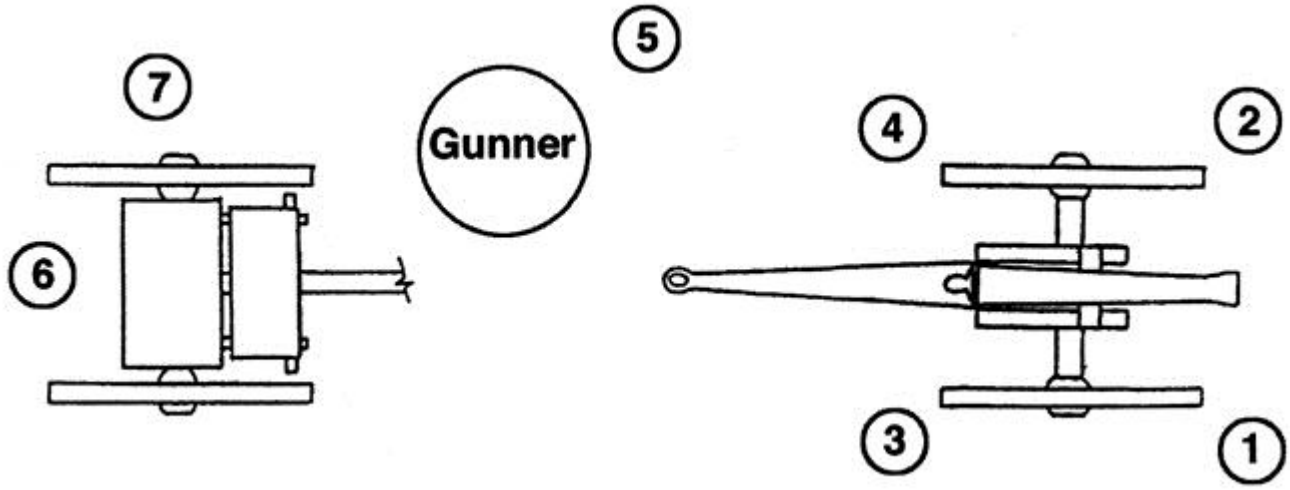
ARTILLERY

Civil War field artillery was generally organized into batteries of four to six guns. Regulations prescribed a captain as battery commander, while lieutenants commanded two-gun "sections." Each gun made up a platoon, under a sergeant ("chief of the piece") with eight crewmen and six drivers.

For transport, each gun was attached to a two-wheeled cart, known as a limber, and drawn by a six-horse team. The limber chest carried thirty to fifty rounds of ammunition, depending on the type of guns in the battery. In addition to the limbers, each gun had at least one caisson, also drawn by a six-horse team. The caisson carried additional ammunition in its two chests, as well as a spare wheel and tools. A horse-drawn forge and a battery wagon with tools accompanied each battery. A battery at full regulation strength, including all officers, noncommissioned officers, buglers, horse holders, and other specialized functions, might exceed 100 officers and men. With spare horses included, a typical six-gun battery might have about 100 to 150 horses.

A battery could unlimber and fire an initial volley in about one minute, and each gun could continue firing two aimed shots a minute. A battery could "limber up" in about three minutes. Firing was by "direct fire," that is, fire in which the target is in view of the gun. The prescribed distance between guns was 14 yards from hub to hub. Therefore, a sixgun battery would represent a normal front of little over 100 yards. Depth of the battery position, from the gun muzzle, passing the limber, to the rear of the caisson, was prescribed as 47 yards. In practice these measurements might be altered by terrain.

During firing, cannoneers took their positions as in the diagram below. At the command "commence firing," the gunner ordered "load."



While the gunner sighted the piece, Number 1 sponged the bore; Number 5 received a round from Number 7 at the limber and carried the round to Number 2, who placed it in the bore. Number 1 rammed the round to the breech while Number 3 placed a thumb over the vent to prevent premature detonation of the charge. When the gun was loaded and sighted, Number 3 inserted a vent pick in the vent and punctured the cartridge bag. Number 4 attached a lanyard to a friction primer and inserted the primer in the vent. At the command "fire," Number 4 yanked the lanyard. Number 6 cut fuzes for exploding shells (if needed). The process was repeated until the command was given to cease firing.

