.

Range — [1] TNT — SW Type

Malfunction chance — [1%]

Flamethrower (FT)

These represent portable fire dispensers – they can shoot flame over a range, with a lot of firepower. The tend to run out of fuel quickly, as represented by the high malfunction chance. Flamethrowers ignore cover in the target hex but not hinderance.

Range — [2] FT — SW Type

Malfunction chance — [8%]

Can start fires.
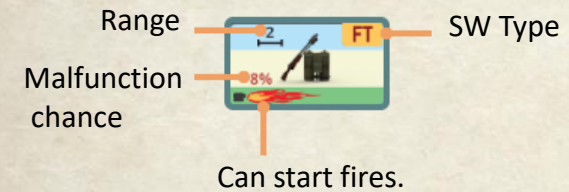
Machine Guns (LMG, MMG, HMG)
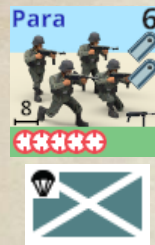
Machine guns dominate the battlefield, providing large amounts of firepower and high rate of fire. They come in multiple sizes with differing ranges, firepower, mobility and rate of fire. Some are able to be dismantled to more easily move them, and need to be reassembled before firing again. German HMG and MMG are able to fire like LMG when dismantled.

Weight (if > 1)

Range — [24 2x] MMG — SW Type

Malfunction chance — [1%] — [33%] Reload Chance

✱✱✱✱✱

Firepower

16 LMG
1% 17%
✱✱✱

32 4x HMG
1% 50%
✱✱✱✱✱✱
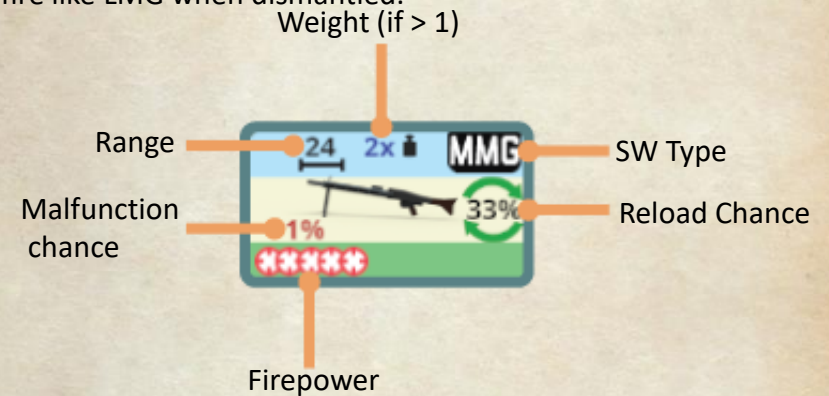
Mortars (MTR)

Infantry portable mortars are in two sizes, one around 50 to 60 mm, and the other around 80mm, depending on nationality. Mortars can also be dismantled to move more easily, and do require reassembly to fire. Some mortars are able to fire smoke grenades in addition to high explosive.

Note that while mortars do fire indirectly, the firing unit does need a LOF to the target location. Mortars have a minimum range due to this indirect fire, so their range is shown as Min-Max instead of just a single value. Because of the trajectory that mortar shots use, when firing against targets in woods and birch, mortars get a bonus multiplier for airburst effects.

Weight

Min and Max range — SW Type

Malfunction Chance — Reload Chance

Size — Smoke ammo chance
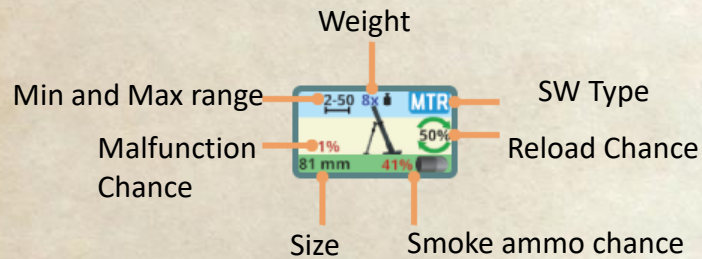
The size of a mortar determines its firepower in the same way that other guns have their firepower determined.

The mechanics used for firing mortars is similar to guns, except mortars don't have a covered arc – they can shoot in any direction.

Designer's Note:
   Artillery fire called in by radios as well as Close Air Support will be realized in a later version of Second Front.

   They are currently not available.

American Weapons

20 2x MMG 1% 33% ✳✳✳✳	24 4x HMG 1% 50% ✳✳✳✳✳	32 4x HMG 1% 50% ✳✳✳✳✳✳✳
3-45 4x MTR 1% 50% 60 mm	2-18 3x MTR 4% 33% 60 mm	3-50 8x MTR 1% 50% 81 mm 41%
4 BAZ 4%	1 TNT 1%	2 FT 8%

Russian Weapons

12 LMG 4% 17% ✳✳✳	20 4x MMG 4% 33% ✳✳✳✳	24 4x HMG 1% 50% ✳✳✳✳✳
16 4x HMG 1% 50% ✳✳✳✳✳	3-20 3x MTR 1% 50% 50 mm	3-50 8x MTR 1% 50% 82 mm 41%
12 ATR 1%	1 TNT 1%	2 FT 1%

German Weapons

16 LMG 1% 17% ✳✳✳	24 2x MMG 1% 33% ✳✳✳✳	32 4x HMG 1% 50% ✳✳✳✳✳✳
2-13 4x MTR 1% 50% 50 mm	2-50 8x MTR 1% 50% 81 mm 41%	0 1x PF 8%
4 PSK 8%	1 TNT 1%	2 FT 8%
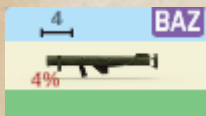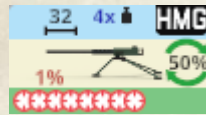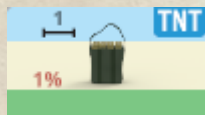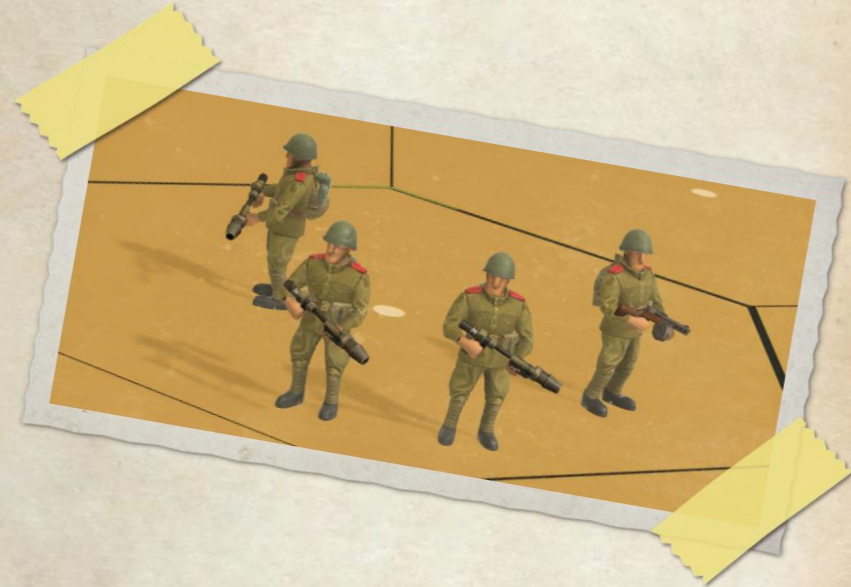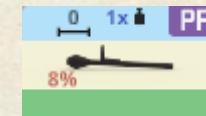
Gun Units

Gun units represent the various heavy weapons used in roles such as anti-tank and anti-air.
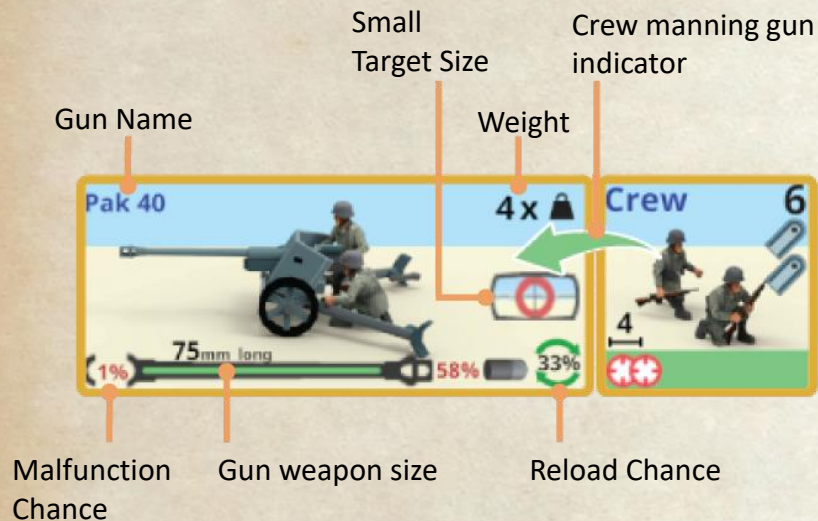
Gun counters show the name of the gun at the top, and the size of the gun's weapon at the bottom. This includes the diameter of the gun and how long the barrel is. Longer barrels get higher penetration and more accuracy for a given gun size than shorter barrels do.

The weight of a gun affects the chances to push the gun into a new location.

Target size affects how easy or hard it is to hit the gun when firing at it. Sizes range from huge to very small.

When guns are initially placed in non-cover terrain other than roads, they will get sandbags to provide some protection for the crew. These sandbags are lost if the gun is moved to a new location. Up to 2 squads and 2 leaders can help the gun's crew push the gun.

Operating a gun requires a crew. Squads and half-squads cannot operate guns. If a gun is not manned by a crew, and is in terrain a vehicle can enter, any tracked vehicle entering the hex will destroy the gun.

Some guns have special ammo available such as HEAT and smoke. The availability and out of ammo chance will be shown on the counter.

Frequently at the start of a scenario, enemy guns not in open ground will be hidden and not visible to the player. They will appear on the map if spotted by units when they fire, or if a unit enters a hex adjacent to the hidden gun.

In Second Front, gun units can not be towed by a vehicle as this was not normally done in a combat situation.

> **Designer's Note:**
>
> Currently guns can't be towed in Second Front. This will be implemented in a later version of the game.

Flags for guns on the map:
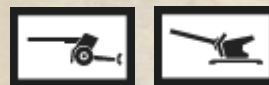
Uncrewed   American

German   Russian

Vehicles

Vehicle counters are similar across the various vehicle types.
Note: Turret armor applies to upper hull on turretless vehicles.

Turret Front Armor
Turret Side Armor
Turret Rear Armor

AAMG
TMG
BMG
PzKpfw IV H
28%
13
75mm long
1%
41%
17%

Hull Front Armor
Hull Side Armor
Hull Rear Armor

Crew Exposed
Turret Rear MG

Armor Piercing
Out of ammo
chance
KV2
RMG
9
Movement
Points

BMG
27%
152mm short
1%

Huge
Target
Size

Gun Malfunction chance

Name
Buttoned Up
Smoke Dispenser
Success chance

Anti-Air MG
Turret MG
Hull Front
MG

AAMG
TMG
BMG
PzKpfw IV H
28%
13
Riders
present

75mm long
1%
41%
17%

Reload
Chance

Gun size and length

Smoke Grenades
Out of ammo chance

Concealed

No fire if
Buttoned Up
M10 GMC
28%
11
No fire if
Buttoned
Up

No fire if
Buttoned Up
76mm long
83%
33%

Yellow indicates the vehicle has moved
but can still fire. Red indicates the gun
can no longer fire this turn.

The **armor strength** on vehicles is indicated by the number of shields in each of the six armor positions. The more shields, the stronger the armor. For turretless vehicles, the "Turret" armor factors are used for the upper hull.

Some vehicles are able to mount **Schurzen** (extra armor) to improve their armor ratings. This must be [set up by the scenario](#) designer and can't be changed during play.

The **crew exposed** or **buttoned up** status of vehicles is shown by the presence of the commander standing in the turret (or upper hull), or being hidden inside the tank for buttoned up.

Some weapons require the vehicle crew to buttoned up to be fired.

Some vehicles have weapons that require the crew to be exposed to be fired.

The various **machine guns** a vehicle may mount each have differing arcs they can fire into. The number of red and white crosshair symbols on them indicate the firepower of each machine gun. No vehicle machine gun is eligible for reload unless it is the main armament of the vehicle. If the main armament is a machine gun, it will be shown at the bottom of the counter where the gun would normally be expected.

AAMG requires the crew to be exposed to fire, and can fire in any direction. It has a range of 8.

TMG fires in the same arc as the turret faces. TMG is mounted higher on the vehicles and is able to fire over walls and hedges. Vehicles with no turret may have a TMG to represent this height advantage. TMG has a range of 12.

BMG is mounted on the front of the hull and is lower than a TMG. BMG cannot fire if the vehicle is parked facing a wall with the hull front. It has a range of 8, and fires in the hull front arc.

RMG is mounted on the rear of the turret and fires in the rear arc of the turret only. It has a range of 8.

When a **Smoke Dispenser** is shown, the percentage beside it is the chance for success. It does not run out of ammo. If an attempt to use it succeeds, Smoke is deployed in the vehicles current location. Using the dispenser does not stop the vehicle from moving further in its turn.

Like gun counters, vehicles show the malfunction chance and the reload chance if applicable to the gun. The gun length affects both accuracy and penetration of the shots it takes. Turret mounted guns can only fire in the turret front arc, while hull mounted guns can only fire in the hull front arc.

Some guns have limited supplies of some ammo. This is shown by the ammo type icon and a percentage to run out of that ammo after the next shot using that ammo.
The ammo icons include:

AP ▬▷   HE ▬▭▷   HEAT ▬▭▷   Smoke ▬▭▷

Some vehicles can carry riders – troops riding on the outside of the vehicle. These troops get no protection from the vehicle's armor, and must bail out if the vehicle changes its turret arc. The capacity is shown as grey heads when empty, and colored in heads when riders are present. A squad counts as 4 heads, half-squad or crew as 2, and soldiers don't take any space – but there is a limit of 2 that can ride in addition to other riders.

