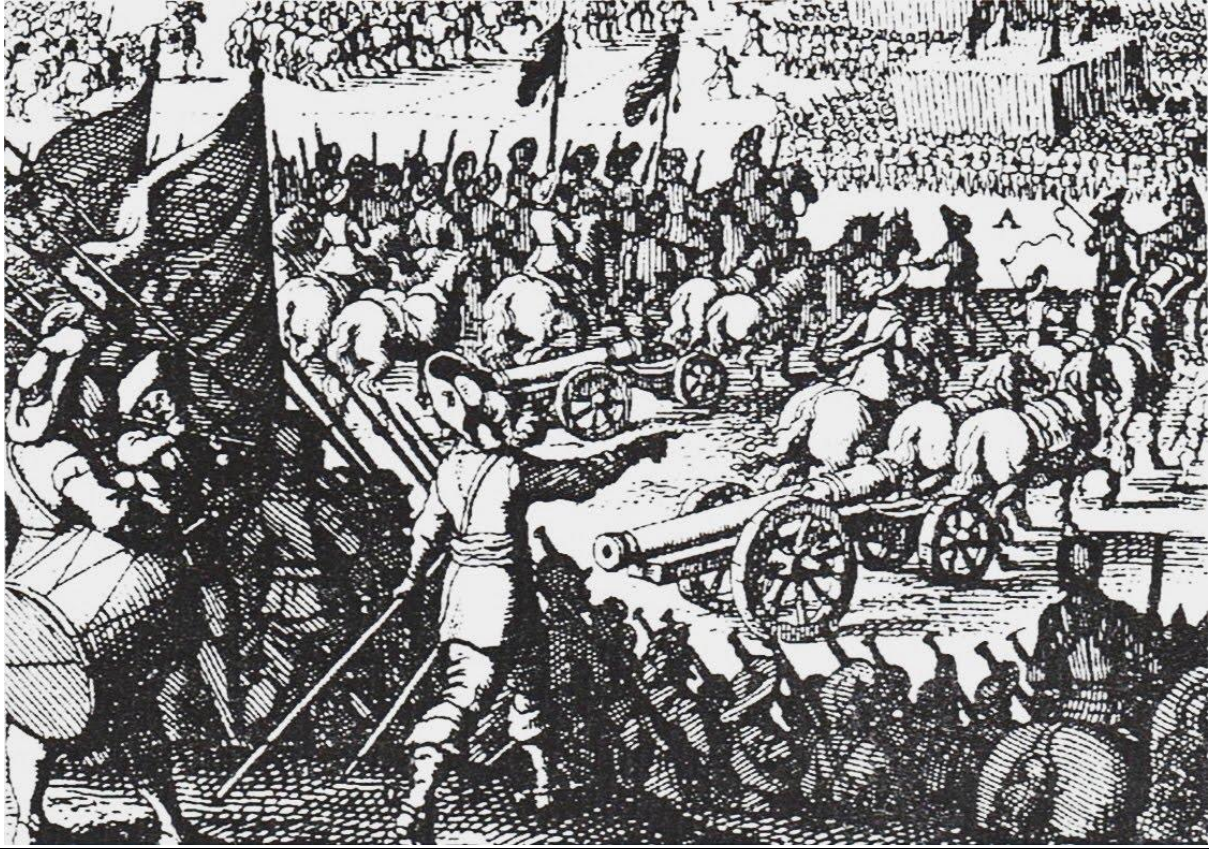


Cannons and Gunnes-

An entirely unofficial amendment for Warhammer 2nd Edition

by Hectorius



History

The first Cannon in the Empire were imported directly from the Dwarfs about 500 years ago (c 2000).

They were quickly imitated, although, (as usual), Human metalworking was greatly inferior to Dwarven, and much more prone to explosion.

The Dwarf cannon tend to be of cast Iron and of at least Good, and frequently of Best quality. (Any Ironworker whose gun burst would usually be so disgraced as to become a Slayer.) They also use Rune magic to strengthen them. This allows them to use less metal (saving money) but also made their guns remarkably lightweight. They also experimented with exotic alloys, complex reloading technology, and breech loading, but quickly settled on fairly conservative designs that they preferred. Medium sized carronade guns were often used underground, where they could clear a tunnel of Grobi with one volley of caseshot.

Oddly enough, Dwarf gunpowder in the early days was usually rather poor, often being mixed up as needed on the day. Humans were more adventurous with their alchemy, and were the first to crack the techniques of making corned powder which travelled better, without the ingredients settling, and had more tolerance for damp.

Human cannon were (up until fairly recently) of very variable quality. Any blacksmith, foundryman, cooper or bell caster would have a go at making one, with sometimes terrifying results. Wood, leather, brass and wrought iron were all used with varying levels of disaster. In the Empire, the Nuln School are now capable of casting very good weapons, but sometimes the pressure to produce large numbers result in some uninspiring and rather cumbersome designs. Most Imperial weapons are still made in bronze, but more cast iron is coming into service. Many old, worn out cannon may still be found on various Noble Estates, or rusting quietly on the walls of backwater towns.

