

# GAME MANUAL

## Dike and Shot



SLITHERINE



## EPILEPSY WARNING

PLEASE READ THIS NOTICE BEFORE PLAYING THIS GAME OR BEFORE ALLOWING YOUR CHILDREN TO PLAY.

Certain individuals may experience epileptic seizures or loss of consciousness when subjected to strong, flashing lights for long periods of time. Such individuals may therefore experience a seizure while operating computer or video games. This can also affect individuals who have no prior medical record of epilepsy or have never previously experienced a seizure.

If you or any family member has ever experienced epilepsy symptoms (seizures or loss of consciousness) after exposure to flashing lights, please consult your doctor before playing this game.

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

### PRECAUTIONS DURING USE:

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

USE OF THIS PRODUCT IS SUBJECT TO ACCEPTANCE OF THE SINGLE USE SOFTWARE LICENSE AGREEMENT

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# 1. Introduction

Welcome to *Pike and Shot*!

*Pike and Shot* aims to capture the essence of major battles in the age of Pike and Shot – the 16th and 17th centuries. It combines playability with a realistic simulation (based on the popular Field of Glory: Renaissance table-top wargames rules by the same game designer – Richard Bodley Scott). The graphics style emulates 17th century battle paintings.

The basic game includes 10 historical battles from the Thirty Years War, including the famous victories of Gustavus Adolphus at Breitenfeld and Lutzen, plus unlimited “what-if” battles on realistic terrain using historically realistic army lists. The development of army organisation and tactics over the course of the Thirty Years War is fully simulated. There are single player and multiplayer modes – the latter using Slitherine’s easy-to-use PBEM++ Multiplayer system. Expansions give access to historical and “what-if” single-player and multi-player scenarios for the English Civil War and the 16th century Italian Wars.

## 1.1. System Requirements

### Minimum Spec

Windows® XP/Vista/7/8

Pentium 4 or equivalent

1GB RAM

128Mb DirectX video card

CD ROM Drive (not required for the digital version)

DirectX Compatible Sound Card

DirectX 9.0c or higher (included in installer)







## Recommended Spec

1GB RAM

256Mb DirectX 9 video card with shader model 2.0 or better

Please ensure your graphics and sound drivers are up to date before playing the game or you may experience graphical glitches or more serious errors. Check your manufacturer's website for the latest version, as new drivers are released regularly.

## 1.2. Installing the Game

Please ensure your system meets the minimum requirements listed above. If you purchased from the Slitherine or Matrix site you will have been provided a download link for the games installer. To install the game, either double click on the installation file you downloaded or if you have the boxed version, insert the Pike and Shot DVD into your DVD-ROM drive. If you have disabled the autorun function on your DVD-ROM. Follow all on-screen prompts to complete installation.

If you have redeemed a Steam key or purchased via Steam you can also launch the game on Steam.

## 1.3. Uninstalling the Game

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

## 1.4. Product Updates

In order to maintain our product excellence, Slitherine releases updates containing new features, enhancements, and corrections

to any known issues. All our updates are available free on our website ([www.slitherine.com](http://www.slitherine.com)) and can also be downloaded quickly and easily by clicking on the "Update" link in your Game Menu or by using the "Update Game" shortcut in your Windows "Start" menu folder for the game. If you have the Steam version, Steam will update it according to your settings.

## 1.5. Multi-player registration

If you bought the game directly from us, we highly recommend registering your game first before playing. You can simply do this through the game menu, from Multiplayer or directly at Slitherine's website at:

[www.slitherine.com/signup](http://www.slitherine.com/signup)

This is because you will need a registered account to play Multiplayer games on Slitherine's PBEM (play by e-mail) server.

When registering you can choose to sign up to the newsletters to receive regular updates, offers and discounts on the rest of Slitherine's catalogue so it is worth registering!

Steam users cannot currently register though are able to play multiplayer.

## 1.6. Game forums

Our forums are one of the best things about Slitherine. Every game has its own forum with our designers, developers and the gamers playing the game. If you are experiencing a problem, have a question or just an idea on how to make the game better, post a message there.

Go to [www.slitherine.com](http://www.slitherine.com) and click on the Forums hyperlink.







## 1.7. Need help?

The best way to contact us if you are having a problem with one of our games is through our Help Desk. Our Help Desk has a FAQs section as well as a dedicated support staff that answer questions within 24 hours, Monday through Friday. Support questions sent in on Saturday and Sunday may wait 48 hours for a reply. You can get to our Help Desk by going to <http://www.matrixgames.com/helpdesk>  
[www.slitherine.com](http://www.slitherine.com)

# 2. Historical Overview

## 2.1. The Development of European Warfare in the Pike and Shot era

At the beginning of our period, in 1494, the French King Charles VIII decided to resurrect the old French dynastic claim to the throne of Naples and attempt to conquer an empire in Italy. He thus began the Italian Wars, a futile struggle between France and the Imperialists (Spain and the Holy Roman Empire). This confrontation continued on and off until 1559.

The French army relied for heavy cavalry on fully armoured gendarmes - the successors of medieval knights, charging fiercely with lances. Swiss and German mercenaries formed the core of the infantry. They advanced in huge deep blocks of pikemen, armed with pikes up to 6 metres (20 foot) long. Native French infantry were not highly regarded. At the start of the wars the crossbow was still their main missile weapon, gunpowder




firearms (arquebuses) not yet having caught on in France. They did, however, have an excellent train of gunpowder artillery. Their Imperialist opponents also relied on massed pikemen, mostly German landsknechts. They also had good Spanish and rather less effective Italian infantry. Their armies included substantial numbers of arquebusiers, who proved increasingly effective. Their mounted arm was usually outmatched by the French in numbers and quality.

The massed attack by huge blocks of pikemen had proved very successful for the Swiss in the 15th century, and had been copied as a military system by the landsknechts of Germany. However, the early years of the Italian Wars were to reveal its deficiencies. At Cerignola (1503) and Bicocca (1522) the previously invincible Swiss foot were defeated by field fortifications manned by artillery and arquebusiers, with pikemen in support. Suffering severe losses from artillery fire in the approach, the Swiss formations were then subjected to a hail of arquebus shot before finally being repelled by pikemen at the fortifications. At Marignano (1515) the Swiss advance was halted by repeated French cavalry charges, until the Swiss losses from the French artillery became too much to bear and they began to retreat.

As the wars proceeded, both sides, particularly the Spanish, began to experiment with different mixed infantry formations of pike and shot in close cooperation. At first (from 1503) the Spanish fielded mixed units (colunelas) of pikemen, arquebusiers and sword-and-bucklermen, in much smaller battalions than Swiss/Landsknecht pike blocks. These could only stand against pike keils if deployed behind field fortifications. Later, in the








1530s, they developed the mighty *tercio*, a much more resilient unit of several thousand men, forming up with a central block of pikemen, surrounded by arquebusiers, with large clumps of arquebusiers at each corner. Each *tercio* was in effect a mobile fortress that could advance inexorably across the battlefield yet was able to repel attacks from any direction.

Cavalry warfare also developed. While the French and Spanish stuck with the lance as the weapon of choice of their heavy cavalry, the Germans changed over to pistols. These reiters (or *schwartzreiters* because of their habit of wearing black armour) became the usual sort of mercenary German horse hired by the various combatants in the wars. They developed the *caracole*, a system whereby a deep formation of pistoliers could deliver a continuous barrage of pistol fire against a stationary target (usually a pike block) – each rank firing in turn then moving off to the rear to reload. Each man carried up to three pistols, two in holsters and one in the right boot.

Soon after the Italian Wars ended in 1559 with the Treaty of Cateau-Cambrésis, France dissolved into anarchy in the Wars of Religion between the Catholics and the Protestants (Huguenots), which lasted from 1562 until 1598. In the second half of these wars, the Huguenots replaced their lance-armed *gendarmes* with pistol-armed *cuirassiers*. Unlike the now-traditional German reiters, these did not attempt to shoot the enemy at a distance, but saved their pistols for the moment of impact. These tactics proved superior both against lance-armed *gendarmes* and traditional reiters. Despite this, for three-quarters of a century there continued to be proponents of the lance and the use of pistol or carbine at a distance (the *caracole*). Towards the end of



the wars, Henri of Navarre (later Henri IV of France) pioneered the use of commanded shot – detached bodies of arquebusiers, placed between the blocks of horse to offset enemy cavalry superiority.

Infantry developments in the later 16th century included a reduction in the proportion of pike to shot, and the gradual replacement of the arquebus with the longer-ranged musket. Despite their advantages, large *tercio*-style units had a major disadvantage. This was that the depth of their formation meant that it was impossible to bring all their firepower to bear frontally. In 1590 Prince Maurice of Nassau became commander-in-chief of the Dutch armies, which had been fighting a War of Independence against the Spanish since 1568. He reorganised the army into smaller battalions of 500 to 600 men. These formed up in shallower formations, so were able to bring a much higher proportion of their firepower to bear. This proved a decisive advantage at the Battle of Nieuwpoort (1600).

Over the following decades, Maurice's smaller battalions became the standard organisation of most European armies, though reduced *tercios* remained in use until the early 1630s, during the Thirty Years War (1618-1648). Further developments were made by the Swedish army under Gustavus Adolphus, who entered the Thirty Years War in 1630. Firepower was increased by the attachment of 12 fast-loading 3-pounder guns to each infantry brigade. Swedish musketeers, normally deployed six ranks deep, were trained not only to fire by counter-march like other European armies, but also, when required, to double the files to form a three deep formation and all fire simultaneously (the famous Swedish salvo), front rank kneeling, second rank





crouching and third rank standing. The pikes would then immediately charge the enemy before they could recover from the salvo. However, salvo tactics were replaced by simpler drills after the Swedish army's veterans were nearly wiped out at Nördlingen (1634).

The proportion of shot steadily increased through the 17th century, and pikemen steadily lost their armour – even when it was supplied by the state, the soldiers often discarded it on campaign. In the last quarter of the century, the bayonet started to come into use, giving musketeer-only units better protection against cavalry. However, early bayonets were of the plug type, which fitted into the barrel of the musket, thus preventing it from being fired. Most European armies retained a small proportion of pikemen in each battalion right up until the end of our period, when both pike and plug bayonet were definitively replaced by the socket bayonet. This, though it somewhat hindered reloading, allowed the musket to be fired with the bayonet in place.

Cavalry tactics also developed through the 17th century, with the use of shallower formations, more aggressive charges and a further reduction in armour. By the end of the 17th century, most European cavalry were unarmoured.