Vehicles that can carry passengers internally show the grey heads for capacity in the upper right corner of the counter either above or beside the movement points. Passenger space is indicated the same way as for riders – 4 heads for a squad, 2 for a half-squad or crew, and up to 2 soldiers for free.

When a vehicle is carrying passengers, especially if it is unarmored, you must be careful exposing it to enemy fire. If it is destroyed, the passengers and riders are likely also eliminated. **Unarmored** vehicles can be destroyed by infantry fire and SW, so they are particularly bad to use in enemy LOS.

Target size reflects how big the vehicle silhouette is, and the chance to hit it. Size ranges from huge to very small.

Movement points vary for each vehicle and the costs to use them depend on the vehicle type. In all cases it takes one MP to start (turn on the engine if it is off), and one to stop (and turn off the engine). The vehicle can keep its engine running and avoid both the start and stop MP expenditure, but it will have serious degradation of its chance to hit if it fires.

Like infantry units, when concealed, your vehicles get a large "?" over their picture. Enemy vehicles that are concealed do not show their counter – they just show as (matching the national color).

All vehicles belong to one of six basic types. These types impact the movement and other capabilities of the units.

Vehicles belong to one of 4 movement types. These include fully tracked, half track, offroad wheels and truck.

 Tanks in Second Front are defined as fully tracked armored vehicles with a traversable turret. Tanks are able to drive over walls and hedges, and can move effectively off road.

The tank designation includes some vehicles that might be traditionally defined as other vehicle types like Tank Destroyers.

 Assault Guns (AG) are defined as fully tracked armored vehicles that lack a traversable turret. Because they lack a turret, the hull front of the vehicle needs to be pointed at the target. Changing the hull front facing requires moving the vehicle (even just to rotate in hex), making it harder to engage a target that is not to the front.

 Half-tracks are lightly armored vehicles with wheels at the front and tracks at the rear. Half-tracks may be armed with a gun or just machine guns, or even be unarmed. Those not armed with a gun are able to transport infantry as passengers, and these passengers will be protected by whatever armor the half-track has.

 Armored cars are lightly armored, wheeled vehicles. Some are armed with machine guns or guns, and some also have a turret. They are typically highly mobile due to light armor and the wheels. Usually they have offroad wheels.

 Trucks are typically unarmored, wheeled vehicle. This includes large trucks down to small jeeps. Some of them are armed with machine guns. They are typically used for transporting infantry. Usually they have truck wheels.

 Landing craft are available to the attacker in Ocean scenarios. These are lightly armored or unarmored, but can move in deep water and have large passenger capacity. Some tanks also come in a version that can float (US DD tanks).

Some units have special rules that affect their performance in some way. These are listed here.

Unit	Effect
Stug	Gains a 5th box negative multiplier when moving
BAZ	Range increases each year after 1943.
PF	Range increases each year after 1943.

The Garage

Second Front includes a useful tool for comparing various vehicles and guns. This is the Garage.

The garage lets you select 2 units to compare their AP penetration chances on each other at various ranges. It also serves as a tool to help select units for scenarios you design.

Notes on all the vehicle and gun units can also be read in the garage to give you some background information on each unit. You can toggle the display of the notes for each side as desired.

To start comparing, you will want to **choose a date** to filter units to those available on that date (year and month). After selecting a date, you can select a **faction** to choose a unit for. Allied faction units will be displayed on the left, while Axis units will be displayed on the right.

With the desired faction selected, you can select the **unit type** to be shown a list of units available of that type in the selected month for that nation. Then you can just click on one to select it for comparison. Repeat the process (you can't change the date) to select a vehicle from the other faction and you will have a unit on both sides of the garage.

At the **top center** of the screen the penetration capability and armor factors of both units are displayed for all 6 armor locations. Along with this is shown the % chance that a hit at each location will penetrate. You can adjust the **range** for comparison using the range selector tool at the bottom.

Using the **Adjust unit tools**, you can adjust the appearance of each unit. These tools affect the unit that is currently selected in the unit list at the bottom.

- The Crew button lets you get the crew to button up or be exposed
- Elevation moves the gun barrel up and down
- Turret lets you rotate the turret left or right (if it has a turret)
- Riders/Passengers lets you load/unload riders on the vehicle
- Hull lets you rotate the entire unit left or right.

The **scenario unit select toggle** lets you mark units you want to use in a scenario you are designing – perhaps because they have similar capabilities. Units marked will show a large checkmark over their counter image at the bottom, and this check mark will also be visible in the scenario editor so that you can easily see which units you have marked.

One important concept to keep in mind with the **penetration chart** is it shows data for AP ammo, and not all units are able to fire AP ammo. This will give you an idea of how they compare if they both had AP, but may not reflect the actual situation.

The **select unit to zoom button** cycles through 3 states – showing both units (like the image on the next page), or zooming in on either unit. The cycle starts showing both, then zooms on left, zooms on right then back to both.

The Garage Screen

Allied Unit counter

Scenario Unit select toggle

AP penetration chances for unit's guns vs opponent at selected range.

Axis Unit counter

Turret Front   Turret Side   Turret Rear
Smoke Dispenser

T34 m43   16 Movement
TMG
BMG
Target Size
1%   76mm long   17% Reload

Hull Front   Hull Side   Hull Rear
October 1942 - December 1945

Show/Hide notes

AP
2%   81%
2%   58%
18%   89%
18%   89%
42%   95%
42%   95%
AP

Turret Front   Turret Side   Turret Rear
Smoke Dispenser

PzKpfw IV E   58%   14 Movement
TMG   58%
BMG   72%
Target Size
1%   75mm short   27% 17% Reload

Hull Front   Hull Side   Hull Rear
January 1941 - December 1943

The PzKpfw IVE was another upgrade featuring applique armor. Another feature was an upgrade to the optics and to improve visibility for the crew. There were only 200 produced, but there were many field upgrades of earlier models and repair upgrades as well. With the new upgrades, the PzKpfw IV could stand a chance against T34's. The low velocity gun still had no chance against the front armor of a T34, but with the improvements in visibility, HEAT ammunition and the armor improvements gave the crews confidence to maneuver into

Unit notes

Adjust Unit Tools:

Crew
Elevation
Turret
Riders
Hull

Exit Garage

Exit

Faction   Type
German
Russian
American

Range: 1   2   3-6   7-18   19-24   25-30   31-36   37-42   43-50   39   40   41   42   43   44   45   September
Year

T34 m43   16
TMG
BMG
1%   76mm long

KV1 M39 40   12
1   76mm

T35   9
1   76mm short   27%

KV1 M41   11
BMG
1   76mm long

KV1 M42
BMG
1   76mm long

Select Faction

Select Unit type

Select Unit to zoom on

Select Unit to compare

Show/Hide Range Selector

Range Selector

Select Year and Month

Show/Hide Year Selector

Options

The options screen lets you adjust settings for audio, graphics, and the interface.

Audio options include controls for the master volume and for individual sounds for the game, UI Music and Ambient sounds. For each you can enable/disable with the check box, and use the slider to adjust the volume. Master volume affects all of the other volumes, and disabling it turns off all sounds.

Graphics options let you choose the quality of the graphics, using lower levels to improve performance if needed.

Interface options let you adjust the size of the interface controls, set the screen size and select the language to use. The Edge Scroll option controls scrolling of the screen by moving your mouse near the edge of the screen. Facecam mode is for use by someone that wants to stream – it will move any pop up information out of the selected location, moving it so that the facecam can be overlayed without hiding the information.

Terrain

There are a lot of terrain types in Second Front. You can find a summary of them in the player help in the game. Not all terrain is available on all maps – only water maps can have water, and only ocean maps have ocean and beaches.

Name	In game Icon and cover rating.
	Combat effect
Movement restrictions	

Terrain information is displayed in grids like the one above. On the left, is a picture of the terrain and its name.

In the top right, is the picture shown in shot panels and for hex info in the game. Also shown is the cover status of the terrain.

The middle right cell shows the combat effects of the terrain.

The bottom section details any movement restrictions.

Terrain Types

Clear	No Cover, dangerous to move in.
	Good aiming against units moving in if no hinderance or other cover.
All land units can enter.	

Plowed Field	No Cover, dangerous to move in.
	Good aiming against units moving in if no hinderance or other cover.
All land units can enter. Increased movement cost for infantry.	

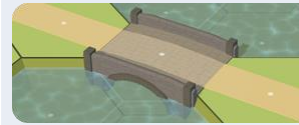| Road	Cover same as other terrain in hex. Treat as clear if fire along road.
	Vehicles can use roads for faster movement if Hatch open.
All land units can enter.	

Bridge	Good cover to fire through bridge wall hexside.
	No Cover, dangerous to move in if fire not through bridge wall.
Acts as road along road hexsides, and walls along wall hexsides.	

Wall	Good cover when fire is through a wall hexside.
	Blocks level LOS not starting or ending in an adjacent hex.
Troops, tanks and assault guns can cross at increased movement cost. This is a hexside terrain, it does not fill the hex.	

Hedge

Poor cover when fire is through a hedge hexside.

Blocks level LOS not starting or ending in an adjacent hex.

Increased movement cost. This is a hexside terrain, it does not fill the hex.
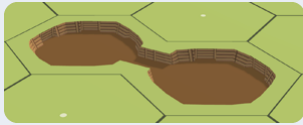
Bocage

Good cover when fire is through a bocage hexside.

Blocks level LOS not starting or ending in an adjacent hex.

Vehicles can not cross. This is a hexside terrain, it does not fill the hex.

Trench

Good Cover.

Can't enter if also going up elevation unless from a connecting trench.

Vehicles can not enter.

Square

No Cover, dangerous to move in.

Good aiming against units moving in if no hinderance or other cover.

All land units can enter.

Vehicles can use square for faster movement if Hatch open.

Woods

Poor cover.

Good aiming against infantry with mortars.

Vehicles can not enter without road. Two levels high.

Birches

Poor Cover.

Good aiming against infantry with mortars.

Vehicles can not enter without road. One level high.

Path

No effect.

Only appears in woods, birch, trees and brush.

Vehicles can not enter. Reduced movement cost along path for infantry.

Stream

Depends on other terrain in hex.

Increased movement cost.

Trees

No cover.

Provides hinderance to LOS. Does not block LOS.

All land units can enter.

Wooden Building

Good Cover.

One to three levels high. Can enter upper levels at stairwell.

Vehicles can not enter. See general building notes below.

Stone Building

Excellent Cover.

One to three levels high. Can enter upper levels at stairwell.

Vehicles can not enter. See general building notes below.

Rowhouse Wall

No LOS through.

No movement or fire through the black wall. This is a hexside terrain.

Bunker
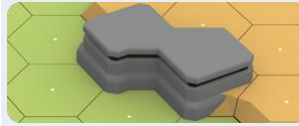
Hard Cover.

Can not move or fire through black hexsides, and can only be entered by bunker entrance.

Vehicle units can not enter.

Graveyard

Poor Cover.

Provides hinderance to level LOS. Does not block LOS.

Vehicles can not enter.

Marsh

Poor Cover.

Provides hinderance to level LOS. Does not block LOS.

Vehicles can not enter.

Water

No effect.

Only landing craft and amphibious tanks may enter on ocean maps only.

Shallow Water

No Cover, dangerous to move in.

Good aiming against units moving in if no hinderance or other cover.

Increased movement cost. Trucks can not enter. Landing craft may get immobilized.

Hill

Depends on other terrain in hex.

Good aiming against units moving in if no hinderance or other cover.

All land units can enter.

Poor Cover if fire up hill and no other terrain in hex.

Valley

Depends on other terrain in hex.

Poor Cover if fire out of valley and no other terrain in target hex.

Increased movement cost when moving up out of valley.

Cliff

No Cover.

Can not be crossed. This is a hexside terrain.

Brush
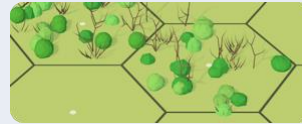
No Cover.

Provides hinderance to level LOS. Does not block LOS.

All land units can enter.

Grain
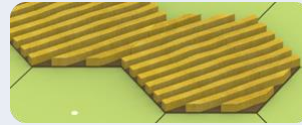
No Cover.

Provides hinderance to level LOS. Does not block LOS.

All land units can enter.

Rocks

Poor Cover.

Provides hinderance to level LOS. Does not block LOS.

Vehicles can not enter without road.

Debris

Poor Cover.

Provides hinderance to level LOS. Does not block LOS.

Vehicles can not enter without road.

Shellholes
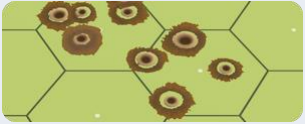
No Cover, dangerous to move in.

Good aiming against units moving in if no hinderance or other cover, and not crawling.

All land units can enter.

Rubbled Building

Treat as original building for cover.

Upper floors can not be entered.

Vehicles can not enter without road. Blocks LOS as if the building was not rubbled.

Railroad Tracks

No effect. Treat as other terrain in hex

Treat as other terrain in hex.

Flame

No effect.

A flame can convert to a Blaze at the start of an Advance phase.

Treat as other terrain in hex.

Smoke

Good Cover. Amount varies depending on source.

Provides hinderance to LOS. Does not block LOS.

All land units can enter. Smoke hinderance can apply up to five times. See additional notes below.

Blaze

Blaze locations can not be entered.

Creates smoke. Can create flame in adjacent locations.

Units in a blaze will be eliminated KIA in the Advance phase.

Wreck

No cover.

Provides hinderance to level LOS. Does not block LOS.

Any type of vehicle wreck. 1 or more in a hex.