Estalia and Tilea lack Dwarf or Imperial ironworking science, and continue with bronze weapons. They tend towards small, mobile pieces, often for ships or their small mercenary forces. Marienburg-made weapons are similar, but they have a reputation- It is said that they are like Marienburg port ladies-*“When they are good, they are very, very good- When they are bad they’ll rip your face off.”*

Kislevite weapons are also influenced by Dwarf craft, but tend to be very large, and very ponderous bronze weapons. Since they are often mounted as defensive pieces on citadels, they are capable of flattening even the largest Chaotic monsters. Kislevite powder is also famously good, resistant to cold and damp, allowing them to load prodigious charges with less risk of misfire.

Brettonian guns are frankly dreadful, and at least two centuries out of date. Their powder is worse. The knights have grudgingly recognised their value in ending boring sieges quickly, but they despise the commoner engineers and gunners who operate them. They usually hire Tilean or Imperial mercenaries to handle their ancient and primitive pieces, and do not mourn if (or more often, *when*) they blow up.

(The infamous Brettonian gunner Pierre Vauban was burned for witchcraft with his own powder after achieving the impossible rate of fire of three shots in a day *that all hit the same wall*. Such unholy accuracy was clearly impossible without the aid of the Black Arts...)

Some large, well made exotic bronze guns from Cathay have found their way into Kislev where they are treated with some respect-No one is quite sure of the meaning of the cryptic inscriptions they bear, and they are either works of art, or bound about with alien magic.

The Arabyans are known for their absurdly large bronze siege pieces, often cast to soothe the ego of the various petty kings without thought of how to deploy the things. One notorious piece required nearly two hundred slaves just to move it. The various mercantile city states and corsairs have different preferences, and prefer smaller, very accurate ‘long’ weapons for their ships.

Powder:

Powder is the crucial thing that makes a gun more than a large lump of metal.

The Dwarfs stumbled upon the secret of gunpowder about -420 of the Imperial calendar- It took some time to move beyond its obvious mining and demolition uses to become the basis for weaponry.

The simplest sort of powder (*Meal powder*) is mixed by the gunner (or an alchemist) on site. (Failure by 5 levels causes a massive explosion, killing the alchemist, unless he has a Fate point to spare. Failure by 2-4 levels means a bad batch- The powder won't work properly, and Firing tests are at -20%.) Each maker has slightly different recipes, but the powder is vulnerable to damp and settling.

It is COMMON quality.

The Kislevites were the first to make caked powder, which can then be ground up. (*Corned powder*.) It is more stable, and the most commonly used. It is usually of GOOD quality, but even when old or decayed to Common it can still be used.

Priming Powder is BEST quality-The gunner usually keeps a small horn of it on his person due to its cost and value.

The Dwarfs are now some of the best makers of powder, but use the Human recipes.

Metal:

Most modern guns are cast bronze, although cast iron is becoming more popular due to its lower cost. Guns corrode very quickly, and need to be cleaned and polished constantly. Iron guns and ammunition in particular suffer from this. Guns also 'honeycomb' with use, weakening over time. Split or broken bronze guns can be melted down and recast, but iron guns are usually only good for scrap. Iron guns cost a quarter as much as bronze, but the metal cannot be reused.

'Wrought' weapons are cheap for a good reason- they are rubbish. Built by amateurs out of whatever they can find, the most common form is lumps of wrought iron bolted or hammered together. Wooden barrels reinforced with iron bands are sometimes only good for one shot, if that.

When is a gunne not a gunne?¹

Most people can recognise cannon- a big weapon on a carriage. At the lowest end of the scale, there can be confusion with other firearms.

The 'Esmerelda' (the smallest class of true cannon) overlaps in some respects with the 'Swivel Gun', which some Humans consider a large firearm. These are often used aboard ship or on some stagecoaches, bolted to a complex and cumbersome swivel mount.

¹ Based on *Apocrypha Now* WFRP 1st Ed.

The Swivel gun can use the Esmerelda 1/2lb solid ball, but is more commonly loaded with 6 standard musket balls. The Esmerelda, being of heavier construction, uses grape or case shot, which might go up to a couple of dozen musket or pistol balls.

The ‘Volley Gun’ was originally a cluster of Arquebus-calibre barrels (usually between 6 and 10) on a wheeled cart, and fired by one trigger. Although this *looks* like a bit like a cannon, it isn’t, because each barrel is below the size of the Esmerelda.

However, since this was obviously (?) such a good idea, there have been numerous attempts to make experimental cannons on the same principle (See the ‘*Experimental*’ class below).

Name of Gun	Weight of ball (pounds)	Crew ²	Base Cost GC	Base Enc/ Wounds	Group	Damage	Range in yards		Base Reload ³	Base Qualities ⁴	Availability
							Point-blank	Maximum			
Swivel	1/2lb or 6 musket balls	2	200	150	Ordinary	3	3	1000	4-6	Unreliable,	Very Rare
Volley	n/a	2	300+25% per barrel over 6	400	Ordinary	3	3	50	2 per barrel	Unreliable,	Very Rare

When a Swivel is fired at a group of targets, roll D6 to determine how many balls MAY attack-then roll BS for each ball.

For Volley guns, roll BS for each barrel, then re-roll each miss. If it hits, roll 1D6 and use the table below:

Roll	Target
1-2	1 creature to the left of target
2-3	1 creature to the right of target
3-4	1 creature behind target

² Minimum number needed to work in combat. Excludes drivers, porters, pioneers, etc. Multiply by three when moving.