Typical Civil War Field Artillery

Weapon	*Tube Composition*	*Tube Length (in inches)*	*Effective Range at 5° Elevation (in yards)*
6-pdr smoothbore field gun 3.67 in. dia. bore	bronze	60	1,523
12-pdr smoothbore field howitzer 4.62 in. dia. bore	bronze	59	1,680
10-pdr Parrot rifle	iron	78	1,950
3-inch ordnance rifle 3.0 in. dia. bore	iron	73	1,835
12-pdr James rifle 3.67 in. dia. bore	bronze	69	1,700
30-pdr Parrot rifle 4.2 in. dia. bore	iron	133	2,200

***Note*: Cannon were generally identified by the wieght of their solid iron round shot, although some, like the 3-inch ordnance rifle, used the diameter of the bore for identification.**

Sources: Henry L. Abbott, *Siege Artillery in the Campaigns Against Richmond With Notes on the 15-inch Gun*, Professional Papers 14 (Washington, D.C.: Government Printing Office, 1867); Alfred Mordecai, *Artillery for the United States Land Service as Devised and Arranged by the Ordnance Board. Including Drawings and Tables of Dimensions of the Ordnance for the Land Service of the United States, 1841*. (Washington, D.C.: J. & G.S. Gideon, 1849); *Instruction for Field Artillery. Prepared by a Board of Artillery Officers*. (Philadelphia, Pa.: J. B. Lippincott, 1863).

Artillery Projectiles

Four basic types of projectiles were employed by Civil War field artillery: solid shot, shells, case shot, and canister.

Shot

Bolt

Solid Projectiles

Round (spherical) projectiles of solid iron for smoothbores were commonly called cannonballs or shot. When elongated for rifled weapons, the projectile was known as a bolt. Solid projectiles were used against opposing batteries, wagons, buildings, etc., as well as enemy personnel. While shot could ricochet across open ground against advancing infantry or cavalry, bolts tended to bury themselves upon impact with the ground and therefore were not used a great deal by field artillery.

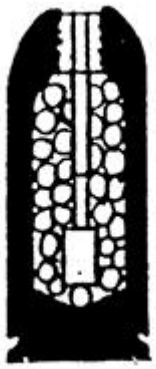
Spherical shell

Rifled shell

Shell

The shell, whether spherical or conical, was a hollow iron projectile filled with a black powder bursting charge. It was designed to break into several ragged fragments. Spherical shells were exploded by fuzes set into an opening in the shell, which ignited the shell near the intended target. The time of detonation was determined by adjusting the length of the fuze. Rifled shells were detonated by similar timed fuzes or by a percussion fuze detonating the shell upon impact.

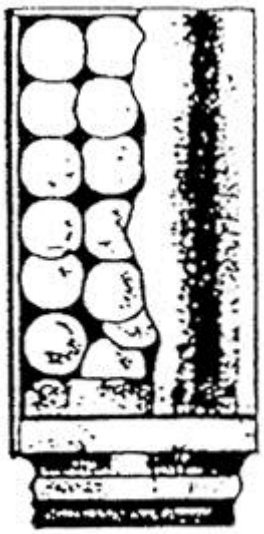
Spherical case shot



Rifled case shot

Case Shot

Case shot had a thinner wall than a shell and was filled with a number of small lead or iron balls (27 for a 12-pounder). A timed fuze ignited a small bursting charge inside the shell, which fragmented the casing and scattered the contents in the air. Case shot was intended to burst from 50 to 75 yards short of the target, the fragments being carried forward by the velocity of the shot.



Canister

Canister

Canister consisted of a tin cylinder in which was packed a number of iron or lead balls. Upon discharge the cylinder split open and the smaller projectiles fanned out. Canister was an extremely effective antipersonnel weapon, with an effective range of 400 yards. In emergencies double loads of canister could be used at ranges less than 200 yards, using a single propelling charge.