



B156 Firearms Artifacts From the Fetterman Battlefield

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After attending this presentation, attendees will learn about the application of criminalistic techniques to the examination of historical artifacts. Attendees will also learn about how to remove calcareous concretions from cartridge cases and bullets without damaging firing pin impressions or land and groove engraving.

This presentation will impact the forensic community and/or humanity by presenting to the forensic community the oldest firearms evidence ever successfully matched using a comparison microscope. It will show that even very old firearms evidence may be successfully examined.

In 1866 the U.S. Army established a series of forts in Dakota Territory. These forts were intended to provide a degree of protection from Indian attacks for civilians traveling on the Bozeman Trail to the gold fields in what is now southern Montana. The Sioux and their Cheyenne allies were enraged by this incursion into the primary hunting grounds ceded to the tribe under the Fort Laramie Treaty of 1851. The U.S. forces guarding the Bozeman Trail had their headquarters at Fort Phil Kearney in what is now northern Wyoming. Four companies of the Second Battalion of the 18th U.S. Infantry and C Company of the 2nd U.S. Cavalry garrisoned the post under the overall command of Col. Henry B. Carrington, 18th U.S. Infantry. The Indians routinely attacked wood cutting parties who were procuring wood for building and domestic use at the post. On December 21, 1866, a woodcutting party came under attack several miles west of the fort and Col. Carrington dispatched a relief force under the command of Capt. William J. Fetterman, A Company, Second Battalion, 18th U.S. Infantry. Capt. Fetterman's detachment consisted of two other officers, forty-nine infantrymen, twenty-seven cavalrymen, and two civilians. Instead of moving directly to the relief of the woodcutters, Capt. Fetterman and his men pursued parties of mounted Indians over a ridge north of the fort. Fetterman's force was ambushed as it moved along the Bozeman trail and Fetterman and all of his men were killed. This was the worst disaster suffered by the post-Civil War U.S. Army prior to the Battle of the Little Big Horn.

The site of the Fetterman Battle has several features that make it an almost ideal subject for battlefield archaeology. Documentary information about the course of the battle is limited; the battlefield has been isolated for most of the intervening time since the battle; and the two sides used different types of weapons. The Indians used mainly bows and arrows and smoothbore muskets, while the U.S. Army forces were armed with Spencer repeating carbines, Springfield rifled muskets and various types of pistols. Firearms-related artifacts were recovered from the battlefield in 2002 and 2004. These artifacts included the following items: (1) expended cartridge cases fired in the Spencer repeating carbines carried by the cavalry; (2) fired bullets from Spencer repeating carbines; (3) fired bullets from .58 cal. Springfield rifled muskets carried by the infantry; (4) expended percussion caps for the rifled muskets; and (5) pistol bullets fired from various caliber pistols (presumably the side arms of the officers and troopers). It was hoped that examination of these artifacts would shed light on the course of the battle. In order to do this, expended cartridges and percussion caps fired from the same weapon would have to be matched using forensic firearms examination techniques. It was first found necessary to develop a cleaning method to remove calcareous deposits from bullets and cartridges. Once these deposits were removed the microscopic details of firing pin impressions and rifling marks could be examined. At the present time three groups of expended Spencer cartridges have been matched. This is the oldest firearms evidence to be successfully matched by their firing pin impressions. Expended percussion caps fired from the same weapon have also been identified.

Firearms, Archaeology, Microscopy