Wire

Infantry becomes Pin on entering.

Wire does not affect units moving directly from one trench to another.

Hedgehogs		Prevents no cover multiplier.
		Does not provide cover.
Vehicles can not enter hexes with hedgehogs.		

Log Ramp		Prevents no cover multiplier.
		Does not provide cover.
Vehicles can not enter hexes with log ramps.		

Sand		No Cover, dangerous to move in.
		Good aiming against units moving in if no hinderance or other cover.
All land units can enter. Only appears in Ocean scenarios.		

Building Special Details

Buildings come in 2 general types – wood and stone. No matter what they look like, or how many hexes or levels they contain, they act as a wood or stone building as above.

Some structures are treated as buildings even though they may look nothing like a building. These structures will show the multiplier as the proper building type in the upper right corner when you point the mouse at them on the map. Some of these structures, like the oil tank, can't be entered by any unit.

Factories and train stations are large buildings with mostly open interiors. If they have a large door, then vehicles can enter and exit through these doors. Large doors are indicated by a road going into them on the building. If there is no large door, then vehicles can not enter the building.
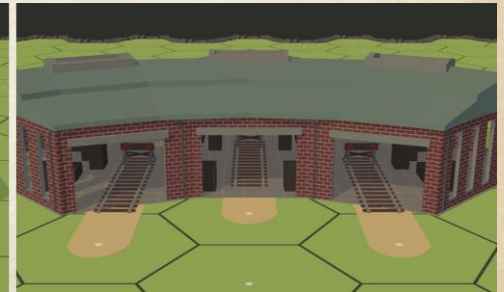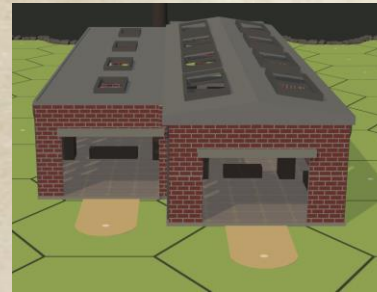
Rowhouse buildings act as a bunch of smaller buildings sharing walls. You can only move between hexes of them if there is not a black wall separating the hexes. A black wall prevents movement and fire between hexes connected on that hexside.

Black Walls

Any building hexside that is a black wall blocks LOS, movement and fire through that hexside even if it is not connected to another building.

Multi-floor buildings include stairs to allow units to move up and down inside the building. Single hex buildings always have stairs if they are more than one floor.

Multi-hex buildings have the location of their stairs marked on their roof with a black square. Hexes without stairs are not marked. Pressing the tab key will hide the roof and let you see where the stairs are in a building.
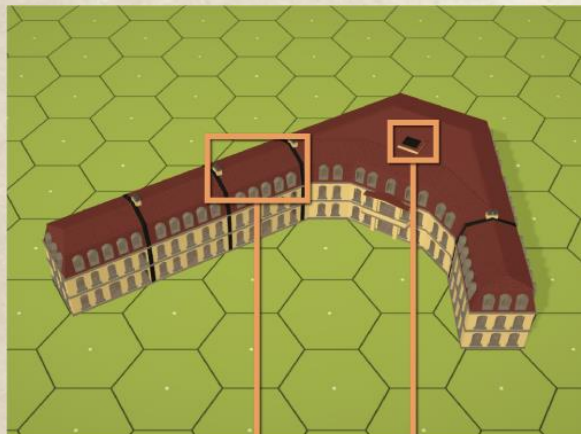
Single hex building
No Stair Symbol

Stair
Symbol
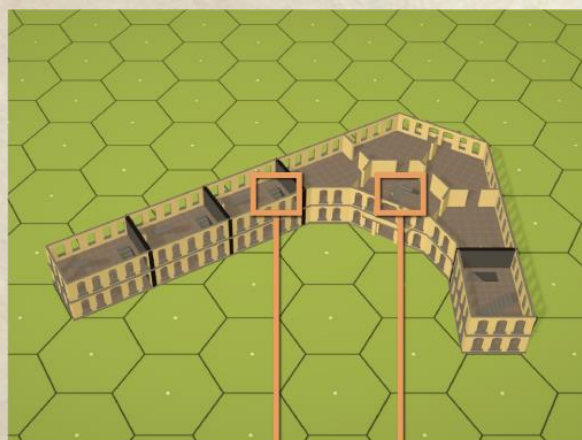
Single hex building Stairs

Stairs

Rubble

Buildings can be rubbled during a scenario when hit by guns >=70mm, and they can be set as rubbled when designing the map (using ruin mode) or scenario (using the bomb tool). A rubbled building hex can only be entered on the ground level. Rubble is treated for LOS purposes as being the same height as the building it was created from.

Flame and Blaze

Flame can be created by an ordnance attack in burnable terrain. It can also be created from burning wrecks. The flame on a wreck can spread to the terrain in the hex and also generates 1 hinderance from its smoke.

Flame can grow to a blaze during each Advance phase. The chance is affected by both the environment temperature and the terrain. Cold weather reduces the chance to spread. A blaze generates 3 hinderance smoke. Any unit that ends the Advance phase in a blaze location is eliminated.

Smoke

Smoke in a hex provides differing amounts of cover depending on the source of the smoke. If from a smoke round or blaze, it provides cover. From a smoke dispenser or burning wreck, the cover is .

Smoke not from a burning wreck or terrain fire lose a level of cover every full turn. Smoke will drift in the direction the wind is blowing.

Smoke also provides hinderance to shots through it, adding 1 per hex to a limit of 5, beyond which the LOF is considered blocked. Firing out of a smoke hex does add this hinderance for the firer's hex.

Fortification Terrain

There are several types of fortifications in Second Front. These include bunkers and trenches as well as movement obstruction devices that include wire, hedgehogs and log ramps.
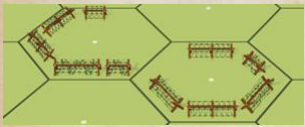
Wire causes Infantry units to get pinned when entering a location with 5 or more strings of wire. Wire does not affect units moving in trenches as long as they move from trench to trench, or trench to building.

Trenches connect to adjacent trenches, as well as adjacent buildings. Trenches can not be entered if the entering unit must also go up a level to get in the trench. While vehicles can't enter trenches, they can be placed there by a scenario designer, effectively giving the vehicle coverage like a wall all around it.

Hedgehogs and log ramps when placed in a hex block all vehicles from entering that hex. In water hexes, they block landing craft and amphibious tanks.

Log Ramp   Hedeghogs

Winter Scenarios

Some scenarios are set in the winter with snow on the ground, giving terrain different colors. They still act as their normal versions except that there is additional movement cost when moving outside.

In winter scenarios, rivers may be frozen allowing units under 5 tons to move across the water. Heavier units can not move on to the ice.
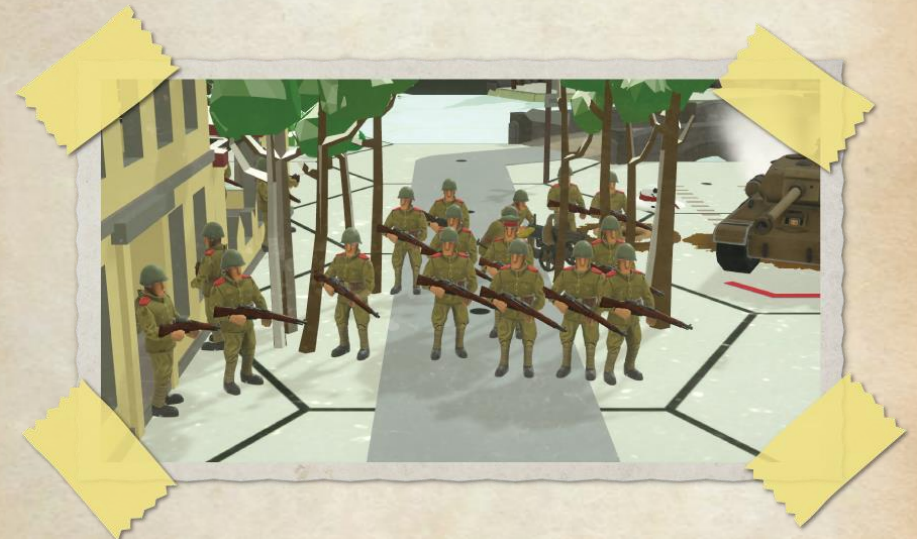
Introduction to the Map Editor

Second Front comes with a great built-in map editor. Using it you can build nearly any map you can imagine. This chapter will show you the basics and give some tips for making maps that work well in Second Front - both for the player and the AI.

Getting Started

The first thing you will need to do is click on "Create" in the menu on the top left. This will take you to a dialog looking for general details about the map you want to create.

The information you enter on this dialog cannot be changed - it is fixed for the map.

The map you are creating needs a name. This will be displayed at the top of the editor, and when choosing a map for a scenario. It also must be unique. Usually, you will want to name the map the same as the scenario - it will make it easier to remember which map is for which scenario.

Map size is the number of hexes you want in each dimension, with 12 being the minimum, and the maximum is 50.

The Random Woods option if turned on will place woods at random on the map in clusters of hexes.

The last option lets you choose the water setting.
- At **off**, there is no water filling any hexes and no bridges are possible.
- With **Water on**, level -1 hexes will be filled with water and road or rail bridges can be placed over them. And you can place marsh and shallow water in water hexes.
- With **Ocean on**, then level -1 hexes will be filled with water, while level 0 hexes will be filled with sand and no bridges are available. Shallow water can be placed in water hexes, and there will also be a slider at the top to adjust the direction of the waves on the ocean hexes.

When you click OK, the map will be generated and ready for you to edit.

The Editor Interface

Once the map has been generated, you will be presented with a screen similar to this:

There are several important areas on the screen. At the top center you will see the name you entered for your map.

The top right corner has a toggle to turn ruins on or off. This will affect the appearance of all buildings and some other terrain. Under this is the location the mouse pointer is currently over and some information about the terrain in that hex. One corner of the map is 1,1 and it extends to the numbers you entered on the create screen.

On the top left are the editor menu controls to exit, create a new map, load an existing map, save the current map under a new name or the existing name. And the last item we will discuss later - currently it will be red to remind you that you have not finalized the map yet.

And then the rest of the left column are the various tool menus. These are what you will use to edit the map - add terrain, change the elevation, or add decorations.

In almost all cases with the tools menus, a left click will add the item, and with the same tool selected, you can delete an item by right clicking. For example use the forest terrain control to add forest with a left click, or remove forest with a right click.

As an example, we will work through a map. Settings were 15 x 24 size with random trees and water on. This is the map after the creation step:

Elevation

Building the hills and valleys is normally the first thing to do when editing a map as everything else goes on top of the ground.

The tools on this menu let you edit the height of the ground in the hexes.

The land elevation goes from -1 (or depression) to level 4. If you have water or ocean turned on when creating the map, all level -1 hexes will be filled with water. Water hexes can only be entered by boats or floating tanks. Shallow water (made by adding shore or fords to water) can be walked in and entered by some units.

Higher level hill hexes require the lower level beneath them - in the hex you want to raise, as well as all surrounding hexes. So to place a level 2 hill hex, you need 7 level 1 hill hexes in a circle.
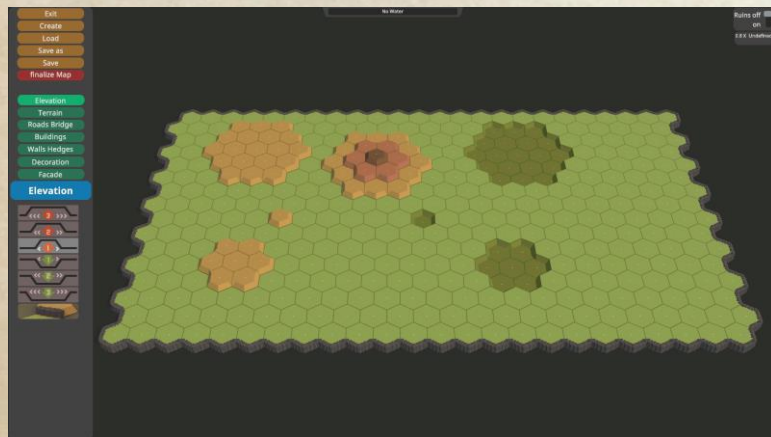
Each of the elevation controls affects an area in radius equal to the number -1 on them around the target hex. So the size 1 affects only the target hex, while the size 3 affects the target hex and those up to 2 hexes away from the target hex.

In the image to the lower left, the large depression and large single level hills are from the "3" control. The medium size hill and depression are from the 2 control, while the single hex hill and depression are from the 1 control.

The multilevel hill shown is the smallest you can have to create a level 3 hill hex. Hills do not need to be round – they can be any shape you build them up in.

Note that you can create cliffs by deleting lower level ground after adding the higher level ground.

Our map after we have adjusted the elevations to create a small stream and some hills:

Adding Terrain

Once you have the elevations set up on your map, the next thing you should add is the terrain - the forests and other terrain features.

The terrain tool lets you add various terrain features including clear (the top icon), shallow water (second icon - but only if water or ocean are turned on, otherwise not available), several kinds of trees and other items. Shallow water lets some units enter the water hexes, and on ocean maps, the shallow water presents a risk to Higgins boats of getting immobilized.

The Pine trees give 2-level forests, while the Birch trees give a level 1 forest. Both of these have size selectors that work on similar area as the elevation tools do - size 1, 2 or 3.

The trench hexes will connect to adjacent trenches - even across a hill hex side. A trench placed on a hill hex can only be entered from another trench hex, or from a same-level ground hex.

Fields and grain fields can be oriented in the direction you want when placed by just selecting the hex vertex that gives you the desired look.

For most terrain types, the individual items in them are placed somewhat randomly. If you want a different arrangement, just left click again in the hex (while the matching terrain tool is selected) until you get an arrangement you like.

