

Medieval Millennium Units

I. Overview

The usage of "combined arms" — armies consisting of multiple different unit types with different roles, acting together on the battlefield — is historically significant, and Medieval Millennium attempts to reflect this. There is no single unit type that can dominate the game in any era, and you will need to organize a strategy around the strengths and weaknesses of infantry, cavalry, and artillery.

Medieval Millennium includes many new features related to units and combat, but perhaps the most noticeable of these is ranged units that fire a projectile instead of attacking directly. These are built and utilized by computer opponents as well as the human player, and there are many special rules that govern their construction and behavior.

Although the quantity and complexity of new features related to units may seem daunting at first, you will gradually become more familiar and proficient with them as you play. Reading the documentation is important, but experience can be the best teacher!

II. Unit Movement Rates

The base game and many scenarios follow a general principle that infantry (foot units) have 1 movement point; cavalry (mounted units) have 2 movement points; and motorized units may have 3 or more movement points. As a result, the unit flag for "Defense x1.5 vs. units with 2 MP and 1 HP" allows for increased defense against cavalry, and is typically given to infantry units with spears or pikes. In addition, the base game has a road multiplier of 3 (that is, a unit uses only 1/3 of a movement point when following a road) and allows infinite movement along railroads.

Medieval Millennium takes a different approach. Although there are exceptions, the general principle is that artillery units (which are generally heavy and must be pulled by a team of horses) have 1 movement point; infantry (foot units) have 2 movement points; and cavalry (mounted units) have 3 movement points. (Motorized units are not applicable to this era.) As a result, the unit flag for "Defense x1.5 vs. units with 2 MP and 1 HP" allows for increased defense against most infantry attacks. Therefore, it is often given to cavalry units, to reflect the inherent disadvantage of a person on foot attempting to initiate an attack against someone on a horse. In other cases, though, it is treated more as a "half defense point" and is used to give one type of unit a defensive bonus for some battles, without making that type universally superior on defense to another similar type.

Furthermore, Medieval Millennium utilizes a road multiplier of only 2 (that is, a unit uses 1/2 of a movement point when following a road) and a multiplier of 3 for royal highways (which are the upgraded roads, replacing railroads). The implementation can be summarized as follows:

	Base game			Medieval Millennium		
Unit Type	Unit MP	Moves along road (cost is 1/3)	Moves along railroad (cost is 0)	Unit MP	Moves along road (cost is 1/2)	Moves along royal highway (cost is 1/3)
Artillery				1	2	3
Infantry	1	3	Infinite	2	4	6
Cavalry	2	6	Infinite	3	6	9

As you can see, the net effect is that cavalry move the same speed along roads as in the base game, but infantry move slightly faster — that is, the gap between them is reduced. Furthermore, royal highways provide a 50% speed increase compared to roads, for units traveling along them.

Due to the way the game calculates movement points, fractional movement points will always be displayed in the Status pane with a denominator of 6 — that is, 1/3 will display as 2/6, 1/2 will display as 3/6, and 2/3 will display as 4/6. Fractional movement points of 1/6 and 5/6 are also possible when traveling over a combination of roads and royal highways.

It should also be noted that in the base game, terrain without roads never has a movement cost higher than 2, except for Mountains which are 3. In Medieval Millennium, Mountains are impassable to all units except Scouts and those with "settler" capability, and multiple terrain types have a movement cost of 3 or higher. As a result, despite the increased movement rates of infantry and cavalry, they will still proceed slowly over unimproved land. Only by clearing land, and/or adding roads, can decent rates of travel be realized. (See the Civlopedia or the separate PDF Guide to Terrain for more information about terrain types.)

Rivers provide a movement multiplier of 1 for units moving along them, assuming the land does not also have a road or royal highway. In other words, a unit traveling along a river uses only 1 movement point per tile, regardless of the underlying terrain type. A river therefore provides no movement benefit if the terrain type already costs 1 movement point to traverse, but allows a unit to move more quickly through terrain with a higher movement cost.

III. Veterans

Units with specialized roles as settlers, diplomats, or merchants will never receive veteran status at the time they are built. The following information, therefore, applies to all other unit types.

As a particular city produces military units, that city gradually becomes more and more skilled in equipping and training the particular types of units that it has produced. Each time a city builds a unit, the likelihood that the NEXT unit produced in that city of that SAME UNIT TYPE will be a veteran is increased by 10%. Therefore, after a city has built five units of the same type, there will be a 50% chance that the sixth unit will be a veteran; and after a city has built ten units of the same type, all future units of that type will be veterans.

If a city contains a Barracks, this increases the likelihood that any human land unit (i.e., excluding large artillery) will be a veteran by 50%. A Barracks is therefore less effective at producing veteran units than in a base game of Civilization II, where it automatically conferred a 100% chance of veterancy. In other words, the first unit of a given type produced in a city will already have a 50% chance of being a veteran; and after a city has built five units of the same type, the sixth unit is guaranteed to be a veteran. Similarly, if a city contains a Shipyard, this increases the likelihood that any naval unit will be a veteran by 50%.

The White Tower Fortress wonder provides an additional and separate 50% boost to the veteran chances of any human land unit, in every city. Therefore, if a nation possesses this wonder, the veterancy chance in a city with a Barracks would be increased to 100%. Similarly, the Commemorative Tapestry wonder provides an additional 50% boost, separate from the Shipyard, to the veteran chances of any naval unit, in every city.

Overall, this increases the role that combat plays in creating veteran units. As in the base game, a unit has a 50% chance of becoming a veteran each time it survives a combat encounter. This system of determining veteran status may also lead the player to focus on developing unit type "specializations" for construction within cities.

