ARTILLERY

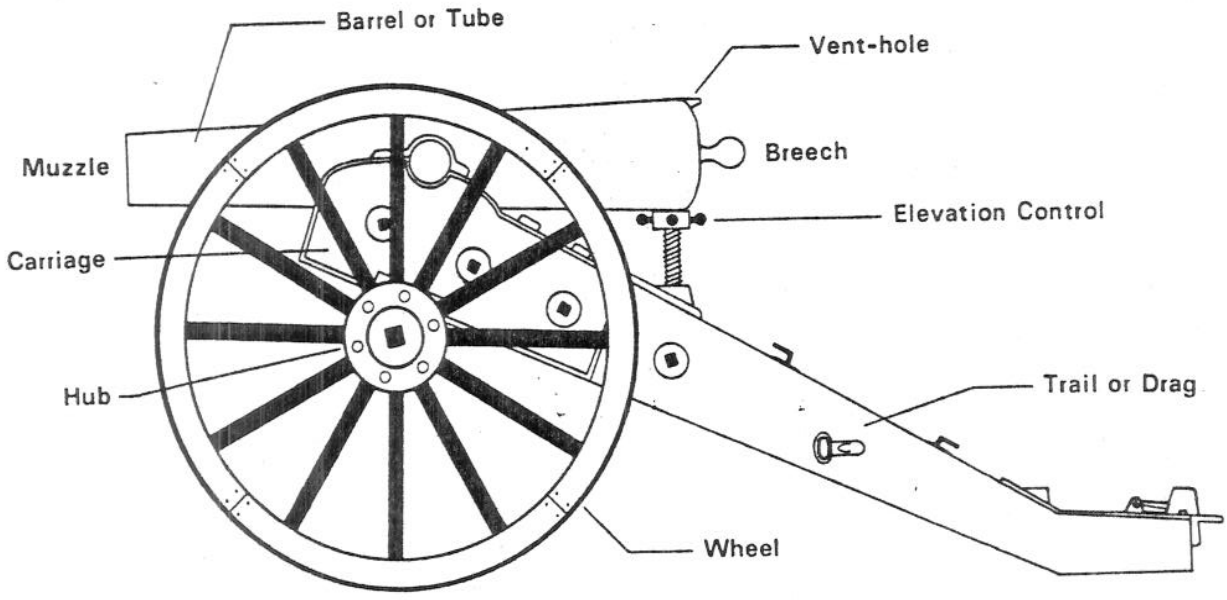
Civil War cannon had advanced little since the early days of artillery. Guns and ammunition were unreliable as well as dangerous to operate.

Barrels or tubes were made from iron or bronze and gun carriages were built of white oak with iron fittings. Many types came into use during the war, ranging from small howitzers to huge seige guns. At Gettysburg however, only field cannon and howitzers were in use due to the mobility required in the campaign.

When unlimbered, horses and caissons were moved to the rear or a safe place nearby. The gun was aligned by hand, loaded and fired. Upon firing, the gun would recoil a few feet or up to a dozen yards, depending on the powder charge and amount of ammunition.

After firing, it was rolled back by hand and re-aligned, being swabbed and loaded as it went. An efficient crew could load, aim and fire twice in one minute. When under heavy attack, crews had been known to fire four canister shots in a minute. Swabbing the barrel could not be hurried for not only did it help cool the tube, but it also extinguished any lingering sparks before the next charge was inserted.

Attacking infantry usually made batteries their prime targets, for the capture of field pieces were a great prize. Often as crews were limbering up to pull out, assaulting infantry would shoot the horses, requiring the piece to be abandoned. If capture was unavoidable, crews would even shoot their own horses to prevent the enemy from moving the piece. Spiking the weapon, that is to drive a piece of metal into the firing vent, also rendered it inoperative for a time.

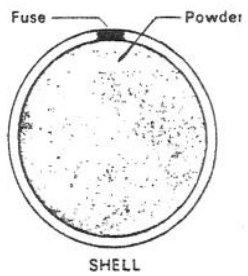


Parts of a cannon

AMMUNITION

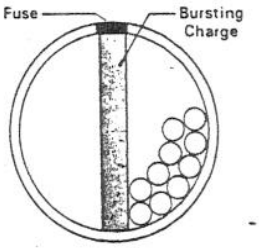
Ammunition among field artillery in the Civil War fell into four types; solid, shell, case (shrapnel), and canister. Chests of artillery pieces carried all types in amounts depending on the type of action anticipated. Generally speaking the types are as follows:

Solid Solid shot was a solid iron shell, primarily used on cavalry, infantry in column or infantry taken in flank. It was used in a bowling ball effect and was the most accurate of the four types. Artillery nomenclatured as pounders (i.e. Ten-Pounder) get it from the weight of one round of its solid shot.