These were the developments in continental Europe. On the fringes, and elsewhere in the world, developments were often slower and obsolete systems sometimes persisted. English armies continued to be based on the traditional longbow and bill until late in the 16th century, and only really caught up with European developments during the English Civil War (1642-1651). Ottoman infantry made the transition from bow to firearms, but, lacking pikemen, could not stand against cavalry in the open.



Their cavalry persevered with the bow until the 17th century. Nevertheless, the Turks remained a serious threat to Christian Europe.

The period covered by this game was one of continuous military evolution, beginning with the medieval forces of the start of the Italian Wars, and ending with the stabilisation of the Western military system into the triad of horse, bayonet armed musketeers and artillery, which then persisted largely unchanged for over a century.

## 2.2. The Thirty Years War

The Thirty Years War from 1618 to 1648 was a titanic struggle which essentially resulted from the Catholic Holy Roman Emperor's attempt to re-establish the privileges and land holdings of the Catholic Church at the expense of the Protestants. Initially a purely German and Bohemian affair, it eventually drew in the Danes, Swedes, Spanish and French. At the end of the war the political and religious status quo ante was largely restored, but Germany was devastated and would take many generations to recover.

During the course of the war, although weaponry remained largely unchanged, organisation and tactics changed drastically, with major effects on the character of the battles. *Pike and Shot* tracks this tactical evolution over the course of 10 historical battles – and unlimited “what-if” scenarios.





## 3. Playing the Game

### 3.1. New Players

New players should start by playing through the Tutorial scenarios, as this will introduce the basics of movement, shooting, close combat, morale and important troop interactions. After completing the tutorials, start with a Skirmish (Random Map Battle), setting the scenario type as Open Battle, the force size as Small or Very Small and allowing the computer to choose the armies (Pot Luck). As you gain experience in the game's mechanics, try playing with larger armies, or other scenario types, until you feel ready to tackle the Thirty Years War campaign. Feel free to adjust the difficulty as needed in the Options screen (see Options below).

### 3.2. Starting a Single Player Game

To start a single player game select "Historical" from the main menu. If you have not played before, select the Tutorial. When you have played through that, you can either pick "Skirmish" from the main menu, which generates a hypothetical battle between historically opposing armies selected from historically accurate army lists on a unique computer-generated battlefield, or you can make a start on the Thirty Years War campaign, which is a series of 10 historical scenarios covering some of the most important battles of the war. These are arranged in chronological order, but you can play them in any order you like. You can adjust the difficulty in the Options menu.



## 4. Historical Scenarios

Apart from the Tutorial scenarios, each of the scenarios in the historical campaigns is a historical battle, and is closely modelled on the real battle. In addition to terrain and orders of battle, various other morale or command peculiarities of the historical battle are also represented. Victory conditions vary from scenario to scenario, as specified in the scenario briefing, but an army will generally break when a certain proportion of its units are routed or destroyed. The commonest goal is to defeat the enemy army, but sometimes the goal may be to conduct a fighting retreat from the battlefield or even to sell your lives dearly.

In the multiplayer versions of the scenarios, the player who starts the battle with the advantage will need to defeat the enemy without suffering too many losses himself, or the battle may be considered a strategic defeat.

Each historical scenario is preceded by a scenario briefing, which shows the map and brief information about the forthcoming battle.





## 5. Skirmish Mode

Skirmish mode allows an infinite number of what-if scenarios to be played. The player (or challenger in the case of multiplayer games) can choose the size of the forces involved, the size of the map, and the nationality and date of the opposing forces. The battle will be fought on a computer-generated battlefield.

### 5.1. Scenario Types

#### 5.1.1. Attack

The enemy is disadvantaged in strength of forces, but his infantry are behind field fortifications.

#### 5.1.2. Defend

The player is disadvantaged in strength of forces, but his infantry are behind field fortifications.

#### 5.1.3. Open Battle

Both sides are eager for battle on an open battlefield.

#### 5.1.4. Reinforcements (Enemy)

The enemy is expecting reinforcements. Best defeat him before they arrive.

#### 5.1.5. Reinforcements (Own)

You are expecting reinforcements. Can you hold the enemy off until they arrive?

#### 5.1.6. Send Flank March

You have decided to send part of your forces on a flank march, to catch the enemy at a disadvantage. Alternatively he might overrun you before they arrive.

There is no scenario selection to make the enemy send a flank march, but they may choose to do so in any of the other scenario types.

### 5.2. Army Lists

The armies for skirmish mode battles are chosen from historically-based army lists for a particular nation and date range. If you select "Pot Luck", the computer will set up a battle between two historically opposing forces of the same date. If you choose to select the nations involved, you can either pick them from possible historical opponents or turn the historical filter off. You can also choose whether to have the computer pick the armies (few historical commanders had the luxury of choosing the forces available to them) or allow the player(s) to tailor their







forces within specified limits. If you choose the latter option in single player games you will get a slightly smaller force.

## 6. Force Selection

At the start of each scenario you'll be taken to the force selection screen. In some scenarios you must make do with the forces available, but others allow you to vary your forces. You can select units from those available up to the points limit specified. The points available will often depend on the difficulty level you have set. Each unit's stats are shown, along with a basic text description.



## 7. The Battlefield

The battlefield is covered with an invisible square grid. Each unit occupies one square (tile). Units move from square to square and never end up part way between squares. Units can face in any of 8 directions. Diagonal movement costs 1.5 times the AP (action

points) of straight movement. There can never be more than one unit in a square. Buildings, woods and hills block line of sight. You will only see enemy units on tiles you have line of sight to and that are within visibility range. Squares you cannot see into are darkened - representing the "fog of war".

Different terrain types have different effects - see the Terrain section below.

### 7.1. Battlefield Display



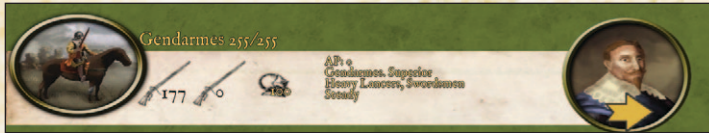
Information about the currently selected unit appears on the left hand side of the screen. Information about any non-selected friendly or enemy unit appears on the right hand side of the screen when the mouse is hovered over the unit. This information includes close combat, shooting and armour ratings as a general guide to the unit's overall power. The close combat rating is only a very approximate guide - the interaction between POAs (Points of Advantage - see the Close Combat section) is







far more important in determining the likely result of a close combat. With the wrong matchup, a powerful unit can lose to a much weaker one – e.g. a unit of veteran horse will probably lose if it charges a steady unit of raw pike and shot frontally. The unit’s available AP, troop-type, quality rating, combat capabilities and cohesion state are also displayed.



More detailed information about a unit can be obtained by selecting the Tools button and then selecting “Show detailed unit information” or by CTRL-L clicking on the unit.

A list of your units (excluding those that are irretrievably dispersed or currently off the battlefield) can be obtained by selecting the Tools button and then selecting View Unit List or by hitting the L key on the keyboard. Units that have already moved are greyed out. You can select a unit by clicking on it in the list.



Alternatively you can tab through your units by selecting Tools then selecting “Next Unmoved” (TAB hotkey) or “Next Unit” (N hotkey).



The Tools menu also allows you to view an up to date casualty report (K hotkey), to toggle between top down and isometric views (M hotkey), and to show a unit’s line of sight and arcline of fire (1 hotkey).

## 8. Deployment

Some scenarios allow you to redeploy your troops before the battle proper starts (some don’t). You can drag, move or swap units into any permitted square (see below), and also set their initial facings.

When you select one of your units, its potential redeployment area is highlighted. Redeployment is restricted to specified areas. In most cases, non-light troops (see “light troops” in Glossary) can only be redeployed within the rectangle defined by the extremes of the current battlefield width occupied by your non-light troops and your rear map edge. Non-light foot troops cannot be redeployed within 8 squares of the side map edge – even though some units may already be in that area. Light troops have a somewhat larger redeployment area, defined by the extremes of the current positions of your light troops and your rear map edge.

Note that medium and heavy artillery can only be redeployed when limbered. However, you can toggle them between limbered and unlimbered without penalty during the deployment phase. If you have the LOS/LOF display toggled on (using the “1” hotkey, or the Tools panel) this will show the potential line of fire of the guns even when they are limbered.

Once you’re happy with the starting positions of your troops, you can start the battle.







## 9. Battlefield Orders

When the default Left/Right UI mode is in use, units are selected with the left mouse button, and orders are issued with the right mouse button. Units are deselected by left-clicking on another unit or an empty square.

The order system is simple. The following actions are permitted. Each has its own icon, which shows when you hover over the target square.

### 9.1. Move



Apart from unlimbered medium or heavy artillery, which cannot move, all units can potentially move to any square within reach of their AP (action points). In Open Ground, moving one square generally costs 4 AP if the move is straight and 6 AP if it is diagonal. Other terrain types may have higher movement costs for some or all troop-types. Gun limbers have higher costs in Open Ground. A unit can move to any square where the total cost of reaching it does not exceed its total AP. There are additional AP costs if the overall move includes a turn of more than 45 degrees – see “Turns” below.

Moves cannot go between units in close combat or between pursuers and routers.

#### 9.1.1. ZOC (Zone of Control)

Movement is restricted when close to the enemy, as follows: Each unit exerts a ZOC (zone of control) affecting the square directly in front of it. A unit’s move cannot pass through an enemy unit’s ZOC, nor diagonally across its front. A unit that is already in an enemy ZOC cannot move except away from that enemy – which

(owing to turning restrictions) means that this is mostly only possible for light troops.

Non-light troops ignore the ZOC of light troops (except commanded shot currently “Protected” by adjacent mounted troops – see “Detailed Combat Information” below). Keils (units with very large blocks of pikemen) ignore all ZOCs. Routing troops, artillery and battle wagons do not exert a ZOC. Evaders, routers and pursuers (which are moved automatically by the computer) ignore ZOCs.

#### 9.1.2. Interruption of Moves

A unit’s move may be interrupted by enemy fire. It halts briefly then will require a further Move order to complete its move. However, if the originally intended move was not directly forwards, the unit may no longer be able to complete it. This represents disruption of manoeuvre when the unit comes under enemy fire.

### 9.2. Turn



Units can face any of the 8 squares adjacent to their own. Facing is very important because arcs of fire are restricted and flank or rear attacks are deadly (see below).

Each game turn non-light units are allowed one free turn of up to 45 degrees. Light troops are, in addition, allowed one free turn in any direction. Beyond this, turns of up to 90 degrees cost 8 AP, and larger turns cost the unit’s full starting AP. Any turn required to reach the chosen tile in a Move order is costed similarly.

