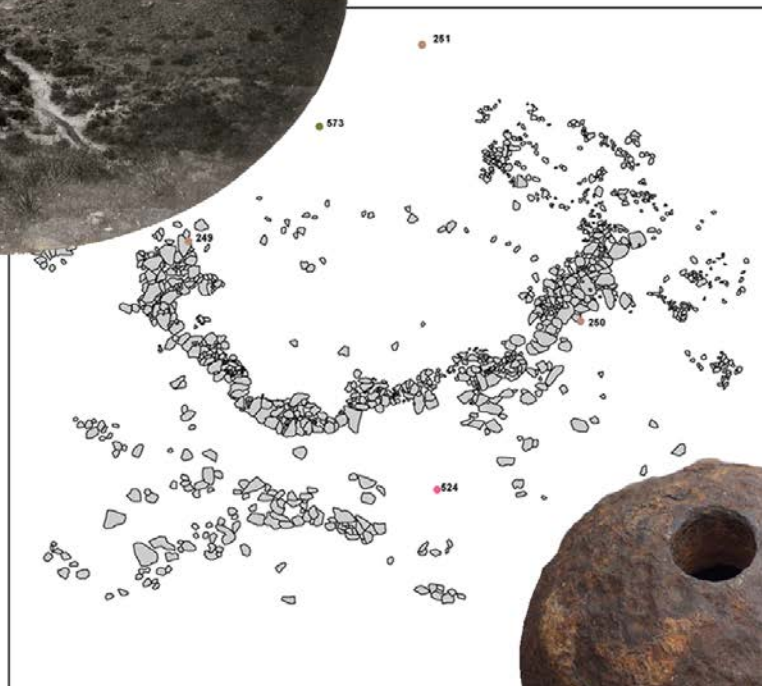




Archeological Findings of the Battle of Apache Pass, Fort Bowie National Historic Site

Non-Sensitive Version

Natural Resource Report NPS/FOBO/NRR—2016/1361



**ON THIS PAGE**

Photograph (looking southeast) of Section K, Southeast First Fort Hill, where many cannonball fragments were recorded. Photograph courtesy National Park Service.

ON THE COVER

Top photograph, taken by William Bell, shows Apache Pass and the battle site in 1867 (courtesy of William A. Bell Photographs Collection, #10027488, History Colorado). Center photograph shows the breastworks as digitized from close range photogrammatic orthophoto (courtesy NPS SOAR Office). Lower photograph shows intact cannonball found in Section A. Photograph courtesy National Park Service.

Archeological Findings of the Battle of Apache Pass, Fort Bowie National Historic Site

Non-sensitive Version

Natural Resource Report NPS/FOBO/NRR—2016/1361

Larry Ludwig
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Fort Bowie National Historic Site
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December 2016

U.S. Department of the Interior
National Park Service
Natural Resource Stewardship and Science
Fort Collins, Colorado

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Acronyms and Abbreviations

AAAG	Acting Assistant Adjutant General
Bros	Brothers
Cat. No.	catalog number
Co	Company
CSA	Confederate States of America
CV	California Volunteers
Dept	Department
HS	Historic Structure
Inft	Infantry
LS	letters sent
Mfg	Manufacturing
N, No	number
NARG	National Archives Record Group
NC	not collected
NHS	National Historic Site
NPS	National Park Service
Phil	Philadelphia
sq in	square inch
SEAZ	Southeast Arizona Group
WACC	Western Archeological and Conservation Center

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If I have inadvertently missed anyone I apologize and thank them for their help. If, after all of the excellent guidance and help I received, I have made mistakes, the responsibility is mine.

Introduction

Background

On July 10, 1862, an advance element of approximately 126 California Volunteers left Tucson and marched east, toward San Simon, Arizona Territory, under command of Captain Thomas L. Roberts, 1st Infantry California Volunteers. On arriving at Apache Pass, New Mexico Territory, 94 of them engaged 140–150 Chiricahua Apaches under Mangas Coloradas and Cochise in a battle for Apache Spring. Beginning with an ambush on the rear of the command, about one half-mile west of the abandoned Butterfield Stage Station, the initial action lasted only 15–20 minutes but cost the lives of one soldier and four Apaches (National Archives Record Group 94 Letters Sent [NARG94LS], report, Roberts to A.A.A.G., Dept. of AZ, 19 July 1862, Bowie, AZ). Infantrymen and at least one shot from a mountain howitzer drove the Apaches away.

After the initial confrontation, the infantry deployed as skirmishers on each side of the howitzers and pushed forward toward Apache Spring and the water they so desperately needed. Four hours of hard fighting by the infantry and use of the two howitzers drove the Apaches from their fortified hillside positions (Fountain 1891). Another soldier and several more Indians were killed in the process. Not having adequate forces to hold the hills above the spring, protect the train at the stage station, and send a detachment back to Ewell Springs to help bring forward the rest of the train and command to Apache Pass, Roberts abandoned his hillside positions for the night.

Because of the lack of numbers, troops were forced to repeat their performance the next day in order to obtain water for the next leg of their journey. Once again, howitzers and infantry deployed, and after a short skirmish the Apaches retreated, thus ending the Battle of Apache Pass (Roberts 1862). History has led us to believe that without the howitzers, the Apaches would have annihilated the California troops.

Several written accounts provide the basis for understanding this important battle. Albert J. Fountain, Company E, 1st California Infantry, a sergeant during the engagement, provided perhaps the best first-person account of the battle (Figure 1). Fountain led an adventurous life as a newspaper correspondent, soldier, scout, Indian fighter, and, later, a Texas state senator and lawyer (Thrapp 1988:512–513). He played an important role in New Mexico's history. Historians of the Indian Wars are familiar with Fountain's account of the battle in the November 15, 1908, issue of the *Arizona Star*, which appeared after his death. However, Fountain's most detailed account of the event appeared in the *Rio Grande Republican* on January 2, 1891. Fountain's version gives a detailed account of troop deployments and tactics used during the battle. It correlates well with other historical accounts. Field observations tend to confirm the accuracy of Fountain's 1891 account, but provide additional information and a somewhat different interpretation of the battle.



Figure 1. Albert Jennings Fountain, 1883. New Mexico State University Library, Archives and Special Collections.

But is the accepted interpretation of the event accurate? Employing archeology is a way of finding physical evidence of the fight and how it supports, or does not support, the historic record. The physical evidence and the patterns it produced can be used to evaluate and better interpret the historic accounts, providing a more complete understanding of the past and providing park staff with the information they need to properly manage, preserve, and interpret the site. In this case, the results of a site survey helped to expand three areas of battle knowledge: they determined the extent to which artifactual evidence supports the historic record, they defined the actual boundaries of the site/sites, and they established artifact density.

Study Purpose and Methods

This project was conceived from a need to gather information on an 1862 Apache Wars battle site. It was performed to pinpoint battle-event locations and to verify the accuracy of the historic record. The findings of the survey have also improved the accuracy of interpretation at the site and provide information crucial to natural resource management and planning.

The project consisted of a metal-detector survey of the entire site. A small crew, consisting mainly of professional archeologists who provided their expertise as volunteers, performed the survey of known areas of the Apache Pass Battle Site. The project began in May 1996 and initially ran for three or four days. Conducted intermittently until its conclusion in 2015, the project moved slowly, with little funding.

Areas to be surveyed were determined by studying the historical record and relying on previous observations of surface artifacts. The areas were surveyed using metal detectors, and artifacts were flagged. Due to the composition of the soil, which in most cases is rocky with little topsoil, many of the artifacts were found either on or within two inches of the surface. After a unit was surveyed, the artifacts were studied (weighed and measured if necessary), recorded, mapped, and flags removed. No collection was performed. For the initial survey, the park used a transit, stadia rod, and tape measures to point-provenience the artifacts.

Findings and Significance

Items observed on the 11-acre tract of land included .58-and .52-caliber bullets, which are representative of the Model 1855 Springfield rifle and the Sharps carbine carried by the infantry and cavalry of the California Column; percussion caps; and shrapnel balls, friction primers, and spherical case and shell fragments. Survey results were compiled into this report.

This survey provided the answers to some basic questions, including, What type of howitzer ammunition was used? What type of weapons did the Apaches use? How accurate was the howitzer and small arms fire? and How could Sergeant Fountain and his 20 men capture a heavily defended Apache firing position on Overlook Ridge without casualties? Altogether, the data collected provided the information necessary to analyze the accuracy of historic accounts.

The archeological survey of the known site and adjacent areas established boundaries for the entire site and locations of firing positions relevant to the battle (Figures 2 and 3).



Southeast Arizona Group

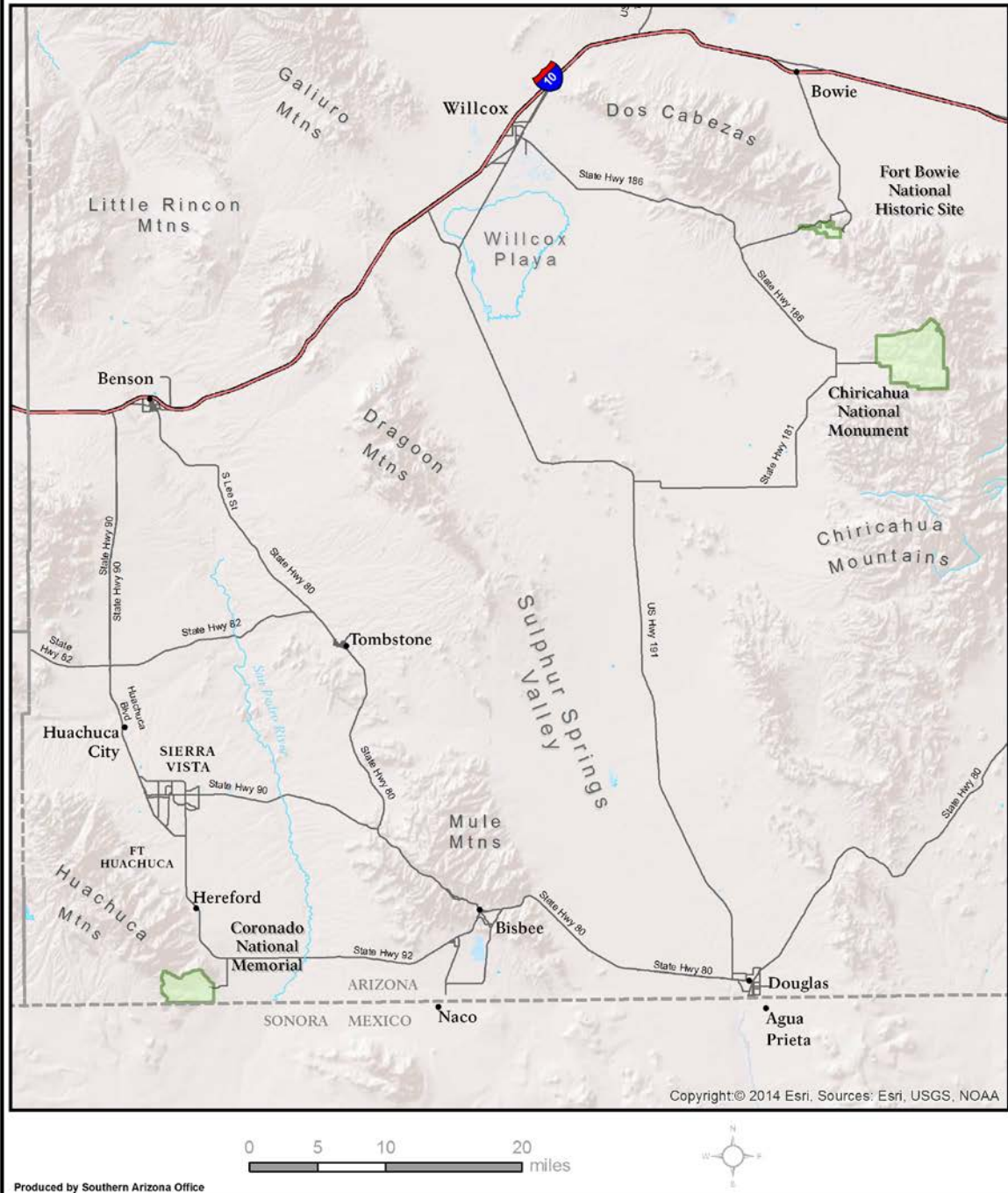


Figure 2. Location of Fort Bowie National Historic Site, southeast Arizona.

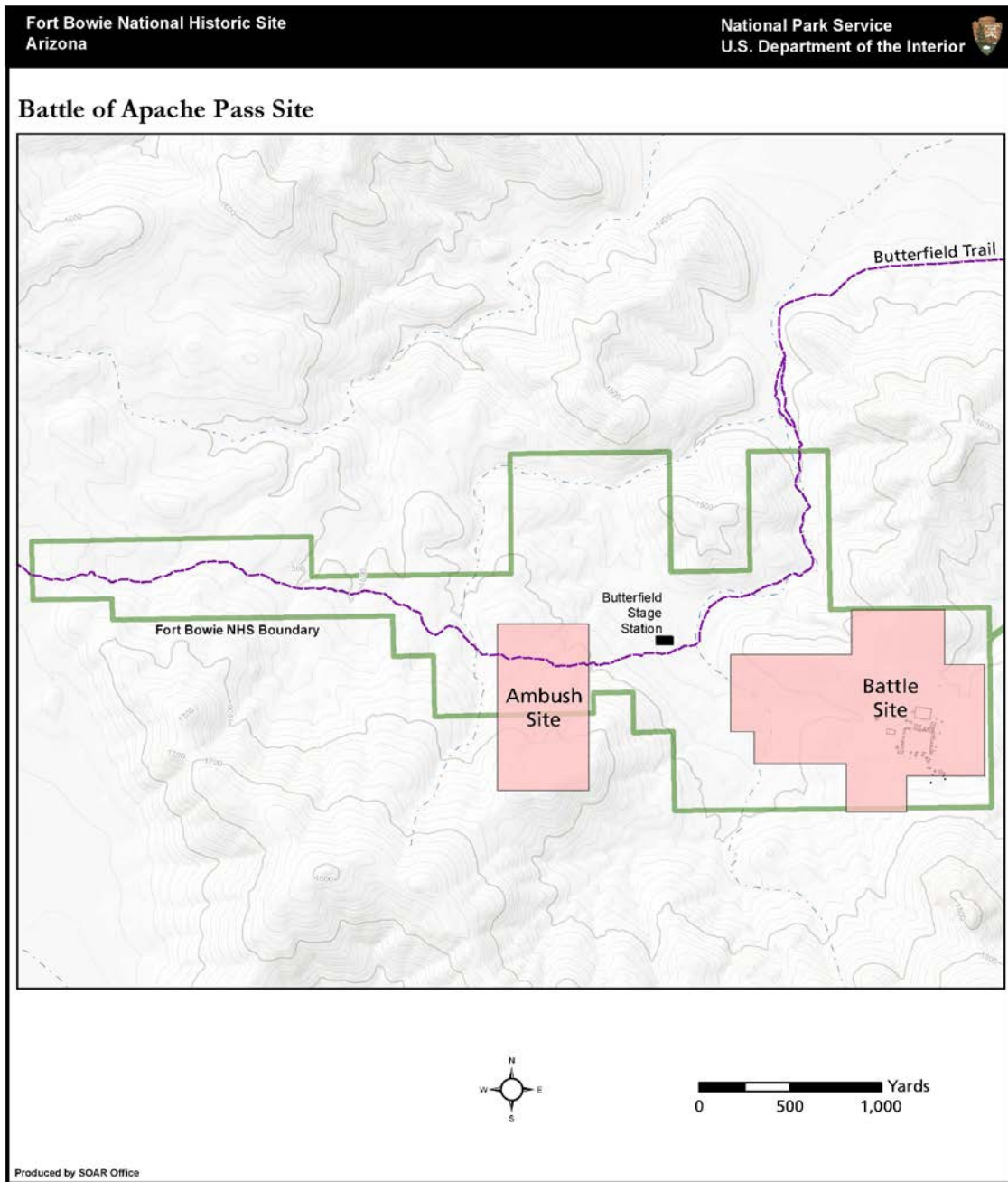


Figure 3. Battle of Apache Pass site.

The historic record provides information about the progression of the battle but little or no information about where and how it happened. No field work had been previously performed to locate specific sites within the battle site. Without this information (i.e., before the survey), park staff interpreted a battle site approximately half the size of that described by Sergeant Fountain, and the exact location of the ambush site was unknown. This survey answered questions that had been

interpreted vaguely because event locations were unknown: Was the ambush site really one half-mile west of the stage station? What were the locations of Apache and soldier firing positions? How much of Overlook Ridge was utilized during the fighting? Where were the mountain howitzers positioned?

The survey also established artifact densities, providing a better understanding of the flow of battle and the tactics used. High-density artifact scatters not only defined the areas of heaviest fighting but also gave clues to finding and recognizing other high-density areas. Conversely, low-density areas, or areas void of artifacts, were eliminated from further investigation. Priority areas for future field work can now be established as time and personnel permit. Information gained from this project provides enough data to perform comparative studies on tactics, armament, and equipment between this and other Apache Wars battle sites, such as the studies done at K-H Butte approximately 55 miles northwest of Fort Bowie (Ludwig and Stute 1993) and Last Chance Canyon in New Mexico (Adams et al. 2000).

The information provided by this project is also crucial for effective natural resource management and planning in the park. For example, some of the survey's early findings revealed the need for a mesquite-reduction program. Mesquite had grown so thick in some areas that visitors were having a difficult time understanding how some of the events had taken place in such dense brush. In response, park staff performed reduction and restoration on nearly 32 acres of land along the access trail through the battle site. Through manual reduction of mesquite, which allowed native grasses to reestablish, the land was restored to an appearance more similar to that at the time of the battle.