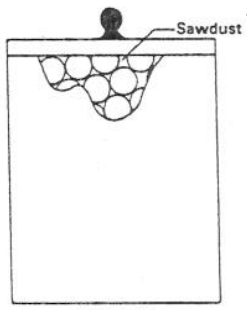
SHELL

Shell Explosive shell was a hollow projectile filled with about 90% black powder. Fuses were cut to time (0 – 5 sec.) and lit by the firing charge. Shell was used primarily against fortifications and enemy artillery.



CASE

Case (Shrapnel) Case shot was invented by General Shrapnel of the British Army, and comprised a hollow shell filled with about 75 iron balls and a bursting charge. It was used against infantry at long range (over 400 yards) and most effective when set to explode about 15 feet overhead.



CANISTER

Canister Canister was a thin metal can containing iron or lead balls in sawdust. In a Napoleon, 25-27 one inch balls were used. When fired, the can ruptured on leaving the muzzle and the effect was like a huge shotgun. Canister was used only in defense against attacking infantry.

Ammunition in the Civil War was notoriously unreliable. Duds were common, sometimes as high as 50% failures. Powder used was the old black type, producing immense clouds of sulfur smoke, blotting out targets and irritating gunners and supporting infantry alike.

Union Union forces fired over 33,000 rounds during the three days of Gettysburg. This expended about 34% of their supply. Seven pieces were lost to the enemy and artillerymen suffered 769 killed, wounded, or missing. Several hundred horses were also killed or had to be destroyed.

Confederate Confederate forces fired about 22,000 rounds but this expended over 50% of their supply. Six pieces were lost and they suffered 608 casualties in the three days fighting.

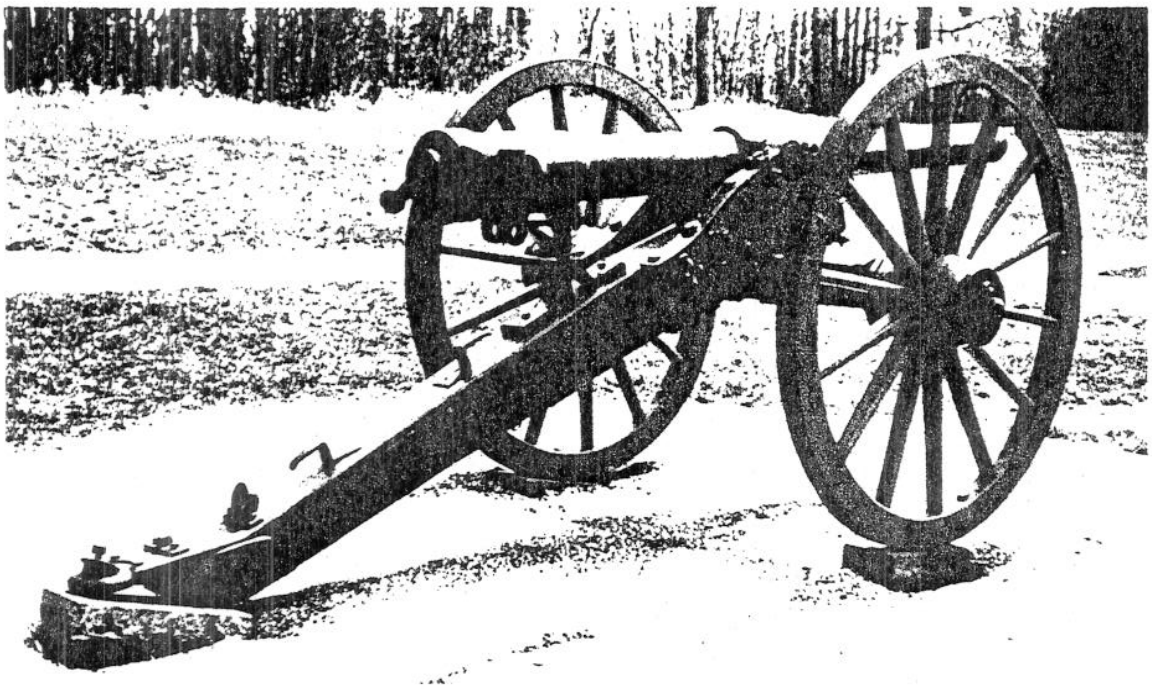
12-POUNDER (NAPOLEON) Perhaps the most commonly used cannon, the Napoleons dot the battlefield marking the batteries of both sides. Distinguished by their green barrels, twelve-pounders comprised 40% of the cannon used at Gettysburg.