Our map after adding some more terrain features including some shell holes, birch forest, brush and rocks:

Roads, Rails, and Bridges

 Typically the third component you edit on a map will be the road and rail network.
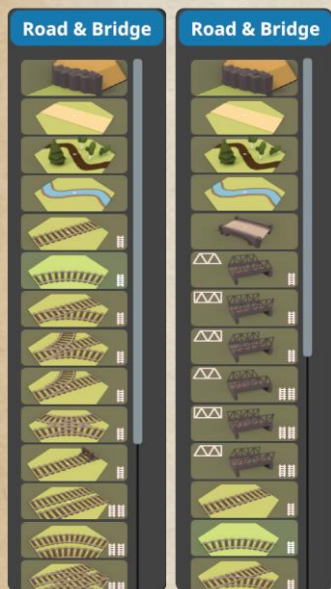
The tools to the left are the items available if you chose to create your map with Water off, or Ocean on. If you use Water on, you will get the list on the right - which adds various bridges for use in depression hexes.

When editing the map you use the road tool to place the roads. Placing a road adjacent to another will automatically connect them if they would touch. When placing road you are picking which hex and then which hexside it should cross. You point at a hex and then move towards the hexside you want the road to cross from that hex. It will be shown where the road will be placed while you move the mouse, and will place it when you left click (or remove with a right click).

 If the preview road is pink, you cannot place a road in that location. If the road goes into an edge hex from a hexside opposite a map edge hexside, the road will also connect to the map edge.

 The type of road (paved or unpaved) is set when designing your scenario. And when placing roads, avoid having too many hexsides in a single hex crossed by roads. There is a "square" terrain to be used in such places - it looks much better.

 For rail placement, there are single track and dual track items. This applies to the various rail pieces as well as the rail bridges. Most track segments can only connect single track segments together or double track segments together. There are four special track sections that will let you transition between single and double tracks.

 When placing pieces, you can again set the orientation of the track by selecting the vertex that gives you the track in the orientation you want or using the R and T keys. And while its okay to have roads going up and down hills, tracks should always be placed level - they only can connect to other tracks at the same elevation.

 Bridges are only possible on maps with water, and will include a road connection on both ends. They are positioned similarly to roads, where they are rotated in the hex depending on which hex vertex you point at (or using the R and T keys). Bridges can only be placed in depression hexes (which will be filled with water), and you can't put a bridge over a stream (the fourth icon in the menu) as it isn't a depression.

Now we add some roads, a bridge, some paths through the trees and a small stream:

Buildings

Buildings provide the focal point of maps - frequently the battle will be to gain control of one. They also happen to be the most challenging to properly place on your map.

Second Front provides many options for buildings. Buildings are based on wood or stone construction – see the terrain chart for differences in play.
The ones in the left picture are Stone, while those on the right are wooden:
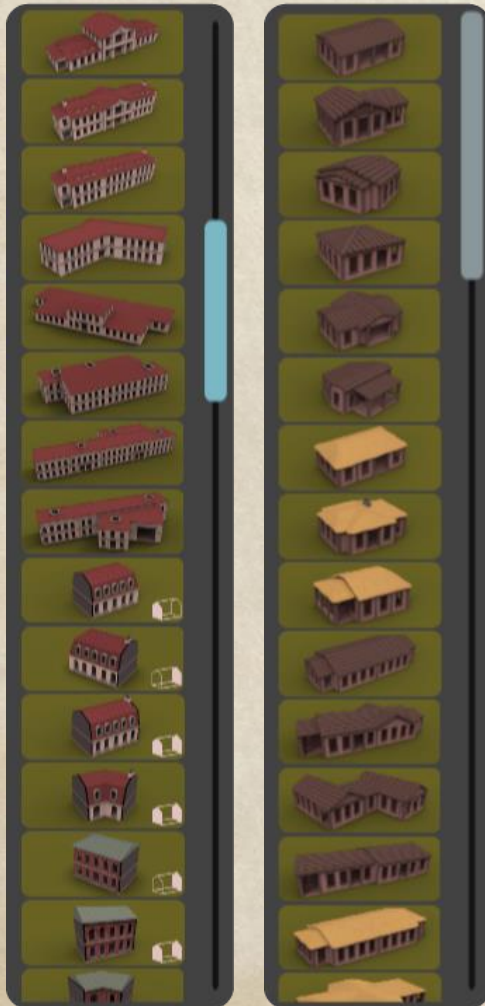
Buildings range in size from single hex structures to large multi-hex structures covering 5 or 6 hexes.

Stone buildings provide better cover than wood buildings do. And bunkers provide even better protection. The black walls on bunkers prevent both movement and fire through them.

Placing buildings involves selecting the building you want from one of the lists, and then pointing at the hex you want it in. Again, you can change the facing by pointing closer to the hex vertices or using the R and T keys. For multi-hex buildings, the building rotates around one hex of the structure, which stays in the hex your mouse pointer is in, while the rest of the building rotates around that hex.

There are some buildings that are put together in pieces - such as rowhouses, train stations and factories. For these buildings there are small sections that can be placed to form a larger structure. You can see some examples at the bottom of the Stone buildings to the left. The small white diagram indicates if the building part is an end piece (has only 1 white wall) or an internal piece (2 white walls). Always form complete buildings so that no structure is left with a black wall at the end of a building - they must always be internal.

Factories and train stations don't have the black wall components, but must instead be assembled so that all of the exterior walls are actual walls, not simply open areas. Note that some pieces have vehicle sized doors on them that might look like open walls.

With building placement, it is better to use a 2-hex (or larger) building instead of placing 2 (or more) one hex buildings side by side. This is because if the buildings are single hex, players and the AI will have issues with perceiving them as not connected. Also, don't make huge clusters of buildings - there should be space between rows of buildings. Plan to have them in a pattern of something like building - road - building or have 2 hexes between buildings.

Below are some more examples of the building types included (and this is far from all of them):

And here is our map (rotated 180 degrees) after adding a few buildings to make it look like a small village:

Walls and Hedges
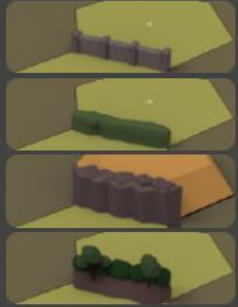
There are 4 types of hex side terrain available.

In the image to the left, from top to bottom they are wall, hedge, cliff and bocage.

Walls are considered piles of stone and provide good coverage against fire. Tracked vehicles can cross them, and infantry can climb over. They will block line of sight that doesn't start or end in a hex adjacent to them.

Hedges are considered plants forming a divider between areas. They block line of sight like walls, but don't provide as much cover.

Cliffs don't provide any protection, and can't be crossed.

Bocage are large hedges that act like walls except that vehicles can't cross them.

Next we add some walls and hedges to our map:

Decorations and Facades

The final steps of building your map are the dressing steps done using decorations and Facades.

The main difference between them is that Facades (examples to the right) are intended to be used on buildings, while decorations (examples to left) are used basically anywhere else.

When placing these items, you can use the R and T keys to rotate the item clockwise (R) or counter-clockwise (T). A left click will place the currently selected item where you are currently pointing. A right click will delete the last facade or decoration placed in the selected hex. CTRL right click will remove all facades and decorations in a hex.

Facades allow you to alter the appearance of each building to make them look distinct from the others on your map. When you look at the items in the list, you can see some of them also have a small white building in the corner. This indicates the facade is to be placed on a building at that level of floor (ground or 1st floor, second floor or third floor). So an item set for third floor will have its base set up to appear at the floor level of the third floor.

Decorations are all designed to be placed at ground level (whatever the ground level is due to hills and depressions). All decorations and facades affect the appearance only, with the exception of wire (decorations 154 to 161), hedgehogs (153), and log ramp (152).

Placing 5 or more wire decorations in a single hex makes the hex function as a wire hex, causing infantry units which enter the hex to be come pinned. A single hedgehog is enough to make a hex impassable to vehicles. A single log ramp will make it so boats can't enter a water hex and other vehicles can't enter a land hex.

And now we have added some decorations to finish off our map:

Finishing Up Your Map

Once you have placed all objects you want on your map there are only a few steps left to make the map ready to use.

First, you will want to generate a snap shot of your map to display in the menus when looking at maps. Press "H" and adjust position and zoom of the map so that the area you want a picture of is in the rectangle.

Then press H again, and this will save the image of your map.

At this point, your map editor screen should look something like this:

Notice that "Finalize Map" is currently red. This is to remind you that the map has not been finalized. What is finalization? This is the process where Second Front analyzes the map you have created and calculates the LOS for all hexes in the map and saves this information to be used when playing a scenario on the map. The reason this is done is to make game play run a lot faster.
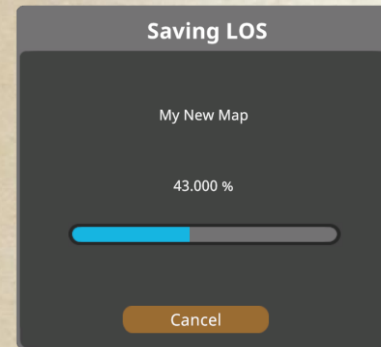
Clicking on the Finalize Map button will start the calculation process and show a progress dialog as this can take a long time (10 minutes is possible on a large map).

Once this is completed, you can save your map and it is ready to use, and the Finalize Map button will change color.
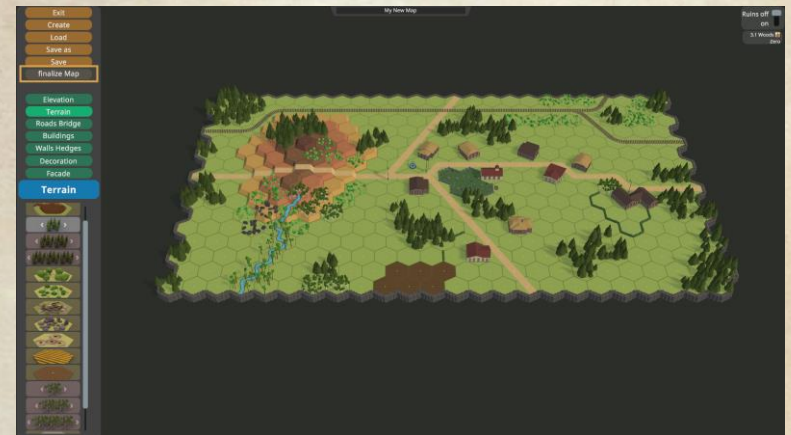
Your map is now ready to use in making a scenario.

Tips and Tricks to get Better Maps

Building a map is easy. Building a good map require taking certain precautions to avoid causing the player and the AI troubles using your map.

1. **Don't create large, mostly empty maps with huge lines of sight.** It may look realistic, but causes a few problems playing the game. Generating the LOS will take a very long time and result in a huge file (250MB+). This file will take a long time to load, and will slow play due to the resources consumed.

Having long LOS also makes it very difficult for the attacker to approach his target, and can lead to player frustration with the situation. Avoid doing this!

2. **Place terrain for broken units to route to.** The game mechanics require terrain that a broken unit can route to. This includes terrain like woods, birches, trenches and buildings. Place some of these to allow for routing destinations.

3. **Design areas for reinforcements to enter the map out of LOS.**

Keep reinforcement entry locations either out of LOS or out of range of opposing forces. The AI needs some time to get its units ready for the battle. Players will find it frustrating to have their new units eliminated with no chance.

Hide the reinforcement hexes behind some trees or make the map bigger and place them far from the front so that units can safely get on the map. The green rectangles indicate areas with good coverage. The red ones are bad unless a long way from where the fighting is at.

4. **Minimize placement of buildings (and bridges) next to each other.** Avoid placing buildings (other than factory, train station, and rowhouse sections) adjacent to each other. It might look good, but it causes problems for mechanics and players.
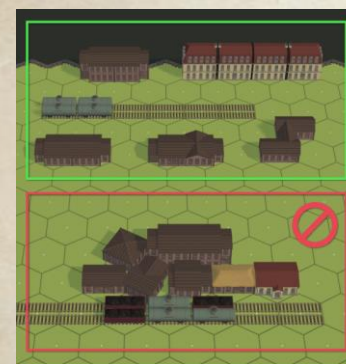
For example, players may be left wondering why they can't move from the upper floor of one building hex to an adjacent upper floor in another building hex. And LOS doesn't work as expected in these situations as you can't shoot through the roof - up or down. In the above, the green area buildings are much better placement than the red area.

Ideally, you should have buildings in the pattern of:
     Building hex - other or open terrain - Building hex.
Similarly with bridges.

Note that some terrain that doesn't look like buildings is treated as a building by the engine, and should be treated the same as buildings when designing your map. This includes anything in the Buildings menu such as Street Cars and Train cars.

5. **Avoid using many three-level buildings on your map.** These buildings can be a bit of a challenge to handle units in. Use mostly two or one story buildings on your maps.

While this map has the buildings spaced out, there are many 3 level buildings making it a challenge to play on. Also, the rowhouses adjacent to the trains will have problems as the train cars are treated as level 1 buildings.

6. **Don't make road cluster hexes.** Don't make road clusters where you have hexes with a road on every hex side. Use the "square" terrain in these situations instead - it looks much better. You can also use the square terrain to represent bigger roads.

The left image shows how bad clusters look - you can use square instead as in the right picture.

7. **Be careful with Decoration placement.** Don't place them so that it looks like LOS may be blocked, or that there might be hinderance due to them when they do not actually provide any. For example, placing a row of barrel stacks along a hex side - it may look like they might be a hinderance to LOS, when in reality they have no effect and are just for appearance.

These barrels might make the player think that LOS is blocked, when in reality it is treated as nothing there.

8. **It takes 5 wire decorations to make them have an effect.** When placing wire, remember that it takes 5 or more wire decorations in one hex to be treated as wire terrain. Otherwise it is just for looks and has no effect on anything. The green hex is treated as wire, the red hexes as clear.