Fire-management planning was also improved by the findings of the battlefield archeology survey. Before the survey, park staff had understood the size of the battle site to be approximately half its actual perimeter, and the location of the ambush site was unknown. Some of the artifact areas identified during the survey were found in heavy vegetation that could be expected to burn much hotter than much of the rest of the site. Such intense levels of heat could have had negative impacts on the artifacts, had they remained undiscovered. Knowing their location, however, will allow park managers to adjust any plans for prescribed burning accordingly. At the ambush site, many of the artifacts are on the surface and are made of materials, such as thin brass, that could have been similarly impacted by fire in the absence of the documentation provided by this survey.

The degree to which the site has been vandalized or, as past employees have said, "picked over," was also ascertained. Before Fort Bowie National Historic Site was authorized in 1964, relic-hunting was commonplace. Fortunately, metal detectors at that time were poor. Under the protection of the National Park Service, the high-tech metal detectors developed in recent years are not allowed to be used in the park. The limited human impact on the site does not appear to have had a significant impact on the data collected.

This document is divided into three parts. Part 1: History of the Battle of Apache Pass, compiles the historical accounts and documentation of the event. This section is formatted according to historical documentation standards, and includes footnotes and a bibliography. Part 2: Archeology of the Battle of Apache Pass, includes site description, survey methods, artifact identification, and interpretation of survey sections. Part 3: Appendices, includes written historical accounts and further information

on the battle. Many of these appendices were reproduced from historical written accounts and include spelling and grammar errors from the original authors. These were kept to preserve the integrity of the original accounts.

This project was supported by the Western Archaeological and Conservation Center, the Archaeological Division of the Southern Arizona Group Office, and numerous park superintendents.

Part 1: History of the Battle of Apache Pass

Although thousands of miles separated the American Southwest from the eastern battlefields of the Civil War, the war strongly influenced the western frontier. It also affected the establishment of Fort Bowie. By July 23, 1861, Lieutenant Colonel John R. Baylor¹ put the Confederacy's plan to invade New Mexico Territory (which included Arizona) into action.

Baylor directed the main thrust up the Rio Grande River, with the intent of capturing military supplies at Union forts along the way. His ultimate goal was the mineral wealth of Colorado. On January 27, 1862, Brigadier General Henry Hopkins Sibley,² then commander of the Confederate forces in New Mexico, ordered a second column west, under command of Captain Sherod Hunter,³ to occupy Tucson, which they accomplished on February 28. The Confederacy hoped Tucson would provide a base for eventual invasion of California's gold fields and open seaports.⁴

¹ John Robert Baylor was born in Kentucky in 1822 but had moved to Texas by his eighteenth birthday. A large man, standing six foot three inches and weighing 230 pounds, Baylor possessed a bad temper and a hatred of Indians. Before the war, he had been employed as a farmer, Indian fighter, and agent, and he had served in the Texas State Legislature. With the outbreak of the war, he was appointed lieutenant colonel of the 2nd Texas Mounted Rifles, which he commanded during the invasion of New Mexico. During the Confederate occupation of New Mexico, he became the Confederate governor of the state. He died of natural causes on February 6, 1891. L. Boyd Finch, *Confederate Pathway to the Pacific: Major Sherod Hunter and Arizona Territory, C.S.A.*, 70–71, 238.

² Henry Hopkins Sibley was born in Louisiana on May 25, 1816. Graduating from the United States Military Academy in 1838, he was assigned to the 2nd Dragoons, where he was promoted to captain by 1847. During the war with Mexico, he was brevetted major for gallant and meritorious service in action near Vera Cruz. Sibley invented the stove and tent that bear his name and were used extensively by the Union Army. He took part in what was termed the "Mormon War" in the mid-1850s, and campaigned against the Navajo. In May 1861, he resigned to join the Confederate Army, and was appointed a brigadier general. Sibley commanded the Confederate troops during the invasion of New Mexico. He died on August 23, 1886. Francis B. Heitman, *Historical Register and Dictionary of the United States Army, 1789–1903*, 886; Jerry Thompson, *Henry Hopkins Sibley: Confederate General of the West*, 4, 30, 174, 177, 216–219.

³ Born on May 24, 1834, in Tennessee, Sherod Hunter spent his early years employed as a store clerk. In 1855, he married Mary E. Goodrich, who died two years later after giving birth to a son. Unfortunately, the boy only lived four months. By 1857, Hunter was farming along the Mimbres River in New Mexico. He joined the Arizona Rangers, a Confederate unit, in August 1861, and soon became a lieutenant and later a captain in Company A. Hunter led his men in the capture of Tucson on February 28, 1862. Promoted to major in the Texas Cavalry, he saw action in Louisiana and later rose to colonel. Refusing to be reconstructed after the war, Hunter moved to Mexico, and the events of his final years are unknown. Finch, *Confederate Pathway to the Pacific: Major Sherod Hunter and Arizona Territory, C.S.A.*

⁴ Ray C. Colton, *The Civil War in the Western Territories*, 4, 14, 25.

To combat this threat of invasion, California organized the California Column, which eventually comprised about 2,450 men under the command of Colonel James Henry Carlton.⁵ By mid-March, California troops began marching across the desert from Fort Yuma to Tucson. Although advance elements of the column had a skirmish with Captain Hunter's troops in Picacho Pass, resulting in casualties on both sides, the remainder had an uneventful march, reoccupying Tucson on May 20 without firing a shot.⁶

After nearly two months of resupplying in Tucson, Carlton's troops began preparation for their march to the Rio Grande. On the evening of June 15, three riders left Tucson for the Rio Grande with dispatches for Union Commander Colonel Edward R.S. Canby,⁷ informing him of the California Column's advance. The party consisted of Expressman John Jones; Sergeant William Wheeling, Company F, First California Infantry; and a guide, known only as Chavez.⁸

⁵ Born in Maine on December 27, 1814, James Henry Carlton was appointed 2nd lieutenant in the 1st Dragoons in October 1839, based on earlier volunteer service. During the Mexican War, he served on General John E. Wool's staff, being brevetted major for gallant service at Buena Vista. The outbreak of the Civil War found him in California, where he organized and commanded the California Column. He was appointed Brigadier General of Volunteers in April 1862 and later Commander of the Department of New Mexico. In September 1866, he was relieved of his command and appointed lieutenant colonel of the 4th Cavalry. He died of pneumonia on January 7, 1873. Ezra J. Warner, *Generals in Blue*, 68–69.

⁶ Ray C. Colton, *The Civil War in the Western Territories*, 101–106.

⁷ Edward Richard Sprigg Canby was a native of Kentucky, where he was born on November 9, 1817. He graduated from the U.S. Military Academy in 1839 and participated in the Seminole Wars and the removal of the Creeks, Cherokees, and Choctaws to Arkansas. During the war with Mexico, he won brevets of major and lieutenant colonel and was promoted to major, 10th Infantry after the war. He saw frontier duty in New Mexico and was there commanding the Department of New Mexico when the Confederates invaded in July 1861. In May 1862, Canby was ordered east, where he eventually became Commander of the Military Division of West Mississippi. After the Civil War, he was promoted to brigadier general. He was killed by Modoc Indians on April 11, 1873, while negotiating a peace treaty. Warner, *Generals in Blue: Lives of the Union Commanders*, 67–68.

⁸ John W. Jones, born in either New York or Missouri around 1824, arrived at Arizona City in 1858, where he married Hilaria Armenta. They had four children. He had a large farm above Colorado City, where he raised corn and other grains, which he sold to the army. Probably because of his knowledge of the country between Fort Yuma and Tucson, Jones became one of General Carlton's most trusted men in providing reconnaissance for the advancing column. In February 1862, Carlton sent Jones into Confederate-occupied Tucson to determine their troop strength and deployment. In the process, he was detained by rebels and only released after taking a Confederate Oath of Allegiance. After his release, he made it back to Fort Yuma using a different route and was sent to Los Angeles to report to General Carlton in person. In April 1862, he was with Lieutenant James Barrett when their small detachment engaged Confederate forces at Picacho Pass, resulting in Barrett's death. He was with the first command to enter Tucson after the Confederate withdrawal. After his harrowing experience with the Apaches, he was captured by rebel troops on the Rio Grande and thrown into the guard house at Fort Fillmore, where he somehow still managed to get his dispatches to General Canby. As the Confederates withdrew from New Mexico, he was released as part of a prisoner exchange. After his release he continued the dangerous job of expressman, making \$125.00 a month. On June 19, 1863, Private George Hand relates in his diary that Jones brought in the torn letters and dispatches he had gathered up when another expressman was killed by Apaches. His career as an expressman

Resting in canyons and maintaining a constant watch for Indians kept the first part of their journey uneventful. But even with these precautions, Apaches spotted the small group as they neared Apache Pass on the afternoon of June 18. Sensing an imminent attack, the three men rode quickly in order to get through what Jones called “the brushy area,” but as they left the pass, they were attacked by Apaches concealed behind brush along the trail. Knowing their horses were tired, they decided to dismount and fight on foot. As they dismounted, some of the animals broke loose, and Chavez sustained a hip wound. Apparently the men did not have sufficient arms—or perhaps the horses ran away with some of their guns.

As Chavez fired Sergeant Wheeling’s rifle, he lost all of the percussion caps out of the lock assembly,⁹ possibly leaving the men with only hand guns and Jones’s rifle, assuming he had one. As the situation worsened, they decided that fleeing was their only chance. Apaches killed both Chavez and Wheeling as they attempted to remount. Although Apaches pursued Jones for many miles, he made good his escape, only to be captured by Confederate soldiers on the Rio Grande. In spite of all this, Jones somehow managed to get the message of the column’s departure to Canby.¹⁰

continued at least until February 1865. By 1870, he was back on the farm dealing in hay, grains, and liquors. After all those years of danger as an express rider, Jones died on February 19, 1871 of erysipelas, an infection that developed in a wound received from a wire as he opened a bottle of wine. He received what some say was the largest funeral seen on the Colorado River. Constance Wynn Altshuler, *Latest from Arizona! The Hesperian Letters, 1859–1861*, Neil B. Carmony, *The Civil War in Apacheland: Sergeant George Hand’s Diary*, 119–120; Finch, *Confederate Pathway to the Pacific*, 142; United States War Department, *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies*, Series 1, Vol. L, Part. 1, pp 89, 121, 124, 402, 490, 521, 861, 937, 1049 [hereinafter cited as OR, series, volume, part, and page number].

William Wheeling enrolled at LaPorte, California, August 8, 1861, and was mustered into Company F, 1st California Infantry on August 30, 1861. The first mention of Wheeling occurs in January 1862, when, as a sergeant, he led a hay-cutting detail east of Gila City to stockpile hay for the California Column advance, making them the first Union troops to go that far east. In May, a disguised Wheeling and Pauline Weaver were sent east to link up with Canby by taking a northern route into New Mexico. High water at the Salt River turned them back. On July 15, he started on his last mission to once again establish communications with Canby and let him know the column was on its way. OR, Series 1, Vol. L, Part 1, pp 95,868–869,1049,1065,1146.

Virtually nothing is known about this Mexican man except his name, Chavez. Since he is not mentioned before this, Chavez may have been from the Tucson area and was apparently familiar with the road to Mesilla. OR, *Series 1*, Vol. L, Part.1, pg 89.

⁹ As an infantryman with the California Column, Wheeling would have been issued the Model 1855 Springfield rifle musket. This model utilized the Maynard tape priming system in which the primers, which looked like a roll of caps, were located inside the breech block and enclosed by a small door. If this door came open in the heat of battle, the roll of primers could fall out, making the rifle inoperable. General Carlton ordered and received standard percussion caps to be used due to the tape primers’ misfiring problem. Andrew E. Masich, *Arizona During the Civil War: The Impact Of The California Volunteers 1861–1866*, MS, 51, 61.

¹⁰ OR, Series 1, Vol. L, Part 1, pp 1,98.

Feeling the need to send out a reconnaissance force in advance of the column, Carlton ordered Lieutenant-Colonel Edward E. Eyre,¹¹ 1st California Cavalry, to take Companies B and C, and three supply wagons, and advance toward the Rio Grande to unite with Canby's forces there. He also had orders to find and observe Confederates and report his observations to Carlton. Although given permission to engage the rebel pickets, one of his specific orders was to "avoid collision with the Indians."¹²

¹¹ Born in Pennsylvania in August 1823, Edward Engle Eyre moved to California (Sacramento), where he became a lieutenant in Sutter's Rifles, a militia company. This and the fact that he had been appointed a deputy at one time enabled Eyre to muster into the 1st California Cavalry as a major on August 24, 1861. In November 1861, he was promoted to lieutenant colonel. Eyre's command reached the Rio Grande in early July 1862. He resigned on November 30. As a civilian again, Eyre became a stockbroker in Nevada and California, eventually becoming president of the Stock Exchange Board in San Francisco. He died of pneumonia on January 15, 1899. Altshuler, *Cavalry Yellow and Infantry Blue: Army Officers in Arizona Between 1851 and 1886*, 125–126.

¹² OR, Series 1, Vol. L, Part. 1, pg 98.

On June, 21, Lieutenant Colonel Eyre left Tucson with three officers (Captain Emil Fritz and Lieutenants Porter Haden and Ephraim Baldwin),¹³ and 140 men of Companies B and C, 1st Cavalry California Volunteers. The command arrived at the abandoned Overland Mail Station in Apache Pass at 6 a.m. on June 25. At about noon, as Eyre supervised the stock-watering, sentries reported seeing Indians carrying a white flag on the hills nearby.

¹³ Born in Germany around 1831, Emil Fritz enlisted in the United States Army in New York on March 1, 1851. He served two enlistments as a sergeant in Company K, 1st Dragoons. He first came to Arizona in 1856, and was stationed at Fort Buchanan and Camp Moore. By May 1858, he was in California, where he participated in the 1860 Pah-Ute Campaign. Discharged from the regulars in January 1861, he was mustered into Company B, 1st California Cavalry, as a captain. He came to Arizona with the Column in the spring of 1862 and went on to the Rio Grande. In April 1865, he was promoted to major and discharged in September 1866. He stayed in New Mexico and became a partner in L.G. Murphy and Company. He died in Germany while visiting relatives on June 24, 1874. Complications from settling his estate triggered the Lincoln County War. Altshuler, *Cavalry Yellow and Infantry Blue*, 136.

Porter Haden was born around 1831, in Kentucky. On September 7, 1861, at Camp Merchant, California, he enrolled in Company G, 1st California Cavalry, as a first lieutenant. Haden arrived in Tucson in June 1862 and left for the Rio Grande with Lieutenant Colonel Eyre a few weeks later. He was later stationed at Camp Goodwin, Arizona, and mustered out of service on September 7, 1864, at Las Cruces, New Mexico. Haden joined the 8th Cavalry as a second lieutenant in August 1867 but resigned in March 1868. He died in California on October 16, 1901. Altshuler, *Cavalry Yellow and Infantry Blue*, 19.

Eyre's report states the presence of 75–100 mounted Indians, all armed with firearms, rifles, pistols (in quantity), and some single-barreled shotguns. The soldiers eventually convinced the Apache leader, Chief Cochise,¹⁴ to come in and talk with Eyre. During this meeting, Cochise learned from Eyre of the column of soldiers that would soon cross the Apache homeland. This information sealed the fate of the next command to come marching through the pass. After a brief conference, the soldiers gave the Apaches tobacco and any food they could spare. Eyre was reasonably satisfied that the Indians left on good terms.

At about that time, three men were reported missing, and an hour's search resulted in the discovery of their bodies. Privates Albert Schmidt, James F. Keith, and Peter R. Maloney,¹⁵ all of Company B, had finished watering their horses and were headed to camp when they apparently stumbled into Apache warriors in a side wash. The warriors had shot all three men in the chest and lanced them through the neck.

By coincidence, the Apaches had probably fired the gunshots that killed the soldiers at the same time the guard had fired shots warning of the Indians' approach, allowing them to be mistaken for warning shots. The Apaches had stripped the bodies, scalped two of them, and captured two of their horses. Pursuit of the Apaches availed nothing, and the company buried the bodies east of the stage station, possibly making them the first graves in what would become Fort Bowie's cemetery.¹⁶

According to Captain John C. Cremony¹⁷ in a letter written to the *Alta*, a California newspaper, some of the officers and men were very upset with the way Eyre handled the situation. In his

¹⁴ It is believed that Chiricahua Apache leader Cochise was born into the Chokonon band sometime around 1810 in either northern Mexico or southeast Arizona. By 1856, Cochise had become a band leader. In 1858, he joined Mangus Coloradas in raiding against Northern Sonora. In February 1861, his band was implicated in the capture of a young boy from a ranch near Nogales. The attempt to recover the boy and the failed attempt to capture Cochise by a command of United States troops under First Lieutenant George Nicholas Bascom precipitated a 12-year war. Cochise surrendered to Brigadier General Oliver Otis Howard in October 1872 and was given a reservation in southeast Arizona. He died June 8, 1874. Dan L. Thrapp, *Encyclopedia of Frontier Biography*, Volume 1, A–F, 290–291; Edwin R. Sweeney, *Cochise, Chiricahua Apache Chief*, 6, 395.

¹⁵ Privates Albert Schmidt, James F. Keith, and Peter R. Maloney of Company B, 1st California Cavalry, all enlisted at San Francisco in August and September 1861. Their graves were the first in what would later become the Fort Bowie cemetery. In the spring of 1895 their remains, along with the other military personnel and military dependents, were removed to the National Cemetery in San Francisco. Richard H. Orton, *Records of California Men in the War of the Rebellion 1861 to 1867*, 104, 107.

¹⁶ OR, Series 1, Vol. L, Part 1, pg 120–122; Hubert Howe Bancroft, *Scraps*, 193.