This means that most non-light foot troops cannot turn more than 45 degrees and also move in the same turn. Most non-light







mounted troops can turn 90 degrees and still move a square or two, but use their entire movement allowance to turn 135 or 180 degrees.

Turns are also restricted by enemy proximity. Units may have priority charge target(s). These include enemy units that are ZOCing them and also enemy within two map squares directly to their front (one square if facing diagonally) and facing within 45 degrees of towards them. A unit with a priority charge target cannot turn except to reduce the threat of a flank charge or face a different priority charge target. This prevents units from ganging up on the front units in a chequerboard formation.

## 9.3. Shoot



Units with shooting weapons can shoot once in their own turn and once in the enemy turn. Shooting in their own turn is controlled by the player (or AI), shooting in the enemy turn is automatic and reactive to enemy movement or shooting. Shooting weapons include Pistols (Shooting), but not Pistols (Impact) or Pistols (Melee), because troops with those capabilities are reserving their pistols for close combat.

### 9.3.1. Shooting Tooltip

If the Simple Tooltips option is toggled on (see Options), the tooltip shows the range bracket (if long range), arc of fire, cover modifier (if any) and range of casualties that shooting will inflict. If the Detailed Tooltips option is toggled on, the tooltip gives additional information.

### 9.3.2. Range

Shooting weapons can shoot if in range. Some weapons have a long and a short range – shooting at half effect at long range.



Salvo also shoot at half effect at short range, because they are reserving fire for a pre-charge salvo. Musket/Impact Foot shoot at three-quarter effect at short range, because their tactical doctrine emphasizes a rapid advance to close combat.

### 9.3.3. Arc of Fire

All units have an arc of fire. If the target unit is outside 45 degrees of straight ahead they can't shoot at it. If the target unit is between (approx.) 22.5 degrees and 45 degrees of straight ahead, they can only shoot with half their men. (They do not get to use the other half against a different target). Off-shore ships can fire a full broadside at troops within 45 degrees of their side.

Potential targets are indicated by a full or half arc of fire icon above the unit.

### 9.3.4. Line of Sight

Line of sight is blocked by higher ground, woods and built-up areas – though not by individual buildings which are not large enough to block LOS through the whole square.

For shooting purposes, it is also blocked by units. The line of sight algorithm for shooting past troops is fairly generous, however – it assumes that there are large enough gaps to shoot through between units in chequerboard formation.

Artillery on higher ground can shoot over any friendly or enemy units that are not in the square immediately in front of them. Artillery can shoot over light foot or commanded shot on the flat provided that they are more than 2 squares from the artillery. Medium and Heavy Artillery can shoot over enemy artillery.







If no higher ground is available, some care is required to avoid blocking the LOS of your artillery.

Line of Sight and Line of Fire can be displayed on the map by selecting Toggle LOS/LOF from the Tools menu, or using the “1” hotkey. Note that this does not take into account the blocking effect of intervening troops.

### 9.3.5. Residual Shooting Phase

Any units that can shoot but have not shot during a turn, will shoot automatically in the Residual Shooting Phase at the end of the turn, unless they are in concealing terrain.

## 9.4. Charge



Troops in adjacent map squares are not automatically in close combat. Those that are in close combat are indicated by a close combat icon between the units.

Charges are triggered by the Charge action. The unit has to have sufficient AP to enter the square that the enemy is in – although the unit is not actually moved into the square. The enemy are assumed to have made a short counter-charge if that would be appropriate to the matchup, and not if not, but are not physically moved.

Charges can be launched against units that are within 45 degrees of straight ahead at the start of the move.

To charge a unit you need to click on the Charge icon twice.

### 9.4.1. Charge Tooltip

After clicking once on the Charge icon, the charge tooltip appears. If the Simple Tooltips option is toggled on (see Options),

the tooltip shows approximate Win:Draw:Lose chances for the Impact combat and first round of Melee combat. If the Detailed Tooltips option is toggled on, the tooltip gives a full breakdown of the factors affecting the combat. On the PC the Detailed Tooltip mode can also be temporarily turned on by holding down the CTRL key.

### 9.4.2. Priority Charge Targets

Units may have priority charge target(s) – these are (a) enemy within two map squares directly to their front (one square if the chargers are facing diagonally) and facing within 45 degrees of directly towards them, or (b) enemy ZOCing them. Priority charge targets apply if the charge path starts in or passes through a square in which they would apply. If a unit has a priority target, it cannot charge a non-priority target. This stops units from ganging up on the front units of a chequerboard formation, or adjacent units in a line. Restrictions apply equally to player and AI units. Priority targets do not affect shooting (except reaction fire), but the arc of fire rules ensure that a unit which shoots at a different target will usually only shoot at half effect.

Sometimes, when the path chosen by the program to a proposed charge target results in the charge being disallowed, the charge may still be possible by moving the unit to a different intermediate square first.

### 9.4.3. Non-Permissible Charges

Foot units other than those with large pike blocks (keils) cannot charge cavalry, even in the flank or rear. Light Foot cannot charge unbroken non-light troops (other than artillery) in open terrain,







even in flank or rear. Dragoons cannot charge unfragmented non-light troops (other than artillery) in open terrain, even in flank or rear. These restrictions are based on usual historical behaviour. FRAGMENTED troops (see Cohesion/Morale section below) cannot charge.

#### 9.4.4. Evasion

Light troops (light foot, commanded shot, light horse and dragoons) may evade charges. The AI decides for the (player or AI) unit whether it will evade, based on its chance of winning the combat and its chance of successfully getting away. The charging unit pursues with its remaining APs, so that it is more likely to catch the evaders if it starts its charge in an adjacent map square. Evaders who are caught are treated as having been charged in the rear. If they do escape, evaders may go off the battlefield, in which case they do not count as lost and may possibly return to the battlefield later. Chargers never follow evaders off the battlefield. If the chargers' pursuit path goes adjacent to another enemy unit (within 45 degrees of straight in front of the chargers), they will charge it if they (the AI on their behalf) fancy their chances and they have enough AP left to charge them.

#### 9.4.5. Flank/Rear Attacks

Charges by units that start their (whole) move behind the flank of a unit count as flank/rear attacks. Unless they are non-light troops charged by light troops, the victims automatically drop 1 cohesion level (see the Cohesion/Morale section below), and the impact combat is fought on a net POA (see Points of Advantage in the Close Combat section below) of +200 to the flank attackers.



(+50 if lights charge non-lights). Being charged in the flank by non-light troops is VERY bad. The AI does its best to avoid it and so should the player. The AI will not miss any chance offered.

Keils (units with very large blocks of pikemen) and units classed as Later Tercios are immune to flank attacks, and units classed as Early Tercios are immune to flank and rear attacks. (Under the rules Later Tercios are the deep units that were the final stage of development before shallower Dutch-style units were generally adopted. Very late Spanish units were still called tercios but were similar to other nations' units so don't qualify for the bonus.)

Later units were in shallower formations and historically far less able to cope with being flanked (especially by cavalry). They do not therefore have the in-game ability to form square.

Foot are immune to the ill effects of flank/rear attacks across an obstacle (hedge, field fortification etc.), and when in a built-up area.

To qualify as a rear attack, the charger must be less than 45 degrees from directly behind the charged unit.

### 9.5. Fall Back



Units can fall back one or two squares straight backwards while maintaining their original facing. Such moves could panic the troops if performed close to the enemy. Consequently, if a fall back move is performed when within charge reach of a non-routing non-light enemy unit, the falling back unit will take a Cohesion Test (see Morale below).







## 9.6. Limber/Unlimber



Medium and Heavy artillery cannot move when unlimbered, and cannot shoot when limbered. The Limber/Unlimber commands allow an artillery unit to perform these actions. The artillery will not be able to shoot on the turn in which they unlimber.

## 10. Shooting

The effects of shooting are modified by various factors, not least the number of men shooting.

### 10.1. Range

Some weapons have a long and a short range – they shoot at half effect at long range. Salvo also shoot at half effect at short range, because they are reserving fire for a pre-charge salvo. Musket/Impact Foot shoot at three-quarter effect at short range, because their tactical doctrine emphasizes a rapid advance to close combat.

Shooting Ranges	Short	Long
Musket and salvo	2	4
Foot bow and crossbow	2	4
Mounted bow and crossbow	2	-
Arquebus and carbine	2	-
Sling	2	-
Pistols (shooting), bombs and javelins	1	-
Heavy artillery	10	20
Medium artillery	8	16
Light artillery	6	-
Regimental guns	4	-



## 10.2. Arc of Fire

All units have an arc of fire. If the target unit is outside 45 degrees of straight ahead they can't shoot at it. If the target unit is between (approx.) 22.5 degrees and 45 degrees of straight ahead, they can only shoot with half their men. Off-shore ships can fire a full broadside at troops within 45 degrees of their side.

### 10.3. Shooting and Moving

Stationary units shoot more effectively than units that move or turn. This also applies to reactive shooting in the following enemy turn.

If artillery unlimber, move or turn, they cannot shoot until their side's next turn.

### 10.4. Cover

Terrain and obstacles provide varying degrees of cover in various circumstances (see the Terrain section).

### 10.5. Armour

The effects of armour are on a sliding scale depending on the amount of armour worn by the target unit. Foot armour is of some benefit against muskets at long range, but otherwise armour is of little value against firearms. It is, however, beneficial against bows and other obsolete non-firearm shooting weapons.

### 10.6. Skirmisher Target

There is a 34% overall reduction in casualties inflicted when shooting at skirmishers (Light Foot, Commanded Shot or Light Horse), because of their dispersed formation.







## 10.7. Large Targets and Enfilade

Large units and units shot at from behind their flank will suffer higher losses from artillery fire.

## 10.8. Threatened Flank

Foot units shoot less effectively when their flank is threatened. This only affects their shooting factor against foot, as the phenomenon is already taken into account in their basic shooting factor against mounted troops.

## 10.9. Morale/Disorder

Shooting is reduced by disorder and low morale.

# 11. Close Combat

## 11.1. Combat Strength:

In impact combat, only the men who actually make contact fight, so if a smaller unit charges a larger one, both sides initially fight with the strength of the smaller unit.

Note that the “strength” is not the strength in actual men, but the relative combat strengths of the units. Mounted troops have more combat strength per man than foot – the ratio varies from scenario to scenario, but often 3 foot have approximately the same combat strength as 2 horsemen. Nevertheless, generally speaking, standard pike and shot battalions of approximately 500 men are large enough that they have 50% higher overall combat strength than equivalent 200-250 man mounted units.