Developed for the Army of Napoleon III, twelve-pounders were muzzle-loading, bronze barreled (90% copper, 10% tin), field artillery. Their immense weight, 2,600 pounds, made mobility difficult for the six horses required to pull it and its full caissons. A crew of six men usually manned each piece.

Capable of four canister shots per minute, Napoleons proved to be efficient killers of infantry. Firing canister at massed troops under 400 yards distance had a devastating effect as Union artillery proved on July 3 against Pickett's assault.

Napoleons had a low muzzle velocity due to its smooth bore design. Its range was short, under one mile (1700 yards) for solid shot and less for shell (1300 yards). The caisson chests carried 32 rounds of the four types of ammunition. Powder charge used for solid and shell was usually 2½ pounds of black powder.

An excellent example of a Napoleon in mint condition stands in the museum area of the Cyclorama Center.



WHITWORTH RIFLE The forerunner of modern artillery, breech-loading Whitworths greatly increased the range of artillery. As a breech-loader, tighter rifling was possible as the shell did not need to be rammed the length of the barrel as in a muzzle-loader. The result was ranges up to five miles.

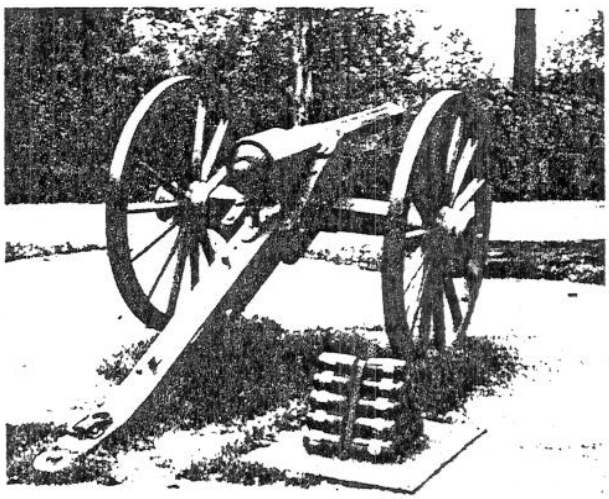
Brought through the blockade from England, these advanced guns were never available in sufficient numbers to the South. Union artillerymen had decided the breech-loader to be of little value and never employed them in great numbers. The North had none at Gettysburg.

The Whitworth fired an elongated twelve-pound shell with a peculiar whine that distinguished it from the lower velocity muzzle-loaders.

Two Whitworths on the field are located to the left of the Peace Light Memorial. They are easily recognized by their unusual breech mechanism.

PARROTT RIFLES The Parrotts were muzzle-loading rifles, distinguished by their cast barrels with a reinforcing band of wrought iron around the breech. Ten-pounders were the widest used, with a barrel weight of only 900 pounds and a range of 6,000 yards (3 miles).

Twenty-pounders were classed as light seige or heavy field artillery. Their weight made mobility difficult at no increase in range over a ten-pounder.



3-INCH ORDNANCE RIFLE Made by wrapping boiler plate around a core, 3-inch rifles were light weight and long ranged. With a barrel weight of only 820 pounds, it became the exclusive weapon of the fast moving Horse Artillery. As a favorite of many regular army batteries, it became known as the Ordnance.

The 3-inch Ordnance was a muzzle-loader with a range of about 4,000 yards (2 miles). Its ammunition chests carried a substantial 50 rounds.