¹⁷ John C. Cremony was known even in his lifetime as quite an embellisher of the truth. Therefore, some of what he wrote may not be credible. He was probably born in Maine around 1817, and he served as a second lieutenant in the 1st Massachusetts Infantry during the Mexican War. He later moved to California, where he became a newspaper man. In November 1861, he became a captain in Company B, 2nd California Cavalry, participating in the second day's battle at Apache Pass. In March 1865, Cremony was promoted to major, thus becoming commander of the Native California Cavalry. After the war, he moved to San Francisco, where he went into the newspaper business

correspondence, Cremony wrote that when Eyre refused to allow cavalry pursuit of the Indians, Captain Fritz became very distraught, throwing his saber and carbine. (There may be some truth to this incident, as Eyre's orders were, "to avoid collision with the Indians.") The command left the pass at 6 p.m., traveled four miles out on the flats, and made camp.

Around 11 p.m., the Apaches fired a volley into the camp, wounding Acting Assistant Surgeon William A. Kittridge¹⁸ in the head and killing one of the horses. The soldiers returned fire but the Indians dissolved into the darkness. Eyre's command left camp at 3:30 a.m. on June 26, and continued their journey to the Rio Grande, arriving there on July 4.¹⁹

Had Eyre known of the attack on Jones, Wheeling, and Chavez a week earlier, he might have taken better precautions while in Apache Pass. Unfortunately, to make matters worse, he did not send a message back, notifying those coming from behind of the attack on his command. Therefore, Captain Thomas L. Roberts,²⁰ Company E, 1st California Infantry, and his command marched out of Tucson to establish a supply base at San Simon, unaware of the threat posed by a large body of hostile Apaches between them and their objective. They had set the stage for a repeat performance.

On July 10, at 4:30 a.m., Captain Roberts's command left Tucson for San Simon. Roberts reported his troop strength at 72 men with Company E, 1st California Infantry; 24 with Company B, 2nd California Cavalry under Captain John C. Cremony; 20 men with the battery of two mountain

again. He wrote *Life Among The Apaches*, based on his experiences. Cremony died on August 24, 1879. Altshuler, *Cavalry Yellow and Infantry Blue*, 85.

¹⁸ William A. Kittridge was a graduate of Oakland College of Physicians and Surgeons. After reaching the Rio Grande with Eyre's Command, he was at Fort Fillmore from August 11 to October 10, 1862, when he was transferred to Mesilla. In November 1862, he participated in a six-week campaign against Mescalero Apaches. He was scouting again in February 1863. He arrived at Fort Bowie on August 17, 1863, where he served as a post surgeon for more than a year. On June 11, 1864, Kittridge left Fort Bowie for Santa Fe, where he was to be examined by a medical board. Although Kittridge stated otherwise, he was charged with not relinquishing hospital supplies for which he was responsible and with being absent without leave. He returned August 11, reporting for duty, and was arrested the next day. He was dismissed from service on September 28, 1864, and left for Las Cruces the same day. Post Returns, Fort Bowie, August 1863–September 1864; Letter from Medical Director O.M. Bryan to Commanding Officer Fort Bowie, January 20, 1865; Letter from W.A. Kittridge to Captain B.C. Cutler, August 14, 1864.

¹⁹ OR, Series 1, Vol. L, Part 1, pg 120.

²⁰ In May 1861, Thomas L. Roberts was working as a bookkeeper in San Francisco. After being authorized to raise a company of militia, he mustered Company E, 1st California Infantry on August 26, 1861, with himself as captain. Although he performed exceptionally well during the Battle of Apache Pass and march to the Rio Grande, he ran afoul of Colonel Joseph R. West and was placed under arrest for neglect in keeping up the forage supply. This is probably what caused Roberts to be removed from command of a scout against Indians in Texas in November. He was mustered out of service in Los Pinos, New Mexico, on September 13, 1864. He elected to stay in New Mexico, becoming a beef contractor for the army. Roberts married Jane Kelley in Santa Fe in 1866. He died of pneumonia on February 26, 1868. Altshuler, *Cavalry Yellow and Infantry Blue*, 283–284, OR Series 1, Vol. L, Part 2, pp 156, 214–215.

howitzers under First Lieutenant William A. Thompson;²¹ 10 men with a detachment of Company H, 1st California Infantry, commanded by First Lieutenant Alexander B. MacGowan;²² and 22 teams under Wagon Master Jesse R. Allen,²³ for a total of 126 soldiers and 242 animals. On the first day, they marched 30 miles on a road so dusty that the men and animals had trouble breathing. At 6 p.m., they arrived at a cienega that had good wood and water. In order to avoid marching during the heat of the day, they laid over on July 11, taking up the march again at 1 a.m. on July 12.²⁴

After a 25-mile march, they arrived at the San Pedro River, where, once again, they were delighted to find plenty of wood and water. They filled the two water wagons and at 1 a.m. on July 13, Roberts left the San Pedro, dividing his forces and taking with him 60 infantry, the battery, and eight cavalrymen.

They arrived at Dragoon Springs at 8 a.m., where, after going up the canyon one half to three quarters of a mile, they found just enough water for their needs but little more. Although they had marched a shorter distance than usual, it had been a rough one for the infantry marching along the dusty road. That night it rained heavily, slowing travel for several days to come.

Captain Cremony had remained at the San Pedro with his cavalry and the wagons, awaiting word from Roberts to bring them forward. Lieutenant MacGowan and his 20-man detachment of Company H began to make themselves comfortable, as it was their duty to remain at the San Pedro to guard

²¹ On August 16, 1861, William A. Thompson was enlisted into Company E, 1st California Infantry, as a first lieutenant in Sacramento, California. By November 1861, he was acting assistant quartermaster in San Diego. In May 1862, he was ordered to take command of a battery of two mountain howitzers that would later see action at the Battle of Apache Pass. He arrived at Canada Del Oro with his battery and men at the end of June 1862. After reaching the Rio Grande with Roberts's Command, he was appointed acting assistant adjutant and placed in charge of another artillery battery in October. Thompson was promoted to captain of Company D in October 1863, and participated in a scout against Apaches in May and June 1864. He mustered out with his company August 31, 1864, in Las Cruces, New Mexico. OR, Vol. L, Part 1, pp 360–369, 728, 1058, 1167, Part 2, pp 101, 156–157; Orton, *Records of California Men in the War of the Rebellion 1861–1867*, 350, 354.

²² Born in Scotland on December 16, 1830, Alexander Bartholomew MacGowan was mustered into Company H, 1st California Infantry, as a first lieutenant on August 16, 1861, in San Francisco. MacGowan also had a run-in with Colonel Joseph R. West, being placed under arrest by him for some undisclosed reason. Because he was not formally charged with anything, General Carlton had him released. After his arrival at the Rio Grande, MacGowan was promoted to Company D, 6th California Infantry, spending most of his service time in Nevada. He was mustered out in San Francisco in October 1866, and enlisted in the 12th Infantry as a first lieutenant, seeing service in the Nez Perce and Bannock Campaigns of 1877–1878. As a captain in Company D, he received a brevet for gallantry for the defense of Fort Apache against hostile Apaches in September 1881. Retiring in December 1894, he died in Troy, New York, on April 18, 1904. Altshuler, *Cavalry Yellow and Infantry Blue*, 214–215; OR, Series 1, Vol. L, Part 1, pg 130.

²³ Little is known about Jesse R. Allen. In November 1862, he was still working for the army as assistant wagonmaster in charge of 20 wagons and one ambulance on a campaign against Mescalero Apaches, commanded by Captain Nathaniel J. Pishon. OR, Series 1, Vol. L, Part 2, pg 213.

²⁴ OR, Series 1, Vol. L, Part 1, pg 130.

forage shipments. After Roberts understood the water situation at the springs, he sent three cavalrymen back with orders to have Captain Cremony bring forward the train and cattle.

While Cremony marched the 28 miles through a bad thunderstorm, Roberts had his men improve the spring and natural tanks in the canyon. They had soon obtained enough water for the whole command. By 4 p.m. on July 14, the column had reunited at Dragoon Springs.²⁵

An hour after Cremony's arrival, Captain Roberts again took part of his command and began the 40-mile march to Apache Pass. Cremony had orders to start for the pass on the morning of July 15 with the train and cattle. Although high temperatures persisted, the dust that had plagued the troops since leaving Tucson decreased in some areas.

²⁵ Ibid.

The heavy rains in other areas made the road hard to travel, and for about two miles, where it crossed the Willcox Playa, two to four inches of water had accumulated.²⁶ As Sergeant Albert J. Fountain wrote: “The march to Apache Pass was one never forgotten by those who made it . . .”²⁷ At first light on July 15, Cremony and his command began their slow march to Apache Pass.

Captain Roberts’s command entered Apache Pass around 12:30 p.m., July 15, with about 94 officers and men (Figure 4).²⁸ Not knowing about the previous month’s events, he took only normal precautions as they marched into the pass (Figure 5). As the weary column marched along, they eagerly anticipated their stop at the old stone station building, now within sight. Soon they would enjoy water, food, and rest after enduring an all-night march.

²⁶ Ibid., 131.

²⁷ Albert Jennings Fountain, *Old Time Reminiscences*, *Rio Grande Republican*, January 2, 1891, 1.

²⁸ The exact number of men entering Apache Pass with Captain Roberts may never be known. Although Roberts left Tucson with 72 men in his company, he assigned 12 of them to help Captain Cremony with the wagons. This left him entering the pass with 60 infantrymen, 21 men with the battery, and 6 cavalrymen, making a total of 87 enlisted men. Add to these three teamsters, First Lieutenant Thompson, Assistant Surgeon William H. McKee, a guide named Andrew Furlong, and Captain Roberts himself, and the total comes to 94. Although Captain Roberts reported 20 men in Thompson’s battery, Special Orders No. 28 and 57 give the names of 21 members. Roberts’s Report, OR, Series 1, Vol. L, Part 1, pp 128–132; OR, Series 1, Vol. L, Part 1, pg 1058; OR, Series 1, Vol. L, Part 2, pg 8; John C. Cremony, *Life Among The Apaches*, 155; Henry P. Walker, “Soldier in the California Column: The Diary of John W. Teal,” *Arizona and the West*, 13 (Spring 1971), 41.



Battle Progression
July 15, 1862; 1330 Hours

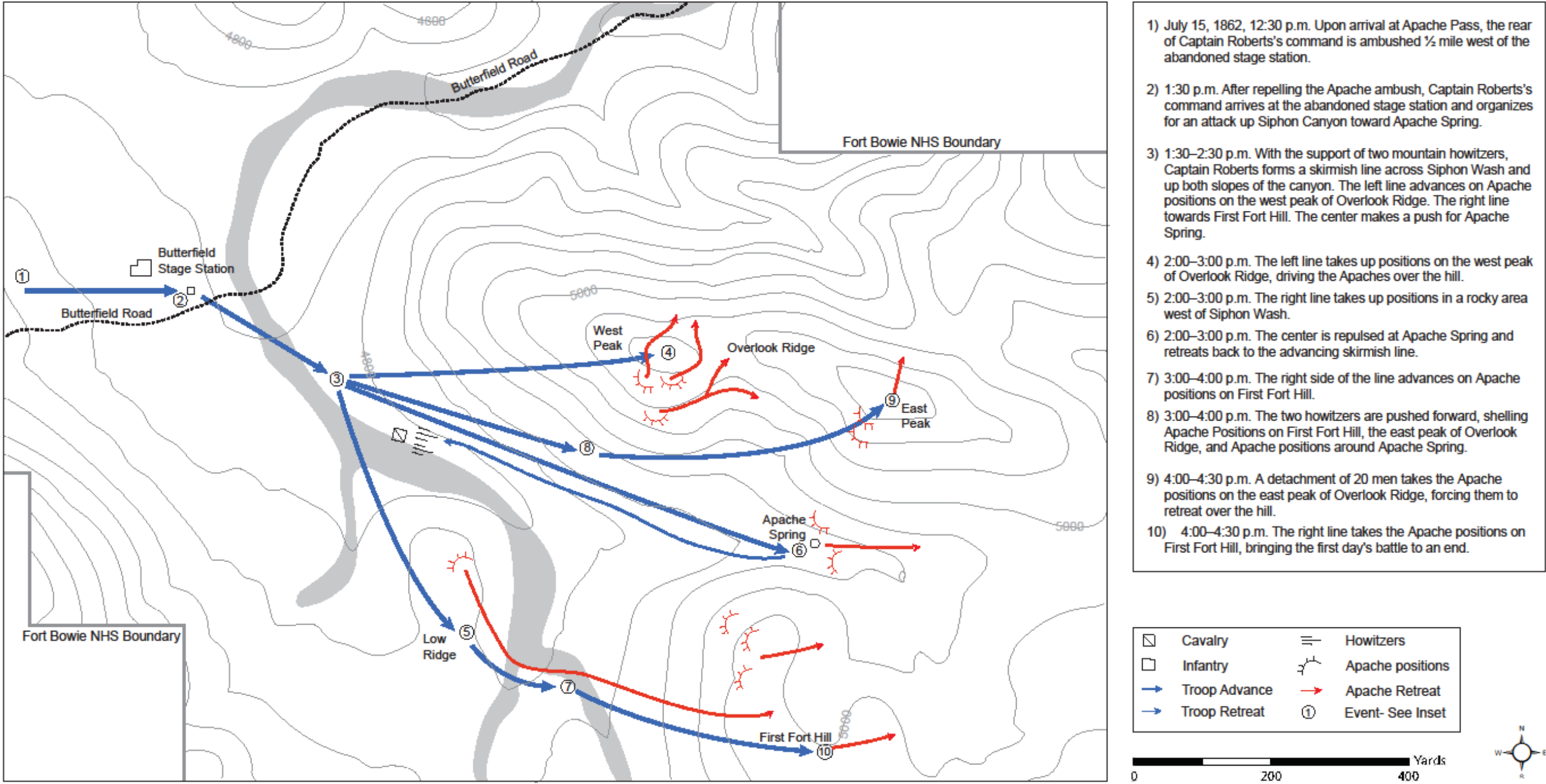


Figure 4. Overview map, progression of the Battle of Apache Pass.



Figure 5. West approach to Apache Pass.

As their pace quickened, the men, joking and singing, strung out along the road.²⁹ The advance of the column reached the old stone station around 1 p.m. (Figure 6). The cavalry had unsaddled their horses and most of the infantry had just broken ranks when they heard gunshots toward the west. The rear of the column had come under attack.³⁰

²⁹ Fountain, *Rio Grande Republican*, January 2, 1891, 1.

³⁰ Walker, Teal's Diary, 40; Conrad F. Schreier, ed., "The California Column in the Civil War, Hazen's Civil War Diary." *San Diego Journal of History* (Spring 1976), 45.

The Apaches, as was the case two weeks before, were led by Chokonon Leader Cochise, who had recruited Mangas Coloradas³¹ and his band of Chihennes and Bedonkohe to participate in the fighting. Together, these bands probably numbered around 140–160 warriors. The Apaches had been watching the column as it approached and knew of the large herd of livestock and wagons of supplies that accompanied it. The prospects of capturing all or part of the stock and supplies is probably what motivated Mangas and his warriors to become involved. Tired soldiers straggling into the pass were the perfect target for an ambush.³²



Figure 6. Ruins of Butterfield Overland Mail Station.

³¹ Born around 1795 in Southwest New Mexico, Mangas Coloradas became leader of the Chihennes Band of Chiricahua Apaches in the late 1830s. Although involved in continual raiding in Mexico, he seems to have enjoyed better relations with Americans until the last few years of his life. He became hostile after American miners began operations on Chiricahua lands. After taking part in several fights at Cooke's Canyon in 1861, he was wounded by Private John Teal during the Battle of Apache Pass and taken into Mexico, where he recovered with the help of a Mexican physician. He was killed by soldiers on January 18, 1863, while a prisoner at Fort McLane. Trapp, *Encyclopedia of Frontier Biography*, Vol. II, G-O, 935; Sweeney, *Cochise, Chiricahua Apache Chief*, 4.

³² Sweeney, *Cochise, Chiricahua Apache Chief*, 199.

Two supply wagons, one water wagon, and the two mountain howitzers pulled by mules brought up the end of the column.³³ They were under a light guard, probably consisting of the 20 men attached to the battery.

Unable to keep up with the rest of the column, the wagons and artillery had fallen behind. As they crossed a low drainage about one half-mile west of the stage station, Apaches posted behind rocks and trees on both sides of the road fired on them.

The opening volley came as a complete surprise, killing Private Charles M. O'Brien,³⁴ Company G, 1st Infantry, attached to the battery, and wounding teamster Andrew (Shorty) Sawyer³⁵ in the thigh. Although wounded, Sawyer mounted his mule and drove his wagon through the hail of gunfire to the safety of the stage station. At first the guard held, although their only targets were puffs of smoke from Apache rifles—but as Apaches worked their way down the rocky slopes, the guard began to give ground. Against this onslaught, and at close quarters, the guard began to fall back toward the

³³ The story of Thompson's battery is somewhat clouded in its beginnings. Some of the mountain howitzers were from Benicia Arsenal near San Francisco, while others may have been left by companies of the 3rd Artillery when they were shipped east. As early as February 15, 1862, correspondence mentions gun crews' practicing with shell and blank cartridges. One battery of two mountain howitzers and 20 men was sent east to the Pima villages under command of First Lieutenant Jeremiah Phelan in late March.

On April 22 when Captain Roberts's Company arrived at Fort Yuma, he had two mountain howitzers with him and 16 men to fire them. In May, Lieutenant Thompson was put in command of these two howitzers by Special Order 57. The howitzers, mounted on prairie carriages pulled by mules, were to be "kept ready at a moment's notice." The crews consisted of 16 infantry men who had been drilled and trained in California, probably under a regular army artillery officer. They were allowed to keep their rifles, a decision that would hinder their efforts during the battle.

Marching from Fort Yuma on May 9, 1862, the battery arrived at Tucson on June 26, after spending time at Camp Barrett and Camp Canada Del Oso. On July 7, Thompson's battery drilled with blanks under one of Shinn's artillery officers. The next day Special Order Number 28 directed Thompson's battery to accompany Captain Roberts's command, leaving for the Rio Grande on July 10. The battery was also given five more men, bringing their total strength to 21 men (see Appendix C), 15 animals, and one wagon. Carried in this wagon were spherical case, shell, and canister; all fixed ammunition. OR, Series 1, Vol. L, Part 1, pg 1058; Akers Diary, July 3, July 7; Orton, *Records of California Men*, 330.