In continuing combat (melee), the smaller unit will be overlapped, so the larger unit fights with extra strength equivalent to half the difference between the units’ actual combat strengths.

In shooting and close combat, infantry units larger than 500 men fight only with 500 men, and cavalry units larger than 250 men with 250 men, the extra troops being mainly extra rear ranks. The extra rear ranks do, however, provided resilience, and in the case of Pikes may qualify the unit as a Keil, which gives extra POAs – see below.

In continuing close combat, a unit that is fighting more than one unit fights them each in turn, but suffers a 20% reduction in combat strength per extra enemy unit, with a maximum reduction of 50%.

## 11.2. Points of Advantage

In addition to relative combat strength, there are a number of other factors that will affect the outcome of a combat. Troop type, armour, combat capabilities and situational factors will all make a difference. Points of Advantage (POAs for short) are used to determine who has the upper hand.

Combat damage inflicted depends on the net difference between the POAs applying to the opposing units. 100 POA difference is roughly equivalent to a 33% modifier to relative casualties inflicted.

The POA difference can never be above 200 – additional POAs beyond that are ignored.

The POA tables are below.





## 11.2.1. Impact POA table

Impact POAs				
	Foot using salvo. Pike in the same unit as foot using salvo	+200	against any foot	
	Impact foot. Pike in the same unit as impact foot.	+100	against any foot	
	Pike, protected shot or protected artillery, if not charging and not FRAGMENTED or SEVERELY DISORDERED	+100	against any mounted	
	Unprotected artillery	-100	against any	
	Spearmen, if not charging and not FRAGMENTED or SEVERELY DISORDERED	+100	against any mounted	
	Spearmen, if not FRAGMENTED or SEVERELY DISORDERED	+100	against any foot except pike keils, protected pike, protected shot, foot with bayonet or impact foot	
	Heavy weapon	+100	against any foot except pike keils, protected pike, protected shot, foot with bayonet or impact foot	
Any one of....	Foot with light spear unless they are charging mounted shock troops	+100	against any except pike keils, protected pike, protected shot, foot with bayonet or impact foot	
	Elephants	+100	against any	
	Battle wagons	+100	against any mounted	
	Impact Pistol	+100	against any except elephants, battle wagons, impact mounted (unless the pistols are high quality Determined Horse), or non-charging STEADY foot who are any of pike, protected shot or foot with bayonet	
	Heavy lancers	+100	against any except elephants, battle wagons, impact pistol, or non-charging STEADY foot who are any of spearmen, pike, protected shot or foot with bayonet	
	Light lancers	Only in open terrain (see glossary)	+100	against any except elephants, battle wagons, heavy lancers, impact pistol, or non-charging STEADY foot who are any of spearmen, pike, protected shot or foot with bayonet
	Impact mounted		+100	against any except elephants, battle wagons, heavy lancers, or non-charging STEADY foot who are any of spearmen, pike, protected shot or foot with bayonet

Pike keils whether charging or not, unless FRAGMENTED or SEVERELY DISORDERED	Only in open terrain (see glossary)	+100	against any
Any mounted		+100	against any light foot, dragoons, warriors or unprotected commanded shot or medium foot without bayonet
On higher ground (height difference <= 75)		+25	against any
On higher ground (height difference >= 100)		+100	against any
Foot defending light or medium fortifications		+100	against any
Foot defending heavy fortifications		+200	against any
Unit has attached guns, and is not charging		+50	against any
Charge counting as on flank or rear		+200	Final overall POA regardless of all other factors (+50 if lights charging non-lights)

## 11.2.2. Melee POA Table

Melee POAs			
Any one of....	Pike, protected shot or protected artillery, unless FRAGMENTED or SEVERELY DISORDERED	+100	against any mounted
	Unprotected artillery	-100	against any
	Melee Pistol	+100	against any except elephants, mounted swordsmen if the pistoliers are not STEADY, or STEADY foot who are any of pike, protected shot or foot with bayonet
	Swordsmen	+100	against any except elephants, STEADY melee pistols, or STEADY foot who are any of spearmen, pike, protected shot or foot with bayonet
	Spearmen, unless FRAGMENTED or SEVERELY DISORDERED	+100	against any except pike keils, protected pike, protected shot or foot with bayonet
	Heavy Weapon	+100	against any except pike keils, protected pike, protected shot or foot with bayonet. Also cancels enemy 'better armour' POAs if any.
	Elephants	+100	against any





Pike keils, unless FRAGMENTED or SEVERELY DISORDERED	+100	against any
Better Armour	Up to +50	against any except shot, heavy weapon, elephants or battle wagons
On higher ground (height difference <= 75)	+25	against any
On higher ground (height difference >= 100)	+100	against any
Foot defending light or medium fortifications	+100	against any
Foot defending heavy fortifications	+200	against any

### 11.2.3. Steady

A unit is only STEADY for combat purposes if it is neither Disrupted, Fragmented or Broken, nor Moderately or Severely Disordered. A unit which is Slightly Disordered will get partial STEADY benefits.

### 11.2.4. Keils

The POA bonus for “pike keils” applies if a unit has enough pikes to qualify (equivalent to approximately 350 pikes remaining at the default representational scale. For this purpose troops with swordsmen or heavy weapon in a pike unit count towards the keil). Most Early Tercios and some full-strength Later Tercios will qualify for the pike keil bonus, as will pike blocks detached from normal pike and shot units. Most normal pike and shot units won't. The UI will display whether the unit currently qualifies as a keil - a unit may lose keil status after suffering enough losses.

Note that only the proportion of the unit with pike, swordsmen or heavy weapon capability get the keil POA bonus. So an Early Tercio with 50% pike, 50% shot would get only +50 POAs for being a keil.



### 11.2.5. Protection

“Protected shot” are foot with Musket, Salvo or Arquebus capability in any of the following circumstances:

- a) Their unit includes pikemen.
- b) They are defending an obstacle. (Not attacking across it).
- c) They are commanded shot who are not attacking, and who have unbroken friendly non-light mounted troops in an adjacent tile (not including the 3 tiles to the commanded shot's “rear”).

The effects of being “Protected Shot” can be seen in the POA tables, but essentially Protection:

- a) Gives a +100 POA advantage against enemy mounted (provided that the Protected troops are not charging, and not Fragmented or Severely Disordered).
- b) Cancels any POAs that the mounted may have (provided that the Protected troops are Steady - i.e. Not Disrupted, Moderately Disordered, Fragmented or Severely Disordered - and are not charging).

So it essentially changes the shot from being at a -100 or even -200 POA disadvantage against mounted troops to being at a +100 POA advantage.

“Protected pike” are those in mixed units with shot.

Artillery are “Protected” when defending an obstacle, “Unprotected” when not defending an obstacle.

### 11.2.6. Troop Quality

In addition to the POAs specified in the tables above, there is a final POA adjustment of between -50 and +100 POA for troops that are below or above average quality.







## 11.3. Combat Results

At the end of the combat calculation, the combat will either be a draw or one side will have won. The losing unit will take a Cohesion Test (see Cohesion below) and may drop morale. It will also suffer higher casualties than the winner.

If Combat Reports are toggled on (see Advanced Options), a popup window will appear after each combat. If Simple Combat Reports are on, it will give a short report. If Detailed Combat Reports are on, it will give a full report of the factors affecting that combat.

## 11.4. Break Offs

One of the units may break off – this is determined by the AI.

Mounted troops may break off from enemy foot if they don't fancy their chances in the continuing combat. They may break off from enemy mounted if they lose badly in close combat. They can only break off from mounted enemy Shock Troops (see glossary) if they themselves initiated the close combat.

Foot may break off from enemy non-shock enemy foot if they lose badly in close combat.

## 11.5. Continuing Combat (Melee)

If neither side breaks or breaks off after the impact combat, the close combat continues in the Melee Phase each turn until it is decided.

If you mouse over one of your units that is in close combat, unless another unit is selected you will see an approximate estimate of your unit's Win:Draw:Lose chances in the next round of Melee combat. If the Detailed Tooltips option is toggled on, the



tooltip gives a full breakdown of the factors affecting the combat. On the PC the Detailed Tooltip mode can also be temporarily turned on by holding down the CTRL key.

## 11.6. End of Close Combat

When a close combat ends as a result of one side breaking or breaking off, the victors have no CC (cannot be given orders) in the immediately following turn, even if they don't pursue. Likewise nor does a unit that broke off.

# 12. Cohesion (Morale)

## 12.1. Cohesion States

There are 4 states of Cohesion.

- STEADY
- DISRUPTED
- FRAGMENTED
- BROKEN (ROUTING)

DISRUPTION and FRAGMENTATION reduce a unit's fighting capability. FRAGMENTATION also reduces its AP. FRAGMENTED units cannot charge.

BROKEN unit flee away from the enemy. If they leave the battlefield or continue to rout for several turns they are considered irretrievably dispersed.

Cohesion states and losses are indicated visually by a unit state icon above the unit – see below.





## 12.2. Cohesion Tests

Troops take a Cohesion Test if they suffer significant total shooting casualties (> 5%) in a turn, lose a round of close combat (inflict significantly less total close combat damage in the turn than they suffer), see a friendly unit break in an adjacent map square, or attempt to Fall Back when in the charge range of enemy non-light troops.

The cohesion test is based on Rand(1,6) + Rand(1,6), with some “re-rolls” depending on troop quality. There are shades of quality, and the effect of these variations is fully represented mathematically by the game engine. However, as a general guide, Untrained troops re-roll 6s, Superior troops re-roll 1s, Elite troops re-roll 1s and 2s. A score of 6 (after modifiers have been applied) is required to pass the test. If a unit fails it drops a cohesion level, and can sometimes drop two levels if the score is bad enough. (It cannot double drop from shooting, nor from close combat unless it lost badly).