³ For a trained crew. For each man missing, add 10% to load time (Minimum 2 rounds). For Untrained crews, Treble the load time.

⁴ May be EITHER Shrapnel **OR** Armour piercing, **but not both**.

Carronades, Mortars/Bombards (Pot de feu)

Carronades are short, thick barrelled, stubby weapons only really effective at Point Blank range, but making up for it with a much heavier ball.

Mortars or bombards are usually siege pieces, not very mobile and angled at up at about 45 degrees on a fixed baseplate without wheels, and are used to lob shot or shell over walls. Due to their weight, and awkward shape they are usually only transported on carts and installed in fixed wooden frames when needed.

Carronades and mortars all have very short range, but gain weight of shot. As rule of thumb, maximum range is divided by 4, but weight of shot is x4, as is damage.

So, the metal for a 24lb Grosse Culverin could be converted to a (24x4=96) 96lb mortar or carronade with a damage of (25x4=100) 100 (or 20x *FIREBALL* if using Shell), but with a maximum range of only 1600 yards.

‘Long’ guns

Some cannon are deliberately made for increased accuracy. These are longer barrelled, and carefully finished at twice the cost, and 10% more Enc, but gain the ‘Precise’ Quality. Carronades and Mortars obviously cannot be ‘Long’.

Carriages

In the early days of gunnery, the gun was simply loaded on to, or bolted to the floor of, a convenient haywagon. This also allowed the powder and shot to be carried in the same vehicle.

Given the normal roads, this was a dreadfully slow means of moving. Although still used for cumbersome siege mortars, field pieces usually now come mounted on two or four wheeled mounts that can be pulled by a team of horses (or Dwarfs), and keep up with a marching army. Ammunition and shot for a limited engagement often come in a small separate cart, called a *limber*.

Ornamentation

Due to the cost and prestige of these weapons, it is usual for weapons to bear individual names, and ornate decoration. (Every Dwarf gun is an individual item. There’s no *craftsmanship* in mass production.) This is usually built into the basic cost. Some are also inscribed with religious iconography, and in some rare cases sorcery or Rune magic. In the Empire most Nuln-cast guns carry Sigmarite or Myrmidian slogans, and there is a tradition of mixing the cremated remains of heroes with new guns, some of which then bear the name of the deceased.

Although this is often dismissed by accountants, the fact remains that Gunners love their beautiful weapons, and each 10% of Base cost added for ornamentation will give a 10% bonus to any WP tests the crew have to make.

Experimental

Despite the best efforts of the Dwarfs, Humans will constantly fiddle with designs, often compromising the build quality. Most famous is the ***Hellblaster Volley Gun***, a contraption with an undeserved reputation for working. Unlike, say, the ***Dragon's Foot Volley gun***, a scaled up version of the Ducksfoot handgun, which has an entirely deserved reputation for **not** working.

Most of these 'Newf Angled' (from the Dawi-Idiot idea) concepts simply make the weapon more dangerous to the crew. Some have caught on, but there are dozens of rejected designs littering scrapyards across the Empire, just awaiting some fool in need of a cheap gun.

The most common experiments are the addition of more barrels, rotating barrels, and more complex reloading devices to reduce the time between shots. What they *actually* do is increase the amount of powder in the area that can explode, while making the weapon bigger, clumsier and more prone to failure.

'Experimental' guns are between 50-100% Enc larger than normal, CANNOT be of Best quality, and cost between 50%-100% more.

- The 'Gatlingsson' or Organ Gun may have up to 10 barrels, (+10% Enc per barrel) and a rotational crank, (usually operated by at least two crew, or one Ogre mercenary) with a rate of fire of 1 every 2 rounds, until all barrels are exhausted, when each barrel of the gun needs to be individually reloaded.
- 'Volley guns' are usually designed to fire all their barrels at once, across a 'Cone' template. Use the main weight of the gun, but divided into as many barrels as is desired: For instance a 24lb Volley gun may consist of two 12lb, or three 8lb guns, or one 10lb plus two 7lb, or any desired combination, which all fire in the same round.
- Alternatively, the 'MacSimm' automatic reloading mechanism, which is never of better than Common quality, allows reloading at two rounds faster than normal. (i.e. an Esmerelda with a 6 round reload time can be fired in 4. A Saker with an 18 round reload time can be fired in 16.)
- Rotational devices can also be fitted to volley guns. The Hellblaster consists of three Volley gun batteries of 6-10 barrels each, plus a rotator. It can fire 6 shots in one round, then two rounds later another 6 shots, then two rounds later another 6 shots. Then it needs to be reloaded.

Dwarfcraft⁵

Dwarf weapons have been developed to meet their particular needs. Swivel guns and Volley guns (in both large and small calibre) are popular, but there are some other types unique to the Dwarfs.

⁵ Based on *Stone and Steel* (WFRP 1st Ed)

As previously stated, all Dwarf weapons are of at least Good, and frequently Best Quality. This means that they are always 10% lighter in Enc and the Best Quality weapons are at +5% BS to hit. A 'Long' Dwarf weapon would be of listed Enc, +5% BS to hit, and with the Precise quality +1 on any Critical rolls).

Dwarf Bombard:

A Light Carronade weapon of the Falcon weight, but normally without a carriage. It is carried and can be set up on a special rack in three rounds by a two Dwarf crew, and operated, if necessary, by one. (Ammunition and powder must be carried separately.) It is very useful for underground combat in enclosed spaces, and blowing away obstacles, doors or skaven.