³⁴ Charles M. O'Brien enlisted in Company G on August 10, 1861, at Nevada City, California, and was assigned to Thompson's battery in May 1862. What little is known about O'Brien indicates that he may have been a little rough around the edges. George Hand's diary mentions that O'Brien was court-martialed and "reduced to the ranks" on March 29, 1862, for reasons unknown. Two months later, on May 27, he and another soldier, named Boylan, were arrested as suspects in the killing of an Indian along the Colorado River. Even in death he was controversial, as it became known that his clothing account had been falsified. Orton, *Records of California Men*, 366; Carmony, George Hand Diary, 30, 38, 158; OR, Series 1, Vol. L, Part 1, pg 1058.

³⁵ Little else is known about Andrew Sawyer other than this quote from the *Alta*: "Shorty was shot through the thick part of the right thigh, near the hip bone, but without breaking the bone, although some important vessels were cut. He was valorously defending his wagon at the time, and after he was wounded, mounted his mule and drove his team safely through the hail of bullets. He is a plucky fellow and deserves much credit." *Alta California*, August 16, 1862.

stage station. The Apaches captured Private O'Brien's body, and it appears for a brief period of time they may have overrun the howitzers.³⁶

When Captain Roberts heard the sound of battle at the rear of the column, he quickly formed his infantry into skirmishers and advanced toward the firing. Sergeant Fountain wrote years later: "Quickly, vigorously and bravely the men responded to their officer's command; there was no thought of a stampede, no danger of panic. The men fell into line as coolly as if on drill, and swept down on the Indians who had assailed the rear guard."³⁷ As the rear guard fell back, they ran into the approaching infantry skirmishers and, together, they advanced toward the Apaches.³⁸

After what Roberts termed "a sharp little contest," the army pushed the Apaches into the nearby hills. One of the mountain howitzers saw action, and they fired at least one parting shot, driving the Indians over the mountain and toward the spring (Figure 7). With O'Brien's stripped and mutilated body recovered and the wagons and howitzers recaptured, the troops marched back to the stage station.³⁹

Although he had sustained one killed and one wounded, Captain Roberts claimed four Apaches killed. He had to be proud of his small command. The Apaches had once again done what they did best. They had likely divided their warriors into three groups: one preparing for the main fight at the spring, one watching the road for reinforcements or stragglers retreating, and one carrying out a classic Apache ambush on the rear of the column. Through ambush and surprise they had disrupted and inflicted casualties on the army. But in so doing, they eliminated the element of surprise. The soldiers now knew the extent of the Apache forces and could make preparations to deal with them.

Captain Roberts regrouped at the stage station. His command desperately needed water, and with the spring still 600 yards up canyon, he knew they would have to fight for it. Roberts's simple plan included dividing his infantry into two platoons, with the first platoon pushing forward to capture the spring while Thompson's battery supported it by shelling the high ground around the spring. The second infantry platoon would deploy as skirmishers and advance with the battery, and the six cavalrymen would support the howitzers.⁴⁰

The 40-mile march; lack of sleep, food, or water; and the initial fight with the Apaches had tired the men considerably, but they knew they would have to fight for the water they desperately needed. Years later, Sergeant Fountain would recall Captain Roberts's speech just before their advance: "Boys, there is the water, we must have it or die; I ask no man to do more than I shall try to do, I expect no man to do less. This is no place for cowards or skulkers; if I fail to do my duty, men, shoot

³⁶ OR, Series 1, Vol. L, Part 1, pg 131; Schreier, "Hazen's Diary," 45.

³⁷ Fountain, *Rio Grande Republican*, January 2, 1891.

³⁸ Bancroft, *Scraps*, 196.

³⁹ *Ibid*; OR, Series 1, Vol. L, Part 1, pg 131.

⁴⁰ *Ibid*.

me down for by G-d I will shoot down the first man who shows the white feather here today.” Fountain continued by saying, “The men responded with a cheer that shook the rocky ribs of the canon, and told the enemy they still had no easy task before them.”⁴¹

⁴¹ Fountain, *Rio Grande Republican*, January 2, 1891.



Figure 7. Probable howitzer firing position at ambush site.

Meanwhile, the Apaches had constructed stone breastworks near the tops of both hills overlooking the spring. They also used natural fortifications along the hillside above the approach and denser vegetation around the spring itself for cover.

The first platoon of skirmishers advanced up the middle of the valley under continuous fire from the Apaches above (Figure 8). With the howitzers shelling the hillsides, the men came within 50 yards of the spring. Cheering as they saw water, they received heavy fire from Apaches hidden around the spring and in fortifications high on the hills above them. This first volley killed Private John Barr,⁴² who sustained a shot to the head. Seeing the 1st platoon staggered by the Apaches' concentrated fire, Captain Roberts sounded the recall to regroup his forces before losing more men (Figure 9). The platoon pulled back, bringing Private Barr's body with them.

The key to winning the fight for the spring was seizing the Apache positions on the high ground. Roberts ordered up the howitzers and instructed them to shell the Apache positions near the tops of the hills.⁴³ This move forward caused problems for the howitzer crews. When the guns shelled the hillsides from 400–500 yards away, they got fair results with the ammunition they selected: spherical case shot, a hollow iron ball filled with 78 .69-caliber musket balls. For best results, these shells needed to explode above and slightly in front of the intended target.⁴⁴ Because the Apaches held positions on hilltops and ridges, a fuse cut too long would send the cannonball over the hill, exploding harmlessly. In addition, bringing the howitzer closer to the target decreased the range to 200–300 yards, making it even more difficult to hit.⁴⁵ This proximity to the Apaches also exposed the gun crew to Apache rifle fire and at least once caused a crew to be driven away from its gun. To make things more complicated, the officers allowed the men of the battery to keep their rifles. When Apache crossfire became heavy, the crews abandoned their guns, sought cover, and returned fire with their rifles, slowing down the rate of howitzer fire.⁴⁶ Finally, by moving the guns in closer to Apache positions, they could no longer attain the elevation needed to hit high points. To correct this problem, the crews began firing from slopes too steep for the gun's recoil, which resulted in the howitzers' flipping over backward (Figure 10). In one case, Sergeant Titus Mitchell and Private John Teal, Company B, 2nd California Cavalry, had to help right a gun with their mounts and ropes.⁴⁷ They also

⁴² John Barr was mustered into Company C, 1st California Infantry, as a private on August 26, 1861. Sometime between his muster and the time of his death, he transferred into Company E of the same regiment. Orton, *Records of California Men in the War of the Rebellion*, 350.

⁴³ Fountain, *Rio Grande Republican*, January 2, 1891.

⁴⁴ Jack Coggins, *Arms and Equipment of the Civil War*, 66–67; Charles M. Haecker and Jeffrey G. Mauck, *On the Prairies of Palo Alto: Historical Archaeology of the U.S.–Mexican War Battlefield*, 78–79, 81–82.

⁴⁵ Many of the field observations are based on an archeological survey of the battle site conducted in May and December 1996. Although Sergeant Fountain's account is somewhat embellished at times, field findings support it very well.

⁴⁶ OR, Series 1, Vol. L, Part 2, pp 26–27; Bancroft, *Scraps*, 196.

⁴⁷ Bancroft, *Scraps*, 196.

⁴⁸ OR, Series 1, Vol. L, Part 2, pp 26–27.





Troop Movements July 15, 1862; 1400-1500 Hours

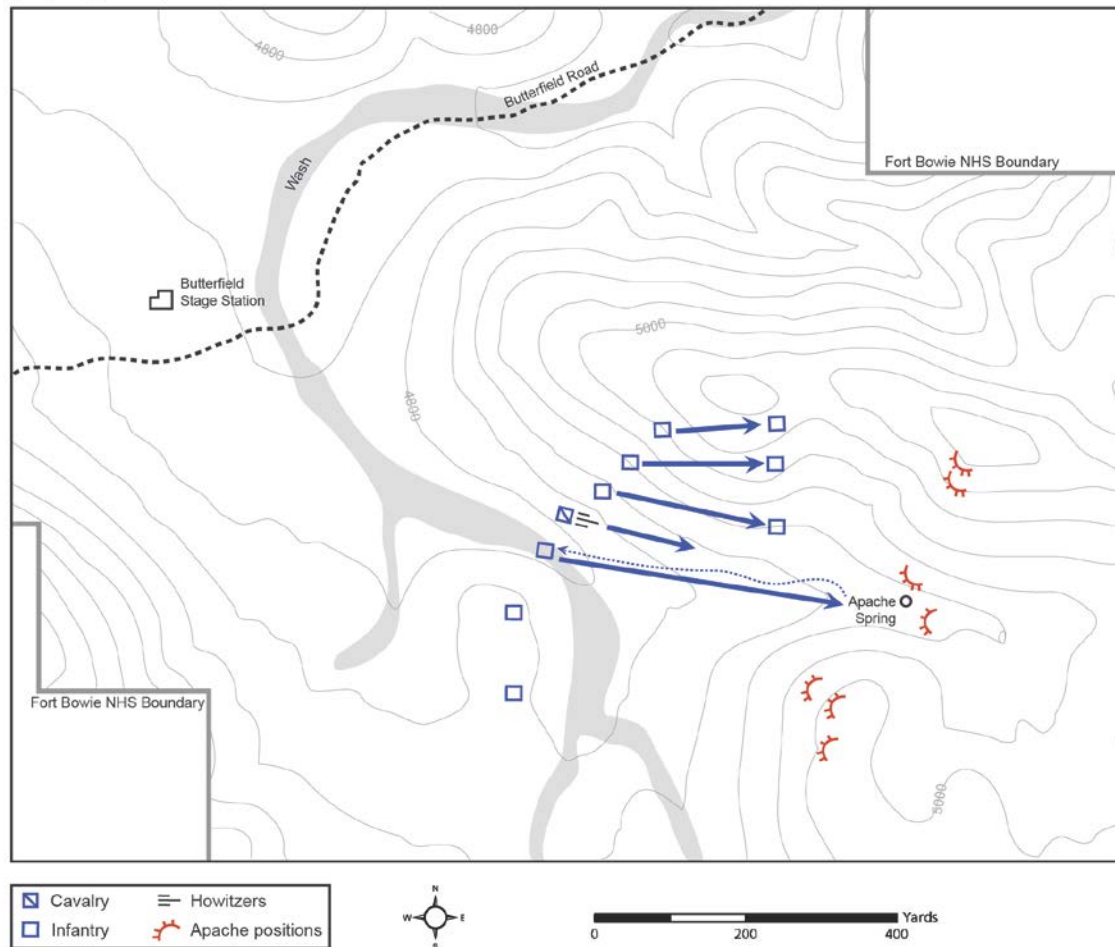


Figure 9. Troop movements, 1400–1500 hours, July 15, 1862.



Figure 10. Howitzers were pushed onto the slope of this small hill in an effort to gain barrel elevation. The west and east peaks of Overlook Ridge are in the background.

With both howitzers out of action, Roberts realized that only the infantry could now take the hills. Once again he divided them into platoons. The first platoon of 20 men, commanded by Sergeant Fountain, would take the high hill on the left. The second would take the hill on the right, and the third would hold the middle and provide cover fire.

Fountain deployed his men as skirmishers and advanced on the hill (Figure 11). He later described his method of attack: “They were ordered to advance alternately, that is 10 men would dash 10 or 12 yards to the front, lie down, and cover the other 10 as they made a dash, and so on. We pushed slowly up the hill in the face of a galling fire.”⁴⁹ Not understanding the physics of shooting down a steep hill, the Apaches overshot Fountain’s men.

Troops taking the hill on the right must have kept the Apaches posted there busy, for no mention of Fountain’s men receiving crossfire from the hill behind them exists at this time. This would later change.

⁴⁹ Fountain, *Rio Grande Republican*, January 2, 1891.



Troop Movements July 15, 1862; 1600-1630 Hours

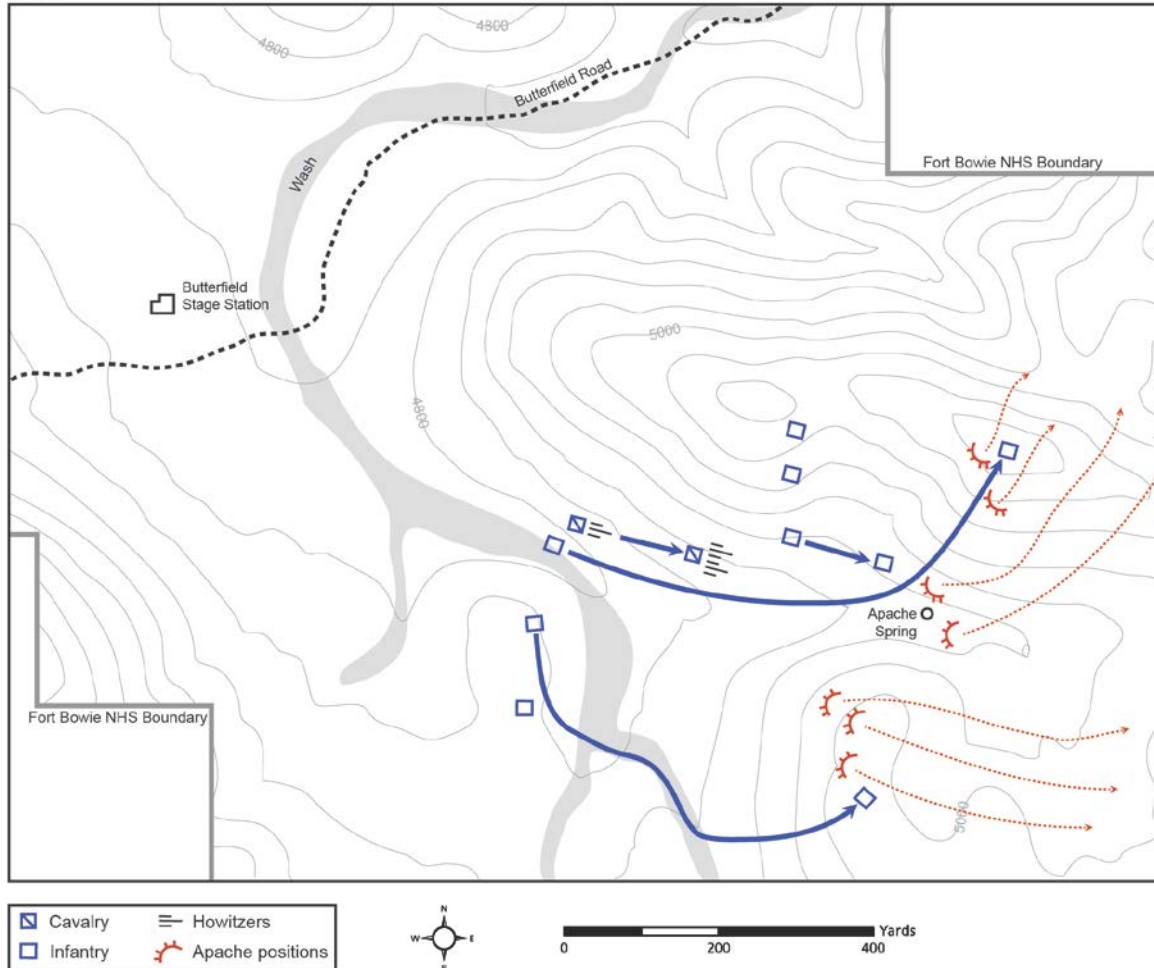


Figure 11. Troop movements, 1600–1630 hours, July 15, 1862.

Fountain's men continued moving slowly up the hill. In his memoirs, he wrote of an incident that happened near the summit: "I lifted my empty canteen to my lips in the vain hope of extracting a drop of water to moisten my parched tongue and there came a flash and report from a loop hole in the breastwork a few yards above me, and a bullet passed through the canteen within an inch of my mouth."⁵⁰

⁵⁰ Although Fountain's canteen story seems a bit far-fetched, it should not be entirely discounted. Several natural rock ridges near the top of the hill provide ample protection for anyone lying down behind them. If, however, you extend your arms above your body while lying on your back, your hands and anything in them becomes a target for anyone above you.

Nevertheless, he gave one final order to “fix bayonets.” Fountain and his men raced the last few yards to the fortification. The Apaches fired a parting volley at the soldiers, overshooting them once again, and ran out of sight over the hill and down its steep slopes. Company E now occupied the fortification, a semi-circular stone breastwork 34 feet in diameter and about two feet high (Figure 12). With it came control of the spring below.



Figure 12. Apaches fired down on Sergeant Fountain's men from these breastworks.

When Fountain and his men carried the hill, they heard cheers from men below as they rushed toward the spring to fill anything that would hold water. The Apaches still on the right hill fired on the advancing men. Fountain's men, having high-ground advantage, fired down on them from the left hill and drove them off quickly. The fighting had ceased for the moment. It was after 4 p.m., and the soldiers busied themselves watering the stock and getting enough water for the night.⁵¹

⁵¹ Fountain, *Rio Grande Republican*, January 2, 1891.

As soon as the soldiers watered their horses, Captain Roberts sent Sergeant Titus B. Mitchell⁵² and his cavalry detachment to locate Captain Cremony and the wagon train (Figure 13). They had orders to inform Cremony of the day's events and tell him of Captain Roberts's plan to meet him with an infantry escort. The detachment included privates Jesse T. Maynard, Bradley King, Oliver F. Keim, George F. Young, and John W. Teal, Company B, 2nd California Cavalry, under command of Sergeant Titus B. Mitchell.⁵³

Hoping to exit the pass before the Apaches noticed them, the six men rode hard along the old stage road until they reached the flats to the west. At this point, Teal dismounted to walk his tired horse, allowing the others to get 200–300 yards in front of him. While riding between two long hills, the advance party drew fire from what Sergeant Mitchell believed to be about 40 Apaches hidden behind some rocks and trees. The first fire wounded Private Maynard, fracturing his right forearm and killing his horse. It also slightly wounded Private Keim's horse, which he could nevertheless still ride.