Units in a trench are not affected by the wire in that hex unless they enter the hex by a non-trench hexside.

9. **Anti-tank devices are effective with one.** Hedgehog anti-tank devices only require 1 in a hex to be effective at keeping vehicles out of the hex.

10. **Anti-ship devices are effective with one.** Log ramps only need one in a water hex to prevent ships from entering the hex, and they are only available on ocean maps. On a land hex they will also prevent vehicles from entering.

11. **Trenches have limited access.** When placing trenches on hills, be aware that they can only be entered from a same level ground hex, or via other adjacent trench hexes which may be at a different level. The green lines indicate where movement is possible, the red ones are blocked.

12. **Plan for map re-use.** If you want to use your map for more than one scenario, consider saving it under a different name if you need to make terrain changes such as adding trenches or shell holes. Build the base map without these items then save a copy to edit for the specific scenario.

Scenario Editor

Second Front comes with a great built-in scenario editor. This chapter will show you the basics and give some tips for making scenarios that work well in Second Front providing both a challenging and entertaining game for the player and allowing the AI to provide a credible opponent.
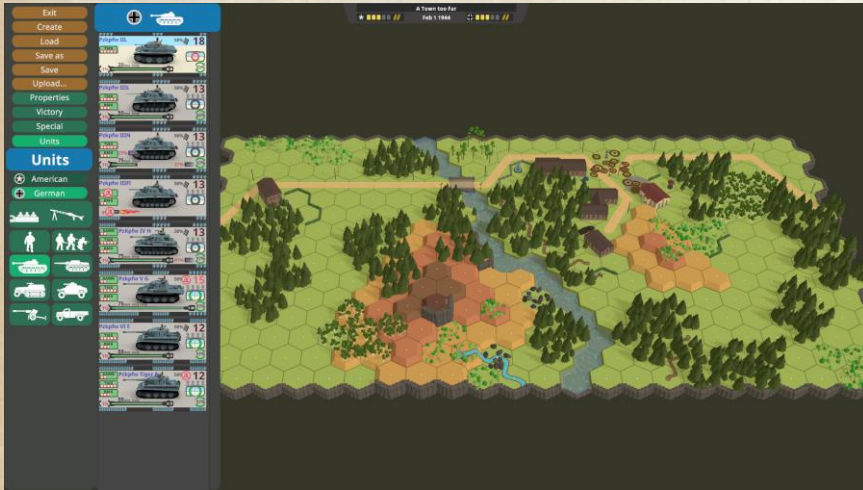
Getting Started

These instructions assume you have already created a map to use for your scenario. For help in building a map, refer the to **Map Editor** chapter.

When you have created a scenario, you will be able to play it from the Play My Scenario menu. For anyone else to be able to play it, you need to upload your scenario to the Steam workshop (this process is covered in the **Finishing Up** section).

To begin, select the **Edit Scenario** option from the main menu.

Set up Scenario Details

Once the editor is loaded, you can either load one of your already existing scenarios or begin creating a new scenario. Editing an existing scenario works much the same as creating one, except that it starts with a lot of work already done. You would do this after testing your scenario to adjust it for better balance or playability.

Creating a new scenario begins by clicking on "create" and filling in the dialog that pops up. Similarly with the map editor, once you save these values, they can't be changed for a scenario.

You need to enter a unique name for the scenario - this should match the name of the map you created previously. This name will appear in many places - the scenario list, the workshop (if uploaded), and at the top of the screen when playing.

Scenario Date

A Town too Far

Feb 1 1944

Year: 1944

Month: Feb

Day: 1

Cancel   Ok
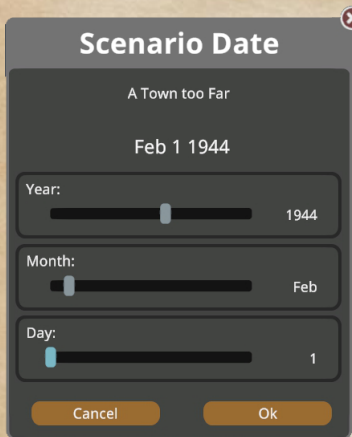
Next you need to select the date of the scenario. The date can range from 1939-Jan-01 to 1945-Dec-31, and it affects which units (vehicles and guns) are available to be placed in the scenario. This means that currently scenarios can be created for the war period of Sept 1939 to the end of the war in Europe in May 1945.

Now we need to know where the battle will take place - so we need to select a map. The map you previously created will be in the map list, so you can select it and click OK. The map name will appear in the new Scenario dialog.

Select Map

A town too far
Aachen
Airfield
AP130
Attack at dawn
Bastogne Vicinity
BB10
Berlin Tramstation
Borisov
Borisov_1
Bridge Number 10
Bridge of the two Battles
Carentan SW
CarentanStation
Central Rail Station

Cancel   OK
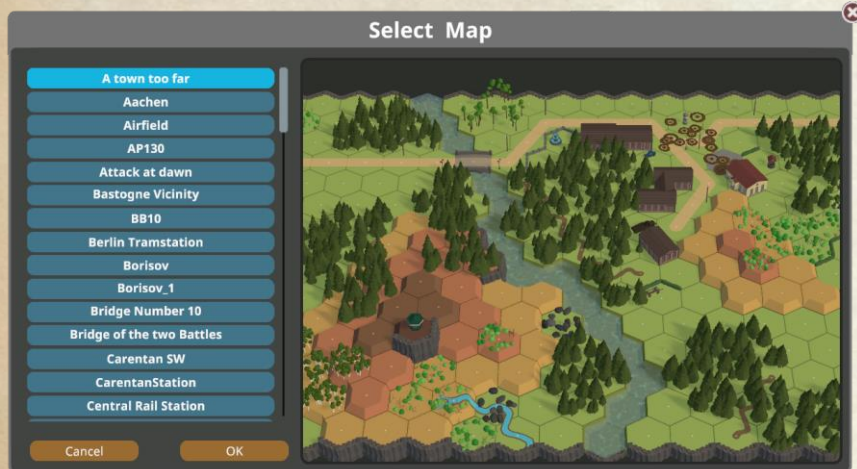
Next, we need to select which forces will be present on the battlefield and the type of battle. You set the nationalities involved by first selecting "Russian vs German" or "American vs German". Then you select which side the player gets.

Finally, you select if the player is attacking or defending. And with an attack scenario, you can choose between a fight for VP locations or a Breakthrough to exit units. These choices are very important as they have a major impact on the design of your scenario.

In Attack - fight for VP scenarios, you set up 1 or more victory locations that the player needs to capture. In Breakthrough scenarios, you will need to select exit hexes and specify which units count for exit points, and how many are needed to win. For defend scenarios you pick 1 VP location that the player has to defend from the AI.

Once you click OK, the map will be loaded, the available force lists will be limited to the units available on that date, and based on the map type certain other units will be available. For example, maps with Ocean on will have landing craft available to the attacking force.

For our scenario, we set the details as shown below. After clicking OK, you should see a screen with your map displayed similar to the view at right below.

new Scenario

Scenario Name:
A Town too Far

Feb 1 1944

Set Date

Select Map

A town too far

Play as:
American
German
Attack
Defend
Russian vs German
American vs German
fight for VP
Breakthrough

Attention:
These Values cannot be changed later.

Cancel   Ok

Scenario Editor Interface and Scenario Properties

The Scenario Editor has a lot of tools available to you. Lets take a look at all of them.

Scenario Editor Menu

Active Unit Toolbar

Scenario Information

Mode Selectors

Unit Menus

Scenario Editor Interface and Scenario Properties

In the top center, we see the scenario name you entered on the create dialog, and the player force nationality (on the left) and AI force nationality (on the right). In the center of this bar we see the scenario date you selected.

In the top left corner, we have the main menu for the editor to let you exit (make sure you save your work first!), create a new scenario (like we did in the previous step), save the scenario under the existing name, or a new one, and the option (initially) to upload the scenario to the workshop.

Under the editor menu, we see the tool selector menu. These items let you set up properties of the scenario, victory locations, special alterations, and units. And the bottom left section (currently showing units) is a context menu for the selected tool mode. Also shown is the active unit type toolbar, currently showing German tanks.

The scenario properties tool lets you configure a number of scenario related details.

The compass direction of North. Look for the icon on the edge of the map to see which direction is being set north, and use this slider to adjust to the desired position.

The ambient temperature for the battle, from very cold to very hot. This affects the chance for fires to spread and become larger. Colder temperatures hinder the fires, while hot temperatures promote spread.

The presence or absence of ground snow. Snow makes it more difficult for infantry to move up hill.

The choice of Dirt or Paved roads. This affects the entire map.

Wind direction and strength. These affect the direction of both smoke and the spread of fire.
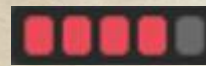
Force Fatigue for each side, ranging from low (1 green square) to high (5 red squares). The higher the fatigue, the more likely that a unit will get a weaken result from breaking. Weaken results downgrade the troop quality one level, to a minimum of green.

Ammo supply level for each force, from low (1 bullet) to high (3 bullets). Low supply increases the out of ammo % for guns and vehicle weapons, while high supply lowers their chance of running out of ammo. This affects AP, HEAT, and Smoke out of ammo % values.

Difficulty - this setting represent how difficult the scenario is for the player, ranging from 0 to 3 stars. This doesn't affect the scenario, its just to help players choose appropriate difficulty scenarios to play.

The **scenario location** (or approximate position) should be entered into the location bar. This value will be displayed when the scenario is loaded along with the date.

Near Cisterna, Italy
Feb 1 1944

The last item on the properties screen is the scenario description. This lets you enter a description of your scenario as well as detail the historical outcome or other results of the battle. The description will appear in the workshop to let players know what your scenario is about. The aftermath will be displayed after the player has ended the scenario.

For our scenario, we have used this description:

Scenario Description

A Town too Far

Feb 1 1944

Description

harsh fighting, A group of American ranges made an attempt to capture Cisterna. Moving during the night, they encountered little rsistance and nearly made it to their objective. Unfortuantely, the sun rose before they could complete their mission. Now they had to deal with the remaining German troops and their soon to be arriving reinforcements.

Aftermath

While the Rangers fought valiantly, they wer simply out numbered by the German response. Eventually, the use of tank support led to the eventual surrender of the few Americans that survived.

Cancel   Ok

The Victory Tool

There are two forms of the **victory tool**, one for attack and defend scenarios, and a second for breakthrough scenarios.

Victory

Superiority

x 1.5

Casualties

Count Casualties

Victory Location

Axis

Victory Points   80

Playing:
American attacking German

Attack - VP Location and **Defend VP** Tool

The Victory tool lets you choose to allow casualty victory points or not with the Casualties slider. If enabled, casualty points are scored for eliminating units as follows:

Half-squad = 1 point
Squad or Crew = 2 points
Leaders = 1 + #of gold stars

Vehicles vary depending on the amount of armor they have - more armor gives more points.

Victory Locations are set using the location tool. You select the value using the slider, then click on the brown button (it will say Axis or Allied depending on who the defender is). Then you click on a location on the map to make it a victory location worth the points you first set the slider to.

Any unit able to enter a VP location can capture it. This means a vehicle can't capture locations in a building or forest location unless it could enter that location. Forest locations with roads or factories with vehicle entrances are examples of these locations that a vehicle could enter and capture.

The choice of VP location value and position is very important to making a good scenario. Depending on the type of scenario (the player is Attacking or the player is Defending) the VP locations will determine the length of scenario, and the chances for a win. Scenarios with the player defending are limited to one VP location, while scenarios with the player attacking can have many VP locations.

It is important to realize that setting a VP location in a building hex makes all locations in that building VP locations. To gain control of a building, you must free all locations in it (every hex of every floor) of enemy units.

For multi-part buildings like factories and train stations, the entire building consisting of all the building locations in all the connected parts must be controlled to gain control of the VP location.

Rowhouses treat each section (between black walls) as a separate building, and so only those in the section with the VP location must be controlled to gain control of the location. The rest of the rowhouse sections do not count unless they have their own VP location marker in them.

Superiority sets the force ratio the player needs to achieve to force the AI to surrender. When the player forces exceed the set ratio compared to the AI forces, the AI will surrender. Normally, this value should be left at the default of 1.5 until you have enough experience building scenarios.

The force strengths are compared based on:
Squad or Crew = 2 points
Half-squad = 1 point
Leaders = 1 + # of stars points
Vehicles and guns = 0 points.

Attack - Breakthrough VP Tool
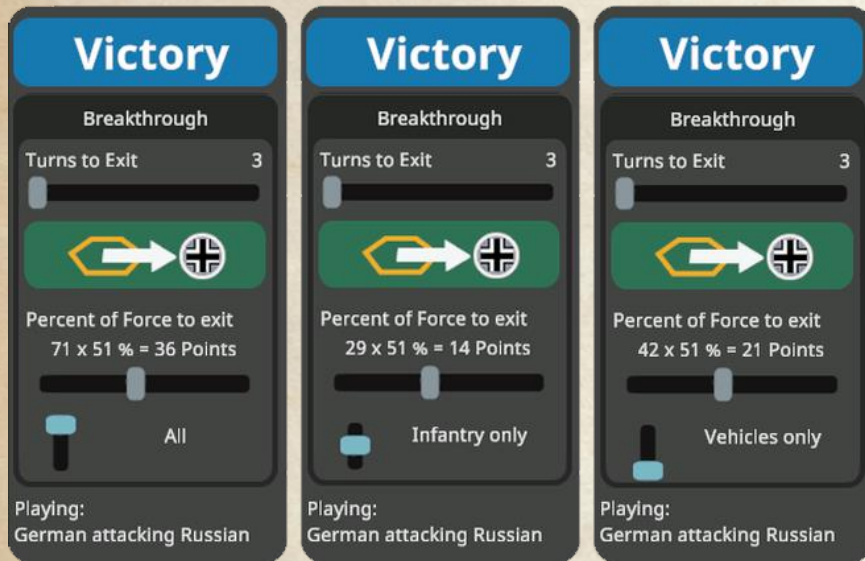
When building a Breakthrough scenario, the VP tool is different. There are several settings - and they apply to all exit locations. You can mark an exit location hex by just clicking on the green button and then left clicking on the desired hex (you can have more than one). To remove an exit location, just right click on it and click on yes in the confirmation dialog.

