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Small but Deadly: The Minié Ball

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Abstract
When Claude-E'tienne Minié perfected the minié ball in 1849, it is doubtful he knew of the carnage that it would cause in the American Civil War some twelve years later. However, this small and compact bullet can teach us far more than simply the horrific bloodletting it caused on the battlefield itself. A closer analysis of the bullet's impact on the human body also reveals a deeper glimpse into Civil War hospitals, medicine, and an entirely new scale and scope of death with which Victorian Americans were forced to come to terms as the war's long casualty lists poured in from both on and off the battlefield. Considered by many to be a significant technological advancement in the 1840s for its supposedly marked increase in range and accuracy, this bullet was initially expected to have a revolutionary impact on battle tactics; however, as recent scholarship has shown, the ball's impacts were most significantly felt not in the number of men it felled on a battlefield, but in the severity of the wounds it inflicted on its targets. [*excerpt*]

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Comments
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Small but Deadly: The Minié Ball

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Minié balls (via Wikimedia Commons)

When Claude-E’tienne Minié perfected the minié ball in 1849, it is doubtful he knew of the carnage that it would cause in the American Civil War some twelve years later. However, this small and compact bullet can teach us far more than simply the horrific bloodletting it caused on the battlefield itself. A closer analysis of the bullet’s impact on the human body also reveals a deeper glimpse into Civil War hospitals, medicine, and an entirely new scale and scope of death with which Victorian Americans were forced to come to terms as the war’s long casualty lists poured in from both on and off the battlefield. Considered by many to be a significant technological advancement in the 1840s for its supposedly marked increase in range and accuracy, this bullet was initially expected to have a revolutionary impact on battle tactics; however, as recent scholarship has shown, the ball’s impacts were most significantly felt not in the number of men it felled on a battlefield, but in the severity of the wounds it inflicted on its targets.

The minié ball was primarily the invention of two French army captains, Claude-E’tienne Minié and Henri-Gustave Dolvigue, in 1849. To provide ease of use in combat situations, the minié ball was made slightly smaller than the intended gun bore so it could be pushed down the barrel with little resistance. The bullet was made out of soft lead, had a conical shape, and had anywhere from two to four rings at the base. These characteristics allowed the minié ball to expand and engage the rifling of the gun barrel

when it was fired, keeping the bullet on a straighter path. Such innovations did help to improve accuracy and slightly increased the range of the rifle musket over that of smoothbores, but the parabolic trajectory of the minie ball, combined with soldiers' deficient training and both preference as well as skill for short-range firing, ultimately prevented any significant increase in long-range use or accuracy on the battlefield.

In 1855, the United States Army, under the direction of Secretary of War Jefferson Davis, adopted the minié ball and the rifled musket. The effectiveness of the rifled musket and minié ball were proven in the Crimean War in the 1850s when French and British forces used them against Russia's smoothbore muskets. In the United States, the two most popular rifled muskets were the .69 caliber Harpers Ferry and the .58 caliber Springfield. When the Civil War erupted in the Spring of 1861, both sides still relied on the older and outdated smoothbore muskets because of the time and money it took to produce the new weapons. However, as the war progressed, the new rifled musket and minié ball phased out the smoothbore muskets. In terms of production of this new weaponry, the North had the upper hand. By 1860, about 90% of the United States manufacturing output came from the North. During the war, the North produced 32 times the number of firearms as the South did; for every 100 firearms the South manufactured, the North produced 3,200. In addition to having superior manufacturing capabilities, the North also had the advantage of more efficient transportation. The North housed around 70% of the nation's railroads, which meant that it could transport weapons and ammunition to the front lines faster than the South could. With superior manufacturing capabilities, the North was able to equip its men on the front lines with this new technology faster and quicker than the South, thus gaining a slight technological advantage over the South.

The evolution and expanded use of the minié ball made many military commanders believe it would be necessary to overhaul military tactics. The range of the rifled musket was 300 yards to a ½ mile, whereas the range of a smoothbore musket was only 50 to 200 yards. In reality, though, both weapons were most effective in the same range of about 100 yards. The rifled musket could not take full advantage of its increased range because of the arc the minié ball travelled on, which created two killing zones. The first killing zone occurred in the first 100 yards and the second from 240 to 350 yards. Soldiers were relatively safe from roughly 100 to 240 yards because the arc of the minié ball, which made the bullet travel over their heads. With intense training, soldiers could accommodate for this arc, but they rarely received that much training and thus they could not take full advantage of the improved range of the rifled musket. Additionally, attacking troops quickly learned how to more efficiently navigate their ways through these two killing zones, thus reducing the number of possible casualties. However, within those killing zones, the impact of the minie ball could be catastrophic, especially to long, thin lines of attacking soldiers. Although successful in numerous Civil War battles such as Gaines' Mill and Kennesaw Mountain, frontal assaults, if not properly executed and coordinated, could become suicidal in the Civil War, as can be seen through General Burnside's attack on Marye's Heights, at the Battle of Fredericksburg, in December 1862, and Pickett's Charge, at the Battle of Gettysburg, in July 1863. At

Fredericksburg, attacking Union forces suffered 12,500 casualties and in Pickett's Charge alone, Confederate forces suffered over 6,000 casualties.

The improved military technology also led to evolution in the care offered at Civil War hospitals in order to keep up with the thousands of casualties that resulted when the minie ball did indeed hit its target. The soft lead of the minié ball caused the ball to flatten out upon hitting its target, and when the target was a human body, the bullet shattered bones and destroyed tissue in catastrophic ways. The increasingly grisly damage of the minie ball led to the high number of amputations performed at Civil War hospitals. Also, when a minié ball entered the human body, it could carry with it any foreign matter it picked up from the uniform, which meant a greater risk of infection. Although, over the course of the war, doctors developed a greater sense for some of the underlying causes of the rampant diseases that claimed the majority of Civil War soldiers' lives, gangrenous wounds often spelled a death sentence for many men. Thus, the minié ball was responsible for a majority of combat casualties, with minie ball-induced amputations responsible for 3 out of 4 operations performed at Civil War hospitals.

Although the minié ball did not change military tactics as much as anticipated, it would be hard to argue to soldiers that the ball did not have a tremendous impact on their lives. For the many soldiers who were hit by a minié ball, or who lost comrades to the small scrap of lead, their lives were forever changed. Wounds caused by the bullet were often severe and, in many cases, required amputations, which left Victorian Americans, both civilians and soldiers, with the difficult task of coping with horrific and disfiguring injuries and long casualty lists. When added to the seemingly endless deaths soldiers succumbed to through disease, torturous, minie ball-inflicted fatalities further challenged Victorians' conceptions of "the Good Death" and their reckoning with the graphic suffering they were forced to endure for four long years on behalf of cause and country. Wounded soldiers also faced the difficult task of integrating back into a post-war society. The minié ball may seem small and insignificant, but it had many far-reaching impacts that extended well beyond the battlefield and that still fascinate scholars and the American public today.

Sources:

Arrington, Benjamin T. "Industry and Economy during the Civil War."National Park Service. U.S. Department of the Interior.

Hess, Earl J. *The Rifle Musket in Civil War Combat: Reality and Myth*. Lawrence, KS: University Press of Kansas, 2008.

Howey, Allan W. “The Rifle-Musket and the Minié Ball.” HistoryNet. World History Group.
Oct. 1999.

Reimer, Terry. “Wounds, Ammunition, and Amputation.” National Museum of Civil War
Medicine. Nov. 9, 2007.

“The Civil War in America: April 1862-November 1862.” Library of Congress.