Fifteen to 20 Apaches had come between Private Teal and his comrades. Seeing the detachment retreating and the Apaches coming toward him, Teal mounted and tried to outdistance them by riding south along the plain. As the Apaches closed in, Teal's worn-out horse was hit "just forward of his hind quarters," bringing them to a halt. Teal dismounted as dusk set in, determined to fight to the last. When his horse fell, he got behind the animal and began firing his Sharps carbine. Hopes for survival would have seemed slim.⁵⁴

⁵² Sergeant Titus B. Mitchell was born in New York. By the age of 26, he had made his way to California. On September 24, 1861, he enlisted in Company B, 2nd California Cavalry, at San Francisco. Described as being six feet tall, with a light complexion, blue eyes, and light hair, at the time of his enlistment he gave his occupation as dairyman. After his time of service expired, he was mustered out at San Francisco on October 10, 1864. Orton, *Records of California Men in the War of the Rebellion*, 210; Walker, "The Diary of John W. Teal," 81.

⁵³ The 2nd California Volunteer Cavalry was mustered into service on October 30, 1861, for three years' service. After a couple months' training, the regiment was scattered. Company B went with the California Column to the Rio Grande. The members of this five-man detachment, under the leadership of Sergeant Titus Mitchell, had all enlisted in San Francisco in September 1861—except for Private George Young, who mustered in November. After spending its time of service in New Mexico, Company B returned to California in spring 1864. The whole company was mustered out in October 1864, at San Francisco.

Oliver F. Keim was born in Pennsylvania around 1839. The 22-year-old Keim enlisted in the 2nd Cavalry on September 24, 1861, listing his occupation as yeoman. He stood five feet, nine inches, with brown hair and eyes, and had a fair complexion. He was mustered out with the rest of the company on October 10, 1864.

Another native of Pennsylvania, six feet, two inches tall, 20-year-old Bradley W. King enlisted on September 17, 1861, giving his occupation as boat man. He was described as having a sallow complexion, with brown eyes and dark brown hair.

⁵⁴ OR, Series 1, Vol. L, Part 1, pp 132–133; Henry P. Walker, "Soldier in the California Column: The Diary of John W. Teal," *Arizona and the West*, 13 (Spring 1971), 41.



Figure 13. Corporal Aaron Cory Hitchcock, Company M, 1st California Volunteer Cavalry, wears a uniform typical of those worn by cavalymen in the California Column. Hitchcock family photograph.

Sergeant Mitchell, believing the Apaches too numerous for his “small and weakened force,” felt they could be of little help to Teal. Following his orders, he headed for Cremony’s camp with the news. All but Private Keim arrived at the camp around 7:30 p.m. Keim’s wounded horse died about a mile from camp, so he elected to retrieve his gear from the animal and walk the rest of the way, arriving about 20 minutes later.

The Apaches now turned their attention to Private Teal. Discovering he was well-armed, they kept their distance and circling around they occasionally fired at him. Teal returned their fire for nearly an hour. As darkness approached, he ceased. Perhaps thinking Teal had been hit or was out of ammunition, the Apache leader, Mangas Coloradas, rode slowly forward. Teal took close aim and

fired, knocking him from his horse. Warriors quickly retrieved the seriously injured leader and withdrew out of Teal's range. The Apaches left the area, taking their wounded leader with them.

Relieved at seeing the Apaches' departure, Teal now focused his energy on joining the train. He pulled all gear from his dead horse, took off his spurs for easier walking, and began the eight-mile trek to Captain Cremony's camp. By steadily walking and carefully avoiding groups of Apaches along the way, he managed to get to Cremony's camp about 10:30 p.m. The soldiers joyously welcomed him.⁵⁵

When Captain Cremony received news from Sergeant Mitchell of the attack on Captain Roberts in Apache Pass, he quickly corralled and secured the train at Ewell's Station. Not knowing how close he was to the fighting and not wanting his command to blunder into an ambush in the dark, he awaited Roberts's reinforcements.

With daylight fast disappearing back at Apache Pass, Captain Roberts realized he did not have enough men to hold the spring, hold the heights above the spring, secure the camp at the stage station, and send a relief force to Captain Cremony. With this in mind, he removed his men from the spring and the hills above it and ordered the camp secured under Lieutenant Thompson. Allowing his men a quick cup of coffee, he took 28 infantrymen and marched 15 miles back to relieve Captain Cremony.⁵⁶

A few miles into the valley, the relief column discovered Maynard's dead horse and feared the worst. Believing the Apaches might have wiped out the cavalry and supply train, infantrymen marched forward as fast as exhausted bodies would let them. Sergeant Fountain described the march: "It was an awful march. The night was dark and as we staggered on we expected every moment to come upon the bodies of our slaughtered comrades and the ruins of our plundered train." Shortly after 2 a.m., Roberts's command arrived at Cremony's camp to learn of the safe arrival of the cavalry detachment.⁵⁷

After allowing the men a couple hours of much-needed sleep, Roberts's command, now united with Captain Cremony's, began the march back to Apache Pass around 5 a.m. on July 16. During the march to the pass, the cavalry rode to the front and rear of the wagon train. The infantry marched on either side of it.

At the mouth of the pass, the column halted to close up. The cavalry dismounted to ride in wagons as protection, while the infantry marched as skirmishers to the front and rear of the train. The cattle came directly behind the wagons. After skirmishing through the pass, the command reunited, arriving

⁵⁵ Walker, "The Diary of John W. Teal," 41; Cremony, *Life Among the Apaches*, 159–160.

⁵⁶ OR, Series 1, Vol. L, Part 1, pg 131.

⁵⁷ Fountain, *Rio Grande Republican*, January 2, 1891.

safely at camp in Apache Pass around 12 p.m. The men then ate lunch—the first meal for some of them in more than 40 hours.⁵⁸

The soldiers could see that the Apaches, possibly believing the howitzers still broken and inoperable, again occupied the fortifications on the hillsides above the spring and around the spring itself. With the water collected the night before nearly gone, Captain Roberts prepared his men, once again, to attack the higher positions. Because Captain Cremony and most of his cavalry had not participated in the fighting the day before, he proposed shelling the Apaches' positions, then letting his cavalry clear the hill.

According to Cremony, Captain Roberts refused him on grounds that the weakening of the cavalry in such a potentially dangerous assignment could jeopardize their main mission. Again Cremony pleaded with Roberts for his chance at the enemy and again Roberts refused. Roberts felt that shelling the heights and spring would provide the safest method of removing the Apaches.

However, Cremony could not accept “no” for an answer and persuaded 2nd Lieutenant Frederick Muller⁵⁹ to try talking Roberts into changing his mind. Muller argued with Roberts nearly half an hour before Roberts told him to either obey orders or be placed under arrest. With this contest ended, Roberts now focused on dealing with the Apaches.⁶⁰

The teamsters drove the wagons into the stage station corral and formed a hollow square, securing the mules inside. Twenty-eight teamsters and wagon masters armed with rifles and ammunition were left to guard the train. The two repaired howitzers were placed in the middle of the canyon, where their shelling would do the most damage. The infantry deployed across the canyon as skirmishers and the cavalry in skirmish line behind them as reserves.⁶¹

With soldiers ready, Roberts signaled the advance. This time, the troops had the advantage of knowing the terrain. Once again, Sergeant Fountain wrote the most detailed account of the advance: “. . . the little howitzers, spitefully throwing 12 pound shells and spherical case right and left were pushed up the canon in line with the skirmishers. The shells burst splendidly, starting the concealed foe from behind their breastworks; and as they fled, the skirmish line accelerated their speed with volleys of Minnie balls. The line advanced coolly and deliberately, the men acting as if on drill.”

⁵⁸ OR, Series 1, Vol. L, Part 1, Report, July 19, 1862, pg 131; Fountain, *Rio Grande Republican*, January 2, 1891.

⁵⁹ Due to Cremony's not having a lieutenant in his command, General Carlton had assigned Second Lieutenant Frederick (Fred) Muller, Company C, 1st California Cavalry, to him. Muller enlisted September 22, 1861; resigned March 27, 1863. Cremony, *Life Among the Apaches*, 165; Orton, 109.

⁶⁰ *Ibid*, 166–167.

⁶¹ It should be mentioned here that Fountain used many of the same words and phrases that Cremony used in his book, especially in the latter half of his narrative. Because Cremony's book was published in 1868, it can probably be assumed that Fountain used it to fill in some of the events that he could not remember or was not aware of. Fountain, *Rio Grande Republican*, January 2, 1891.

The Apaches put up little fight, perhaps surprised to see the howitzers working again. They quickly left their fortifications and disappeared over the hills. At this point, the cavalry, no longer able to contain themselves, rushed through the skirmish line after the retreating Apaches. They pressed them hard until steep terrain and broken ground brought an end to the horsemen's advance. With the soldiers in command of the spring, the Battle of Apache Pass ended.

The men spent the remainder of the day digging out the spring, walling up part of it, and generally improving it. The wounded received treatment and privates O'Brien and Barr received a decent burial in front of the stage station. Private Thomas Akers, Company A, 1st California Infantry, wrote in his diary for July 29 that "O'Brien and Barr were buried in front of the stage station and three other graves, Privates Keith, Schmidt and Maloney, of Eyre's command were buried 'in a large flat nearby.'" ⁶² Shortly after this, O'Brien's and Barr's bodies were moved to a place beside Eyre's three men, the first graves in what would become the Fort Bowie Cemetery. The Apache dead lay where they fell. When his company marched through Apache Pass two weeks later, George Washington Oaks, a private in Company I, 1st California Infantry, wrote, ". . . it was sure a sweet smelling place due to the dead Indians up in the rocks." ⁶³

Officers ordered the men to fill their canteens and the water wagon and begin watering the stock—a time-consuming job, not finished until well after dark. This time, as darkness fell on the command, the cavalry dismounted and occupied the Apache fortifications above either side of the spring for the night. At the main camp, around the stage station, the teamsters took on guard duty to allow the infantry a much-needed rest. ⁶⁴

The battle gave the soldiers a new respect for their opponents. They tasted, first-hand, the Apaches' ability to execute an ambush and then meet the soldiers head-on at a battlefield where the Apaches always had high ground. The Indians, too, learned that they could not take the soldiers too lightly, and that defeating a disciplined army would be no easy task. They had been on the receiving end of a new weapon, the mountain howitzer. Although the howitzers were not used to their best capabilities,

⁶² Private Thomas Akers, Company A, 1st California Infantry, left a diary of his days with the California Column. Akers passed through Apache Pass on July 29–30, 1862, making mention of the graves as he saw them. Thomas Akers California Volunteer Diary, Arizona 300, Special Collections, University of Arizona, Tucson.

⁶³ George Washington Oaks was born on an Ohio farm in 1840. He moved to California with his family in 1854. The 20-year-old Oaks enlisted in Company I, 1st California Infantry, on August 17, 1861, in San Francisco. Oaks's unit did not leave Tucson until about a week after the Battle at Apache Pass. He mustered out at Santa Fe on August 31, 1864, after spending most of his service in New Mexico. In 1868, Oaks survived the famous Battle of Beecher's Island, leaving an excellent account of his participation. In 1869, he was a packer at the Battle of Summit Springs. He spent many years as a teamster on the plains before moving to Arizona. Ironically, he became employed at Fort Bowie more than 20 years after he went through the pass with the California Column. He was appointed town marshal for Tombstone in 1888. Oaks was a well-known figure around Tucson for years, dying there on February 5, 1917. Ben Jaastad and Arthur Woodward, *Man of the West; Reminiscences of George Washington Oaks, 1840–1917*, Arizona's Pioneer's Historical Society, 14–15, 17–20, 26, 29, 46.

⁶⁴ Walker, *Diary of John W. Teal*, 42.

they nonetheless had a demoralizing effect upon the Apaches. Ambush and surprise remained the Apaches' best weapons.

On July 17, at 8 a.m., Roberts's command marched out of Apache Pass, on the last leg of their journey to San Simon. About three miles from the mouth of Siphon Canyon, on the old stage road, they discovered several bodies. Even though two of the dead wore government-issue shoes, Assistant Surgeon William H. McKee⁶⁵ identified them as Indians, and the command moved on without burying them.⁶⁶ Had they taken time to look around a bit longer, they would have discovered all nine bodies, none of them Indians.

These were the remains of a party of nine men who had left the mines at Pinos Altos and headed west. Four of them—Thomas Buchanan, William Smith, Conrad Stark, and William (Nelson) Allen—had deserted from the Arizona Guards, a Confederate unit organized in New Mexico. The other victims included David Berry, James Barnes, James Ferguson, and two unnamed Mexicans from Mesilla.⁶⁷

On July 13, as the nine men had approached Apache Pass, their road crossed a deep arroyo, which provided concealment for an Apache ambush. Within 40 yards of the arroyo, the Apaches fired into

⁶⁵ In August 1864, Assistant Surgeon William H. McKee joined several other California Column officers in organizing the Carrasco Mining Company, which operated mines in the Organ Mountains. Taking an active role in his investment, McKee became director of the company. Two years later, he wrote a book, *The Territory of New Mexico and its Resources*, which although containing inaccurate information, increased interest in New Mexico's mining industry. He was listed as residing in Grant County in the 1870 census. Darlis A. Miller, *The California Column in New Mexico*, 55, 203, 232.

⁶⁶ OR, Series 1, Volume L, Part 1, July 19, 1862, pg 132.

⁶⁷ Thomas Buchanan, William Smith, Conrad Stark, and William (Nelson) Allen were all members of the Arizona Guards, a Confederate unit organized by Captain Thomas J. Mastin in Pinos Altos, New Mexico, on July 18, 1861. Mustered into Confederate service for 12 months at Fort Fillmore, the unit was primarily organized to fight Apaches. They were involved in several scouts and skirmishes against the Apaches. In one such skirmish, on September 27, 1861, Mastin received a mortal wound and died several days later. As the demoralized Confederate army retreated into Texas, desertions began to thin the company's ranks.

Thomas Buchanan, a native of Pennsylvania, had been a fourth corporal in the company when he deserted on July 6, 1862, from Mesilla, taking his musket with him. The 23-year-old Stark, from Ohio, deserted from Fort Fillmore on July 6. (The list also includes a third sergeant, named John M. Smith, who deserted and was supposedly killed by Apaches at Apache Pass. However, the *Weekly Gazette* article definitely states the man killed was William Smith, of Pennsylvania. The last name may have created some confusion.)

Although there is no listing for a William Allen, there was an H.D. or Nelson Allen who deserted from Mesilla on the same date as Thomas Buchanan, taking with him a "Minié musket." In all likelihood, William and H.D. were the same man. If this is the case, then the 23-year-old Allen was a native of Illinois. Little is known about the rest of the victims, other than that David Berry was from Iowa, James Barnes was an Irishman from Wisconsin, James Ferguson was a native of England, and the two unnamed Mexicans were from Mesilla. They had probably all been miners around the Pinos Altos area. *Santa Fe Weekly Gazette*, October 4, 1862; Martin Hall, "Captain Thomas J. Mastin's Arizona Guards," C.S.A., *New Mexico Historical Review*, 49 (Spring 1974), 147–149.

the unsuspecting party, killing or wounding most of them in the first volley. The Apaches made short work of the survivors, tying one of them to a yucca and burning him. General Carlton's Command buried their remains as it passed through toward the Rio Grande two weeks later.⁶⁸

As Roberts's command continued toward San Simon, they discovered the site of Sergeant Wheeling's and Guide Chavez's demise, but finding no bodies, they moved on. They arrived at San Simon about 4 p.m. on July 17 and began digging entrenchments around the abandoned adobe stage station. Here the troops and stock rested a couple of days before Captain Cremony and a cavalry detachment escorted the wagons back to the San Pedro River. A few days later, Captain Roberts's command moved on to the Rio Grande.⁶⁹

With the Battle of Apache Pass over, the Apaches would never again have control of the spring. In Captain Roberts's report to his superiors penned from San Simon, he strongly recommended ". . . that a force sufficient to hold the water and pass should be stationed there, otherwise every command will have to fight for the water, and, not knowing the ground, are almost certain to lose some lives."⁷⁰ General Carlton agreed and on July 27, 1862, ordered the establishment of Fort Bowie, probably having no idea that it would remain active for the next 32 years and play a major role in ending Apache resistance in Arizona.⁷¹

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⁶⁸ OR, Series 1, Vol. L, Part 1, September 20, 1862, pg 100; Cremony, *Life Among the Apaches*, 174–175.

⁶⁹ OR, Series 1, Vol. L, Part 1, July 19, 1862, pg 132; Cremony, *Life Among the Apaches*, 167–168; OR, Series 1, Vol. L, Part 1, July 19, 1862, pp 128–129.

⁷⁰ OR, Series 1, Vol. L, Part 1, July 19, 1862, pg 128.

⁷¹ OR, Series 1, Vol. L, Part 2, July 27, 1862, pp 40–41.

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Part 2: Archeology of the Battle of Apache Pass

Site Description

Fort Bowie National Historic Site (NHS) is approximately 35 miles southeast of the town of Willcox in Cochise County, Arizona. Administered by the National Park Service, Fort Bowie NHS was authorized on August 30, 1964, and formally established on July 28, 1972. The 1,000-acre site connects Sulphur Springs Valley, on the west, with San Simon Valley, to the east, through Apache Pass. Apache Pass separates the Chiricahua Mountain Range from the Dos Cabezas Range to the north. The historic site varies in elevation from 4,520 to 5,152 feet. Access to the fort ruins is by a 1½-mile foot trail that passes several historic sites, including the ruins of the Butterfield Overland Stage Station, post cemetery, remains of the Chiricahua Apache Agency Building, Battle of Apache Pass site, Apache Spring, and the ruins of the first and second Fort Bowie.