The attack and defense factors of veteran units are increased by 50%, as in the base game. A ranged attack unit will have its veterancy status translated along to the corresponding projectile unit that it fires.

IV. Defensive Bonuses

As in the base game, many bonuses are available to defending units. Some of these are unchanged: a unit that is fortified receives a +50% bonus, and a unit that is in a castle (fortress tile improvement) receives a +100% bonus. However, the City Walls improvement is less powerful: in the base game, this improvement provides a +200% bonus, but in Medieval Millennium, the bonus is only +100%, the same as a castle. Note that a unit that is fortified *within* a castle or city with walls receives only the *greater* bonus, not both; in other words, a castle and City Walls offer only an *additional* +50% bonus to a unit that is already fortified. (This is still substantial enough to provide the difference between defeat and victory in many battles!)

As in the base game, some terrain types will also provide a bonus to defending units. Please consult the documentation of each terrain type for details.

Naval units are never permitted to attack cities directly, so the concept of a Coastal Fortress to defend against these types of attacks is irrelevant. However, artillery projectiles (such as Rocks, Boulders, and various cannonballs) are air units that will ignore the effects of City Walls. Late in the game, cities can construct a Bastion Fortress improvement, which offers a +50% bonus against these types of attacks.

V. Unit Stacks

a. Stack Kills

Medieval Millennium utilizes the "No Stack Kills" feature of TOTPP. If multiple units are on the same land tile and one is attacked and defeated in battle, the others are not immediately lost as a result of the same battle.

b. Stack Damage

Even though stack kills are not enabled, stacked units may suffer collateral damage if they are present on the same tile as a defending unit that is defeated. Conceptually, this encompasses damage taken by these additional forces as they attempt to aid the unit under attack, as well as decreased morale resulting from that unit's defeat. This "Stack Damage" is applied as follows:

- Each unit with 8 or more HP loses 2 HP
- Each unit with 5-7 HP loses 1 HP
- Each unit with 4 or fewer HP is not affected

This stack damage applies to all types of land units (melee, ranged, human, artillery, etc.) that are located on the same tile as the unit which was killed. However, note that all surviving units will heal at the beginning of the defender's next turn, potentially enough to completely recover from this type of collateral damage.

c. Stack Attrition

Based on multiple rounds of testing, it seems that the game logic which controls AI unit movements is written to expect "Stack Kills" to be enabled; it is unaware of the TOTPP option which disables this. As a result, the AI tends to avoid large stacks of units (because it sees this as putting all of them at risk) and disperses its units more widely. This may provide a tactical advantage to the human player, since you can utilize large stacks of units freely knowing that there is no risk they could all be lost in a single battle.

To balance this, a new feature called "Stack Attrition" has been created which applies only to the human player. Medieval armies in the field were often asked to "live off the land" by finding their own food (to the detriment of local farmers!), and nations rarely maintained long supply trains back to major cities. Therefore, in Medieval Millennium, a formula is used to calculate the maximum number of units that each tile can support; if any tile contains more than this many units, all units on that tile suffer damage each turn. The number of units that each tile can support is calculated as follows:

- Each point of Health produced by the tile can support 5 units.
 - Exceptions: Marsh/Fen and Mountain Pass each produce 0 Health and can support 1 unit; Urban produces 0 Health and can support 10 units.
- A tile that contains any type of castle can support 5 additional units.
- A city can support any number of units; stack attrition is never applied to units located in a city.

For example: Marsh/Fen terrain produces 0 Health, so its unit support limit is 1. Dense Forest produces 1 Health, so its unit support limit is 5. Arable land without irrigation produces 2 Health, so its unit support limit is 10. However, if the tile is irrigated, then it produces 3 Health and it can support 15. In each case, a castle would increase the limits to 6, 10, 15, and 20 units respectively.

Because the current implementation of TOTPP does not permit Lua to determine if a tile contains a terrain "special", these are ignored when calculating unit support. Only the base statistics of the terrain type itself are evaluated.

When calculating the number of units that are actually present, certain units are excluded:

- Settler-type units such as Peasants, Serfs, and Yeomen are never included and will never take damage. These units are already using 1 or 2 Health per turn from their home city.
- Units with a trade or diplomacy role such as Merchants and Envoys are excluded.
- Artillery units such as Trebuchets and all types of cannons are excluded, due to their mechanical nature.
- All ships are excluded, and units on Sea tiles (aboard ships) are never subject to stack attrition.

When the number of units present exceeds what a tile can support, then the amount of damage is determined by the difference. If a tile can support 5 units but there are 7 present, then 2 HP of damage are applied to each of the 7 units. If a tile can support 10 units but there are 13 present, then 3 HP of damage are applied to each of the 13 units. If the damage exceeds the number of HP that a unit has left, then the unit is killed outright.

The [Backspace] key, which provides context-sensitive help regarding units and terrain, will always display the number of your units which are being supported by the Health output of a tile, as well as the maximum number of units that could be supported before attrition occurs.

VI. Capturing Units

Mechanical artillery and ships, which are not impacted by the rules for Casualties and Survivors, may instead be captured by a successful attack. Whenever one of these units is defeated while defending against an opponent's attack and it is the last remaining unit on that tile, there is a good chance that it will be captured by the attacking unit. When this happens, the unit is recreated on the tile of the attacker, belonging to that nation, with reduced hit points and no movement for the remainder of that turn.