Cohesion Test			
MODIFIERS			
Unit suffered heavy total shooting casualties this turn (> 8%)*	-1	Unit is heavy, mixed or determined foot	+1
Unit suffered significant total close combat damage this turn (> 5%)**	-1		
Total close combat damage suffered this turn exceeds total close combat damage inflicted by a large margin	-1		
Unit has lost over 25% of its original men	-1	Current Cohesion State	
Unit has lost over 50% of its original men	-1	Disrupted or Severely Disordered	-1
		Fragmented	-2

Foot battle troops with threatened flank	-1	Broken	-3
Any one of...	Any troops shot at by artillery or bombs*	* Only applies when testing as a result of shooting. The modifier for being shot at by artillery applies whether or not they inflicted any casualties. ** Only applies when testing as a result of losing a close combat. The modifier for fighting specific enemy troop types applies whether or not these inflicted more damage on the unit than it inflicted on them. Other tests do not use these modifiers even if they occur in the same phase.	
	Any troops testing for having lost close combat even partly against elephants**		
	Medium foot, warriors, light foot, commanded shot, mob or dragoons testing for having lost close combat even partly against mounted troops or mixed, heavy or determined foot in open terrain**		
	Any troops testing for having lost impact phase combat even partly against lancers, impact mounted or foot using salvo**		
	Foot testing for having lost impact phase combat even partly against impact foot**		

As a unit may have to take multiple cohesion tests for the same reason in the same turn, the random score for each of shooting and close combat is retained for the whole turn. (But replaced in the enemy turn, and also after melee close combat has been resolved). This means that (for example) subsequent cohesion tests for shooting after the first will get the same result unless there are additional modifiers – such as -1 for being shot at by artillery, or -1 for the total shooting casualties this turn exceeding 8% of the unit. The program remembers if the unit has already been shot at by artillery this turn, so it does not matter which order the shooting is done in. For example, if the unit is shot at by artillery first, it might





not reach the threshold of 5% shooting casualties this turn necessary to trigger a Cohesion Test. If it is subsequently shot at by musketeers, and the total losses from shooting this turn exceed 5%, a Cohesion Test will be taken, with a -1 modifier for being shot at by artillery.

Moreover, a unit cannot drop cohesion twice in the same turn from shooting, nor from impact close combat, nor continuing close combat. (But can drop once for each, and in some circumstances can double drop). Also, a unit that is Fragmented may break (without waiting to be contacted) if charged by another unit, even if it became Fragmented as a result of a previous impact close combat this turn.

### 12.3. Rallying

There is a chance at the start of each of its turns that a non-steady unit will take a Cohesion Test to improve its cohesion state. This is much less likely to occur if it is routing. If it does take a test and scores 6 or more, it rallies and goes up one cohesion level.

Routing units cannot test to rally if they are being pursued, or if they suffered more than 5% losses from shooting in the previous turn. (This includes damage from shooting in the Residual Shooting Phase immediately preceding the current turn).

### 12.4. Autobreak

In addition units will Autobreak if their losses get too high. For example an average quality unit will autobreak if it falls below 50% of its original strength. Higher quality units will stick it out longer and Raw units won't hang around as long.



### 12.5. Flank/Rear Attacks

Troops also automatically drop a cohesion lesion if charged in flank or rear (unless they are non-light troops charged by light troops, or are immune – see above).

### 12.6. Routing and Pursuing

If a unit breaks, friendly troops in an adjacent map square take a Cohesion Test, unless the broken unit was artillery, or the broken unit was light troops and the adjacent friends aren't.

Broken units rout. Their close combat opponents will pursue at least once in most cases. (Foot mostly won't pursue mounted, Artillery and battle wagons never pursue).

If pursuers end their pursuit move within 2 map squares of the routers they are still considered to be pursuing, and will inflict some casualties on the routers.

After each turn, routers will rout again. Pursuing units test to see if they continue to pursue, the chance of which depends on their troop type. Cavaliers and gendarmes are very likely to continue pursuing.

Troops pursuing routers cannot perform any other actions until the unit decides to stop pursuing. However, if the pursuers meet fresh enemy in an adjacent map square that is within 45 degrees of straight ahead, they will charge them if they have enough move left and they (the AI on their behalf) fancy their chances. For the purpose of determining whether such charges count as flank/rear attacks, the starting position of the charger at the beginning of the pursuit is what is taken into account, not its starting position at the start of the whole turn. If the charged unit breaks and the pursuer pursues again, the starting position is once again reset.







If the routers go off the battlefield they are considered irretrievably dispersed. The pursuers test to see if they follow them off. If they do, they subsequently have a chance each turn of returning to the battlefield close to the place where they left it.

Routers that have no route of escape are dispersed. Routers are also dispersed if they have not rallied after 5 consecutive rout moves.

## 13. Unit State Icons

The flag icons above each unit become progressively more tattered as the unit suffers losses. They also show a D if the unit is Disrupted or an F if the unit is Fragmented. If the unit is Broken, they turn into a white flag.

## 14. Terrain

### 14.1. Difficulty

Terrain is divided into 4 difficulty levels: Difficult, Rough, Non-Open and Open. These affect movement and order to varying degrees. (Heavy and Medium Fortifications count as Difficult to troops attacking them but cause no ill effects on troops defending them).

Difficult terrain includes Woods and Marsh. It does not disorder Light Foot. It disorders Medium Foot, Warriors, Dragoons and Mob. It causes slightly more disorder to Mixed Foot. It causes severe disorder to other types.

Rough terrain does not disorder Light Foot, Medium Foot, Warriors, Dragoons or Mob. It slightly disorders Mixed Foot. It severely disorders fully armoured gendarmes. It disorders other types.

Non-Open terrain (e.g. Enclosures, some Streams) does not cause disorder, but stops combats counting as "In Open Terrain" thus reducing Impact POAs for Mounted Troops and Pike keils.

Open has no effect.

Streams vary in difficulty level according to the size of the stream.

Built-up areas protect occupying foot from the ill effects of flank/rear charges.

### 14.2. Impassable Terrain

Water squares (including moderately large rivers except at bridges or fords) are impassable to land troops. Ships can only enter Deep Water squares.

### 14.3. High Ground

Troops on higher ground gain an advantage in close combat. This is minor (+25 POA) if the height differential is 75 or less, but significant (+100 POA) if the differential is 100 or more. Squares for which no height is shown on the tooltip are height 0.

### 14.4. Visibility

Woods, Buildings and Marsh offer concealment to stationary foot troops inside.

Dead Ground is Open, but stationary infantry can be concealed in it (by lying down) and then cannot be shot at. Its main value is to allow infantry to avoid enemy artillery fire.







Woods, built-up areas and higher ground block line of sight. (Some individual buildings don't, if they are not large enough to block a whole square).

## 14.5. Close Combat on the Edge of Terrain

If troops inside a terrain feature are in close combat with troops outside, then the troops outside will suffer the disorder penalties as if inside the terrain if they are attacking into it, but not if the enemy is attacking out of it. Either way the combat will not count as if "in open terrain".

## 14.6. Obstacles and Fortifications

### 14.6.1. Obstacle positions

Linear obstacles are either on or close to tile edges, or along roads. Foot troops in a tile with an obstacle along an edge gain benefits when defending it against troops beyond an imaginary line extending that edge. Those on a straight hedged road square gain benefits when defending it against enemy except in the direction of the road. Those on a curved hedged road square gain benefits when defending it against enemy on the outside of the bend. Fortifications only protect the tile edges where fortifications are depicted.

### 14.6.2. Obstacle effects

Foot defending obstacles count as "Protected" against mounted troops (see combat charts) and against the ill-effects of being flank/rear charged across the obstacle. Depending on the nature

of the obstacle they may also count Cover – reducing incoming shooting casualties (see below).

When on a tile edge, chains, hedges and low walls can protect stationary foot whichever side of them they are on. Cover is lost if the unit moves, even to change facing. Fortifications only protect foot inside the fortification, but cover is not lost if the unit turns or moves.

Troops that charge enemy across an obstacle lose all benefits that they would have had if the enemy charged them.

### 14.6.3. Obstacle types

- Chains – these give "Protection" but no Cover.
- Hedges/Low walls – these give "Protection" and 33% Cover.
- Field Fortifications (Light Fortifications) – these give "Protection", 33% Cover, and a +100 POA bonus in close combat to troops defending them.
- Enhanced Field Fortifications (Medium Fortifications) – these give "Protection", 66% Cover, and a +100 POA bonus in close combat to troops defending them, and also count as Difficult Terrain for troops assaulting them across the fortifications.
- Heavy Fortifications – these give "Protection", 75% Cover, and a +200 POA bonus in close combat to troops defending them, and also count as Difficult Terrain for troops assaulting them across the fortifications.
- High (Estate) Walls – unless destroyed these are impassable and block LOS.







## 15. Victory Conditions

These will depend on the individual scenarios. However victory conditions depending on losses are based on units routing or dispersed rather than casualties or destroyed units. The size of units is taken into account.

Default victory conditions are that an army breaks and the side loses if 60% of its original troops are routed or dispersed, or if 40-59% are routed or dispersed and the enemy have loss at least 25% less. Thus a side will fight on longer if the battle is hard fought than if it is a disaster.

In the historical MP scenarios the final scenario victory conditions are adjusted to take account of any initial disparity in forces, so that an initially disadvantaged losing army will win the scenario if the enemy victory was too Pyrrhic. If this is likely to happen, the text in the top left of the screen will report that the losing side is “ahead on points”.

In SP games, the player is given the option to play on and conduct mopping up operations after the enemy army is defeated.

## 16. Battle Reports

When a scenario is won (or lost!) you get a report showing each side’s losses resulting from the battle. This takes into account additional losses suffered in the pursuit, and the recovery of some walking wounded.



## 17. Load/Save and Options



The Load/Save/Options menu allows you to load and save games, set the difficulty level and set various audio and screen options. The advanced options menu allows you to control the amount of information displayed.



### 17.1. Load/Save

You can save your progress during your turn or from within the Scenario Selection screen. You cannot save between turns or during the enemy turn.

Saved games are located in “My Documents\My Games\PIKEANDSHOT\SAVES” on PC, and “~/Documents/MyGames/PIKEANDSHOT/SAVES” on Mac.

You can load your saved game from the main menu or when on the Battlefield.







## 17.2. Difficulty

There are five difficulty settings: Captain, Colonel, Sergeant Major General, Lieutenant General and Captain General. Captain is the easiest and Captain General is the hardest. In most scenarios these difficulty settings adjust the size of force available to the player, and (for Captain and Captain-General settings) the quality of the opposing forces. In some of the historical scenarios, however, there are different effects. Multiplayer games are played on the middle setting for both sides.

## 17.3. UI Mode

The default UI mode is called Left/Right UI mode. In this mode the left mouse button is used to select units and the right mouse button is used to issue orders. Units are deselected by left-clicking on another unit or an empty square (or by using the SPACE bar).

The alternative UI mode is called Left only UI mode. In this mode the left mouse button is used to select units and issue orders. Units are deselected by right clicking or by using the SPACE bar. (They can also be deselected by left-clicking on another unit, but this is not recommended as it will instead result in the first unit executing a turn action if the second unit is on an adjacent square).

## 17.4. Advanced Options

### 17.4.1. Helper Mode On/Off

When helper mode is on, additional helpful information is displayed in the tooltips and in popup windows. Most of these messages appear only once per game. When you no longer feel

the need to see these messages you can turn helper mode off. You can toggle helper mode on and off in the advanced options menu. There is also a button to toggle helper mode on and off on the popup message box.