ARTILLERY ORGANIZATION

Union Chief of Artillery: Brig General Henry J. Hunt

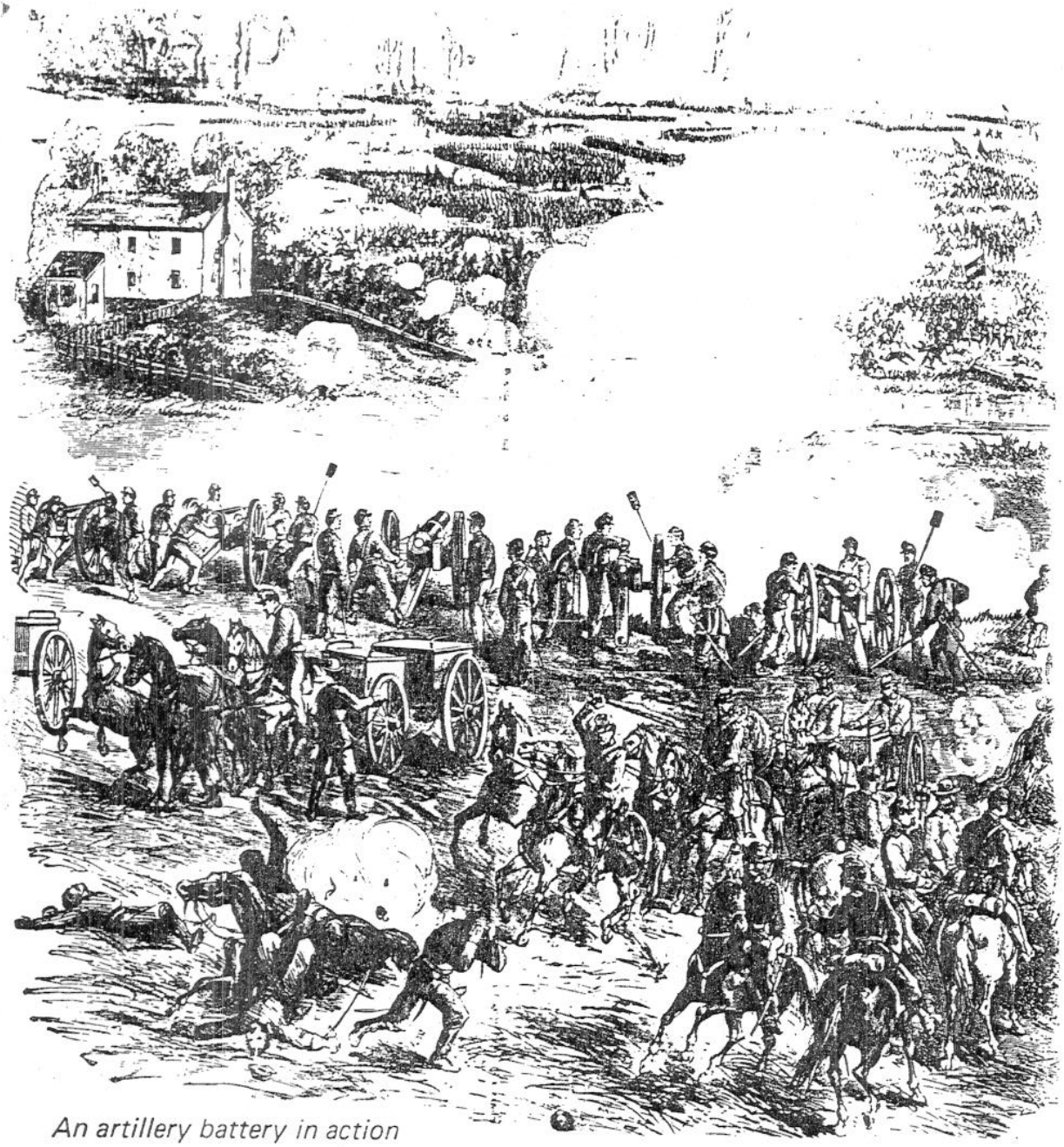
Each infantry corps was assigned one artillery brigade; the cavalry corps assigned two artillery brigades, and five brigades went into the Artillery Reserve under the command of Brig General Robert Tyler. Generally, there were five or six batteries to an artillery brigade. The Union forces had 68 batteries present at Gettysburg for 362 cannons.

A Union battery usually consisted of six guns divided into three, 2-gun sections (left, middle and right section). The guns in a battery were of the same type making ammunition supplies easier to maintain. About 100 men were required to man a Union battery.

Confederate Chief of Artillery: Brig General William Pendleton

Confederate artillery was also divided among the Corps with a smaller Artillery Reserve. The Southern forces also had 68 batteries present, but since a Confederate battery had just four guns, they unlimbered only 272 cannons.

Southern batteries were of mixed types of guns, making ammunition supply extremely difficult. A force of 65 men maintained a Confederate battery.



An artillery battery in action

Caisson and limber