Note that if a ship is defeated in battle and that ship is carrying other land units, only the ship itself is captured and the land units are lost. (However, if the battle occurred on a coastal sea tile, adjacent to land, those land units may swim to shore and become survivors as outlined elsewhere under "Battle Survivors". If the battle occurred in the middle of the sea, the land units will be permanently lost.)

VII. Battle Casualties, a.k.a. Population Loss

In the base game, if one of your units was defeated in battle, this did not impact the population of any of your cities, unless the unit was defending a city tile against an enemy attack. In this case, the city on that tile lost 1 population point (that is, its size was reduced by 1). However, building a City Walls blocked this population loss.

In Medieval Millennium, when a unit is defeated in battle, that unit's home city will suffer a decrease in accumulated Health (renamed from "Food" in the base game). This is true for all battles at any location, not only those that occur on city tiles, and always affects the unit's home city even if it is defending a different city. A unit without a home city is therefore exempt from this behavior.

The decrease consists of 24 Health for cities of size 4 or larger; 18 Health for cities of size 3; 12 Health for cities of size 2; and 6 Health for cities of size 1. The City Walls improvement has no effect on this behavior. However, this penalty does not apply if the defeated unit is a "settler" type unit, since building such a unit already decreased the population of its home city by a full point; and it also does not apply to mechanical units such as artillery or ships.

Note that the Health decrease may cause the city to lose 1 population point, if (but only if) the city's Health box contains less Health than the amount of the decrease. A city of size 1 will not be destroyed, however, even if its Health box is emptied.

VIII. Battle Survivors

When a human unit (not mechanical artillery or ship) is defeated in battle, there is a chance that a remnant of the defeated company is able to escape the battle field in a disorganized flight. If this occurs, these soldiers will straggle back to their home city, invisible to the game, reappearing there at a later date. The delay between the battle and their return is determined by the distance between the battle location and the home city that they are trying to reach. As the leader of the nation, you do not have visibility to whether a particular defeated unit will reappear as survivors or when this might take place.

If it does, though, a message will appear to notify you of their return, and the unit will be recreated in its home city with 1 hit point. Additionally, that home city (which suffered a loss of Health at the time the unit was defeated, as described in the documentation regarding Battle Casualties) will receive half of that decrease back again: a size 4 or larger city receives 12 Health; a size 3 city receives 9 Health; a size 2 city receives 6 Health; and a size 1 city receives 3 Health. This increase could cause the city to immediately gain 1 population point, if its Health box is nearly full at that time.

Only military units are eligible to return as survivors. Peasants and Merchants (all "settler" and "trade" type units) who are defeated in battle are considered to be enslaved, killed, or simply melt away into the countryside and begin a new life wherever they can; they will not return to their home city as a surviving unit.


IX. Terrain Damage from Battle

Just as in the base game, both human and AI units can deliberately pillage the improvements on a tile. Battles in Medieval Millennium may also result in the removal of tile improvements (you might consider it "automatic pillaging") from the tile on which the battle is fought, with the following conditions and impacts:

- 1. This type of damage does *not* occur when the attacking unit is a projectile. The damage is considered to be the result of infantry and/or cavalry charging across fields; targeted attacks by aerial units would not have the same effect.
- 2. The damage always takes place on the tile where the *defending* unit is located, unless the defending unit is in a city. In that case, the damage takes place on the *attacking* unit's tile.
- 3. Damage to tile improvements is the same regardless of whether the attacker or defender is victorious. The battle itself causes the damage, not the efforts of one side or the other.
- 4. Enclosed fields and irrigation are always destroyed by a battle, but a mine/woodcut improvement is not. Royal highways are always downgraded to roads, and the road itself may be destroyed in a percentage of cases as well. The road will *always* be destroyed if the tile contains a river (since the defending units would likely destroy the bridge intentionally to gain a tactical advantage).
- 5. The presence of a castle on a tile protects the improvements on that tile from this type of damage, until the final defender of the castle is defeated. (This is admittedly not quite realistic, but it provides motivation for building castles more frequently as the best way to protect key tiles with especially high productivity.) When the final defender is defeated, however, the castle itself (along with tile improvements) may also be destroyed in a percentage of cases.

X. Peasant Militia

This basic military unit can never be built deliberately, but may be created automatically if a city without sufficient defenders is being threatened by enemies. This will result in the build cost of the unit (20 gold) being deducted directly from your treasury.

Image	Name	Build	Move	Att	Def	HP	FP	Prerequisite Tech	Notes
		Cost							
	Peasant Militia	20 <u>gold</u>	1	1	1	1	1		

XI. Standard Infantry Table

NOTE: All of the units in this category, and **only** those units in this category, can make naval assaults — that is, they can attack directly from a ship onto a land tile containing an enemy unit.

NOTE: An asterisk (*) in the "Def" column means that the unit has Defense x1.5 vs. infantry (all attackers with 2 movement points).


























Image	Name	Build						Prerequisite Tech	Notes
		Cost	Move	Att	Def	HP	FP		
	Axeman	10	2	2	1	1	1		
	Spearman	20	2	1	2	1	1		
	Seax Swordsman	10	2	2	1	1	1	Metal Working	
	Swordsman	30	2	3	1	1	1	Ulfberht Swords	
	Axeman II	40	2	3	2	1	1	Motte and Bailey Castles	
	Spearman II	40	2	1	3	1	1	Chainmail Hauberks	
	Swordsman II	50	2	4	2	1	1	Chainmail Hauberks	
	Pikeman	50	2	1	4	1	1	Advanced Polearms	
	Halberdier	60	2	3	3*	1	1	Advanced Polearms	
	Swiss Pikeman	80	2	4	5	1	1	Advanced Polearms	Can only be built by the nation that owns the Palace of the Popes wonder.
	Pikeman II	60	2	1	5	1	1	Battle Tactics	
	Berber Infantry		2	2	2	1	1		Barbarian-only unit.
	Viking Raider		2	3	2	1	1		Barbarian-only unit.