You will likely want to configure the Breakthrough Victory requirement details after you have finished placing units so that you can see just how many points of units will be needed to exit for the player to win.

The Turns to Exit slider sets how many turns the player will have to exit the required VP value of units through any exit hex. This setting has a big impact and needs to be tested in your scenario. If its too low, the scenario becomes impossible to win. If too high, then it becomes very easy to win.

The percent of Force slider works in combination with the unit type slider. The unit type slider gives the choice of infantry only, vehicles only, or all. This allows you to limit which types of units count when exited. After setting the type slider, the Percent slider will show the total value of all qualifying units in the player's force, the selected percentage, and how many points that equates to. In the picture above, you can see that the total force of the player is worth 71 points (from the All units image on the left), and that there are 29 points of infantry and 42 points of vehicles. In each case, it shows the value that the 51% of each type equates to - 36 for all, 14 for infantry, or 21 for vehicles.

The scenario will end on any turn that the total set is reached in - it does not matter which exit hex the units use. It will also end early if all units of one side are eliminated.

Sample Scenario

Here is our map with a few VP locations set:

Scenario Victory Conditions

Victory conditions for winning each type of scenario are:
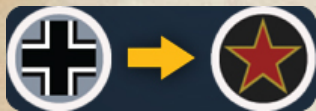
Attack Scenarios (the player is Attacking to control VP locations)

VP locations are marked on the map and are reduced by 10 points every complete turn that they are not held by the attacker force. A VP location in a building includes the entire building (as described above).

The player wins by having control of all VP locations and having a force strength greater than the defender by a factor greater than the set superiority level (default value is 1.5x), or with the elimination of all defenders. The forces are compared based on:

   Squad or Crew = 2 points
   Half-squad = 1 point
   Leaders = 1 + # of stars points
  Vehicles and guns = 0 points.

The player loses by not capturing all locations before they go to 0 points or by resigning.

Breakthrough Scenarios (the player is Attacking with exit locations)

You score points for exiting units of the selected type (infantry, vehicles or both). Points scored are calculated like casualty points for the unit that exits. You have a time limit to exit enough points - this is shown in the upper right information block, under the current VPs total.

You win by exiting enough points within the time limit, or by eliminating all defenders. Any other result is a loss.

Defend Scenarios (the player is Defending)

There can be only 1 VP location marked on the map, and it will lose 10 points a turn that the player controls it. If the attacker gets control of the location, it stops losing points, and the scenario will end when you surrender. This gives the defender a chance to recapture the VP location and still win.

You win by forcing the attacker to surrender due to your force strength exceeding the attacker's strength by more than the superiority level, or by controlling the VP location until it drops to 0 points.

The Units Tool

Now that we have the map set up with the intended victory locations the next step is to select the forces for each side and set them up. This will include any reinforcements we want to have.

The process in general is to select the unit you want to place from the proper unit list then left click in the hex you want to place it. Vehicles and guns have a front facing, and you can select which way it is initially set similarly to placing other objects - point at the vertex you want the front facing, or use R and T (for guns) to pick it. And like placing decorations, left click places, right click removes the last unit placed in a hex.

Note that stacking limits are applied when placing units - even in entry hexes. The exception for entry hexes is that you can exceed the stacking limit, but only the first units placed up to the stacking limit will appear. Other units will only appear after the initial units move out of the entry hex.

The forces available for each side are restricted by the type of map, the date of the scenario and the side (attacker or defender). You will only have vehicles and guns historically available on the date selected appearing in the unit lists. Only Ocean maps will have landing craft - and they will only be available to the attacker (and this must be the player's forces).

You can use the Garage to help you select and mark which vehicles you want to use in your scenario as shown in the Garage section in the manual.

Below are examples of all the unit menus available to the German side for the settings used for our scenario.

The left column shows unit counters:

- TNT — 1 / 1%
- FT — 2 / 8%
- HMG — 32 / 4x / 1% / 50%
- LMG — 16 / 1% / 17%
- MMG — 24 / 2x / 1% / 33%
- MTR — 2-13 / 4x / 1% / 50% / 50 mm
- MTR — 2-50 / 8x / 1% / 50% / 81 mm / 41%
- PF — 0 / 1x / 8%
- PSK — 4 / 8%

Vehicle column:

- PSW 222 L — 42% 34 / TMG / 20mm long / 4% / 33%
- PSW 222 — 33 / TMG / 20mm long / 4% / 33%
- Sdkfz 231 8 — 42% 33 / TMG / 20mm long / 4% / 33%
- Sdkfz 232 8 — 42% 33 / TMG / 20mm long / 1% / 33%
- Sdkfz 233 — 58% 33 / AAMG / 41% / 75mm short / 4% / 27% / 17%
- Sdkfz 234 1 — 33 / TMG

Gun column:

- 37mm Pak35 36 — 0 x / 37mm long / 1% / 50%
- 50mm Pak38 — 2 x / 50mm long / 1% / 50%
- Pak 40 — 4 x / 75mm long / 1% / 58% / 33%
- 76 2mm 36 — 5 x / 76mm long / 1% / 72% / 33%
- 88mm Pak43 — 8 x / 88mm very long / 1% / 33%
- 88mm Pak43 41 — 7 x

When placing infantry units in buildings be careful to put them on the floor you intended. You can see which floor they are on by looking for the color border around their flag. No border means they are at ground level, any other color represents a different level.

The color on the flag matches the color of the hexagon of the level they are on. In this example, the orange border indicates the units are on the second floor.

Note that you can't move units if you place them in the wrong spot - you must remove it and place a new one in the location where you wanted it. When guns are placed in appropriate terrain, they will start the scenario hidden, and may include sand bags to protect their crew.

Leaders

When you place leaders in a scenario, they will be given a randomly selected name. If you want to give them a specific name, you just need to select the leader and hit the Name button.

Name

Leader Name:

Lt. Kuhlschrank

Cancel   Ok
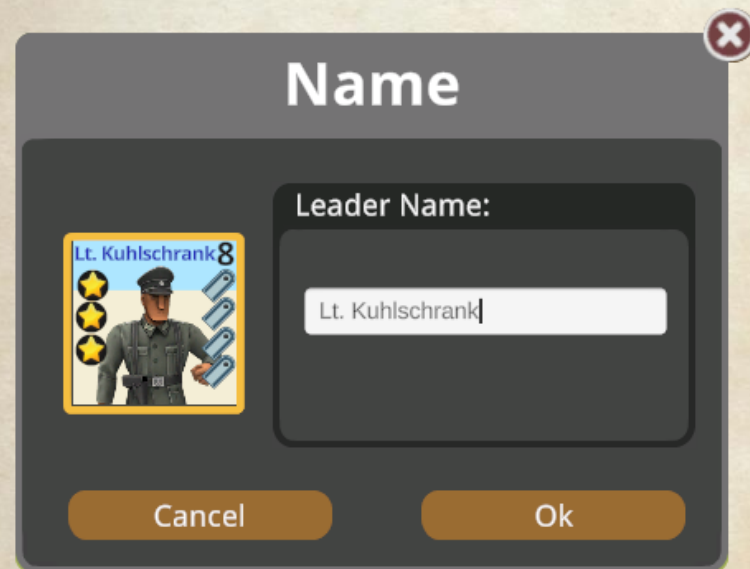
Just enter the new name you want for the leader and click Ok. The new name will be visible on the leader's counter.

Support Weapon Assignment

To assign support weapons to a unit takes a couple steps. First the unit that you want to possess it must be placed. Then click the Units Menu item for Support Weapons to get in SW mode. Now click on the hex containing the unit you want to give the weapon to. If you have done this correctly, the units in that location will appear in the bottom right of the screen.

You then select which unit you want to give the weapon to (left click the counter to select, right click to unselect) then click on the weapon in the active unit toolbar. This will assign that weapon to the unit and it will appear above the unit in the lower right corner. If you want to remove the weapon, you either remove the unit holding it or use the hand icon on the weapon.

When you have placed the weapon correctly, it will be visible on the unit's flag on the map.

Passengers

Setting up passengers works similarly to assigning support weapons. You set up a vehicle that can carry passengers (for example, a truck or half track), place the desired infantry units in the same hex as the vehicle and then switch to the Support Weapon tool. This lets you select the hex with the vehicle and infantry, and shows them in the menu in the lower right corner.

Then you just click the mount icon to enter the vehicle for each unit you want as a passenger or rider.

Reinforcements

Setting up reinforcements works similarly to support weapons and passengers. First you need to mark the entry hex (see the process in the "Special" section below).

Then you place the units you want to arrive as a group in the hex, assigning support weapons and passenger status as desired.

Finally you add them as reinforcements by selecting a turn of arrival and clicking the "add" or "copy" button.

Add puts the units as reinforcements and deletes the units from the map, while **Copy** puts the units as a reinforcement group and leaves the unit on the map - to add as another group on a different turn, or increase the size of the group on a previously selected turn.

For more details on creating entry points and managing reinforcements, see the **Reinforcement Hex** in the **Special Tools** section below.

Special Tools

The Special Tools Menu gives tools to do a variety of things from modifying the terrain appearance to adjusting details about units.

Top to Bottom, on the left we have Reinforcement Hex, Hidden Unit, Blaze, Immobilize and Schurzen tool. On the right we have the Variable Gun set up tool, the flame tool, Broken tool, and Bomb tool.

Immobilize

The Immobilize tool lets you make any vehicle immobile at scenario start. Select the tool then click on any vehicle that you want to be immobile.

Broken Unit

The Broken tool lets you set any infantry unit to start the scenario Broken with "!". Simple select the tool then click on the units you want broken at scenario start.

Flame and Blaze

The Flame and Blaze tools work similarly - you select the tool, and then click on locations where you want to have a blaze or flame in at scenario start. Keep in mind that both will spread to other burnable terrain that is adjacent. The difference between them is the size of the fire created, and that a blaze can spread more easily.

Schurzen

The Schurzen tool lets you add Schurzen (extra armor) to some vehicles. Again, select the tool then select the target vehicle and they will be added (or removed if already present).

Fanatic

The Fanatic tool lets you designate units as Fanatic. Just click on the button to enter this mode, then click on units to toggle them to Fanatic or back to normal. This affects all units in the location.

Bomb (Ruins) Tool

The Bomb tool lets you turn some terrain items (buildings and decorations) into their ruined version. This is a toggle - so click again on anything you accidentally wrecked to fix it. Also with buildings, it is per location - each hex and floor is separate from the others and ruining one location only affects that location.

Variable Gun

The Variable Gun Position tool lets you set multiple locations that an AI defender's gun can appear in at the start of the scenario. The actual position the gun appears in is randomly selected from among the options saved for the gun.

To use this, you select the tool, then select the gun you want to set up alternate locations for in the list, then select the alternate locations. The gun will show up in its original location with a yellow arc indicating its current facing in the hex, and will show a horizon line in the background of its image in the list. Each allowable location you click in will show a red hex with a yellow arc. Right click will remove a possible location.

Locations selected for other guns will show up with a grey hex outline and grey arc, and all gun locations will be grey when not in this mode.

Hidden Units

With the Hidden Tool, you can select AI Defender units in covering terrain (buildings, trenches, and the various woods) to be hidden at scenario start. When you select this tool, the hex under the mouse pointer shows a hex outline with ? at each vertex. You just click on any location with infantry in cover terrain, and they will be tagged as hidden - making them not visible on the map at scenario start.

And similarly to the Variable Gun tool, you can select multiple locations to set up a hidden infantry unit in, and one of those designated for a unit is randomly selected at the scenario start. This makes the unit potentially much more powerful at the start as the player won't know where they are. Normally, only a small portion of the forces should be hidden, and its okay if none are.

Reinforcement Hex

The Reinforcement tool lets you designate entry hexes for reinforcements for either side.

When you click on a hex with this tool, an Arrow will appear pointing at the hex, and a box will appear in the upper right corner of the screen. To set up units to enter at the location, you set them up as normal in the entry hex - including assigning weapons and passengers. Once you have units in the hex that could become entering units, a control panel will appear under the box.

When you are ready with your units, you click "Add" to add the units as reinforcements and empty the hex, or "Copy" to add the reinforcements, and leave the units in the hex. This lets you add more groups that have the same composition.
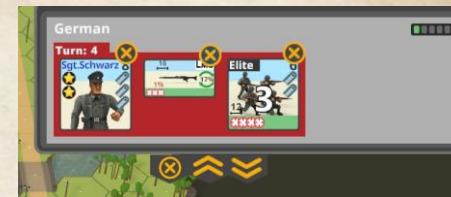
The units appear in the box as a group indicating the selected turn of entry, and which units will appear. Note that in this box, vehicles and infantry appear separately even if they will enter on the same turn. You can remove units in a group by clicking on the yellow X over the unit - this removes one of that unit.

The yellow X at the bottom of the box can be used to remove a reinforcement hex (and all units entering there).

The Arrows at the bottom of the box can be clicked on to expand or shrink the unit box.
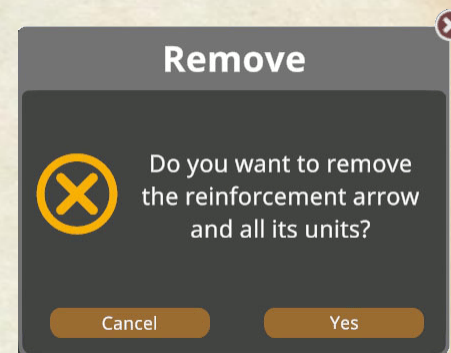
Sample Scenario

After performing the desired steps from above, and adding all units to the map we have a finished scenario now almost ready:

Finishing Up

Now that we have everything done, we can save the scenario and test it.