Dwarf Mortar:

Unkindly known in the Empire as the 'Knee Mortar' (Because of its height to a man).

This is a two-Dwarf weapon, again based on the Falcon. It can fire a ball of up to 16lb over short distances.

(Note- There is a legend that the Dwarfs aim these weapons by actually bracing their knees against them. This is entirely false, and anyone stupid enough to try it is going to get their kneecap broken by the recoil.)

Field Cannon

The standard Dwarf weapon. Usually of Saker or Grosse Saker calibre.

Tempest Cannon-

A slightly heavier (Culverin) weapon used on some of the Dwarf warships of Barak Varr. Built into ships, they often have a complex reloading system that reduces the time to reload.

Thunder Cannon-

The pinnacle of the Gunsmiths art, these are enormous weapons used to defend Dwarfholds. They are too big to go into the field with an army. These are of **at least** Grosse Culverin and sometimes Imperial Culverin calibre, and will always have automatic reloaders, The complex Hydraulic mounting and steam powered turrets means that the Master Gunner needs to make an additional Average Int Test when aiming to operate it correctly.

Sorcery

Some forges look to the mystic arts to improve their weapons.

At the most basic, a priest is asked to bless the weapon, or a Runesmith may put a temporary rune on it. Such charms will add 10% to the cost **so far**, but will generally act as a Fortune point to allow a failed shot to be re-rolled once a day.

The most expensive, (and most suspect) require a Runemaster, Bright or Gold Wizard to apply their skills in the crafting or forging. These will **double** the cost of the weapon **so far**,

and they can be very disturbing things-The weapon is saturated with magic, which will make anyone nearby feel uneasy, and the exact spell is very much at the whim of the wizard- and they can be very strange indeed. Each magically enhanced gun has a 'Quirk' at the Referee's discretion.

For instance, the culverin *Dracotodt* has an unerring ability to hit dragons. Which is very useful, if only there were any dragons near Nuln.- Or the rather irritating Saker *Sturmlieder* with its' habit of playing loud martial music in the middle of the battle "to encourage the troops", as its maker said.

Runecraft⁶

Most Dwarf made guns have at least one permanent Rune inscribed on them, but **no more** than three. (Although guns made for export to the Humans probably would not.) The drawback is that if the same rune is on another item within 100 yards, they cancel each other out. Only Level 1 Runes will work for non Dwarfs.

These are usually *Engineering* runes⁷. (Dwarfs see cannons more as noble achievements and artworks than simply as weapons)

Level 1 Runes

- Accuracy** +10BS
- Forging** 1x reroll of a Failed firing roll.
- Burning** For 1d3 Hours all ammunition does an additional 1d8 burning damage.
- Penetrating** Increases strength of weapon for 1d3 hours, allowing larger powder charges.
+1 to Critical hits

Level 2 Runes

- Fortune** For 1d6 Hours, any Level 5 failures may be re-rolled once.
- Stalwart** +10% WP tests for the crew
- Valiant** For 2 hours after first attack, +20% on WP and Leadership tests.

Level 3 Runes

- Disguise** Weapon is invisible until it first fires, after which it is visible.
- Immolation** Weapon can be ordered to self-destruct as if a Level 5 Failure had occurred.
- Reloading** Reloading time is either halved, OR 1 crewman can do the work of three.

⁶ *Realms of Sorcery* WFRP 2nd Ed

⁷ *Dwarfs Stone and Steel* WFRP 1st Ed

Seeking For 1d6 hours the weapon will automatically hit its target, so long as within maximum range.

Ammunition

Originally bolts from existing siege engines were used, or simply large rocks. These were inaccurate to say the least.

Modern ammunition includes stone shot, (a favourite of the Dwarfs for its cheapness and easy availability), and which can shatter on impact to form deadly shrapnel), cast iron or brass Solid Shot (which can also be heated in a brazier to start fires), Grape / Case (a leather bag full of musket balls, nails or scrap metal used for close range anti-personnel work), Chain (two solid shot linked by chain to rip down the rigging of ships) Bar Shot (two shot linked by an iron bar to rip away masts) and the terrifying Shell. These are hollow balls of cast iron full of gunpowder, nails and musket balls. *If* they arrive on target, they are capable of destroying entire troops of men. They are lit with a separate fuse **before** the cannon is fired. Getting the timing sequence wrong can be spectacular.

OOPS....

Shells are Unreliable in their own right. Treat each explosion as a multiplier to the damage of a *Fireball* spell of 1 per 5 lb of normal shot damage. (Rounded down) (i.e. a 1lb shell from an Esmerelda will do 1 standard *Fireball*, whereas an 18lb Culverin will do *Fireball* damage x3.)

A constant headache for the quartermaster is the lack of standard sized ammunition. Most guns are rated for weight of shot, rather than size of bore. Thus, a pair of guns both of 9 pound calibre might be bored out to slightly different sizes. Stone shot is less dense than metal, so requires a larger bore. Obviously, the smaller sized shot can be used in both, but sometimes it is necessary to make custom ammunition for odd calibre guns. Stone shot costs 1GC/lb, but tends to shatter on impact. (Treat as normal for arrows-50% of shot is not reusable). Brass or iron solid shot costs 3GC/lb, but metal Solid shot can be recovered and reused. Shell costs 4GC/lb, and cannot be reused.