Image	Name	Build Cost	Move	Att	Def	HP	FP	Prerequisite Tech	Notes
	Viking Berserker		2	4	1	2	1		Barbarian-only unit.
	Arab Infantry		2	3	3	1	1		Barbarian-only unit.

XII. Standard Cavalry Table

NOTE: An asterisk (*) in the "Def" column means that the unit has Defense x1.5 vs. infantry (all attackers with 2 movement points).

Image	Name	Build Cost	Move	Att	Def	HP	FP	Prerequisite Tech	Notes
	Horseman	30	3	2	1*	1	1		
	Lancer	40	3	3	1*	1	1	Cantles / Stirrups	
	Knight	70	3	4	2*	1	1	Feudalism	
	Monastic Knight	90	3	6	2*	1	1	Military Orders	Can only be built in a city with a Monastery improvement.
	Man-at-Arms	60	3	4	2*	1	1	Chivalry	
	Knight II	80	3	5	3	1	1	Chivalry	
	Knight III	100	3	6	3*	1	1	Plate Armor	
	Demi-lancer	70	3	4	3*	1	1	Battle Tactics	
	Berber Cavalry		4	4	1*	1	1		Barbarian-only unit.
	Arab Cavalry		4	5	2*	1	1		Barbarian-only unit.

XIII. Ranged Units (Overview)

Medieval Millennium supports ranged unit attacks for all nations, human and AI (including barbarians). Some other recent scenarios support this only for the human player, since in these scenarios a ranged unit fires its projectile(s) when the human player presses 'k' on the keyboard. In Medieval Millennium, ranged units for all nations will fire automatically whenever a target is within range; no special action is needed by the human player. Conversely, though, there is nothing you can do to *prevent* a ranged unit from firing, even if you would rather order it to retreat; this provides parity between the human player and AI nations. (See "Artillery Chance to Fire" within the section on "Artillery" for a more nuanced discussion of this topic.)

Most units will fire only one projectile, although a few are capable of firing two projectiles on a single turn. Each projectile that is fired reduces the movement points remaining to the ranged unit on that turn. For many units, firing a single projectile uses all of the available movement points, but some units will have movement remaining (often only a fraction of a point, however).

Note that the projectile does not automatically move or attack — it is simply created on the same tile as the ranged unit. It is up to you (or the AI) to move the projectile and attack the appropriate target. Note that any projectile which does *not* attack is disbanded at the end of the turn. Projectiles cannot be carried over or accumulated and used later.

If a projectile is ever activated and the event logic determines that there is no longer a target within range, the game will "undo" the firing of the projectile by removing it and restoring movement points to the unit that originally fired it (if applicable).

All checks that determine whether or not a target is within range run at the time the unit is activated, not after every tile that it moves. If you move a ranged unit toward an enemy unit, such that the opposing unit is now within range of your ranged unit's projectile, you will need to de-activate and re-activate the unit in order for the ranged unit to fire.

Strategic Tips for Ranged Units

- 1. Remember that projectiles provide a way for a unit to attack with no risk of being defeated or suffering any damage of its own during the battle, regardless of the strength of the defender. Do not underestimate the value or strategic significance of this!
- 2. Early in the game, many projectiles (especially handheld ones fired by human ranged units) are relatively weak and it is expected that they will lose most battles. However, multiple attacks from several such projectiles can be very effective. Even if an enemy unit is only weakened and not killed, this will greatly increase your chance of surviving a direct counterattack by that enemy on the following turn.
- 3. In contrast to the previous point, projectiles fired by mechanical artillery are considerably more powerful. Because of their ability to ignore and potentially even destroy City Walls, they are a vital component of an offensive strategy aimed at conquering enemy cities.
- 4. The strength of artillery projectiles becomes even more pronounced after the invention of Gunpowder. All of the most powerful attack units in the game are projectiles fired by cannons, and you should attempt to learn to use these effectively on both offense and defense in order to maintain and expand your kingdom.

XIV. Ranged Infantry and Cavalry






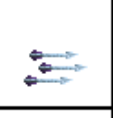









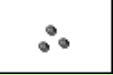
Ranged units using handheld weapons (bows, crossbows, and smaller guns) fire projectiles that can only move one tile. These are essentially "land missiles" that cannot enter a water tile and are not able to ignore City Walls when attacking a unit within a city.

Handheld ranged weapons always fire when an enemy target is within range. However, if the ranged unit is wounded (has reduced HP) then the projectile that is created has its Attack and/or Firepower strength reduced proportionately.

XV. Ranged Infantry Table




NOTE: An asterisk (*) in the "Def" column means that the unit has Defense x1.5 vs. infantry (all attackers with 2 movement points).