Located within Fort Bowie NHS is the Battle of Apache Pass battle site, where on July 15–16, 1862, elements of the California Column, advancing east under the command of Captain Thomas Roberts, Company E, 1st California Infantry, fought with Chiricahua Apaches led by Cochise and Mangas Coloradas. The site is actually composed of two distinct areas: the ambush site (approximately 90 acres) and the primary battle site (approximately 200 acres). The ambush site is located about one half-mile west of the stage station along the Butterfield Road, and extends to the top of a hill to the south. This area, composed mainly of decomposed granite, is rugged and rocky, with steep hillsides and mountain ridges that provided protection for Apache warriors during their ambush of the California Column.

The Apache Pass fault zone runs through the primary battle site and is the major geologic feature at the park. Running in a northwesterly direction, the fault varies in width from 0.6 to 1.2 miles wide, with a length of 38 miles. The fault runs through the fort site and over Overlook Ridge, separating the Precambrian Rattlesnake Point granodiorite from the Pennsylvanian-age Horquilla limestone. Much of the battle was fought on the steep, southern, rocky, limestone slopes of Overlook Ridge, where the fault line is clearly visible, and in the riparian area along Siphon Wash. Boulder outcroppings and terrain features on these slopes provided cover for Apaches, as well as soldiers. Apache Spring, located on the fault line, is at the south base of the east peak of Overlook Ridge. It has an average flow of around four gallons per minute and is supplied by precipitation, producing flow fluctuations throughout the year (Bezy 2001).

Fort Bowie contains four major vegetation communities: Madrean Evergreen Forest and Woodland, Semi-Desert Grassland, Chihuahuan Desert Scrub, and Interior Southwestern Riparian Deciduous Forest and Woodland. The battle site itself contains three of these communities. The ambush site has an upper-elevation site and a lower-elevation site. The upper site is dominated by Mexican pinyon pine (*Pinus discolor*), desert deerbrush (*Ceanothus greggii*), alderleaf mountain mahogany (*Cercocarpus montanus*), and beargrass (*Nolina microcarpa*). The lower site is representative of the woodlands, dominated by Emory oaks (*Quercus emoryi*), turpentine bush (*Ericameria laricifolia*), point-leaf manzanita (*Arctostaphylos pungens*), and grama grasses (various *Bouteloua* spp.). The rocky slopes of the battle site contain one-seed juniper (*Juniperus monosperma*), fairy duster

(*Calliandra eriophylla*), banana yucca (*Yucca baccata*), sotol (*Dasyilirion wheeleri*), scrub oak (*Quercus turbinella*), and ocotillo (*Fouquieria splendens*). The low benches along Siphon Canyon are primarily velvet mesquite (*Prosopis velutina*), turpentine bush, burro-weed (*Isocoma tenuisecta*), beargrass, and snakeweed (*Gutierrezia sarothrae*), representing the grasslands. Siphon Wash represents a riparian area dominated by Arizona walnut (*Juglans major*), netleaf hackberry (*Celtis reticulata*), desert willow (*Chilopsis linearis*), gum bumelia (*Bumelia lanuginosa*), and velvet ash (*Fraxinus velutina*).

The battle site is the home of several large mammals, such as black bears (*Ursus americanus*), mountain lions (*Puma concolor*), and mule and whitetail deer (*Odocoileus hemionus* and *O. virginianus*). Other mammals include the gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), coatimundi (*Nasua nasua*), and ringtail cat (*Bassariscus astutus*). Jackrabbits (*Lepus californicus*), cottontails (*Sylvilagus audubonii*), rock squirrels (*Spermophilus variegatus*), and a variety of small rodents round out this category. Common birds include Say's phoebe (*Sayornis saya*), cardinal (*Cardinalis cardinalis*), roadrunner (*Geococcyx californianus*), and a variety of warblers, hummingbirds, sparrows, and hawks. Reptiles and amphibians include gopher snakes (*Pituophis melanoleucus*), Sonoran whipsnakes (*Coluber bilineatus*), Big Bend patch-nosed snakes (*Salvadora hexalepis*), western diamondbacks (*Crotalus atrox*), black-tailed rattlesnakes (*Crotalus molossus*), Gila monsters (*Heloderma suspectum*), zebra-tailed lizards (*Callisaurus draconoides*), and a variety of horned and whiptail lizards.

The two biggest changes at the site since the battle are the increase in vegetation and the size of Siphon Wash. The earliest photograph that includes portions of the site was taken by William A. Bell, in November 1867 (Figure 14). Although the photograph shows dense vegetation along Siphon Canyon, the hillsides and valley beyond appear to have little vegetation. Siphon Wash appears to be considerably narrower than it is now, providing wide flats along the east side of the wash, although they are covered with vegetation. Troops during the battle would have had only rocks on the hillsides to provide protection from Apache fire. Those in the wash would have been concealed by vegetation. The Apaches would have primarily used rocks for protection on the hillsides and vegetation around Apache Spring.



Figure 14. Apache Pass, taken by William Bell, November 1867. William A. Bell Photographs Collection, #10027488, History Colorado.

Due to fire suppression in the years following Fort Bowie's closure, and the spread of mesquite through heavy cattle grazing, vegetation at the site increased considerably since the battle. A mesquite reduction project pursued by the park during the 1990s and early 2000s restored some of the scene to what it would have been during the battle, but many more acres need to be treated.

Methodology

George Teague, Chief of Archeology at the Western Archeological and Conservation Center (WACC), authorized the archeological survey of the Apache Pass Battle Site in 1996. Due to a shortage of WACC archeologists at the time, Teague allowed the survey to proceed with NPS archeologists leading and supervising the fieldwork. Because of the “no collection” stipulation on the survey, all information about artifacts had to be recorded at the time of discovery. Although the surveyors took great pains to record extensive information, some analysis could not be performed because it required physical manipulation of the artifact. For example, the crew could not conduct refitting of cannonball fragments to determine the number of shots fired or further analysis of lead bullets and balls.

Volunteers performed initial investigations at the Apache Pass battle site in May and December 1996, for three days each. Charles Haecker, NPS archeologist duty-stationed in Santa Fe, New Mexico, led the May crew. Volunteers Neal Mangum (NPS), Kate Neilsen (NPS), Larry Ludwig (NPS), Ed Sweeney, Katie Ludwig, Quentin Gilliam, Kathi Plauster, and Roberta Komor participated in the survey (Figure 15). After studying the historical record and observing surface artifacts, it was decided to begin the project on the easternmost high point of Overlook Ridge.



Figure 15. Crew members work in rocks below the breastworks on Overlook Ridge.

The remains of a low rock wall, once utilized as a defense by Apaches during the battle, lie near the top of Overlook Ridge. Although historians assume the Apaches constructed the fortification prior to the battle, members of Second Lieutenant George Bascom’s command may have built it in February of the previous year, during the fortnight-long event known as the Bascom Affair. During this time period, Apaches stole most of Lt. Bascom’s riding stock from Siphon Canyon. High ground, with the

ability to shoot down on Bascom's men, contributed to the Apaches' success. The soldiers drove off the attack only after they retreated uphill to higher ground. Once there, they could have constructed the low fortification in minutes with the manpower available. Based on historical accounts and Sergeant Fountain's description, the Apaches used this particular breastwork during the battle. Fountain describes the "breastworks" as a "circular fortification some thirty feet in diameter" on the summit of the hill (Fountain 1891). The circular feature measures about 32 feet in diameter. The crew began the metal-detector survey at the summit and around the breastworks.

The crew used metal detectors manufactured by Fisher and C&G Electronics for the survey. They operated 2–3 detectors, initially spaced about three yards apart at one time. Due to steep, rocky terrain and thick vegetation in some areas, surveyors had to drift off-line at points to provide more complete coverage. They then re-aligned themselves and continued their transects. Metal-detector sweeps overlapped in order to provide 100% coverage on each transect. Because of a lack of pinpointers (small, handheld metal detectors used to pinpoint an artifact's exact location), the metal-detector operators dug their own targets. Upon locating an artifact, the operators identified and marked each artifact with a pinflag, then resumed surveying their transects. At this point, other team members recorded the location, identification, and other comments about the artifact and assigned it a "not collected" (NC) number. They then removed the flag and re-covered the artifact with soil. In some cases, diagnostic artifacts were photographed in the field.

The crew mapped the area by sectioning off high-density artifact zones. They stretched a tape measure along a line through the densest grouping of artifacts in each section, and established a sub-datum at each end of the tape measure. They recorded the sub-datums with a Sokkia total station global positioning unit during the field work performed in December 1996. They measured the distance down the tape line and the distance to the left or right of the line to mark the location of artifacts.

Charles Haecker led the December 1996 field work, with the assistance of Douglas Scott (Archeologist Midwest Region, NPS), Neil Mangum (NPS), Larry Ludwig (NPS), and Carolyn Bernaski, National Archives. Firearms expert Dick Harmon also participated. This survey focused on three different areas: the south side of Overlook Ridge, the westernmost high point of Overlook Ridge, and a low, elongated hill to the south of Siphon Wash. Methodology for the December fieldwork closely resembled that used in May (Figure 16). The December team consisted of fewer volunteers, so fewer metal detectors were operating at one time. However, instead of using tape measures to record artifact locations as before, a Sokkia total station global positioning unit gathered the information for mapping. Original maps were produced using Autocad Lt97. Once again, no artifact collection occurred.



Figure 16. The crew works on a steep slope near the top of Overlook Ridge.

After two initial surveys, the rapidly expanding size of the battle site became apparent, while large areas still remained unsurveyed. Increasing concern over costs and logistics necessitated the decision to reduce the size of the teams (2–4 members) and survey smaller areas (Figure 17). Methodology remained the same as for the first two surveys, except that a handheld Trimble or Garmin global positioning unit now recorded artifact locations.

Charles Haecker, U.S. Forest Service archeologist Chris Adams, and Fort Bowie Unit Manager Larry Ludwig performed the first survey to employ this method in May 1998, on the area south and southeast of First Fort Hill. The surveyors attempted to use four-yard transects, but thick vegetation caused the crew to generally follow a transect while taking advantage of clearings in the vegetation to metal-detect, as well. This survey produced two spherical-case detonation sites, one shell detonation site, and overshot .58-caliber Minié balls.

In February 2004, park ranger Jeff Helmer, Chris Adams, and Larry Ludwig surveyed the hillside north of Overlook Ridge. Although the steep hillside could have presented complications, sparse vegetation allowed for fairly easy maintenance of four-yard transects. This area contained artifacts from at least two (possibly three) spherical-case detonations. In March 2004, Larry Ludwig and Jeff Helmer surveyed the hillside south of the ambush area, locating one spherical-case detonation site near the top of the hill. The steep terrain, covered with dense vegetation, was difficult to survey, making transects impossible.



Figure 17. Crew members excavate artifacts at the breastwork.

In September 2005, Charles Haecker, Chris Adams, Swedish historian Berndt Kuhn, and Larry Ludwig conducted a survey of the lower watershed area north and west of Apache Spring. Although relatively level, vegetation at this site was so dense that in some cases only about 25% of the area could be surveyed.

In March 2006, Charles Haecker, Chris Adams, and Larry Ludwig conducted a survey encompassing the lower watershed east of Apache Spring. Although not as steep, considerable vegetation covered the rocky site. This survey used identical methods as in the four previous reduced-function surveys.

In April 2008, Charles Haecker, Chris Adams, and Larry Ludwig surveyed the north side of First Fort Hill. Dense vegetation carpeted the steep, rocky site. Dense artifact scatters along the top half of the hill, associated with the first Fort Bowie, impacted the site considerably, making it difficult to locate and verify battle-related artifacts. Even with this overlap of artifacts, the team located another spherical-case detonation site.

In 2013–2014, as this report was being written, artifact maps indicated that several areas had not been surveyed. Once again, Charles Haecker and Chris Adams assisted Larry Ludwig in surveying them. Due to the time of year when these final surveys were performed, lack of vegetation provided excellent conditions for metal detecting. Most of the areas produced many battle-related artifacts that added considerably to the interpretation of the site.

Artifacts

Unlike most remote Indian Wars battle sites, the Apache Pass site sustained impact from post-battle events; most significantly, the 32-year existence of Fort Bowie. Located on a hill near the center of the battle site, the First Fort Bowie caused the heaviest impact, from July 1862 to January 1867 (Figure 18). During these five years, rifles issued to troops at the fort fired the .58-caliber Minié ball, the same ammunition used by California Volunteers during the fight. To make matters worse, the heaviest fighting took place on the hill where 16 months earlier, members of the 7th Infantry attempted to turn back an Apache attack on their horse herd during the Bascom Affair (Robinson 1891). These soldiers also carried .58-caliber weapons. With this in mind, researchers scrutinized .58-caliber Minié balls more carefully than any other artifacts to determine their relationship to the battle. The terrain, exposure to fire, remaining historic features, and the historic record held great importance in making these determinations.

Although not nearly as overwhelming as identifying .58-caliber firearms used during the battle, dating of .69-caliber Minié balls also became problematic. Researchers dealt with the quantity and distribution of .69-caliber ammunition through a process of elimination. A large portion of the .69-caliber ammunition found in specific locations can be discounted because neither Bascom's nor Roberts's men carried weapons of that caliber. During the battle, only the Apaches would have possessed these large-caliber firearms—and then only in areas of close proximity to other mixed calibers and specific terrain features. The only exception that could have a minor impact on the logic behind the deposition of some of the .69-caliber ammunition is the fact that these weapons were issued to members of Company A, 1st New Mexico Volunteers, stationed at Fort Bowie from June 1864 through June 1866 (Meketa 1980). Once again, troop locations, terrain, exposure to fire, and the historic record helped distinguish Apache .69-caliber bullets from those deposited by the New Mexico Volunteers (see further discussion below, “.69 Caliber Bullets”).

Other impacts on artifacts came primarily from long-term military presence, soil erosion, early relic hunting, and cattle grazing before Fort Bowie became part of the National Park Service. Rocks, boulders, and densely compacted soils that cover the site considerably affected lead bullets in particular, especially in defensive positions. In most cases, these factors deformed the ammunition so badly that it was impossible to determine the number of lands and grooves or any other bullet peculiarities. The few bullets in good-enough condition to provide extra information will be discussed.

Selected to organize and lead the California troops across Arizona to combat the Confederate invasion of New Mexico, the experienced veteran Colonel James H. Carlton knew that supplying his army presented one of the most formidable duties before him, and that standardization of his command held the key to success (Masich 2006:19). In so doing, Carlton acquired standard weapons and equipment for the time that could be repaired, replaced, or have ammunition readily available.



The Battle of Apache Pass Artifact Map

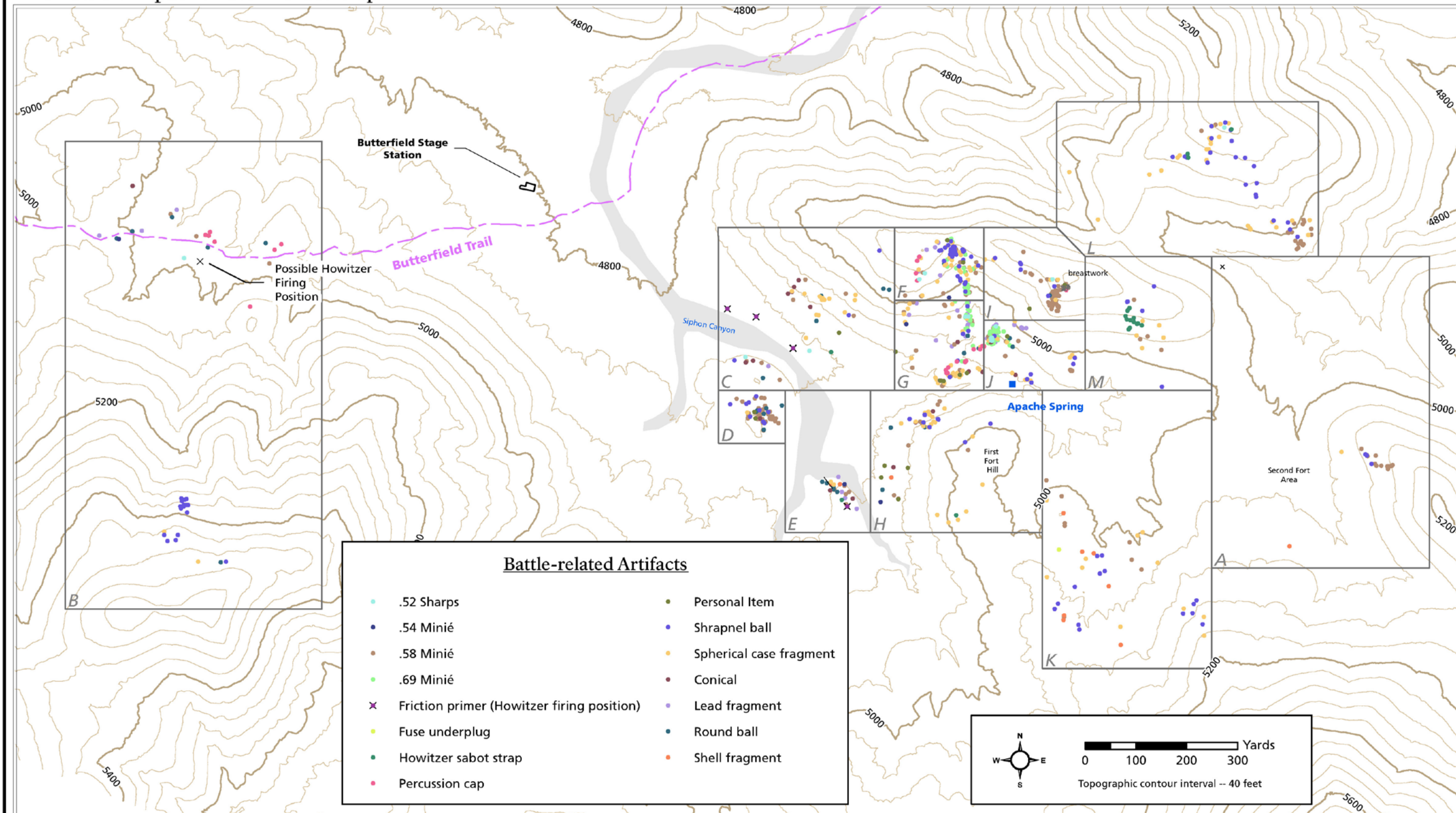


Figure 18. Overview map of artifacts from the Battle of Apache Pass.