Obviously, it is possible to load smaller calibre ammunition into larger calibre guns, but for each gun class lower, the gunners' task in Firing the gun (stage 12 below) goes up in difficulty one level. (The ball bounces around inside the barrel, and tends to veer off course.) **The ball will still do only as much damage as if fired from the correct piece. If a 6lb ball is fired from an 18lb, it will still only do the damage of a 6lb, not an 18lb.**

Breech loaders

To speed up reloading, some smaller guns are breech loaded. A pre-loaded breech block is slotted into the back of the barrel. This halves the normal reload time, by replacing steps 6-8 below. This works well, *up to a point*. Firstly, the gun is more expensive by 50% per additional breech block. Secondly, the seal is unreliable. **All** breech loaders are Unreliable, *whatever their other build Quality*, and are prone to exploding. Only Falcons and below are regularly made as breech loaders. After all the blocks have been used, they have to be reloaded individually at normal speed. **Mortars cannot be Breech loaded.**

Double Shotting

Although very dangerous, it is possible to put two or even three balls into the cannon at once. Each additional ball adds a level of Difficulty to the loading process. It is usually done before the battle, when the crew have time. If it goes off safely it can do two normal attacks. Chain and Bar shot is automatically Double shot.

Praise the Lord and pass the ammunition...

Although many foundries put their own marks on their cast solid shot, a few have taken to having religious symbols inscribed, and blessings applied- (at a x10 Cost multiplier) Such shot has normal effect on mundane enemies, but can also be terribly effective against **either** the spawn of chaos **or** the Undead (but rarely both). (Apply as if the shot is a *magic missile* against such magical creatures.)

Spiking the guns.

It is easy to *disable* a gun- simply hammer a nail into the vent. This will make it impossible to fire.

Destroying a gun is quite difficult- **Consider each weapon to have Total Hits equivalent to its Enc-**

However, there are break points: At 25% of Hits, the carriage is damaged-The gun can continue to fire, but each stage of the Drill Difficulty goes up one level, as the gun is harder to aim and load.

At 50% of damage, the carriage collapses- The gun may be fired , but each stage of the Drill is Two levels of Difficulty harder. It cannot be moved from its current position

At 75% damage, the gun is cracked and highly dangerous-It fires at 3 levels of Difficulty harder.

Rate of fire

- An elite gun crew can usually fire and reload in about 2 minutes.
- A more regular rate of fire is one round every 5 to 8 minutes.

In WFRPG game terms, it takes an elite crew about 12 combat rounds to fire and reload.

A regular crew normally takes between 30 and 50 rounds.

An amateur crew might be lucky to get reloaded in 150 rounds.

All guns need a minimum crew of 2, one being the gunner. (The Artillerist career is described in the Warhammer Companion Ch XI)

Working guns is physically hard work.

After 10 shots, make an Average Toughness test, or take a Wound.

Each five shots after, make another Average Toughness test., or take a wound.

For each man under the listed crew, add another round to the reload time, but also after the first 10 rounds, the Toughness tests becomes Challenging.

OOPS....

Guns sometimes blow up. Usually, bronze guns split, and will attack each crewman with a WS of 60%, an attack value of 1 per 5lb, and a number of attacks of 1 per 5 lb calibre.(Round down) . Cast iron or Wrought guns shatter, and also get the *Shrapnel* quality. **If Shell is used, add the value of the Shell to the value of the bursting gun.**

Example- A Bronze 24lber explodes. All crew members take 4 attacks at 60% with a value of 4.

If it were an Iron or Wrought gun, with the Shrapnel Quality it would *automatically* hit the crew with all four attacks, unless a Routine agility roll is made FOR EACH ATTACK.

If the same 24lb was firing Shell when it explodes, then add 4x *Fireball* attacks.

Anything above a 'normal' failure at any stage will have to be repeated. **Deliberately taking two turns at each stage lowers the Task difficulty one step. Taking three turns reduces the Task by two steps.-However, if Shell is used, because it is individually fused, any failure by more than two levels will mean that the problem is not resolved before the shell explodes, taking the gun with it.**

Failure of more than 3 levels at any stage signifies a serious fault-Either a jammed shot, a broken tool, which will require replacement, a 'Blind', where the main charge has failed to ignite, and the weapon will need to be carefully unloaded in reverse order, but with every test 1 level higher. **If Shell is used, the gun cannot be unloaded in time, and explodes.**

At **5 levels** of failure at any stage, there is a catastrophic failure, where the gun itself bursts, the charge ignites prematurely, or its' mounting collapses.

With Shell, **failure of more than 3 levels at Stage 8a** means that the fuse was incorrect, and the shot explodes harmlessly in the wrong place, or simply fails to explode at all. **Failure by 5 levels** means the shell detonates *inside* the cannon, totally destroying it, and killing or maiming the crew. If the gunshot fails, then the shell **automatically** fails as well, even IF it had already passed the first test. This represents the fact that the shell failed to leave the gun before the shell detonates.-again, taking the gun with it.