Image	Name	Build Cost	Move	Projectile				Cost To Fire	Proj Move	Proj Att	Proj FP	Move After Firing	Def	HP	FP	Prerequisite Tech	Notes
				Image	Projectile Name												
	Archer →	20	2		→ Broadhead Arrows			0	1	1	1	0.5	1*	1	1		Can no longer be built after your nation acquires either the Longbows advance or the Composite Bows advance.
	Crossbowman →+	40	2		→+ Bolts			1 gold	1	1	2	0	2	1	1	Crossbows	

Image	Name	Build Cost	Move	Projectile Image	Projectile Name	Cost To Fire	Proj Move	Proj Att	Proj FP	Move After Firing	Def	HP	FP	Prerequisite Tech	Notes
	Longbowman →»	60	2		→» Bodkin Arrows	1 gold	1	2	1	0.5	2	1	1	Longbows	Every Longbowman unit automatically receives a 50% increase in its chance of receiving veteran status when created.
	Bowman →»	50	2		→» Bodkin Arrows	1 gold	1	2	1	0.5	2*	1	1	Composite Bows	
	Arbalestier →×	50	2		→×	1 gold	1	1	3	0	2	1	1	Cranequins	
	Hand Cannoneer ·	40	2		· Pebbles	1 gold	1	2	1	0	2*	1	1	Primitive Cannons	
	Hand Culveriner ¨	70	2		¨ Pellets	1 gold	1	2	2	0	2*	1	1	Serpentine Lever	
	Arquebusier •	90	2		• Bullets	1 gold	1	2	3	0.5	3	1	1	Matchlocks	
	Musketeer ² •	130	2		• Bullets (fires 2)	1 gold each	1	2	3	0	3	1	1	Muskets	
	Turkish Janissary ¨		2		¨ Pellets		1	2	2	0.5	3	1	1		Barbarian-only unit.

XVI. Ranged Cavalry Table

NOTE: An asterisk (*) in the "Def" column means that the unit has Defense x1.5 vs. infantry (all attackers with 2 movement points).

Image	Name	Build Cost	Move	Projectile Image	Projectile Name	Cost To Fire	Proj Move	Proj Att	Proj FP	Move After Firing	Att	Def	HP	FP	Prerequisite Tech	Notes
	Cuirassier ² ¨	160	3		¨ Pellets (fires 2)	1 gold each	1	2	2	0.666	7	3*	1	1	Wheellocks	
	Mongol Cavalry →»		4		→» Bodkin Arrows		1	2	1	3	5	2*	1	1		Barbarian-only unit. Has movement remaining after firing arrows and can also attack directly.

XVII. Artillery (Overview)

Larger ranged units are considered artillery. These typically fire projectiles that can move one or two tiles and are more traditional "air missiles" that can enter or traverse water and also ignore City Walls when attacking (the Ribauldequin is the only exception to this). When attacking a city or castle, they have the potential to cause ancillary damage to buildings on the target tile. Larger projectiles are more likely to cause this ancillary damage (for example, it is more likely that you will be able to destroy City Walls with a Large Stone Ball than with a Small Stone Ball).

Because of the time it takes to load, aim, and fire an artillery weapon, the range of the resulting projectile depends upon the type of target. Only targets with poor mobility such as cities, castles, monasteries, and other artillery units can be attacked from a distance of two tiles. Non-artillery units that are two tiles away on open terrain are too mobile and not a suitable target for long-range artillery. These units can only be targeted when they are on a tile adjacent to the artillery unit itself.

Ships can be attacked by artillery projectiles as well, but they follow a special form of the above rules. First, they can only be targeted by land-based artillery when they are in a coastal tile; in the open water, they can only be targeted by the single sea-based artillery unit in the game, namely the Armed Carrack. Second, they can be targeted at a range of two tiles (provided the first condition is met) similar to land targets with poor mobility; although they are fast-moving units, they cannot dodge or change direction quickly enough to avoid an incoming artillery projectile.

All of the units in this category, and **only** those in this category, will ignore City Walls when attacking an enemy city. (Ribauldequin is the one exception, see notes for that unit.) None of the units in this category may attack **directly** under any circumstances. Each may only attack by firing its respective projectile.

XVIII. Artillery Table














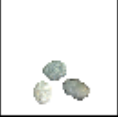


















Image	Name	Build Cost	Move	Projectile		Cost To Fire	Proj Move	Proj Att	Proj FP	Move After Firing	Def	HP	FP	Prerequisite Tech	Notes
				Image	Projectile Name										
	Torsion Catapult ␣	50	1		␣ Rock	0	2	3	1	0	1	1	1	Siege Warfare	
	Springald }—>	60	1		}—> Artill Arrow	2 gold	2	1	4	0	1	1	1	Siege Warfare	Can only be built in a city with a Barracks.
	Mangonel ␣	40	1		␣ Rock	0	2	3	1	0	1	1	1	Traction Trebuchets	
	Couillard ␣	40	1.5		␣ Rock	0	2	3	1	0	1	1	1	Counterweight Trebuchets	After the acquisition of Bombards, Corned Gunpowder, or Trunnions/Limbers, this unit can only be built in a city without a Smith specialist or Foundry improvement.
	Trebuchet ␣	60	1		␣ Boulder	1 gold	2	4	1	0	1	1	1	Counterweight Trebuchets	After the acquisition of Bombards, Corned Gunpowder, or Trunnions/Limbers, this unit can only be built in a city without a Smith specialist or Foundry improvement.
	Pot-de-fer }—>	50	1		}—> Garrot	2 gold	2	1	4	0	1	1	1	Primitive Cannons	Can only be built in a city with a Smith specialist, Forge specialist, or Foundry improvement. Obsolete with the acquisition of any of the following advances: Bombards, Corned Gunpowder, or Trunnions/Limbers. Loses 1 HP after firing.