This is very important - testing will show you if the scenario is even possible to win, or if its too hard or too easy.

It will also let you know if it works as you intended, and give you the chance to fix it up before releasing it.

While playing it, you should take some screen shots (press F12) and also take an in-game shot using the H key. This will give your scenario image a nice background when it gets posted in the workshop.
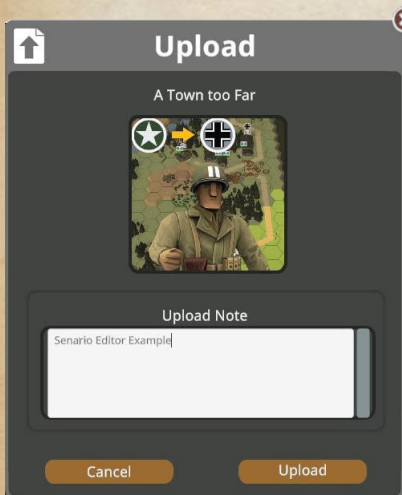

Once you have tested and won your scenario, and are satisfied with how it plays, you can then upload it to the workshop so that others can play it.

You load the scenario again into the editor and use the "Upload" button in the scenario editor menu to get it in Steam workshop.

You just need to add in a comment and then you can upload your scenario. After this, if you need to make changes, the menu item will say "Update" instead of "Upload".

If you don't take an "H" screen shot while playing your scenario, the icon on the workshop will have a black background. If you have taken an **H image while playing**, then the image will be used for the background.

Once your scenario is in the workshop, you can go to the workshop in the Steam client and edit your entry.

You can find screenshots taken with the F12 key using the manage screenshots function from the Steam client library page for Second Front. Use the "Show On Disk" function to open the folder where they are located.

Images taken using the "H" function can also be uploaded to the workshop – but beware that Second Front only allows 1 "H" image per scenario. Capturing a second will replace the previous one. You can find these images in the **...\Second Front\Second Front_Data\StreamingAssets\Pictures** folder, with the name matching the scenario name.

Once you have the pictures you want to use and know where they are, you then need to open your scenario in the Steam client and look for the owner controls.
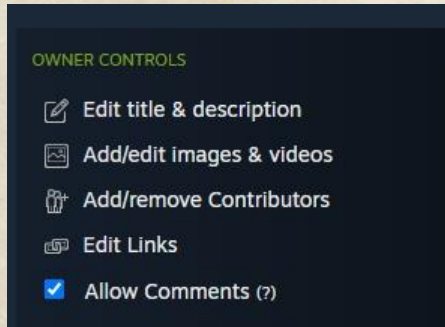
You use the "Add/Edit images & videos" function. On the page that opens, use the "choose files" control to select a file (one at a time) to upload.

After you have uploaded the pictures, they will appear at the bottom of the window.
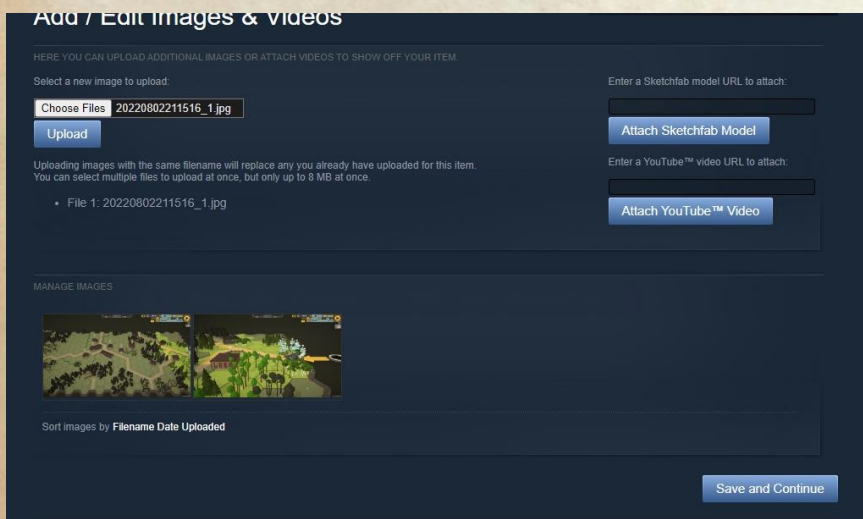
Click the "Save and Continue" button in the lower right corner when all pictures have been attached. This will take you back to your scenario in the workshop, and you will see the pictures there. They will be displayed in an automatic slide show.
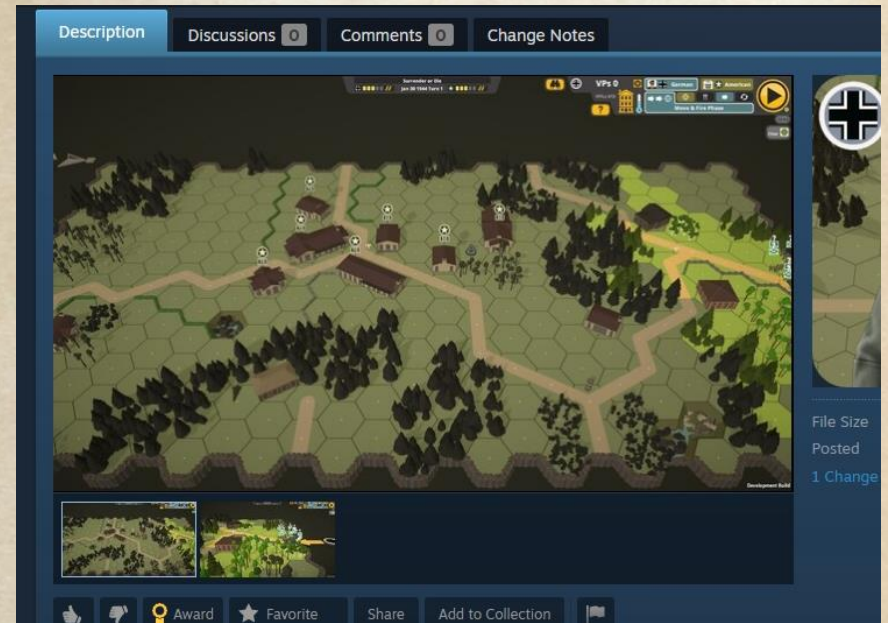
Useful Tips for Building any Scenario

Just like building a map, there are certain things to keep in mind when building a scenario to get a better result. This list applies no matter what kind of scenario you are building.

1. **At Start Units**
   The AI doesn't work well if it has no units on the map at the start of the scenario. You must always make sure the AI has a few units available from the start to avoid a potential crash. The player side can start with all forces off-map and entering by reinforcement.

2. **Safe Reinforcement**
   Chose Reinforcement hexes that are either out of line of sight or out of range of enemy units. The AI needs some time to get its units ready for the battle. Players will find it frustrating to have their new units eliminated with no chance. Hide them behind some trees or buildings to give them a chance.

3. **AI Can't do everything**
   The current AI has issues doing certain things, so you should plan your scenario to avoid requiring the AI to do them. This includes using transports properly (AI isn't very good at deciding when to unload), and using TNT weapons. If you give them to AI forces, they will not use them.

4. **Fatigue can be Devastating**
   Be careful giving a force high or low fatigue. For some forces, this can turn them into supermen or cause them to crumble away quickly. High fatigue and Russian forces do not mix well - they will rapidly become a force of green quality troops even if starting with elites. Low fatigue will leave Americans able to almost ignore fire.
   Be sure that you are seeing the results you expect when you test your scenario.

5. **VP Location Values**
   The values you use for VP locations can make a big difference on the scenario. In a Defend scenario, the higher the value, the longer the player has to hold on to win.
   In an Attack - VP location scenario, the higher the value, the slower he can move and take time to set up the fights as he wants. The lower the value, the faster he has to capture the locations. And the player must capture all locations before any of them get to 0 value or he loses. It can take a long time to capture a factory, so you need to allow for this variability when choosing VP values.

6. **Reinforcement Timing**
   A small change in the arrival turn can make a big difference in the scenario outcome. So if your scenario is working as you want you can try adjusting the turn of arrival to see if it improves the play of your scenario. Also remember that stacking limits can't be exceeded by entering units. If the force is larger than the limit, the player will need to move some units out before the others appear. And they will appear in the fixed order that you added them.

7. **Prevent Forest Fires**
   The higher the temperature, the more fires will spread. Note that orchard and grain can kindle from burning wrecks in their location.
   If you have a lot of burnable terrain (for example grain, forests, and buildings), you should probably set the temperature to cold or even very cold to slow down the spread. Otherwise you could end up with most of your map on fire.

8. **Fewer Leaders is Better**
   Having too many leaders can make it too little risk for units taking fire. With a lot of leaders, it is easy to rally a lot of troops every turn. With fewer leaders available, you will get a battle that is a lot more interesting.

9. **Avoid using Three-Star Leaders**
   They are very powerful and can easily imbalance a scenario.
10. **Don't make it too big**
    Don't try to show full formations or too many units. It slows down game play, and reduces tactical options as units run out of space to maneuver. Doubling the number of units will more than double the play time of a scenario.
11. **Play the game**
    Before you start building scenarios, it is to your benefit to play several scenarios to get a feel for what the game can do and how it plays.
12. **Get some experience before building a Defend or Breakthrough scenario**
    They are a challenge to design properly. Play some existing defend and breakthrough scenarios first to get a feel for them before trying to build your own.

Extra Tips for Building a Defend Scenario

These tips apply to designing Defend Scenarios.
1. **Build an Attack - VP Location scenario first**
   Building good, playable Defend scenarios is a challenging task. Second Front requires you to build an Attack (VP location) scenario first to get some experience. You really should play some defend scenarios prior to trying to build one so you have an understanding of what works in this type of scenario.

2. **Only 1 VP location**
   Defend scenarios can have only 1 VP location set because the AI performs unsatisfactorily when more than one is present.

3. **No Beach Landings**
   Don't build a Defend scenario with the AI performing the landing. It will not go well.

4. **Encourage the AI**
   When designing the Defend scenario you need to take steps to encourage the AI to attack.

Extra Tips for Building a Breakthrough Scenario

These tips apply to building Breakthrough Scenarios
1. **Play the Game**
   Play the game a lot first. Playing the game in a variety of scenarios to get a good understanding of how the game works is essential to being able to build good Breakthrough scenarios.
2. **Build Regular Attack - VP Location scenarios first**
   Get familiar with building Attack - VP Location scenarios to improve your understanding of the mechanics of scenario design and AI behavior. Then you can look at building a Breakthrough scenario.
3. **Test the scenario extensively**
   Getting the locations, points, and the forces (both sides) right as well as determining the proper amount of time will take several tries to get a workable scenario. Keep testing it until it works properly – and ensure that it is both winnable and fun.

CAMPAIGNS

PLAYING A CAMPAIGN

As an alternative to playing scenarios, you can play Campaigns in Second Front. Campaigns work as a series of connected scenarios in a fixed order, each of which is played like a normal scenario with some minor differences.

With the substantial increase in complexity and challenge associated with campaigns, it is highly recommend to play several regular scenarios before attempting a campaign. The player is expected to know how the game works, and employ proper tactics to use their units effectively.

You do not need to win every scenario in a campaign to win the campaign, rather your final score for the campaign is accumulated across all the scenarios in the campaign. You will move on to the next scenario in the campaign after you have won or surrendered in the current scenario.

Transitions

This moving on to a subsequent scenario is referred to as transitioning. There are several types of transitions that can occur between scenarios in a campaign.

None transitions carry over nothing except your points to the next scenario. All surviving units are lost, and do not appear in subsequent scenarios.

Only Leaders transitions bring across your points and any surviving leaders to the next scenario. The units will enter the map in the next scenario as reinforcements.

All Forces transitions brings your points and all of your surviving units as reinforcements to the next scenario. They will enter on a map edge of the next scenario.

Shifted Map transitions work a bit different. You still keep your score, but your surviving units get treated differently depending on where they are on the map. The shift occurs at the end of the scenario – win or lose.

The next scenario is played on a map that is a shifted form of the current scenario map – it will usually retain one quarter to one half of the current map, shifting the retained terrain towards one map edge. Terrain that moves off the edge is no longer used, and the new map area is filled with new terrain.

In the shift, all units in retained hexes that appear on the new map will start the next scenario in those hexes, while player units that were in hexes shifted off the map will enter as reinforcements into the next scenario.

Scenario Types

Scenarios of any type can appear in a campaign. Attack for VP location and Defend scenarios work the same, while Breakthrough scenarios are treated different. Any units which exit the map in a Breakthrough scenario are lost from the campaign – they will not appear in the rest of the campaign. You score points in each scenario based on the scenario type, and they accumulate across all scenarios in a campaign.

Finishing a Campaign

After completing the last scenario of the campaign, there is no transition, and your final score is determined and submitted to the high score list, much like ending a regular scenario. Your score is not submitted until you complete the campaign.

CREATING A CAMPAIGN
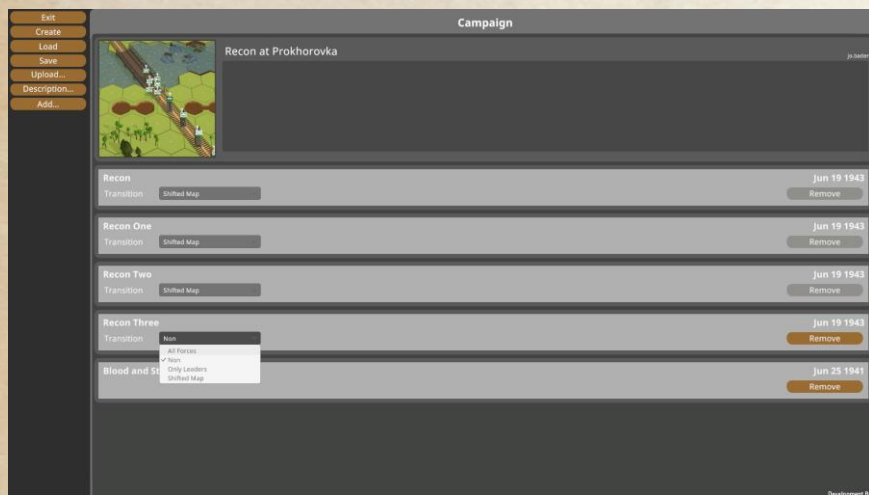
Preparation

Creating a campaign is a lot of work. You should have created several working and playable scenarios before you attempt to create a campaign. Expect to do a lot of testing to get a great campaign that will be fun and challenging for players.