The Firing Drill

1. **Clean the vent** Crewman removes burned powder from the firing vent. Task-SWG-Gunpowder WS Routine.
2. **'Stop' the vent.** Gunner places a thumb over the vent hole. Task-SWG-Gunpowder WS Routine.
3. **'Worm' the bore** Crewman uses worming tool to scour out barrel. Task-Agility Routine
4. **Wet sponge the bore.** Crewman uses a wet sponge on a long rod to remove any burning debris from barrel Task-Agility Routine
5. **Dry sponge the bore.** Crewman uses a dry sponge on long rod to remove water from barrel. Task-Agility Routine
6. **Load powder.** Crewman places powder bag in barrel, and pushes it down to rear of barrel using a long rammer. Task-Agility Routine
7. **Load ammunition.** Crewman loads ammunition, and wadding and rams down on top of powder charge. Task-Strength Routine
8. **NOTE: IF SHELL IS USED, THEN THERE IS AN ADDITIONAL STAGE:**
8a GUNNER LIGHTS SHELL FUSE: Task SWG-Gunpowder-Average.
9. **Pick the charge**-Gunner uses a long piece of wire to punch a hole in powder bag. Task- SWG-Gunpowder WS Routine. **Normal Failure will add a -20% to Stage 12**
10. **Prime the vent.** Gunner uses fine 'Priming' gunpowder to fill the vent. Task- SWG-Gunpowder WS Routine. **Normal Failure will add a -20% to stage 12.**
11. **Lay and Run out the gun.** Crewmen push cannon to correct firing position. Task-Strength- Average, **PLUS** SWG Gunpowder Weapon- Routine. If **either** fail, the step has to be repeated. If Shell is used, the gunner may fire off the weapon at random, to avoid a detonation in the gun. It will be a Very Hard SWG Test to hit the original target.
12. **Fire.** Gunner uses a piece of burning matchcord to ignite the priming, which ignites the main charge. Task- SWG-Gunpowder WS Routine, with modifications for weapon quality and reliability. **If this stage fails and shell is used, the gun fails to fire, but the shell will detonate anyway, destroying the gun.**
NOTE: This is the point where the gun itself will fail, if it is going to.

OOPS- Gun failure. The Firing roll must fail by 5 levels or more for an explosion.

Modifications to SWG-Gunpowder weapons.

Best Quality -20%

Good Quality -10%

Common Quality -0%

Poor Quality +10%

13. Avoid the recoil. The Gun will recoil as if the Gun is attacking all the crew with WS 20%, SB 1 per 5lb of shot rounded up, and the potential to do 1d10 Wounds to anyone failing an Agility Task-Average /or Dodge. Ulric's Fury is also applicable- It is quite possible to be killed outright by a recoiling gun. (For example, an 18lber would 'attack' everyone at 20%, with a SB of $18/5=3.6$, rounded to 4)

14. Roll to Hit: Gunner SWG- Gunpowder Weapon + modifications for weapon quality and long/short barrels. {Not actually part of the Loading Cycle, but probably the most important bit as far as players are concerned.}

15. Repeat Loading procedure.

Hitting the target:

Laying the gun (aiming) on target is the job of the Gunner/Artillerist, or anyone with Specialist Weapon Group-Gunpowder . Use the Gunner's BS, modified for range and weapon quality.

The shot is basically linear, attacking anything along the line up to the effective range of the gun. Case shot uses the Cone template out to minimum range.

Ricochet:

The solid shot does not have to strike directly-If falling short, it will bounce along the ground, in a generally straight line, losing some energy, but still capable of destroying entire ranks of troops. The sheer force of the shot passing can stun or kill even without physical contact. (Unless a Fate Point is used.)

Common Imperial Gun sizes

Name of Gun	Weight of ball (pounds)	Crew ⁸	Base Cost GC	Base Enc ⁹ Wounds	Group	Damage ¹³	Range in yards ¹⁰		Base Reload ¹¹	Base Qualities ¹²	Availability
							Point-blank	Maximum			
Esmerelda ¹⁴	1/2	2	100	100	Ordinary	3	200	750	6	Unreliable,	Very Rare
Falconette	1 to 2	2	500	200	Ordinary	5	300	1000	6	Unreliable,	Very Rare
Falcon	3 to 4	2	600	400	Ordinary	5	400	2,500	6	Unreliable,	Very Rare
Saker	5 to 7	4	750	600	Ordinary	10	400	3,750	18	Unreliable,	Very Rare
Grosse Saker	7 to 10	4	900	900	Ordinary	15	600	4500	30	Unreliable,	Very Rare
Culverin	10 to 18	6	1500	1200	Ordinary	20	800	5,000	150	Unreliable,	Very Rare
Grosse Culverin	24	6	2000	2000	Ordinary	25	1,700	6,600	150	Unreliable,	Very Rare
Konig Culverin	24 to 40	6	2500	2500	Ordinary	30	650	3700	200	Unreliable,	Very Rare
Imperial Culverin	40 and up	8	3500+	3000	Ordinary	35	800	2500	300	Unreliable,	Very Rare

⁸ Minimum number needed to work in combat. Excludes drivers, porters, pioneers, etc. Multiply by three when moving.

⁹ Gun only-x2 for field carriage, x 8 for wagon mounted.

¹⁰ Solid Shot and shell only. Shrapnel (grapeshot) loses effectiveness beyond Point blank, but uses cone template.