### 17.4.2. Tooltips: Simple/Detailed

Detailed tooltips display the factors affecting shooting or close combat in much greater detail. However, on the keyboard, detailed tooltips can be temporarily turned on by holding down the CTRL button while mousing over the target unit.

### 17.4.3. Close Combat Reports Simple/Detailed/Off

You can toggle between simple close combat report popups, detailed close combat report popups, and no close combat report popups. When close combat report popups are turned off, the most important close combat information can still be seen as floating text above the units.







You can also toggle between the options using the “i” button on the close combat popup, although this will not take effect until any queued reports have been shown. (Note that if you turn close combat report popups off you will have to use the Advanced Options menu if you want to turn them on again).



#### 17.4.4. Yellow Question Marks On/Off

When this option is on, yellow question marks appear to warn of terrain that might conceal hidden enemy units.

#### 17.4.5. Compass On/Off

When this option is on, a small compass appears which can help you with keeping track of directions when you rotate the map.

## 18. Multiplayer

*Pike and Shot* includes a very comprehensive and easy to use multi-player system. To reach it, select Multiplayer from the main



game menu. If you already have a Slitherine forum username or have previously played other multiplayer games on our server, choose the login option and enter your details. If you are new to Slitherine, register your username and password in game. You can use these details to log in to the Slitherine forum and view stats or chat to other players.

The revolutionary PBEM (Play by E-Mail) system does not require you to organise games in advance; you do not even need to be online at the same time as your opponent. It is as simple to play as a single player game, removing all the barriers to entry of other multiplayer games.

It really needs to be tried to be believed!



When you arrive in the Lobby, you’ll see 3 tabs. The first tab, “My Games”, lists any games you currently have going. The middle tab is how you issue a challenge to start a new game, while the third lets you view any challenges from other players looking to start a game. You can accept these to get playing.







Any games displaying a padlock icon are private challenges only available to specific opponents.

If you want to start your own challenge, click the “Issue Challenge” button and you’ll see a list of available scenarios. Select the one you wish to play, or click the “Create Skirmish” button to set up a computer generated scenario, then select your side.

Once you have an opponent, the game moves to “My Games”. If it is your turn you’ll be able to select the game and press Play. If not, you’ll have to wait for your opponent to take their turn. When your opponent has moved you’ll be notified by e-mail. It is very important that you enter your real e-mail address when registering or you will not see the e-mail alerts when it is your turn.

## 19. Hints and Tips

The key to defeating the enemy is to make his units drop Cohesion (Morale) until they break and run.

The more shooting damage a unit suffers in a turn, the more likely it is to lose cohesion. It therefore pays to concentrate your fire as much as possible on individual enemy units. Shooting at an enemy unit with both small arms and artillery is particularly effective at cracking their morale.

Troops shoot better at short range, with full arc of fire and when stationary. They shoot less effectively if they move or turn. This effect lasts until your next game turn, so will affect two rounds of shooting. If you are not advancing, try to anticipate enemy movements and have your troops in position before the enemy is in range. Artillery cannot shoot at all if they unlimber, move or turn. Try to avoid blocking the shooting of your own



artillery. Units react to enemy units by shooting in the opponent’s turn. Take this into account when advancing on the enemy and when planning your defence. Any shots not used in either side’s turn are used in the residual shooting phase that follows the turn.

For close combat Points of Advantage are the key to victory. (See the Close Combat section above). Try to ensure that your units have the best possible matchups, and try to avoid charging frontally against enemy who will have the advantage in close combat.

Some units have capabilities which give them an advantage in the initial impact against some troops. Some of these require the unit to be stationary – i.e. not charging. For the others, it does not matter whether the unit is charging or receiving the charge as the unit receiving the charge is assumed to counter-charge a short distance if that fits the situation (although the unit does not actually move on the screen).

The close combat rating is only an approximate guide to the unit’s overall close combat power – the interaction between POAs is far more important in determining the likely result of a close combat. With the wrong matchup, a powerful unit can lose to a much weaker one – e.g. a unit of veteran horse will probably lose if it charges a steady unit of raw pike and shot frontally. Along with the optimal use of firepower, advantageous matchups are key to victory.

Foot (other than keils) can’t charge non-light mounted troops. Light foot, commanded shot and dragoons can’t charge most non-light troops in open terrain.

Flank or rear attacks are very dangerous. Try to avoid leaving your units vulnerable to them. Try to set up flank or rear charges







against enemy units. Keils and Tercios are immune to flank attacks. Early Tercios are also immune to rear attacks.

Light troops (Light Foot, Commanded Shot, Light Horse and Dragoons) can evade enemy charges, but may get caught, especially if the chargers start their move close to them. Troops that evade off the battlefield may return later.

Some terrain disorders troops, especially mounted troops and close order foot. The worse the disorder, the more the fighting ability of the unit is affected. Troops charging enemy who are in disordering terrain are disordered as if they were in the terrain themselves. However, troops in open terrain that are attacked by troops in disordering terrain are not disordered by the terrain. Troops in cover take reduced shooting damage, especially when stationary. Foot can hide in buildings, woods and some other terrain. They can only be seen by nearby enemy or if they shoot. Before some battles begin you may be able to redeploy your troops. Position troops to make good use of terrain.

Troops behind obstacles or fortifications gain various advantages against attacking enemy. They lose these if they themselves charge. Troops behind obstacles (other than fortifications) lose any cover provided by the obstacle if they move or turn.

Light or Medium Foot are vulnerable to mounted troops in the open. Try to keep them in terrain or behind obstacles when cavalry are about.

Troops in close combat have an advantage if on higher ground than the enemy - the advantage is much greater if the slope is steep (height differential 100 or more).

A unit that is in melee against more than one enemy unit fights less effectively against each of them. Ganging up multiple units



in close combat against an enemy unit therefore increases the chance of defeating it.

Once in close combat, units continue to fight in each melee phase until one side routs or breaks off. Higher quality troops fight better and are more resilient. When a unit routs, its opponents will usually pursue. You cannot issue orders to routing troops until they rally, nor pursuers until they stop pursuing. Troops that pursue off the visible map may return later. Routers won't.

Disrupted or Fragmented troops fight less well. Fragmented troops are likely to rout if anything else goes wrong, or if they are charged. Fragmented troops cannot charge and cannot move far. If they attempt a Fall Back action when the enemy is in charge reach, they will probably break. However, if you can keep the enemy occupied with other units they may get a chance to rally.

## 20. Making a Map in the Map Editor

A map in Battlefield Academy is built up from a grid of tiles, with 3D objects placed on them. As well as the visual look, the tiles determine the passability and cover values of each square, although certain objects can override these values.

The default size for a map is 32x32 tiles. If you wish to change the size or proportions of the map, click the button at the bottom left of the sidebar.

This opens up the map resize dialogue. You can either create a new map of the required dimensions, or resize the current map. Resizing the current map can cause issues if care isn't taken to







avoid lopping off key features or leaving placed units stranded off map. If just the size of an existing map is changed, the playable area will shrink or expand from tile 0,0. If this isn't what is desired, the x and y offset values can be used to shift the point at which the new sized playable area is applied.

You must also define the base terrain style of the map by cycling through the options – currently Central Europe, Northern Europe or Southern Europe.



## 20.1. Tiles

Once the size is correct, the basic terrain can be laid out with tiles. To work with terrain tiles, press the top left button on the sidebar.

The tiles are grouped into palettes of terrain types. Selecting a palette name from the second window down in the sidebar displays all the terrain tiles in that palette in the larger window below. Mousing over the tiles within this window displays a tooltip of the tile's terrain type. Clicking on a tile within the large palette

window selects it and allows you to place the tile onto the map with a click of the mouse (or hold the mouse button down to paint large swathes). Tiles can be rotated in 90 degree increments using the R key, although some have their rotation automatically randomised. While over the map, the tooltip displays the existing tile's terrain type, rather than the type of the tile you are painting with.

The palettes available in the window are limited to those matched with the terrain style specified when the map was created. However, an "Advanced Mode" can be turned on with the button underneath the tile window, which allows access to all terrain tile types at once. Advanced mode defaults to off, but this can be changed by adding 'EDITORADVANCEDMODE 1' to USER.TXT.

There are two kinds of tiles, flat and overlay.

- Flat tiles are used to block out the functional landscape and set terrain types – open ground, forest, marsh, water etc.
- The tiles from an overlay palette sit on a layer over the top of normal tiles. An alpha channel on the overlay tiles allows parts of the tile beneath to be seen. Some overlay tiles are completely transparent but alter the terrain-type of the tile without altering its appearance (e.g. Enclosure, Deep Stream, Medium Stream, Dead Ground).

These two layers of tiles can be edited independently of one another. Selecting an overlay tile from the palette window and clicking on an already laid down overlay tile will replace it without changing the tile underneath, while an underlying flat tile can be changed without affecting the overlay above it. Pressing the "Delete" key while working with terrain tiles will remove any overlay tile underneath the mouse pointer.







Some overlays (e.g. roads and tracks) can be layered over other overlays (e.g. streams).

Certain overlay tiles change the terrain type of a tile they are placed over. Roads, paths and tracks can be laid out across multiple tiles and overwrite their terrain types.

### 20.11. Auto-edging.

Auto-Edging can be toggled on and off using the button underneath the tile window.

When a flat tile is placed while Auto-Edging is on, the computer will automatically assign edge overlays to blend the terrain to the default terrain. Water placed on the map will automatically form streams, lakes or rivers, while roads will join together without time consuming selection of bends and straights.

This generally saves a great deal of time, but in some cases a map designer may wish for more control. Turning “Auto Edging” off using the button below the “Advanced Mode” button will disable this feature, and allow individual selection of overlay tiles. This is very useful when joining different types of roads together or when sorting out the propensity of the editor to create “mini-roundabouts” whenever roads make tight turns.

See also “Edging and Style” below.

### Hills

The game supports multiple hill levels. Holding the CTRL key allows the player to change the height of tiles on the map. Left click raises a tile in set increments, right click lowers. Complex hill geometry can prove very tricky for the game’s LOS rules to interpret, especially narrow ridges.



### Objects

Objects are accessed via the central button in the top row of the sidebar. Objects are grouped together in palettes in much the same way as the tiles. As with the Tiles, the terrain type selected in the map creation screen determines the object set available, unless “Advanced Mode” is active, in which case all object sets can be used.