Image	Name	Build Cost	Move	Projectile Image	Projectile Name	Cost To Fire	Proj Move	Proj Att	Proj FP	Move After Firing	Def	HP	FP	Prerequisite Tech	Notes
	Ribauldequin ²ᄁ	60	1		ᄁ Stones (fires 2)	1 gold each	1	3	1	0	1	1	1	Primitive Cannons	Can only be built in a city with a Smith specialist, Forge specialist, or Foundry improvement. Obsolete with the acquisition of any of the following advances: Bombards, Corned Gunpowder, or Trunnions/Limbers. Loses 1 HP after firing. NOTE: All <i>other</i> ranged artillery fire projectiles that can move 2 tiles and ignore City Walls, but this is an exception. Stones can only move 1 tile and do not ignore City Walls.
	Fowler o	60	1.5		o Sm Stone Ball	2 gold	2	5	1	0	1	1	1	Bombards	Can only be built in a city with a Smith specialist, Forge specialist, or Foundry improvement. Loses 1 HP after firing.
	Bombard O	80	1		O Med Stone Ball	4 gold	2	6	1	0	1	1	1	Bombards	Can only be built in a city with a Forge specialist or Foundry improvement. Loses 1 HP after firing.
	Basilisk O	90	1		O Lg Stone Ball	6 gold	2	7	1	0	1	1	1	Bombards	Can only be built in a city with a Foundry improvement. Loses 1 HP after firing.
	Serpentine °´	80	2		°´ Sm Iron Ball	1 gold	2	3	2	0	1	1	1	Corned Gunpowder	Can only be built in a city with a Smith specialist, Forge specialist, or Foundry improvement. Loses 1 HP after firing.
	Demi-culverin ó	100	1.5		ó Med Iron Ball	3 gold	2	4	2	0	1	1	1	Corned Gunpowder	Can only be built in a city with a Forge specialist or Foundry improvement. Loses 1 HP after firing.
	Culverin Ó	130	1		Ó Lg Iron Ball	5 gold	2	5	2	0	1	1	1	Corned Gunpowder	Can only be built in a city with a Foundry improvement. Loses 1 HP after firing.
	Falconet °´	100	3		°´ Sm Iron Ball	1 gold	2	3	2	1	1	1	1	Trunnions / Limbers	Can only be built in a city with a Smith specialist, Forge specialist, or Foundry improvement. Loses 1 HP after firing.
	Saker ó	110	2.5		ó Med Iron Ball	3 gold	2	4	2	0.666	1	1	1	Trunnions / Limbers	Can only be built in a city with a Forge specialist or Foundry improvement. Loses 1 HP after firing.
	Field Culverin Ó	130	2		Ó Lg Iron Ball	5 gold	2	5	2	0.333	1	1	1	Trunnions / Limbers	Can only be built in a city with a Foundry improvement. Loses 1 HP after firing.

a. Artillery Damage to Units

Artillery units, whether mechanical or gunpowder in nature, are only able to fully destroy other mechanical or structural units (such as artillery or Siege Towers) or immobile units (such as Monks). If the defending unit is any other human type (infantry, cavalry, or handheld ranged) then it can only be wounded but never killed. Specifically, a defending human unit will never lose more than 50% of the Hit Points it had when the battle began. If a strong unit is attacked by a weak artillery projectile, it may take less damage than this (potentially none at all), but it can never take more. Once that minimum threshold of 50% is reached, the attacking projectile is automatically set to 0 HP and the battle ends.

Conceptually, this is intended to reflect the fact that medieval artillery were especially significant when trying to breach a fortified enemy stronghold, not reduce the size of the enemy army. In gameplay terms, this requires greater diversification of units, while still reserving an important role for artillery that makes them crucial to a successful military campaign. Artillery are ideal for "softening up" a tough enemy, especially in an entrenched position, but are unable to finish them off without assistance.

As you can see, the first artillery attack on a completely healthy unit has the potential to do the most damage and is therefore the most valuable and significant. Additional attacks on the same unit can continue to weaken it until it only has 1 HP remaining, but at that point the defending unit will no longer be identified as a valid target for an artillery attack, so the artillery unit facing it will not fire a projectile. Each of these additional attacks has diminishing returns as far as the number of HP it can remove, and it becomes much less worthwhile to use artillery to attack an enemy that is already weak.

The above limitation also applies to ships that are targeted by an artillery attack — they may suffer a maximum of 50% damage but may not be completely destroyed or sunk.

This behavior applies to AI artillery as well as to those belonging to the human player, with one important variance. When a unit has an odd number of Hit Points (greater than 1), 50% of that value would result in a threshold involving half of a Hit Point. This is always rounded to favor the defender, unless the defender is the human player. In other words, if you (or another AI nation) are attacking an AI target with 7 HP, a successful attack could reduce it to 4 HP. On the other hand, if the AI is attacking one of your units that has 7 HP, a successful attack could reduce it to 3 HP. This distinction was implemented in order to reflect the fact that in contrast to the AI, you can formulate a strategy that incorporates an understanding of these rules.

b. Artillery Damage to Improvements

In addition to the damage it inflicts on a defending unit, an artillery projectile may also destroy a castle or a city improvement. The most likely city improvement to be destroyed is the City Walls; in fact, this may even be the primary goal of the entire artillery attack and its most important outcome. Larger projectiles, fired by more powerful artillery units, have a greater chance of destroying City Walls in an attack. If the City Walls improvement is not destroyed, then it is still possible that another building inside the city would be destroyed instead, but the probability of this is lower.

c. Artillery Chance to Fire

Whereas handheld ranged units always fire successfully when a target is within range, artillery will attempt to fire but may not succeed. For any artillery unit, the chance of firing successfully is equal to the percentage of Hit Points that it has remaining. A completely healthy unit will fire 100% of the time; a unit with 6 (out of 10) Hit Points will only fire 60% of the time. Conceptually, this represents a mechanical artillery unit that is damaged and needs repairs to function properly, or a cannon that is overheating and needs to cool down before being fired again. If the unit attempts to fire but fails, it loses all of its movement points for that turn and must rest in its current location.

