

Smoothbores, Napoleons, and Civil War

by Gene Enders

“Schnell! Schnell! Bringt doch diesen Kanon hierher! Jetzt! Schnell!”

To the New England mill hand soldiers of the Army of the Potomac these words were incomprehensible, but to the Cincinnati Deutschlanders of Battery I, they were as clear as a church bell on Sunday morning. Doing the yelling was Hubert Anton Casimir Dilger, late of the Grand Duke’s Horse Artillery, trained at the Karlsruhe Military Academy, and like so many other European professional soldiers, he had taken a leave of absence and come to America to get into the only war available at the moment. He assumed command of Battery I when its commander was invalidated out in September, 1862, and he remained in the post until June 13th, 1865 when the battery mustered out.

At the beginning of the war, most Union field artillery batteries consisted of six guns commanded by a captain such as Dilger and broken down into three sections, each section commanded by a lieutenant. A section consisted of two platoons – each platoon consisting of a gun and its caisson, a nine-man gun crew commanded by a sergeant and two corporals and the drivers and horse handlers. Dur-

ing combat, another lieutenant commanded the line of caissons at the rear of the battery. As the war progressed, alternative configurations in the number of guns, their mixture of weights, and their usage changed based upon need. The Confederate Army was the most creative due to a chronic lack of equipment for which standardization was non-existent, creating a logistical nightmare for their quartermasters.

Additional personnel supported the battery. Orderly and quartermaster sergeants, bugler and guidon-bearer each had their uses, as did the “artificers,” blacksmiths, and mechanics, who kept everything operational; but it was the horsemen who made things move. A six-pounder battery normally had 14 six-horse teams plus seven spare horses, while the larger 12-pounder battery had 20 six-horse teams plus ten spare animals.

Drivers rode the left horse of each two-horse team when pulling equipment; the gun crews generally walked or rode the limber’s and caisson’s ammunition chests if they were in a real hurry – a real trick holding on, given 19th-century American dirt roads – and a real butt buster to boot. Addi-



Field artillery at Gettysburg Battlefield

tional teams pulled the battery wagons that carried equipment and forage for the animals. Their drivers dealt with the animals while the gun crews were serving their pieces.

The standard field piece of the American Civil War was the Model of 1857 "Napoleon" smoothbore cannon. Slightly smaller in all dimensions and 530 pounds lighter, but equal in performance to the previously used Model of 1841-1844, it was usually made of bronze, a mixture of copper and tin, or of brass, a mixture of copper and zinc, and on rare occasions, of cast black iron, a brittle metal that was prone to exploding when used for gun barrels.

During the 19th century, cannon were not classified by caliber or by diameter of bore but rather by "weight of metal," the weight of a solid shot that a particular cannon tube could fire. Commanders, particularly naval commanders, used "weight of metal" as a main criterion to decide if they could compete successfully against an opponent before opening fire. The largest muzzleloading smoothbore cannon in the war was the Union's Rodman that weighed 117,000 pounds, had a 20-inch bore, and could throw a 1080-pound ball 3.5 miles on a 100-pound charge of powder.

The two most common weights, however, were the six-pounder, more often found in Confederate batteries where economy was necessary due to endemic materiel shortages, and the 12-pounder, which became the standard – although 24- and 32-pounders could also be found. Three types of cannon tube – the howitzer, the Napoleon, and the gun – were used as field artillery utilizing these two

weights. With a bore of 4.62" for a 12-pounder cannon, the only difference in the three tubes was overall size. At 53, 66, and 78 inches in tube length, they weighed 788, 1227, and 1757 pounds respectively. Both the gun and Napoleon fired a 12.3 pound round ball using 2.5 pounds of black powder at a rate of two aimed rounds per minute; the effective range was 2000 yards with a horizontal deviation of three feet at 600 yards and 12 feet at 1200 yards. The howitzer used a single pound of powder to fire an 8.9-pound round ball of the same diameter.

On paper the deviation may seem substantial; in practice these pieces were lethally accurate. On Pine Mountain during the Atlanta Campaign, Leonidas K. Polk, Episcopal Bishop, Confederate General, officiate at the nuptials of John Hunt Morgan and Martha "Mattie" Ready, and discounter of the accuracy of a 12-pounder Napoleon from long range was unhorsed by a cannon ball through the body after repeated warnings from his staff about exposing himself unnecessarily.

Other forms of projectiles besides solid shot – shell, spherical case, and canister – were fired from these cannon depending upon the needed application. Shell was molded metal projectiles filled with a powder charge that would explode over an enemy position, sending lethal fragments to destroy structures or troops under cover. Spherical case, or shrapnel, was used against troops and consisted of a wood sabot with a tin canister on top filled with 78 musket balls packed in sulphur and a 4.5 ounce charge of black powder, known as a *burster*.