To place an object, select a name from the list in the larger window. The object is then attached to the cursor and can be placed as seen on the map with a left mouse click. Objects can be rotated in 90 degree increments using the “R” key. They can also be freely rotated using the “Page Up” and “Page Down” keys. Objects can be scaled up and down using the “Home” and “End” keys. Pressing “Delete” will remove any object currently under the cursor.

Certain objects, such as buildings and fortifications, change the terrain type of a tile they are placed over as well as blocking the LOS. Bridges create a passable tile beneath them over water. These objects’ placement is often constrained to within a tile’s boundary, to prevent the placed object falling between two tiles and creating visually misleading terrain. If two objects on the same tile have different terrain effects, whichever was placed last will take precedence.

Trees are a special case. The terrain tile “forest” specifies that the tile provides cover for infantry units. However, it is the objects placed on it that cause the tile to block LOS.

Certain objects, such as Hedge (ShrubsDense) objects, can only be placed on tile edges, except for the special versions designed to go along roads. These will provide defensible obstacles as detailed in the Terrain section above.







## 20.2. Units

Once the map has taken shape, it can be populated with units. To work with Units, click the right hand side button on the top level of the sidebar. Repeated clicks toggle between Side 0 and Side 1 unit lists. The list can be refined by clicking on the filters in the small window above the main unit list.

Once a unit type has been selected from the list, move over the map and click the left mouse button to place the unit on a tile. Press “R” while holding the mouse cursor over an already placed unit will rotate it in 45 degree increments. Pressing “Delete” in similar circumstances will remove the unit.

Placing a unit on a tile that already contains a unit will load the second unit into the first. There is no limitation on what units can be loaded, so it is up to you to avoid loading (for example) an infantry unit into an infantry unit. You should in practice only put one unit on a tile – except for guns on limbers.

The same care must be taken in where units are placed. There are no limitations to where a unit can be deployed, so to avoid problems once the scenario is being played we must, for example, guard against units in lakes or outside the battlefield.

### 20.2.1. Fixed/Unfixed Units

When a unit is placed in the map editor, it displays a label “Fixed” above it. This denotes that in a scenario the player will not have to purchase that unit and it will always be present in the scenario. Pressing “F” key with the cursor over a unit turns off the fixed label and means that the unit will have to be purchased using the points allocated in the scenario.



### 20.2.2. Alternate Unit Textures

The map editor allows units to have a variety of different textures. The “Unit Textures” button will pop up a list of textures available for the currently selected unit type. Selecting a different texture will convert all units of that type on that side to the new texture.

The alternate textures are kept in subfolders in Data/Battle/UnitTextures (either in the main installation or under the specific campaign). The name of the subfolder determines the name that will appear in the text box. The textures must be named the same as the original texture.

You can find out which texture names apply to which unit by looking in the Squads.xlsx file in the AssetFilename column. (The program actually uses Squads.csv, but the formatting is easier to read in the .xlsx version.). However, altering either Squads file will not alter the file-reference in the associated model, so the editor will still show the alternative textures as per the unaltered filename.

## 20.3. Reinforcements Mode

This section allows a designer to bring on reinforcements for either side during a scenario. While in reinforcement mode, click on any units on the map to add them to the current reinforcement group (there are up to 8 reinforcement groups per side). Each group can be assigned a turn to arrive on.

If you wish to display a message to the deploying side when the reinforcements arrive, type it under Message. Message text will be stored in the TEXT9.TXT file in your campaign. If you wish the camera to pan to show the units to the player, set Move Camera: to Yes







The units will appear where they were placed, so some discretion should be exercised to avoid complaints of teleportation.

Advanced users may wish to customize their own scenario scripts (see the Scenario Script section below). Once units have been added to the map and assigned to reinforcement groups, clicking Export to File in the Reinforcements Editor window writes a script fragment with the unit types and locations. The units should be removed from the map once the fragment has been integrated into the main scenario script.

## 20.4. Custom AI Dialogue

This controls the AI behaviour.

“AI Team” button cycles through the 8 possible teams that the AI force can be split into. Select a team number, then click on any units on the map to assign them to that team.

“Aggression” controls the currently selected team’s responses to the player. Each behaviour has its own value

- 2 – Keep together when moving.
- 4 – Ignore all enemy unless they are close. Don’t move (except to turn to face) even if they are.
- 8 – Ignore all enemy unless they are close. Engage them as per other orders if they are.
- 16 – Seek and Destroy
- 32 – Use the threat map to move around carefully.
- 64 – Stay put in current tile.
- 128 – Non-light troops ignore enemy light troops unless they are protected commanded shot or very close.
- 256 – Ignore enemy foot troops unless very close.



- 512 – Ignore enemy mounted troops unless very close.
- 1024 – Light troops bug out. (This isn’t much use if applied in the Editor, but it can be used in scripted AI in the scenario script).
- 2048 – Ignore enemy artillery.

These behaviours can be combined by adding them together. For example, a team can seek and destroy enemy non-light foot only by combining seek and destroy (16), ignore enemy light troops (128) and ignore enemy mounted (512). The resulting Aggression code would be 656. Holding shift advances the values by 10 each click.

These “Aggression” values can also be used to control AI behaviour in scripts using the available script functions.

“AI target point” allocates a destination to the AI team. Clicking the AI point button cycles through the twenty four available points. Once the correct number is displayed, click the “Place AI point” button, then click on the map to place the marker.

## 20.5. Plugin Tools

This button accesses the additional tools that have been coded to help scenario design. There are currently three.

### 20.5.1. Random Enemy

This controls how many points each of the 8 teams will be given to purchase units.

### 20.5.2. Random Map

This section creates a random map using the present map’s dimensions.







The random map generator creates 16th/17th century battlefield terrain tailored to each region covered by the game.

Having selected the desired region, click “build map” to generate the map. Each click will build a different map.

### 20.5.3. Victory Points

This section covers the placement and allocation of victory points, and also the conditions required for victory.

Clicking on the left hand button of a VP cycles through its four possible states – Off, Neutral, belonging to side 0, belonging to side 1. Clicking on the right hand side, then clicking on the map allows the placement of VP.

Clicking the side 0 and/or side 1 boxes allows the designer to set victory conditions. Left clicking the “Capture” and “Defend” boxes raises the count, right clicking decreases.

Left clicking increases the turn limit, right clicking decreases it. Clicking the small box next to the turn limit sets the victory conditions to be “whoever has the most VPs at the end of the game”.

The bottom section allows the designer to select which AI teams will attempt to capture any VP flags held by the player.

## 20.6. Edging and Style

This section allows high level control of the auto-edging functionality in the editor.

“Edge All” will attempt to edge all terrain tiles, overwriting any hand placed edging that the player has implemented.

“Align all roads” will attempt to join all roadways together.

“Clear all ground edging” removes all generated and hand placed edging of ground terrain.



“Clear all water edging” removes all generated and hand placed edging of water tiles.

“Convert Style” allows the designer to change the visual look of a map but keep its layout by swapping texture sets. This only works if the two texture and tile sets have the same components – Central Europe, Northern Europe and Southern Europe do have the same components. Note that objects will not be changed.

## 20.7. Conditions

Weather and Time of Day are currently purely aesthetic.

## 20.8. Scenario Description

In the editor, click the Scenario Description Exporter button to open the tool. Fill in the scenario name and up to five additional pieces of descriptive text. Click Export once you have entered the text to save the scenario description.

For single player scenarios, this information will be displayed when choosing which scenario to play. If you place a .dds or .tga format image in the scenarios directory with the same name as the scenario, it will be used as the background while displaying this text in place of the default.

For multiplayer scenarios, it is possible to enter all of the strings and a UI file will be created, but only the name and first line of description will be displayed on the game selection screens within the lobby UI.

The UI is written to data/UI/ScenUI\_<Scenario>.txt while the strings are written to text9.txt. It is safe to manually edit the UI after it has been exported, it is only rewritten when explicitly exporting from this window.







## 20.9. Deployment Mode

Clicking on this button cycles through the three options for deployment in the scenario

**No deploy** – all units start where they are placed

**Partial deploy** – one side deploys while the other is fixed

**All deploy** – both sides can deploy

The default behaviour is that units can deploy into any tile they can see into. To use the standard deployment rules as outlined in the main Deployment section above, you need to include

```
if (GetTurn() == -1)
{
    SetUniversalVar("StandardDeployment", 1);
    SetStandardDeploymentBounds();
}
```

in the StartTurn(side) function of your scenario script.

## 20.10. Side0/Side1

Side 0 is the player's side, Side 1 the AI or opponent's side. Left and right clicks cycle up and down through a list of available side identities.

## 20.11. Text Markers

Text markers can be created and placed on the map. The top window shows a list of markers currently specified. New markers can be created by clicking "New Marker" while existing ones can be removed by clicking "delete marker".

The window below these buttons shows pre-set options for the text markers. If another option is required, the designer can click "Clear String" and type their message into the box. The tag



displays the identity tag of the text line – this will be generated automatically for any custom text lines created. Both the font and the text colour can be customised.

Once the Text marker has been created, it can be placed on the map by clicking "Place Marker" then clicking on the map. This will clip to the centre of the tile, although holding Shift down will allow for finer placement.

Use the ID shown in the text marker list to turn the visibility of text markers off and on from script using SetVisibilityTextMarker.

Strings created in the text marker edit window are stored in the TEXT9.TXT file in your campaign.

## 20.12. Point Allocation

Underneath the tile/unit list window are the displays for the points available for each side. If a side has no points allocated, it will be unable to buy any non-fixed units. If there are no non-fixed units on the map, the points allocated are redundant.

These points values are over-ridden if the scenario script contains a FORCE\_POINTS\_CALLBACK(side, points) function.

## 20.13. Scenario Script

It isn't absolutely necessary to have a Scenario Script for scenarios created in the Editor to function. However, a Scenario Script is recommended because it will allow:

- AI more complex than what can be set in the Editor.
- Bespoke victory conditions – without a script the game will use the default victory conditions with no adjustment for MP imbalance.







- Scenario UI – the text in the top left hand side of the battle screen.
- Different points availability for different difficulty levels – otherwise the central three difficulty levels will all be the same.
- Scripted reinforcements – the Editor can generate a script fragment to do this.
- Any other scripted behaviour

Examples of how to do the first four of these are in ScenarioTemplate.BSF in the main directory.

You can clone this file as the starting point for your own scenario script – copy it into the same directory as the scenario .BAM file created by the editor, and rename it with the same name as the scenario – SCENARIONAME.BSF. If you use the cloned file unchanged, your scenario will work correctly, but you can add any additional script features that you want.