In another contrast to handheld ranged units, though, an artillery unit that does fire successfully always generates a projectile at full strength, regardless of how many HP it had left at the time. In other words, when comparing artillery to handheld ranged units, artillery have an "all-or-nothing" approach, whereas handheld ranged units have a more gradual one.

Artillery units that do not move will heal naturally every turn, thereby increasing their chance to fire in the future, unless they take additional damage.

d. Firing Gunpowder Artillery

When a gunpowder-based artillery unit is fired, the unit automatically takes 1 HP of damage. As a result, these units are never permitted to fire if they only have 1 HP remaining, since that would cause the unit to be destroyed. This type of gradual damage feeds directly into the previous point on Chance to Fire. It also qualifies as "taking additional damage" and therefore the unit will not regain HP due to healing naturally prior to the next turn.

XIX. Naval Units (Overview)

Unlike in the base game, which permits a ship to be built in any city that is adjacent to a water tile, in Medieval Millennium ships can only be built in cities that are adjacent to a larger body of water — specifically, a sea or ocean consisting of at least 21 tiles.

Ships may only attack other ships in open water. They are never permitted to conduct "shore bombardment" and attack an enemy city or unit located on a land tile.

None of the units in this category may be **bribed** to join your nation with gold. However, all of the units in this category can be **captured** when they are defeated in battle. If the capture is successful, the unit will be recreated belonging to the winning nation.

XX. Naval Units Table



















Image	Name	Build Cost	Move	Att	Def	HP	FP	Capacity (Hold)	Prerequisite Tech	Notes
	Carvel Galley	20	5	2	1	1	1	2	Carvel Shipbuilding	"Coastal" ship that must end its turn adjacent to a land tile.
	Clinker Galley	20	5	2	1	1	1	2	Clinker Shipbuilding	"Coastal" ship that must end its turn adjacent to a land tile.
	Trade Galley	30	6	0	2	1	1	3	Lateen Sail	"Coastal" ship that must end its turn adjacent to a land tile.
	Dromon	40	6	3	2	1	1	2	Lateen Sail	"Coastal" ship that must end its turn adjacent to a land tile.
	Knarr	40	7	0	2	1	1	3	Viking Ships	
	Longship	50	7	3	2	1	1	2	Viking Ships	
	Balingier	50	8	2	2	1	1	2	Sternpost Rudders	"Coastal" ship that must end its turn adjacent to a land tile.
	Cog	50	6	0	3	1	1	4	Sternpost Rudders	
	War Cog	70	6	3	4	1	1	3	Sternpost Rudders	
	Slender Galley	60	7	3	3	1	1	2	Two-Masted Ships	"Coastal" ship that must end its turn adjacent to a land tile.
	Great Galley	60	6	0	4	1	1	5	Two-Masted Ships	"Coastal" ship that must end its turn adjacent to a land tile.
	Hulk	60	6	0	4	1	1	6	Large Clinker Ships	
	Caravel	60	9	2	3	1	1	2	Large Carvel Ships	
	Carrack	90	7	4	5	1	1	5	Large Carvel Ships	

Image	Name	Build Cost	Move	Att	Def	HP	FP	Capacity (Hold)	Prerequisite Tech	Notes
	Viking Longship		7	3	2	1	1	4		Barbarian-only unit.
	Privateer		7	4	3	1	1	4		Barbarian-only unit.

Late in the game, a special variant of the Carrack becomes available. It is a ranged naval unit that fires one "ó Med Iron Ball" and retains movement afterwards, as follows:

Image	Name	Build Cost	Move	Projectile Image	Projectile Name	Cost To Fire	Proj Move	Proj Att	Proj FP	Move After Firing	Att	Def	HP	FP	Capacity (Hold)	Prerequisite Tech	Notes
	Armed Carrack ó	150	7		ó Med Iron Ball	3 gold	2	4	2	5	7	4	1	1	3	Gun Decks	Can only be built in a city with a Forge specialist or Foundry improvement. Has movement remaining after firing and can also attack directly.

a. Carvel and Clinker Shipbuilding

All nations begin the game with the option to research either Carvel Shipbuilding or Clinker Shipbuilding (unless one or both of these advances was granted as a starting tech at the beginning of the game). Once a nation acquires or begins researching one of these advances, the other is removed from the list of potential research options until much later in the game. It can still be acquired from another nation by theft or trade, but it may not be researched directly until many years later.

Each type of shipbuilding leads to subsequent advances on independent paths of the tech tree, allowing you to improve that type of ship technology and built more advanced naval vessels. Eventually, though, to build the largest naval vessels near the end of the game or to build the Atlantic Fleet that allows you to win an exploration victory, the two research paths merge back together.

b. Coastal Ships

At the beginning of the game, "coastal" ships will be lost 100% of the time that they end their turn without being adjacent to a land tile. On maps with more widely dispersed islands, this increases the importance of naval research that will allow you to build seagoing vessels. This percentage is reduced to 50% late in the game when a nation acquires the Large Clinker Ships advance, and then reduced further to 25% when that nation acquires the Large Carvel Ships advance.