Carlton issued the California Volunteers the best weapons he could acquire. The cavalry received the Sharps New Model 1859 breech-loading carbine in .52 caliber, a Model 1840 cavalry saber, and, as a sidearm, the Model 1851 Colt Navy revolver in .36 caliber. The infantry was issued the Model 1855

Springfield rifle musket, in .58 caliber, and an 18-inch triangular bayonet. The Model 1855 Springfield had a rather innovative method of priming the weapon, called the Maynard priming system. The system consisted of a roll of paper primers that resembled a roll of modern cap-gun caps. They fit into a small compartment on the side of the lock and were pulled over the nipple when ready to fire. Although he had access to the more modern method of priming, Carlton chose to issue the tried-and-true copper percussion caps to avoid the risk of the paper caps' absorbing moisture and becoming unusable. Although issued to teamsters for self-defense, the Model 1841 "Mississippi Rifle" in .54 caliber, and the .44-caliber Colt Dragoon revolver, probably saw action only during the initial ambush. Even with this limited diversity of weapons, the military still needed five calibers of ammunition to maintain their arms (Masich 2006:19–22).

The weapons used by the Apaches before their acquisition of firearms had limitations, but each item had its own place. These weapons consisted of bows and arrows for warfare at a distance; spears; lances or slings for closer ranges; and a war club, knife, or shield for hand-to-hand combat (Goodwin 1973). As the Apaches came into conflict with Mexicans possessing firearms, their interest in acquiring guns was piqued. Jason Betzinez, a Chiricahua Apache, wrote, "In those days before the Civil War in the United States guns were scarce. They could be obtained only in fights with Mexican soldiers or attacks on gold seekers and settlers who were crossing the mountains on their way to California" (Betzinez 1959:30). With the increase of settlers, another type of trade emerged that would continue on both sides of the border for many years. The Mexican government accused American settlers and government officials of trading arms and ammunition to Apaches in return for stolen Mexican stock or goods, and the American government made the same accusations of the Mexicans. Despite the run-down condition and lack of relevancy of some of these weapons, the Apaches, although lacking instructions on how to use them, began to accumulate a wide variety of firearms (Sweeney 1991:94,140).

These weapons required different calibers of ammunition. Ammunition used in captured or obsolete military weapons was often more easily obtainable than that required for a variety of civilian weapons. With obsolete muskets or plains rifles that fired odd-caliber round balls, the Apaches sometimes had to make their own bullets. They cut pieces of lead from bar lead or shaved an oversize bullet to approximate the size of the caliber needed. They then chewed the lead until it resembled a rough, round ball that would fit into the gun's barrel. Tooth depressions in the lead identify these balls. Haecker (2012); Johnson, Adams, Hawk, and Miller (2009); and Scott (2000) discuss the presence of chewed balls from other sites in their reports. Crews recorded seven chewed round balls during the Battle of Apache Pass survey. Therefore, between the mixed calibers of Minié balls, bullets, round balls, and homemade bullets, impact areas for Apache ammunition often lend themselves to easier identification than military impact areas that contain one or two calibers of ammunition.

Between the Bascom affair of February 1861 and the Battle of Apache Pass in July 1862, the Apaches acquired enough firearms through raiding, trading, and warfare that by contemporary standards of the day they were considered well-armed. Sergeant Albert Fountain, a participant in the battle, affirmed in an article, written in 1891, that the Apaches were “well armed” (Fountain 1891).

Lieutenant Colonel Edward Eyre, who had an encounter with Cochise’s Apaches in Apache Pass two weeks before the battle, supported this statement. In his July 6, 1862 report to the Acting Assistant Adjutant General, Eyre stated that “. . . all of them [were] armed with fire-arms, some with rifles and six-shooting pistols. Of the latter I observed a great number and occasionally single-barreled shotguns” (Davis et al. 1897). An *Alta California* newspaper correspondent with Eyre expanded further on the Apaches’ armament in a letter to his editor. The correspondent wrote, “All of them have carbines, and some rifles, shot guns, six-shooters and all other kinds of arms that we use. In fact, they are just as well armed as we are.” He also mentioned that Cochise had a “fine rifle and two six shooters” (1862).

In 17 months of fighting with the army, the Apaches acquired at least four Sharps carbines, eight Model 1851 Colt revolvers, nine Model 1855 Springfield rifles, and four Minié musket conversions. These are the arms that the correspondent referred to when he said, “all other kinds of arms that we use.” Based on contemporary accounts for the same time period, the Apaches acquired at least 17 Sharps rifles or carbines, 24 revolvers, 20 rifles, and one shotgun from fighting with Butterfield Stage employees, miners, travelers, and ranchers. This does not include raids into Mexico and some incidents in New Mexico. With this in mind, it quickly becomes apparent that the Apaches had a varied accumulation of firearms available during the battle, which only became more apparent as the archeological survey progressed. In a way, the time between the Bascom Affair and the Battle of Apache Pass became a time of Apache firearms standardization as well, with modern weapons replacing many older, obsolete arms of the same calibers. It bears mention that none of the battle participants mention the Apaches’ using bows and arrows during the fight, and the crew found no arrow points during the survey.

Although equally well-armed, neither side had gained sufficient proficiency with their firearms to have a decided advantage. For the most part, the Apaches’ relatively recent weapons acquisitions came with little or no instruction. With most of their limited supply of ammunition accumulated through raiding and trading, they did not have the quantity required for target practice. They had figured out the fundamentals of firing their firearms on flat ground and short range and had become effective in the art of the ambush. However, elevation changes diminished their already presumably limited understanding of firearms trajectory. However, what an Apache warrior might lack in complete understanding of his weapon, he made up for in natural abilities. Years of hunting, raiding, and warfare helped him develop use of cover, knowledge of terrain and environment, and tactics such as the ambush, which made him a formidable opponent.

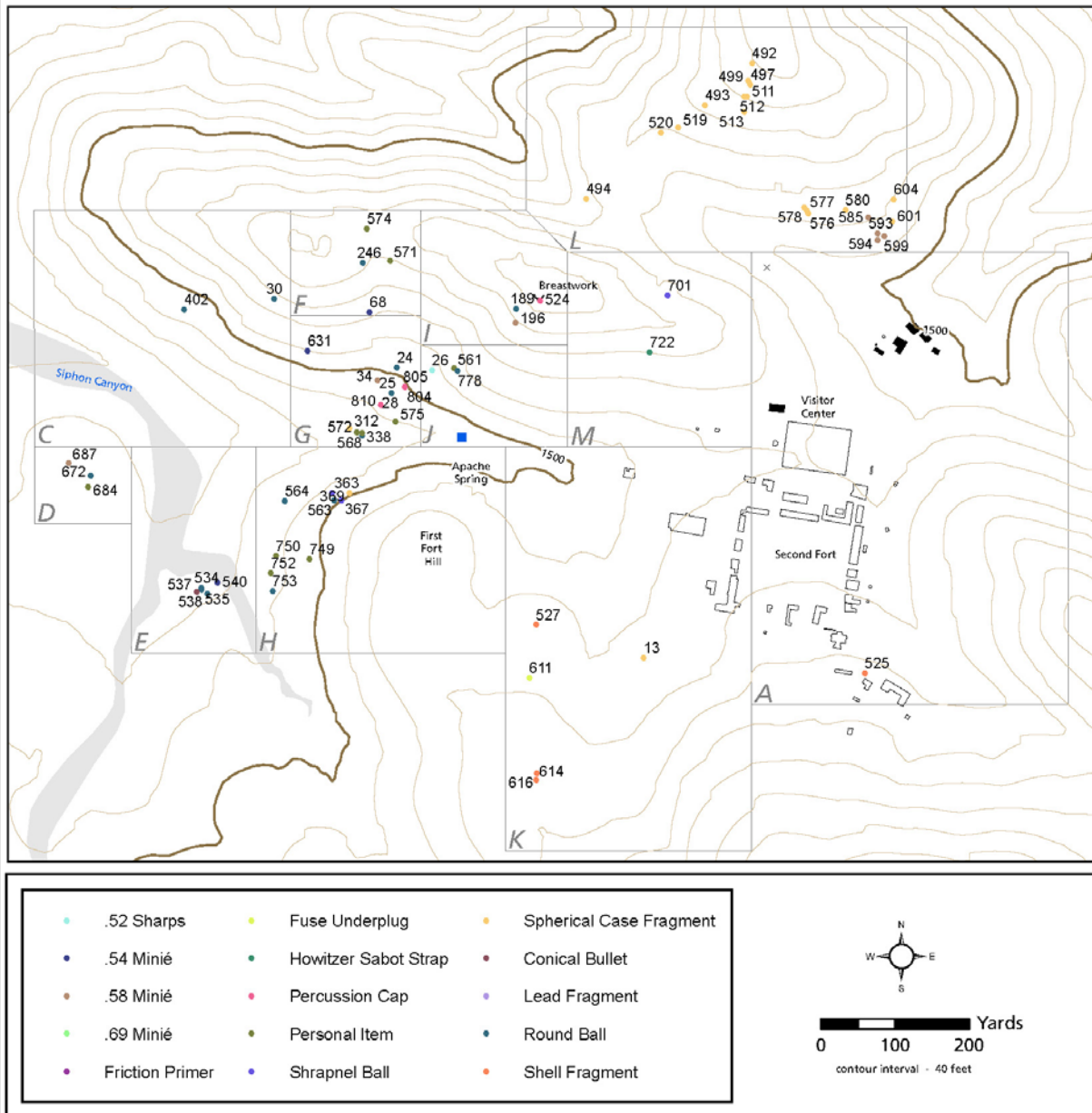
Soldiers, on the other hand, drilled regularly with their weapons, and had gained familiarity with their basic operation (McChristian 1981:13). Troops also had a general knowledge of trajectory, which their officers reinforced during battle. Although the army lacked an established system of target practice, the California Column troops apparently received more firearms training than most

army units. Members of the California Column drilled in squads and also as skirmishers. Their commanders allowed them to fire at game as they marched, while on sentinel duty, and on the Fourth of July (Hand 1862). Additional support for firearms training comes from a book written by Aurora Hunt, which states that “the troops drilled on foot and on horseback and improved their aim with the weapons they were issued” (Hunt 2004). California troops were composed mainly of outdoorsmen. For the most part they were strong, healthy miners, familiar with horses and firearms. Many were well-educated (Masich 2006:14–15). Masich also mentions that the troops drilled with both blank and live ammunition while at Fort Yuma. Although ammunition was usually a concern, they also drilled by battalion, company, and as skirmishers. At many other camps or forts across the west, a soldier’s target practice normally consisted of shooting one round at a post to empty his weapon when coming off guard duty (McChristian 1981:10). A shot or two a week at a stationary target does not make for an army of sharpshooters. Thus, although firearm competency would probably favor the soldiers, they did not outperform the Apaches by much.

Eight hundred twenty-seven battle-related artifacts were recorded during the survey. They were each given an NC (Not Collected) number for identification (Figure 19). For this report, the artifacts were divided into three general groups: Small Arms Ammunition, Personal Items, and Artillery-Related Artifacts.



Artifacts Discussed in Text



Produced by SOAR Office

Figure 19. Locations for artifacts discussed in the text.

Small Arms Ammunition

Spherical/Round Balls (35)

.28 Caliber Spherical Ball (N=1)

This single, round ball (NC778) was in good-enough condition to provide an accurate diameter of .28 caliber. It was probably No. 2 buckshot fired from a muzzle-loading shotgun (Logan 1959:171). The intended target was far enough away that the ball's energy was used up by the time the ball dropped to the ground, causing little damage to the round.

.30 Caliber Spherical Ball (N=1)

This spherical ball (NC30) is likely No.1 buckshot fired by Apaches from a captured shotgun. Several contemporary accounts mention shotguns being captured during raiding leading up to the battle.

.36 Caliber Spherical Balls (N=7)

Seven .36-caliber spherical balls (NC402, 548, 563, 564, 645, 659, 769) were recorded. The five fired balls could have been fired from either a revolver or some type of early civilian percussion rifle. The distances involved, however, make it likely that these rounds were fired from a rifle. One of the balls (NC564) had been dropped and was in excellent condition. Ball NC563 has teeth marks on it, suggesting that an Apache chewed the ball into shape and then fired it out of a civilian rifle or possibly a shotgun, which would have provided a greater range than a revolver (Figure 20, right).

.38 Caliber Spherical Balls (N=3)

These three rounds (NC672, 695, 781) were probably fired from some type of civilian rifle. Ball NC781 was dropped and has a sprue. A sprue is a piece of wasted lead left on the ball from the mold (Thomas 1997:108–109). Because of the rocky terrain, most of the lead bullets were damaged too badly to count lands and grooves. However, one of these rounds (NC672) shows evidence that the rifle that fired it had seven lands and grooves. Once again, they were fired from Apache positions.

.41 Caliber Spherical Ball (N=1)

This .41-caliber round ball (NC538) (determined by caliper) may have been fired from a plains rifle or some type of civilian rifle. Because of the individuality of each of these rifles, calibers varied from about .36 to .50. Indian traders or merchants acquired many of these guns and widely dispersed them across the western frontier (Flayderman 1994:541, 561). They would have been a common Apache firearm at the time of the battle.



Figure 20. Chewed or hammered round balls. From left to right, .50 (NC24), .45 (NC29), .44 (NC535), and .36 (NC563) calibers.

.44 Caliber Spherical Balls (N=7)

Although these .44-caliber balls (NC25, 28, 32, 52, 338, 535, 549) could have been fired from either a revolver or some type of plains or percussion civilian rifle, their provenience would indicate that they were probably fired out of a civilian rifle of some type at troops approaching Apache positions. Two of the spherical balls (NC338, 535) show evidence of having been chewed by an Apache into about a .44-caliber round ball (Figure 20, center right). Balls NC25 and 28 were dropped and in excellent condition.

.45 Caliber Spherical Ball (N=9)

Nine .45-caliber spherical balls (NC27, 29, 31, 407, 534, 649, 673, 753, 766) were recorded. One of the balls (NC29) appears to have been hammered into roughly a .45-caliber diameter (Figure 20, center left). Ball NC534 was chewed into shape. These Apache-modified balls were fired out of an early civilian muzzle-loading rifle. Ball NC753 exhibits a large ramrod ring and sprue that suggests it was fired from a rifle, as were the others.

.50 Caliber Spherical Balls (N=6)

Six .50-caliber (NC24, 189, 246, 758, 771, 774) round balls were found near the base of Overlook Ridge. Two balls (NC24, 246) were chewed into shape (Figure 20, left). Although several early muskets and rifles could fire this caliber of ball, it may have been fired from a plains rifle or Kentucky rifle. Both rifles were quite popular in the 1850s and 1860s, and commonly used by the Apaches.

Conical Bullets (42)

.32 Caliber Bullet (N=1)

A single .32-caliber, solid-base, conical bullet (NC537) was recorded. Several early gun manufacturers, such as Colt, Ethan Allen, Manhattan, and others made small pocket pistols and revolvers that fired .32-caliber bullets (Flayderman 1994:52, 67, 109). Any of these guns would have had limited range and little, if any, impact during the battle. Extraordinary distances for this type of light weapon would have only been made possible by extreme elevation differences between shooter and target. Although the nose of the bullet is too deformed to tell, there is also the possibility that it may have been forced down the barrel of some type of an early percussion rifle. Either way, the bullet would have been fired from an Apache weapon.

.36 Caliber Bullets (N=2)

Two .36-caliber bullets (NC391, 547) recorded were conical, solid-base bullets in poor condition. California cavalrymen were armed with the Model 1851 Colt Navy revolver (Masich 2006:20). The Model 1851 was a lightweight, accurate revolver held in high regard by the troopers who used it. The Apaches were also armed with these revolvers, so which side fired a given bullet is determined by each bullet's provenience. Artifact NC 547 was probably fired by an Apache, while the location of NC391 may make it not battle-related.

.44 Caliber Bullets (N=19)

Eighteen .44-caliber bullets (NC7, 21, 34, 57, 58, 60, 79, 322, 345, 348, 361, 373, 388, 389, 390, 404, 693, 776, 826) were discovered on the site. They were all conical, solid-base bullets consistent with those fired in early percussion revolvers. The early 1860s saw many makes of revolvers in .44 caliber. The most predominant ones, however, were probably the Colt Walker, First, Second and Third Model Dragoon revolvers, and the Model 1860 Army revolver (Flayderman 1994:71–72, 80). Because only the teamsters were armed with .44-caliber revolvers and they did not take part in much of the fighting, most of these bullets would have been fired by the Apaches.

.50 Caliber Bullet (N=1)

This bullet (NC771) appears to have been modified by Apaches before being fired out of a .50-caliber weapon (Figure 21). The bullet was originally a .58-caliber Minié ball with a triangular cavity in its base, indicating it was made for French muskets (Thomas and Thomas 1996:47, 69). The sides of the bullet were scraped off until it was about .50 caliber in diameter. The bullet also has deep remnants of a ramrod impression on its nose, indicating that it was probably still too large and loaded hard. The weapon that fired it was probably some type of .50-caliber civilian rifle or rifled musket.



Figure 21. .58-caliber Minié ball (NC771) scraped down to .50-caliber bullet. Note triangular cavity.