When you decide to make a campaign, there are some things you need to do before you actually start making anything. You should do some research on the battle you want to portray so that you know what the general terrain is, what forces should be present, the number and type of scenarios, and what kinds of transitions you will want to use between the scenarios.

Campaigns are restricted to use the same nation for the player's and computer's forces for every scenario. So if you have the first scenario as German player vs Americans, all the rest of the scenarios must be set up the same - you can't add in a German vs Russian scenario, nor even an American player vs German computer scenario later on.

Make the Maps

Once you have this information, the next step is to create the maps for the scenarios. You can use the same map for multiple scenarios, but typically you will create one map for each scenario.

For all transition types except shifted map, the maps are independent of each other. For shifted maps, you must create them in the order you want to shift.

Creating maps works like for any normal scenario – you use the map editor and build the terrain into the desired arrangement. And then you save the map.

For **Shifted Maps**, you build the first map as normal and save it. Then you use the shift map button in the map editor to open the Shift map dialog.
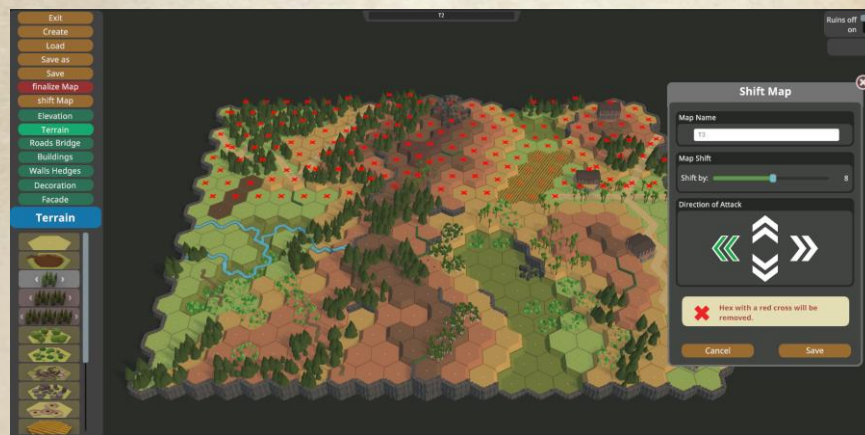

Enter a name for the new map in the name box, select the direction of shift by clicking on one of the arrows, and then set the distance of the shift. This will place "**X**" in the hexes that will be removed. An equal number of empty hexes will be added to the opposite edge of the map.

The new map created from the above shift retains the overlapping terrain and has empty hexes for the new area.
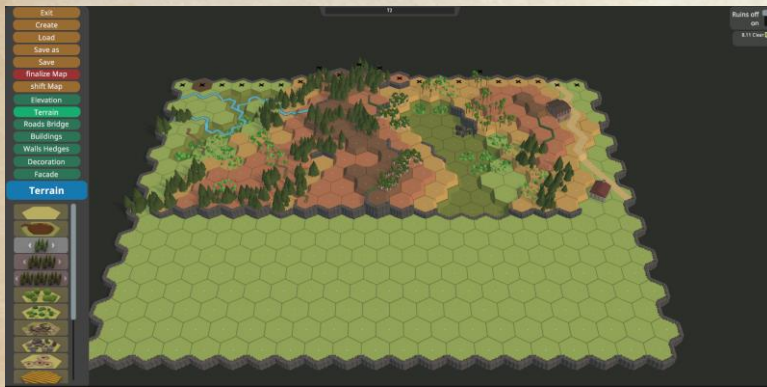
After editing the new map hexes, the completed map can be saved and used to create the linked scenario for the campaign.
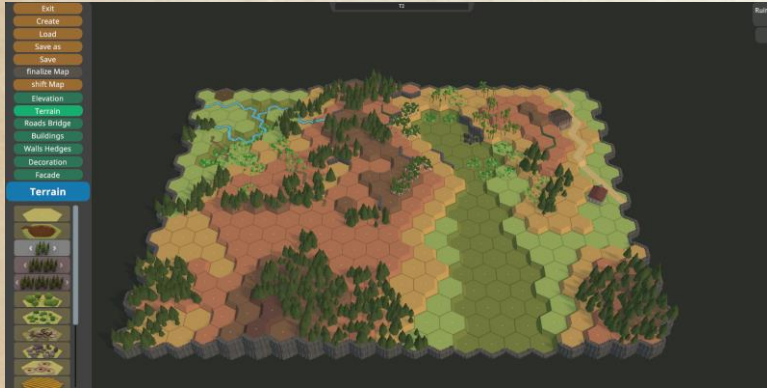
An important consideration for shifted maps is that they must all be the same map type – either with water, ocean or neither. This can't be changed. To change the map type in your campaign, you need to use a new map of the desired type instead of a shifted map for the scenario.

You can create a shifted map from a previously shifted map, and it does not need to be shifted in the same direction.

You should also be aware that shifted maps can only be used in scenarios in campaigns and must use a shifted map transition. You can't use a shifted map to play a stand alone scenario.

Editing the Map Example

When editing a shifted map, add a decoration to mark the edge of the original map. Here, the red flags mark the former edge of the original map. Use these to help keep the overlapping terrain on the maps matching. These will be helpful while editing the scenarios, and these decorations can be removed later by editing the map again after the scenario is set up. Remember to finalize the map again after doing this.

Now that the former edge is marked, you begin editing the map by removing any cliffs that were created from the original map by hexes being on the edge. This may require adding some elevated hexes on the new map to allow the cliffs to be removed. When doing this, use the one hex elevation tool to avoid damaging the overlapping terrain.


You can then add any other terrain to the new part of the map to complete it for the new scenario. Make sure you finalize the map when done editing it. And, like editing a normal map, remember to take the "H" picture to get an image of the map in menus. See the map editor chapter for details.

Create the Scenarios

Once you have the maps created, you are then ready to create all the scenarios for your campaign. This process works much the same as for normal scenarios – place units and VP locations, reinforcement entry hexes and exit hexes for breakthrough scenarios. And remember that all of them must have the same nation for player and computer (e.g. all German player vs Russian).

You may want to include notes in the description or name of the scenario to tell you the intended order, or keep track of this on a note pad for refence when editing the campaign.

Scenarios for a campaign should be placed in chronological order – but may all be designed to be the same date, representing simultaneous actions. There is a lot of flexibility provided in the campaign editor.
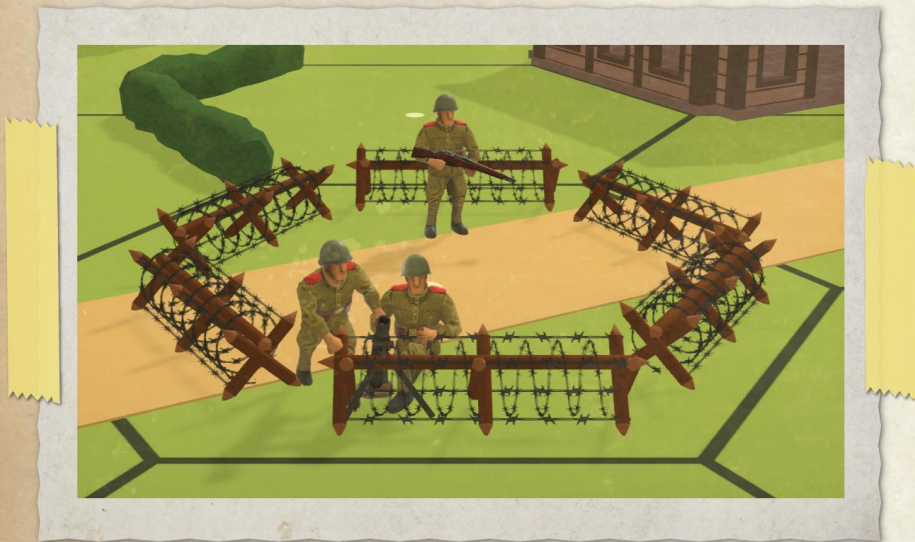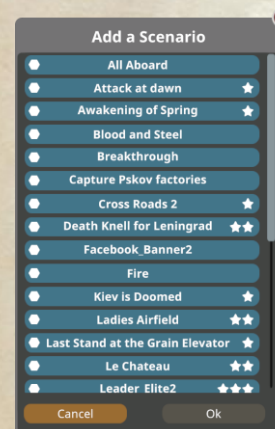

Create the Campaign

Once you have all your scenarios created, you then can start to build your actual campaign.

You open the Campaign Editor and click on the create button to open the dialog on the right.

Enter a name for your campaign, select the player and computer nationalities you chose when creating the scenarios.
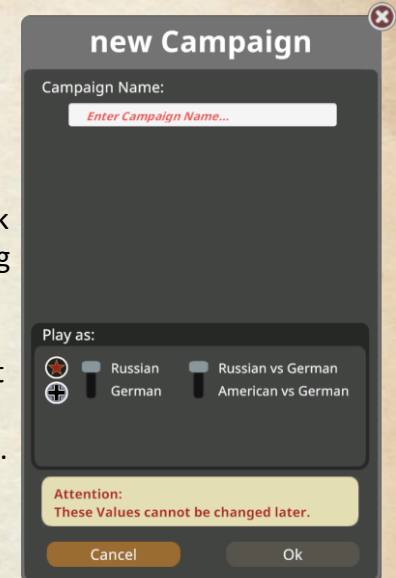
Click OK to save these choices and move on to adding a description and the scenarios to the campaign.

Click on "Description…" to open a dialog to enter the campaign description. This text will be visible on the workshop when you upload the campaign, so it should describe the campaign, and include the number of scenarios in it.

Then you can click on the "Add…" button to open the add scenario dialog. This list will only show scenarios that match the player and computer nationalities you selected when creating the campaign.

Select the scenario you want to add and click OK.

new Campaign

Campaign Name:
Enter Campaign Name…

Play as:

| ☆ | ☐ Russian | ☐ Russian vs German |
| ✠ | ☐ German | ☐ American vs German |

Attention:
These Values cannot be changed later.

Cancel   Ok

Campaign Description

Recon at Prokhorovka
Jun 19 1943

Description
Enter a Campaign Description…

Cancel   Ok

Add a Scenario

- All Aboard
- Attack at dawn ★
- Awakening of Spring ★
- Blood and Steel
- Breakthrough
- Capture Pskov factories
- Cross Roads 2 ★
- Death Knell for Leningrad ★★
- Facebook_Banner2
- Fire
- Kiev is Doomed ★
- Ladies Airfield ★★
- Last Stand at the Grain Elevator ★
- Le Chateau ★★
- Leader Elite2 ★★★

Cancel   Ok

When you have added more than one scenario, all except the last one will give you an option to select the transition type between the scenarios.

The Shifted map option can only be selected if the lower scenario is based on a map shifted from the map in the previous (higher) scenario.

You can click on the Remove button to a scenario if you need to – but only from the bottom up.

Once you have all scenarios added, all transitions set, and the description completed, you can then test your campaign from the Play My Scenario menu – but you will need to select Campaign mode to see it.
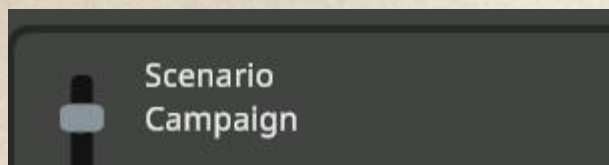
Play your campaign all the way through (ideally, several times) to make sure it works as intended. Once you are satisfied, if you added decorations to show shifted map edges, you can go back to edit each map and remove the decorations (remember to finalize again after this) if you want to.

And then you can load your campaign in the Editor one more time so that you can then upload it to the Steam Workshop and share it with the other players. This will also upload the scenarios and maps as part of the campaign.

Campaign Design Tips

1. Building good campaigns take a lot of work – and a lot of testing. Be prepared to do this before starting to make one. And make sure you have played a variety of scenarios and even several different campaigns so that you have an understanding of how thigs work in the game.

2. When using shifted maps, it seems that shifts of half to three quarters of the map size in the shifted dimension gives the best feel. Small shifts don't provide enough difference, while larger shifts don't provide enough continuity between maps.

3. On shifted maps, it is preferable to not have units show up on the new map with direct LOS to hexes that were being fought over in the previous scenario. It looks a bit strange to think that they sat there idly watching their forces be attacked and did nothing to help. Sometimes there is reason for such situations to exist, and if so, then you can do this.

4. Remember that map shifts do not need to be in the same direction – you could shift once to the east, and then for the next scenario have the map shift to the south.

5. Keep in mind that if you want to have a significant period of time between scenarios of a campaign, units that transfer to a scenario will not be upgraded to match the later date.

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KEEP INFORMED

There are several places you can find discussion and support for Second Front.

The Steam page has discussions, the workshop for scenarios and guides on using the software:
https://store.steampowered.com/app/1148490/Second_Front/

There is a Developer Blog on Facebook:
https://www.facebook.com/SecondFrontDeveloper/

And a forum for discussion on GrogHeads:
http://www.grogheads.com/forums/index.php?topic=23758.0

You can find a lively community active on discord:
https://discord.gg/BXmBuda