Both shell and spherical case were detonated by a fuse screwed into the base of the projectile. Known as a Borman



Smoothbore cannons in front of the 1st Ohio Light Artillery, Battery I monument, Howard Ave., Gettysburg Battlefield

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A battery of field artillery with their limbers, Gettysburg Battlefield

fuse, it was round, filled with black powder, with a thin disc of pewter, lead, or other soft metal marked in seconds, half- and quarter-seconds in between, which confined the powder inside the fuse casing. More art than science, the gunner would calculate the number of seconds needed to reach

the target, and then cut a slice in the disc at that time mark to expose the powder. Upon firing the round, the powder in the timer was ignited by the cannon charge and then burned until it reached the central charge in the fuse, which exploded and set off the burster charge in the projectile. No-



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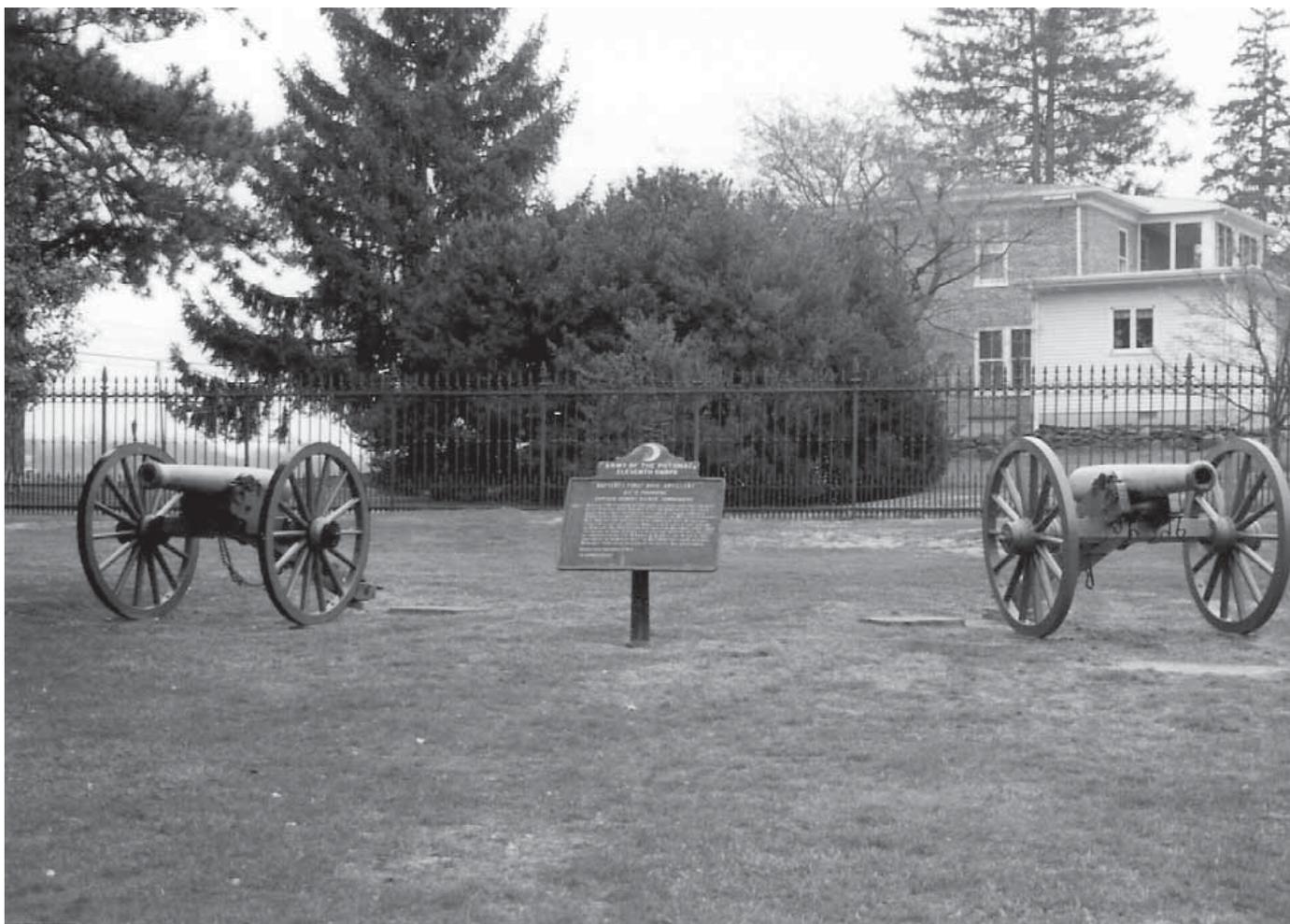
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Marker at the location of Battery I on Cemetery Ridge, Gettysburg Battlefield. Note the Administration Building for the original village cemetery behind the field pieces.

toriously inaccurate in every aspect, only about 75% of the time did the shell explode – and even less frequently at the proper time.