¹¹ For a trained crew. For each man missing, add 10% to load time (Minimum 2 rounds). For Untrained crews, Treble the load time.

¹² May be EITHER Shrapnel **OR** Armour piercing, **but not both**.

¹³ Solid Shot. For shell, treat each explosion as a Fireball spell with a Damage multiplier of 1 per 5 points of normal shot damage, rounded down.

¹⁴ Named by the Halflings- about the only people who use what is basically a reinforced blunderbuss. Sometimes fired to announce the start of pie eating contests.

Battles:

These rules are not for WFB games, but are very abstract.

In open field combat, the referee should determine just how many rounds the battle will last, and how many rounds the crew can **possibly** get off before their position is over run, or the battle ends.

The referee should also determine what sort of enemy will attack the gun crew- it is possible that they will receive attacks from

- Infantry
- Cavalry
- Missiles
- Artillery
- Monsters

Infantry are blocks of slow moving foot soldiers- They have relatively poor mobility, so the gun crew should, in most cases, be able to move themselves and/or their weapon out of their path.

Cavalry are the biggest threat to cannon, as they are fast enough to over-run the guns- They are, however, very vulnerable to grape or shell as the mounts fall quite easily. **Aiming is one level harder, but damage is x2 if using grape/case, or shell.**

Missiles- Archers or firearms can shoot effectively at the gun crew, if they can get within range, but are often dispersed to make them hard to hit in return. Referee decides how many attacks will focus on the crew.

Artillery- Artillery and siege engines often fire at each other. It is possible the characters may be on the receiving end of cannon fire.

Monsters- Often large, but can be treated as individuals. Normal rules apply, but Aiming is one difficulty level higher- Even a Troll or Giant is more nimble on its feet than 100 infantrymen packed into line.

Any Enemy Unit can be considered to have values like a single character, aggregated from the Wounds of its members, although it may be made up of many individual members. A giant (1 member) may have an equivalent combat value of a thousand goblins aggregated together.

Treat each enemy unit as a character, but there is one additional factor- the units WS and BS will decline in roughly 20% increments in line with damage. It will be drawn up in between 1-10 ranks. (Referee's decision)

Solid shot damage will be applied along the line of fire, with each rank attacked separately.

Shell affects all ranks with the same attack roll.

Case/Grape can be fired only at Point blank range, and affects only the front rank, but at x4 value. If the front rank is eliminated, it will overspill into the rank behind.

Ignore armour bonuses. (It doesn't matter how tough you are or how much armour you have-a high velocity cannon ball *hurts*.)

Big blocks of troops are hard to move around. Big mobs aren't very clever either. Unit Movement, Agility and Int is calculated by **dividing** the individual soldiers statistic by the number of ranks to a Minimum of 1. (So the Orcs would have a Move of $4/5=0.8$, rounded to 1).

However, Strength, Toughness, WP and Fel is **Increased** by multiplying the individual soldiers' statistic by the number of ranks-Note that this can result in very powerful units-These are aggregates, so if any member of the unit gets into close combat with the players, they will meet *Individual* members of the horde.

Example:

A company of 100 Orcs, each with (on average) 11W+4 TB=15 Wounds are besieging a town. They are drawn up in (roughly) 5 lines of 20 orcs.

Main Profile							
WS	BS	S	T	Ag	Int	WP	Fel
40	30	$40 \times 5 = 200$	$40 \times 5 = 200$	$40/5 = 1$	$20/5 = 4$	$30 \times 5 = 150$	$30 \times 5 = 150$
Secondary Profile							
A	W	SB	TB	M	MAG	IP	FP
1	$15 \times 100 = 1500$	20	20	1	0	0	0

This unit would have morale break points at 20% increments of total Wounds. ie. 300, 600, 900, 1200 and 1500. At 20% casualties the Unit must make an Average Fear Test. At 40% a Challenging Fear Test, and so on.....

A cannon crew with an 18lb wall mounted Culverin (doing Damage 20) fire on them with solid shot, hitting 3 ranks.

Rank 1 1D10 (Roll 5) +20= **25**. Orc Wounds reduced to 1475.

Rank 2 1D10 (roll 3) +20= **23** Orc Wounds reduced to 1452

Rank 3 1D10 (roll 10-roll to hit again –success Ulrics Fury Roll 8) +20= **38 damage**. Orc Wounds reduced to 1414.

Total damage for the shot is $25+23+38=86$

Total damage is less than 20%, so the Orcs laugh it off. (Probably enough to kill 5 Orcs outright)

Annoyed, the Master Gunner loads Shell.

This goes off correctly and lands in the middle of the orcs, hitting all 5 ranks.

The shell detonates using the Blast template, for a *Fireball* multiplier value of 4 (1 per 5lb of normal shot damage) x Normal Fireball damage . (roll 5 on dice +3=8) 8x4 =**32 per Rank**.

5 ranks x32 damage each = 160 (Probably 10 Orcs killed outright)

The Orcs now have taken 246 hits, leaving 1254. This is still less than required for a Fear test.

The third attack, using case/grape, hits only the front rank

1 rank (roll 5 +10) =15 damage x4 (Total 60), or about 4 Orcs, which is now enough for a *Fear* test. If they fail, the unit breaks, and is useless until it rallies- Effectively, it is out of the game for 1d10 x10 Rounds, as everyone takes cover.