Note that if you are designing a straightforward encounter scenario, with side 0 on the left of the map and side 1 on the right, you can use the AI\_Masterplan() function to automate the AI. This is in SCENARIOTEMPLATE.BSF but is currently commented out. If you do use it, you also have to include AI\_ReassignTeams(1); in the PreBattleSetup() function.

## 21. Modding

Pike and Shot offers very many modding opportunities. You can create new scenarios, alter equipment tables, modify the campaign structure, and adjust the game rules and user interface.

For help modding and creating scenario scripts see the *Pike*



and *Shot* section of the Slitherine GameWiki at <http://www.slitherinebravo.net/GameWiki/>

Also please visit the *Pike and Shot* modding forum at [www.slitherine.com/forum](http://www.slitherine.com/forum)

## 22. Technical Support and Game Forum

The main menu has a link to the game forum where there is a technical support sub-section. You can go there to post your question or problem. Please remember to tell us as much information about your problem as possible and include your machines specs and operating system.

## 23. Useful Hot keys

1 – Toggle LOS and LOF display.

A – scroll map to the left.

CTRL and left click on unit – detailed information on the unit.

CTRL when moused over target – showed detailed tooltips.

D – scroll map to the right.

E – rotate map to the left.

ESC – opens load, save and exit options.

F – zoom out on map.

F1 – list of hot keys.

F2 – Takes a screenshot and dumps it to

My Docs\My Games\PIKEANDSHOT\SCREENS (on the PC).







- J - moves and hides the mini map.
- K - toggles casualty screen
- L - toggles unit list.
- M - toggles the overhead map view.
- N - next unit.
- P - add map pin.
- Q - rotate map to the right.
- R - zoom in on map.
- S - scroll map down.
- SPACE - deselect unit. Also closes popup windows, and acts as proceed button for most screens.
- TAB - next unmoved unit.
- W - scroll map up.

## 24. Appendices

### 24.1. Troop Types

Troop Type	Description
Heavy Foot	Foot troops who fight in close formation. These include most pikemen and billmen.
Determined Foot	Heavy foot noted for their exceptional speed of advance, such as Swiss pikemen.
Medium Foot	Foot troops fighting in looser formation than heavy foot and hence better suited than heavy foot to fighting in rough terrain. They are often principally reliant on shooting weapons. When not mixed with pikes - see below - they are very vulnerable to a mounted charge if caught in open ground. Medium foot cannot have pike capability.
Mixed Foot	Units with some Heavy Foot and some Medium Foot. Most pike and shot.



Light Foot	Foot troops who fight in a dispersed formation with missile weapons. They are best at harassing enemy from a distance and working in difficult terrain.
Commanded Shot	These are small units of detached shot who have been assigned to assist their side's mounted troops against enemy mounted troops. They are treated as light foot except that they become "Protected" (see combat section) if they have unbroken friendly non-light mounted troops in an adjacent map square (not including the three squares to the commanded shot's "rear").
Warriors	Tribal or other close combat foot not part of the European or Chinese tactical systems, They are often fiercer but less disciplined than European or Chinese troops. They are very vulnerable to a mounted charge in open ground.
Mob	Untrained rabble, usually of low morale, fighting as a disorganised mass. They may be equipped with only peasant weapons or may have been hastily equipped with proper weaponry but not trained to use it effectively.
Gendarmes	Usually drawn from a gentry skilled in horsemanship, these are heavily armoured cavalry who rely on a fierce charge at the gallop with lance. They usually fight in less depth than other mounted troops, and can get carried away in the pursuit of defeated enemy.
Cavaliers	Usually drawn from a gentry skilled in horsemanship, these are cavalry who rely on a fierce charge sometimes at the gallop. They usually fight in less depth than other mounted troops, and can get carried away in the pursuit of defeated enemy. Example: English Civil War Royalist horse.
Determined Horse	Disciplined cavalry in shallow close order formations who mostly charge at the trot in a controlled manner. Examples: Swedish 30 Years War cavalry and Cromwell's Ironsides.
Horse	Cavalry who ride in close deep formations and charge at the trot. They include German men-at-arms and reiters trained to use the caracole.
Light Horse	Lightly equipped horsemen specialising in skirmishing, usually with missile weapons.
Cavalry	Most other non-light mounted troops fall into this category. Examples: Hungarian Szeklers, Polish pancerni, Ottoman sipahis,





Camelry	Camel-mounted troops. They are treated as Cavalry, but they have less difficulty with movement over sand. Camelry disorder horses.
Dragoons	Infantry mounted on cheap horses who usually dismount to fight on foot in support of cavalry wings in battle.
Elephants	Indian elephants, whose strength is breaking into solid lines of enemy troops. Elephants disorder horses.
Light Artillery	Small cannon such as organ guns, falconets or galloper guns and drakes and also eastern rocket artillery. Treated as foot.
Medium Artillery	Moderately mobile pieces such as demi-culverins, quarter-cannon, sakers and falcons. Treated as foot.
Heavy Artillery	Heavy guns such as full cannon, demi-cannon and culverins or bombards. Intended more for sieges than for field battles and virtually immovable once deployed. Treated as foot.
Battle Wagons	Horse or ox drawn wagons, usually with missile-armed crew on board. Treated as foot. Not very manoeuvrable.

## 24.2. Combat Capabilities

The combat system is function based. The mere possession of a weapon is not sufficient to qualify for a combat capability. For example, most western musketeers were equipped with a cheap sword but were not practised in its use (they mostly preferred to use their musket butt in close combat) and so do not have swordsmen capability. Similarly, early Ottoman sipahis were primarily horse archers, so get bow capability but not lancers capability, even though some were armed with lances.

Some weapons were used in different ways and at different times by different troops. Reiters preferred to wear down an opponent by shooting their pistols from a distance. Continental cuirassiers used their pistols to deliver a point blank range volley at impact.

Allocation of capabilities inevitably has a subjective element.

Capabilities are situational and may not result in points of advantage in every combat.

Units may have men with different capabilities – if so this is expressed as a percentage value. e.g. a pike and shot unit might have 34% pike, 66% musket.

Combat Capabilities		
Capability	Phase	Description
Arquebus	Shooting	Foot whose missile weapons are mainly arquebus or caliver, though possibly including a proportion of musketeers.
Bayonet	Impact, Melee	Foot equipped with musket and either plug or socket bayonet.
Bombs	Shooting	Foot equipped with naphtha bombs or grenades.
Bow	Shooting	Specialist foot bowmen or longbowmen, or horse archers (excluding crossbowmen).
Carbine	Shooting	Mounted equipped with carbine: the cavalry equivalent of the arquebus.
Crossbow	Shooting	Foot or mounted troops armed with crossbows.
Heavy Artillery	Shooting	Heavy artillery such as demi-cannon, culverins or bombards.
Heavy Weapon	Impact, Melee	Troops armed with pole arms or 2-handed swords, axes, and other weapons. Examples: English billmen, Irish Galloglauch and some Landsknecht and Swiss foot.
Impact Foot	Impact	Foot relying on a fierce charge to disrupt the enemy at impact. Examples: C17th French foot. Aztec and Indonesian foot warriors.
Impact Mounted	Impact	Cavalry, usually in shallow formations, who rely on the impetus of their charge, sword in hand or with light lance, to shatter the enemy formation, allowing the effective use of swords and similar in the ensuing melee. Examples: Polish winged hussars, English Royalist cavaliers and 17 <sup>th</sup> century French cavalry trained by Turenne.
Javelins	Shooting	Light foot or light horse with javelins. Examples: early Irish kerns, stradiots. Warriors with atlatl. Example: Aztec or other Mesoamerican warriors.





Lancers	Impact	Mounted troops specialising in charging with lance. Example: French and other gendarmes. Most early gendarmes are classed as having heavy lancers capability. Some gendarmes, and most non-gendarme lancers, have light lancers capability, which includes cavalry using a spear as a primary weapon such as early reiters.
Light Artillery	Shooting	Light artillery such as drakes or organ guns.
Light Spear	Impact	Foot battle troops armed with light spear, whether thrust or thrown. Example: Inca warriors.
Medium Artillery	Shooting	Field guns such as falcons, sakers and demi-culverins.
Musket	Shooting	Foot armed mainly with musket though possibly including a proportion armed with arquebus or caliver.
Pike	Impact, Melee	Foot armed with long 2-handed pikes and forming a concentrated pike block. Most such troops are also armed with swords – the Pike melee POA already takes this into account. They never use ‘Swordsmen’ POA.
Pistol	Shooting, Impact, Melee	Mounted armed with pistols. Depending on their style of fighting, such troops may be given Pistol capability in Shooting (S) or Impact (I) and/or Melee (M) phases. For example, 16th century German reiters preferred to use their pistols at a distance, so are given Pistol capability in the Shooting phase, but not in the Impact phase. Later in the century, cavalry started to withhold their pistol fire until the moment of impact, so are given Pistol capability in the Impact phase. Both could use spare pistols in the melee, so are also given Pistol capability in the Melee phase.  Troops with pistol capability can only use pistol in the phase(s) specified in their description.
Salvo	Shooting, Impact	30 Years War Swedes were trained to withhold fire until very close range when usually at least 3 ranks would fire simultaneously. Such troops have an advantage in the impact phase to simulate the powerful effect of close range volley fire but shoot with reduced capability at short range in the shooting phase.



Sling	Shooting	Still used in this era by some native Americans.
Spearmen	Impact, Melee	Foot usually fighting in close formation with thrusting spear.
Swordsmen	Melee	Foot using swords as their primary weapon. Example: Spanish sword and buckler men. Foot equipped with swords or equivalent weapons as secondary weapons, but ready and willing to fight hard hand-to-hand when required. Example: Early Ottoman janissaries. Mounted troops equipped with swords, maces or horseman’s axes and ready and willing to fight hand to hand. Examples: French gendarmes and some horse archers.

## 24.3. Glossary

### 24.3.1. Keil

Any unit with enough pikemen (which can include a proportion with swordsmen or heavy weapon capability) to qualify as a keil. This is more than about 350 men on the default representational scale.

Keils give benefits in close combat, are immune to the ill-effects of flank attacks, and ignore enemy ZOCs.

### 24.3.2. Light Troops

These include light foot, commanded shot, light horse and dragoons. All other troop-types are non-light troops.

### 24.3.3. Shock Troops

These include keils, any non-light unit with impact foot, salvo, heavy lancers, light lancers or impact mounted capability, and all gendarmes, cavaliers and determined horse.

### 24.3.4. Shot

Any foot with arquebus, musket or salvo capability.







## 25. Credits

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### PROGRAMMING

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French version – Bertrand Lhoyez







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