When engaging troops, artillery would begin sending spherical case at their assailants at around 1500 yards, exploding the shells over or in front of the troops. This created more of a morale effect than actual damage. As the troops switched to a quick step at 650 yards, the cannoneers would begin sending solid shot that could remove both limbs and lives, passing through several bodies at a time.

As the distance lessened to 350 yards, the artillery would switch to canister, also known as grapeshot. As its name implies, it was a container filled with golf-ball-sized metal balls fired by a charge of powder that turned the cannon into a giant shotgun. When ammunition ran out, anything at hand would go down the muzzle to be used as canister – nails, bits of metal, even large gravel. A single round of canister would cut gaping holes in any oncoming line of troops. At about 100 yards under canister troops would either cut and run or charge the cannoneers. If they charged, the guns would be “double shotted” with two rounds of canister on one charge of powder. The artillerists would continue firing until infantry support drove off the attackers or until their position was overrun; then it was sabers, handspikes, ramming staffs, and hand to hand combat to the bitter end.

There would be occasions, such as at Chancellorsville, when a battery would fight a rear-guard action either to

protect retiring troops or keep from losing their guns to the enemy. After Burnside’s debacle at Fredericksburg, his replacement Joe Hooker concentrated most of the Army of the Potomac on a southwest/northeast line centered on a crossroads called Chancellorsville. While Hooker dawdled, Lee took action. Defying the military thinking of the time, Lee split his force, leaving 20% to deal with a Union corps in his rear at Fredericksburg, and moved the rest west against Hooker’s main body. Lee then did what guaranteed his fame forever in military history – in the face of two-to-one superiority, Lee detached Jackson’s Corps to do an end run around Hooker’s right flank and attacked Howard’s XI corps, an action repeated with equal success by H. Norman Schwarzkopf 127 years later on the plains of Iraq. Succumbing to shock and overwhelming numbers, the Dutchmen of the XI Corps fled. Dilger’s battery slowed Jackson’s corps with a rear-guard action while the Army of the Potomac regrouped. Two months later, Dilger once more was called upon to cover the withdrawal of an overwhelmed XI corps when Henry Heth’s troops pushed them back through a small market town in Pennsylvania. For his actions at Gettysburg, the Army of the Potomac was able to reestablish itself on high ground at Cemetery Ridge and fend off two days of brutal assault by Lee’s forces. For his actions at Chancellorsville, Dilger received the Medal of Honor.

In *Arms and Equipment of the Civil War* Jack Coggins describes a retirement: “... The prolonges (a rope used to man-

handle gun carriages, with a hook at one end, a toggle at the other and ring just above the toggle) were passed up through the lunettes (fittings on the trail piece) and held by the toggles, while the rings were hooked over the pintles (a hook on the back of the limber for towing the gun carriage). The limbers moved to the rear, hauling the guns at the end of the prolonges with the cannoneers marching alongside. The guns could be loaded while in motion, and the teams halted just long enough for the guns to be aimed and fired." This would also be done by section or half-battery whereby they would "leap frog" each other which provided covering fire for the battery and the withdrawal.

Firing a Napoleon under these conditions was a well-cho- rographed ballet of nine men – a gunner and eight men num- bered one through eight. Training took attrition into account, and gun crews were taught to function with as few as two men. One and two handled the muzzle, three and four handled the vent, five and seven ran powder and projectiles, and six cut fuses and prepped shells while the Gunner handled the sight- ing. Number eight's duties weren't listed, but he was probably used as needed.

Coggins describes the loading and firing procedure: "At command 'Commence firing,' G orders "Load." One sponges. Two takes round from Five, puts it in gun. One rams round home, while Three holds thumb on vent. G sights gun. When round is in, three goes to trail, moves it as G orders "Trail Right" or "Trail Left." Five gets another round from six or seven at limber, where six cuts fuses.... G steps clear to side where he can observe effect of fire, gives command "Ready"; one and two step clear. Three pricks cartridge. Four hooks lanyard to primer, puts primer

in vent. Three covers vent with left hand, Four moves to rear, keeping lanyard just slack. "Fire": Threeer steps clear of wheel. Four pulls lanyard. G orders gun run up." Then the process would start all over again.

Sources & Further Reading

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