Building a Gun

- 1) Select a size.
- 2) Select manufacturer (Dwarf, Imperial, Other Nations, Brettonian)
- 3) Decide build quality (Dwarf Guns are either Best or Good. Imperial guns range from Poor to Best. 'Other nations' guns range from Poor to Good. No Wrought gun can be better than Common. NO BRETTONIAN GUN CAN BE BETTER THAN COMMON)

Quality	Cost multiplier
Best	X10
Good	X3
Common	X1
Poor	X50%

- 4) Select metal (Basic cost for bronze, X0.25 cost for cast iron, x0.10 cost if 'Wrought'- wrought iron or other materials)
- 5) Decide if 'Long'(x2 cost, +10% Enc) or Carronade /Mortar (Max range x 0.25, weight of ball X4, damage x4)
- 6) Decide if Breech loaded (+50% Cost per extra breech block- automatically Unreliable)
- 7) Decide carriage (Normal cost for Limber. Enc the same as the gun. 0.5 cost for cart, but x4 Enc)
- 8) Decide if 'Experimental'
- 9) Decide Ornamentation multiplier
- 10) Decide if Sorcery is used in manufacturing (See table)

Spell	Effect	Cost multiplier	Note
Runes	See description	+10% per 1 st level, +20% per 2 nd level, +50% per 3 rd level.	Dwarf made weapons only

Basic charm	Weapon has 1xFortune point per combat	+10%	Usually of only one faith.
Bright Wizard¹⁵	Weapon is unusually militant. +1 dice Damage	X100%	Has at least one ‘quirk’
Gold Wizard¹⁶	Weapon metal is unusually pure and strong. +10% range due to ability to withstand larger powder charges, and +10% to gunner’s BS due to fine manufacturing of sights.	X100%	Has at least one ‘quirk’

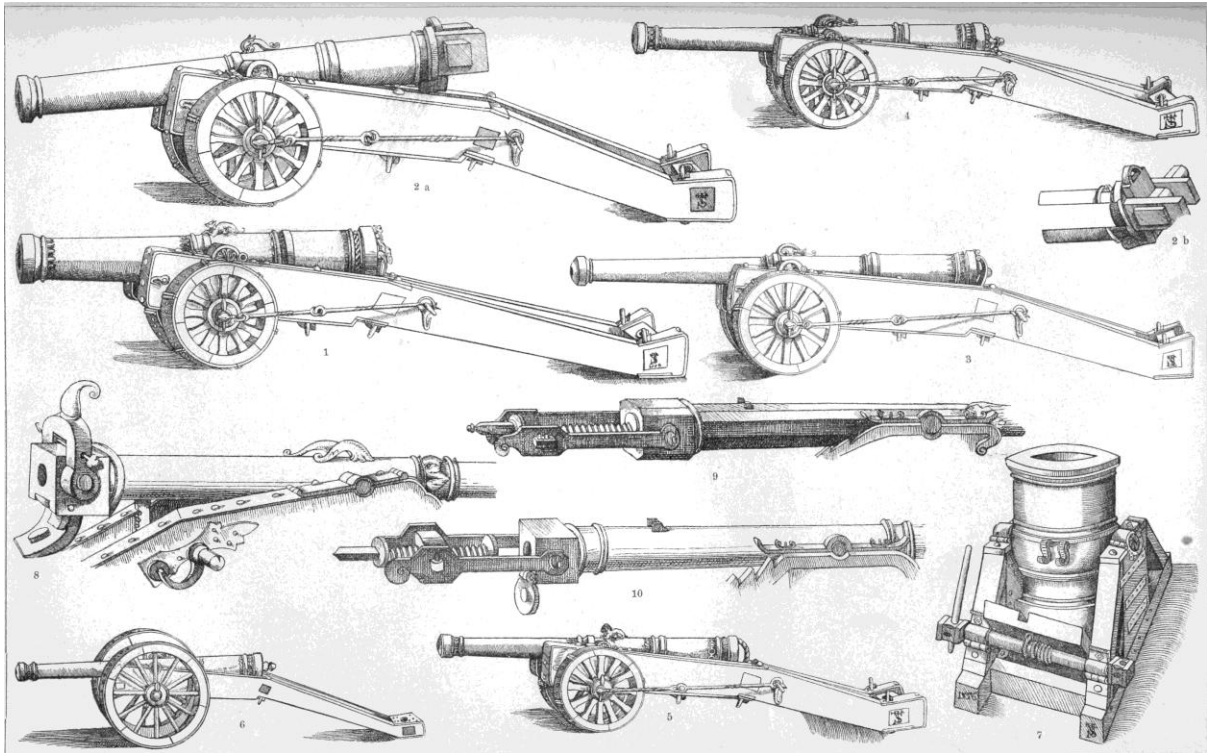
11) Total cost and name weapon

Design Template

	Basic Cost	Basic Enc	Notes
Name of weapon			
Size			
Metal (Iron, Bronze, Wrought)			
Long/Carronade/Mortar			
Breech Loader (Falcon or smaller)			
Carriage (Limber or cart)			
Build quality multiplier			
Experimental multiplier			
Experimental type			
Ornamentation multiplier			
Sorcery multiplier			Quirk:
Final Cost			

¹⁵ These functions are replicated in Nuln-made guns by a naming ceremony- weapons will be either militant **or** hard –hitting.

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