XXI. Settler-type Units Table









Image	Name	Build Cost	Move	Att	Def	HP	FP	Role	Prerequisite Tech	Notes
	Peasant	30	1	0	1	1	1	Settler		Under a Primitive Monarchy government (after you have learned Manorialism) or under a Feudal Monarchy government, Peasants are replaced by Serfs, which are slightly cheaper to build and have the same capabilities. New Peasant units that you build will never have veteran status. Can enter impassable terrain (Mountains).
	Serf	20	1	0	1	1	1	Settler	Manorialism	A Serf can only be built under a Primitive Monarchy government (after you have learned Manorialism) or under a Feudal Monarchy government. Under all other forms of government, the available settler-type units are Peasant and possibly Yeoman. New Serf units that you build will never have veteran status. Can enter impassable terrain (Mountains).

Image	Name	Build Cost	Move	Att	Def	HP	FP	Role	Prerequisite Tech	Notes
	Yeoman	60	1.5	0	1	2	1	Settler	Enlightened Monarchy	<p>A Yeoman works twice as fast as either a Peasant or Serf. However, it cannot be built under a Primitive Monarchy or Feudal Monarchy government. The first Yeoman unit that is produced during the game, by any nation, will cause the support cost of each Peasant, Serf, and Yeoman to increase to 2 Health per turn for all nations, and all government types, in exactly 20 years (10 turns). New Yeoman units that you build will never have veteran status. Can enter impassable terrain (Mountains).</p> <p>This unit can never be built deliberately, but may appear as "partisans" when a city is conquered. Can enter impassable terrain (Mountains).</p>
	Refugee		1	1	1	1	1	Settler		



XXII. Diplomacy Units Table

Image	Name	Build Cost	Move	Att	Def	HP	FP	Role	Prerequisite Tech	Notes
	Envoy	30	1	0	0	1	1	Diplomacy	Catholic Christianity	<p>The standard diplomat unit. Once the more advanced Inquisitor is available, an Envoy may only be built in cities that do not contain a cathedral. New Envoy units that you build will never have veteran status. Ignores enemy zones of control.</p> <p>The advanced diplomat unit, with additional capabilities and benefits. May only be built in cities that contain a cathedral. New Inquisitor units that you build will never have veteran status. Ignores enemy zones of control.</p>
	Inquisitor	60	1.5	0	0	1	1	Diplomacy	Inquisition	

XXIII. Trade Units Table



Image	Name	Build Cost	Move	Att	Def	HP	FP	Role	Prerequisite Tech	Notes
	Merchant	30 - 60 (varies)	1	0	1	1	1	Trade	Trade	<p>The standard trade unit. Once the more advanced Commercial Trader is available, a Merchant may only be built in cities with a size less than 8. New Merchant units that you build will never have veteran status. Ignores enemy zones of control.</p> <p>The advanced trade unit, with additional capabilities and benefits. May only be built in cities with a size of at least 8. New Commercial Trader units that you build will never have veteran status. Ignores enemy zones of control.</p>
	Commercial Trader	50 - 80 (varies)	1.5	0	1	1	1	Trade	Double-entry Bookkeeping	

XXIV. Siege Engineers and Towers Table

Image	Name	Build Cost	Move	Att	Def	HP	FP	Role	Prerequisite Tech	Notes
	Siege Engineer	50	2		1	1	1		Siege Warfare	<p>This unit is unable to attack. A Siege Engineer will automatically transform into a Siege Tower whenever he is within 2 tiles of an enemy city or adjacent to an enemy castle. Similarly, a Siege Tower will transform back into a Siege Engineer when this is no longer the case.</p> <p>This unit can never be built deliberately. A Siege Engineer will automatically transform into a Siege Tower whenever he is within 2 tiles of an enemy city or adjacent to an enemy castle. Similarly, a Siege Tower will transform back into a Siege Engineer when this is no longer the case.</p>
	Siege Tower		1	4	3	2	1		Siege Warfare	




XXV. Castles Table

For a more detailed explanation, please see the entry for "Castles (Fortresses)" in the Civilopedia or within the PDF Guide to Terrain.

Image	Name	Build Cost	Move	Att	Def	HP	FP	Role	Prerequisite Tech	Notes
	Motte and Bailey		0		4 (see Notes)	2	1			This unit can never be built deliberately. Once you acquire the Stone Castles advance, any Motte and Bailey castles (i.e., fortress tile improvements) you have built to that point will be removed and replaced by this Motte and Bailey unit. New fortresses will then appear in the game as Stone Castles (with a different icon). The unit is always created with veteran status and it will receive the corresponding defense bonus if attacked.
	Stone Castle		0		4 (see Notes)	3	1			This unit can never be built deliberately. Once you acquire the Corned Gunpowder advance, any Stone Castles (i.e., fortress tile improvements) you have built since you acquired the Stone Castles advance will be removed and replaced by this Stone Castle unit. New fortresses will then appear in the game as Bastion Fortresses (with a different icon). The unit is always created with veteran status and it will receive the corresponding defense bonus if attacked.

XXVI. Other/Special Units Table

For a more detailed explanation of Plague, please see the entry for "Plague and Black Death" in the Civilopedia or within the PDF Guide to Gameplay.

Image	Name	Build Cost	Move	Att	Def	HP	FP	Role	Prerequisite Tech	Notes
	Scout	30	3	0	1*	1	1			Uses 1 movement point per tile over any terrain. Ignores enemy zones of control. Can enter impassable terrain (Mountains).
	Warlord		2	0	0	1	1			Barbarian-only unit. Ignores enemy zones of control. A reward is provided when this unit is conquered.
	Plague		0							Barbarian-only unit. This unit will not attack, but it marks the site of a severe plague outbreak and blocks all access to tile resources for 1 turn. When it disappears, it leaves behind "plague pollution" that will reduce tile productivity by 50% for 20 turns.