.52 Caliber Bullet (N=19)

These bullets were manufactured by U.S. government arsenals for the Sharps carbine or rifle, and represent three variants of Sharps bullets. Of the 19 Sharps bullets (NC26, 39, 40, 46, 47, 48, 49, 51, 53, 55, 56, 59, 62, 78, 220, 386, 506, 558, 767), all but two have three compression rings and a solid base, sometimes called a “ringtail,” that protrudes from the bottom of the bullet, providing a place to attach the paper cartridge (Thomas and Thomas 1996:24). The Sharps New Model 1859 breech-loading carbine was standard issue to cavalry troops heading for Arizona with the California Column (Figure 22, left). These carbines were acquired in California from regular cavalry troops being transferred to the East (Masich 2006:19). Of the 19 Sharps bullets, 16 were fired by Apaches, while three (NC220, 386, 506) were fired by soldiers.

One linen cartridge Sharps bullet (NC26) was recorded (Figure 22, right). This variant has a flat, solid base and does not have the “ringtail,” as previously described. It has two, lightly defined compression rings and is one of the few bullets that was so little damaged that the lands and grooves imprinted on it were visible. It has six lands and grooves, typical of a Sharps (Thomas and Thomas 1996:26).



Figure 22. .52-caliber Sharps bullets. From left to right, standard paper Sharps bullet (cat. 3106, NC558), multi-groove bullet (cat. No. 8271, NC767), linen cartridge bullet (NC26).

One lone Sharps multi-groove bullet (NC767) was also found (Figure 22, center). This variant has a wide compression ring near the base and a narrower one about halfway up the side of the bullet. In between the compression rings are a series of nine small grooves. It also has a lead fold on its base, creating a ringtail to which the cartridge was tied. The multi-groove bullet was patented by Edwin Gomez and William Mills in August 1858. The bullet was not the only thing that was innovative about the cartridge. It contained a new type of powder that produced half the smoke of regular powder with virtually no muzzle flash, reduced fouling, improved penetration by about 15%, and did not misfire when wet. Even though all these claims were verified during testing, it appears the cartridge did not gain acceptance by the military but was more popular commercially (Thomas 2002:223–225). Found at the ambush site, its provenience suggests that it was fired by an Apache.

It is known that the Apaches were well-armed with Sharps carbines. In fights with Butterfield Overland Mail employees at Doubtful and Cooke's canyons, Cochise had acquired 13 Sharps rifles (Couchman 1990:131–132). The latest Sharps acquisitions came when three more were obtained during an attack on an army reconnaissance patrol in Apache Pass on July 25, 1862, just two weeks before the Battle of Apache Pass. The patrol, under the command of Lieutenant Colonel Edward E. Eyre, lost three men to the Apaches who captured their Sharps carbines and ammunition (McChristian 2005:48–50).

Minié Balls (315)

.54 Caliber Minié Balls (N=5)

Five .54-caliber conical, cavity-based, three-compression-ring Minié balls (NC68, 540, 631, 754, 772) were recorded. Although the weight of these bullets varies, they average around 440 grains. Cartridges were made of paper and were to contain 50 grains of powder (Thomas 1997:124). The bullets are consistent with those manufactured by U.S. arsenals for the Model 1841 rifled musket (sometimes called a Mississippi Rifle). This rifle was standard military issue from 1846 to 1855 (Flayderman 1994:457). By 1861–1862, it would have been common for them to be in civilian hands. Apaches would have acquired them through raiding or trading. NC772 was the only bullet of the five that was in good enough condition to see lands and grooves. It had seven, which would be consistent with the Model 1841 Rifle Musket (Figure 23). This rifle would have been fired by Apaches.



Figure 23. .54-caliber Minié ball (NC772).

.58 Caliber Minié Balls (N=227)

Designed for the Model 1855 Springfield Rifled Musket, these .500-grain Minié balls were standard issue for the California Volunteer Infantry. The Minié ball had three lubricating grooves that encircled the bullet and a conical cavity in its base. This cavity allowed gases to expand the bullet's thin sides to conform tightly to the rifling, considerably improving the rifle's accuracy (Logan 1959). The paper cartridge was to contain 60 grains of black powder.

The Model 1855 had an innovative Maynard priming system that employed a roll of percussion caps closely resembling those used in twentieth-century cap guns. The caps were loaded into a small compartment on the side of the lock plate and fed up and over the nipple, thus eliminating the problem of losing copper percussion caps. On the surface, the roll of caps seemed to have an advantage over the old copper caps; however, they were susceptible to moisture damage, which increased the probability of a misfire. Knowing this problem existed, Colonel James H. Carlton ordered his California troops to use the old-style percussion caps (Masich 2006:20).

The not-collected numbers for .58-caliber Minié balls are as follows: NC33, 34, 36, 37, 38, 41, 42, 43, 44, 45, 50, 54, 61, 63, 64, 65, 66, 67, 69, 70, 71, 72, 73, 74, 75, 76, 80, 81, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 211, 212, 213, 214, 221, 222, 228, 229, 230, 231, 232, 248, 249, 250, 251, 252, 259, 273, 264, 265, 266, 267, 268, 269, 270, 320, 324, 331, 332, 353, 356, 364, 375, 376, 377, 378, 392, 394, 396, 408, 503, 504, 514, 531, 532, 539, 541, 543, 555, 557, 559, 584, 585, 586, 588, 589, 590, 592, 593, 594, 595, 596, 597, 598, 599, 600, 602, 603, 605, 606, 607, 609, 610, 615, 618, 619, 622, 623, 627, 628, 634, 635, 637, 638, 640, 641, 642, 644, 646, 647, 648, 651, 653, 654, 656, 658, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 674, 675, 677, 678, 680, 681, 682, 683, 687, 689, 690, 691, 692, 694, 697, 700, 703, 708, 709, 711, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 743, 756, 765, 768, 777.

Minié balls of .58 caliber were the most commonly found artifact of the survey, at 27.4%. They were used by both sides during the conflict and so have a wider distribution than any of the other artifacts. Two varieties were recorded. One of them, represented by (NC741), had a rounded nose (Figure 24, left). The other type was much more pointed (Figure 24, right). Over half are concentrated on the east peak of Overlook Ridge, where the largest concentration of Apaches was positioned and one of the last positions to be abandoned by the Indians near the end of the fight. Most of the remainder of the .58s were scattered among the lower positions and the saddle between the east and west peaks on Overlook Ridge. Additionally, they were found near Apache positions on First Fort Hill and on the next ridge south of First Fort Hill, suggesting that they were overshots of Apache positions along the crest of the hill.

Some of the .58-caliber Minié balls in Sections J and G are probably related to post-battle targets associated with the First Fort Bowie and may not be battle-related. The locations of the Minié balls in these sections had to be scrutinized more closely to assist in determining the artifact's relationship with the battle. This problem is discussed more fully in the next section on .69-caliber Minié balls.



Figure 24. Two types of dropped .58-caliber Minié Balls (NC741, 756).

.69 Caliber Minié Balls (N=83)

The .69-caliber Minié ball came into existence in 1855. This ammunition was to be used primarily in converted Model 1842 rifled muskets, musketoons, and, during the Civil War, some imported rifles. As part of the musket's conversion, the barrel was rifled and improved sights were added. The weight of the .69-caliber Minié ball varied but was supposed to be 730 grains (Thomas 1997:244–245). The paper cartridge was to contain 70 grains of black powder. Minié balls of .69 caliber are represented by numbers NC 409–491.

The most common .69-caliber weapon during the time of the battle and first four years of the fort's existence was the Model 1842 smoothbore, or rifled, Springfield musket. It is believed that these conversions were the type of weapon issued to troops in Company A, 1st Infantry New Mexican Volunteers, stationed at Fort Bowie from June 18, 1864 to June 4, 1866 (Meketa 1980: 14–16).

Although not preferable, the .69-caliber Minié ball could be fired out of a smoothbore musket—but without rifling, the accuracy and range would not be optimal. The more preferred ammunition for the smoothbore musket was a .69-caliber round ball or buck and ball, which consisted of one .69-caliber ball and three .31-caliber balls packed into a paper cartridge.

There are two dense concentrations of conical base cavity, .69-caliber Minié balls (409–491) on the south slope of Overlook Ridge. One of these concentrations occurs in a linear pattern along the drainage between the east and west peaks of Overlook Ridge, below the saddle. There are no natural features or rock formations near this concentration and a cluster of this size is totally out of place for being battle-related. There is no mention or evidence of troops' being in that location during the battle, and anyone there would have been totally exposed to fire from above. The bullets appear to have been fired from a person or persons on the north side of First Fort Hill. This suggests that most of these artifacts are not battle-related.

As was common practice at western forts during this time period, men coming off of guard duty at Fort Bowie were allowed to discharge their weapons at a target (Masich 2006:73). This gave the soldier some target practice and allowed him to avoid the hassle of pulling the ball from the barrel of the gun. At Fort Bowie, the target, a wooden post, was located on a hillside across from the camp and within the battle site. It was probably established by members of Company G, 5th Infantry California Volunteers shortly after their arrival to construct the fort. The California troops, armed with .58-caliber rifled muskets, were probably responsible for the concentrations of .58-caliber Minié balls around the targets. This practice was stopped abruptly when ammunition shortages became a concern.

When the New Mexico Volunteers arrived in the summer of 1864, they re-established the target and allowed soldiers coming off of guard duty to unload their weapons by firing at it. Sometimes the soldier coming closest to the target was rewarded in some manner, such as being excused from his next guard duty (Meketa 1980:7). It is believed that the concentration of .58 and .69-caliber Minié balls along this drainage is where one of these targets was located, accounting for most but not all of this ammunition. Although there is no way of telling how much, some of it was battle-related.

The second concentration is located on the north edge of the impact area at the base of Overlook Ridge, below the breastworks. Although the densest part of this concentration probably represents another post-battle target, making many of these bullets not battle-related, it also overlaps the impact area containing a variety of different calibers of bullets. Although many of the .58- and .69-caliber Minié balls at this location are not battle-related, some of them were likely fired by the Apaches during the battle. The .69-caliber Minié balls found in the impact area near the base of the east point of Overlook Ridge were found in connection with several other caliber rounds and represent overshots at troops as they ascended Overlook Ridge. Many of these rounds were peculiar in that they struck the ground either sideways or even backwards, as opposed to nose-first. There are three likely causes for this: (1) the bullets had reached their terminal velocity and started to tumble, (2) they were fired from dirty guns and were destabilized when fired and tumbling when they hit, (3) they were fired in a larger-bore gun, like a smoothbore, and were tumbling (D. Scott, personal communication, 2014). The first possibility can be eliminated because the shot was relatively short and downhill, so the bullets would not have reached terminal velocity. The other two possibilities fit well with Apache traits at the time. Apaches seldom, if ever, cleaned their weapons and were often forced to fire the wrong size or type of ammunition out of their guns—especially in the early days, when many of them had muskets.

Weapons of .69 caliber were relatively common in the early 1860s, so it is possible that the Apaches had acquired some of them, including smoothbores. We know that the Apaches had obtained at least four .69-caliber weapons just days before the Battle of Apache Pass. At that time, a party of miners was ambushed and killed about three miles east of Apache Pass. In this group were four members of the Arizona Guards who were Confederate deserters armed with what was termed “Minié Muskets” (Hall 1978:369–371). The term “Minié rifle or musket” was applied to smoothbore muskets that were converted to a percussion ignition system and rifled, or the Model 1842 rifled musket (Coggins 1962:31). The Apache style of acquiring guns through trading and raiding likely led them, over time, to acquire both smoothbore and rifled weapons.

Gun-Related (94)

Lead Fragments (N=66)

Lead fragments make up about 8.2% of survey artifacts. Many of them were found amongst the other fired ammunition and represent fragments from the bullets with which they were associated. They were either too small or too disfigured to identify by type or caliber.

Percussion Caps (N=28)

Invented in 1822 by Joshua Shaw, the percussion cap quickly became the primary method of ignition for small arms of the period (Figure 25). Constructed of copper, the cap looked like a small top hat, the interior of which contained a small amount of fulminate of mercury. Each shot from the weapon required one percussion cap, which was placed on the nipple near the breech end of the barrel after loading the piece. When the hammer struck the cap it ignited, showering sparks into the main powder charge within the barrel. The percussion system was much improved over the old flint-and-steel



Figure 25. Three fired percussion caps. From left to right, NC804, 805, 810, found in soldier positions near the base of Overlook Ridge.

method that was so susceptible to moisture. Twelve percussion caps were packed inside each ten round package of cartridges. If there was a disadvantage to percussion caps, it was their small size. It was easy to drop them, especially in the heat of battle (Coates and Thomas 1990:72–73).

Primarily because of their small size, percussion caps are not often found in any quantity. After being fired, they could easily fall between rocks or get washed downslope, and they were prone to break up into even smaller pieces. The battle site's steep, rocky terrain made it difficult to find them. They were only discovered in four different areas: on the skirmish line at the ambush site, at soldier firing positions on the base of Overlook Ridge, at soldier firing positions near the top of the west peak of Overlook Ridge, and at the Apache positions on top of the east peak on Overlook Ridge. Twenty-eight of them (NC315, 326, 327, 328, 524, 755, 757, 759, 760, 761, 762, 763, 764, 801–815) were recorded. All but one were used with rifles.

Percussion caps were found in quantity in only three places: the ambush site, which produced eight (NC755, 757, 759, 760, 761, 762, 763, 764); soldier firing positions at the base of Overlook Ridge, which produced 15 (NC315, 326, 327, 328, 801–811); and soldier positions on the west peak of Overlook Ridge, where four were recorded (NC812–815). Their discovery was made possible only because the soil in these areas is relatively rock-free, which allowed for the metal detector head to be held close to the ground, increasing sensitivity. Of the eight caps found at the ambush site, seven were used with rifles and one (NC764) was used with a revolver. The four caps found in the rocks near the top of the west peak of Overlook Ridge were all used with a musket. The single percussion cap near the Apache breastwork may have been fired by an Apache or by troops during the Bascom Affair a year earlier.

Personal Items

Clothing, Equipment, and Personal (N=19)

This category, consisting of 19 items, includes eight general-service buttons (NC568, 571, 572, 574, 684, 749, 750, 752), three four-hole trouser buttons (NC569, 570, 676), two roller buckles (NC573, 779), two rivets (NC575, 742), one canteen stopper (NC780), two boot tacks (NC762, 827), and one clay pipe-bowl fragment (NC561). These artifacts represent common military items that could have been deposited any time during or after the battle, but based upon their provenience, with the exception of one item, a general-service button (NC684), they are strong contenders for being battle-related.

One small, incomplete, general-service button (NC684), missing its attachment eye and not backmarked, was located in an area that troops moved through on their advance toward Apache Spring. This area saw other military activity after the battle, such as the existence of a scout camp and close proximity to the rifle ranges, so the button may not be associated with the battle. It would have been a cuff button on the four-button fatigue blouse. The other general-service buttons are located in areas that were heavily used by troops during the battle but saw limited use afterward.

The seven remaining large, Civil-War-style, general-service buttons are consistent with those used on the four-button fatigue blouse issued to the California troops (Masich 2006:74). These two-piece, brass buttons consist of a domed front and a back plate with a wire attachment loop shank fastened to

it. An eagle holding arrows in one talon and an olive branch in the other is stamped into the front. This style of button, with a few minor modifications, was used from 1855 to 1902. It was not uncommon to lose these buttons during rigorous activities, such as fatigue duty or campaigning.

One of these buttons (NC574) is backmarked “EXTRA” at the 12 o’clock position, “QUALITY” at the six o’clock position, and has three stars between the words at the three and nine o’clock positions. The use of the term and stars is consistent with buttons manufactured in the 1860s, but the maker is unknown (Tice 1997). This button was found in the saddle of Overlook Ridge.

Two incomplete, general-service buttons (NC568, 571) with no backmark or attachment loops were also recorded. The maker is unknown. NC571 was found in the saddle of Overlook Ridge, while NC568 was found at a soldier firing position near the base of Overlook Ridge.

One complete, general-service button (NC572) was found with no backmark, making maker identification difficult. This button was also found at a soldier firing position near the base of Overlook Ridge.

One complete, general-service button (NC749) was backmarked, “Scovill Mfg. Co., Waterbury.” Operating out of Waterbury, Connecticut, the Scovill Manufacturing Company was in business, under this name, from 1850 to 1970 (Tice 1997:32). This button was found near the base of First Fort Hill.

One complete, general-service button (NC750), backmarked, “Horstmann Bros. & Co., Phil.,” was found near the base of First Fort Hill (Figure 26). Horstmann Brothers produced buttons with this backmark from 1859 to 1893 (Tice 1997:40).



Figure 26. Large general-service button. (NC750) manufactured by Horstmann Brothers in Philadelphia.

Another complete, large, Civil War, general-service button (NC752), backmarked “*Extra Quality*” was found at the base of the west slope of First Fort Hill. This area is where it is believed California troops attacked the Apache positions on the hill. Although two other buttons were found here, some of them may be post-battle.

Three large, four-hole, iron trouser buttons (NC569, 570, 676) were found either in troop positions or in areas they passed through. These buttons were used on trousers to close the fly and attach suspenders (Herskovitz 1978:41).

Two iron roller buckles were recorded. One (NC573) was found near the Apache breastworks on the east peak of Overlook Ridge. The second (NC779) was discovered along the base of the west half of Overlook Ridge. This type of buckle was used on horse and mule harnesses but was also typical of those used on cartridge boxes. The M1855 rifle musket cartridge box had two of these buckles on the bottom of the box for attaching the shoulder strap (Dorsey 1984:54). The piece of equipment this device was part of is unknown.

A canteen stopper ring (NC780) for a Pattern 1858 canteen was located along the south base of the west half of Overlook Ridge (Phillips and Rila 1989:66–67). The stopper consisted of a pull ring on an iron shaft, an iron washer, a cork, and a small nut that held all the parts together. Attached to the ring was a chain. Only the iron wire pull survived.

Two copper rivets, one with a washer (NC742), are typical of rivets used on horse equipment and military accoutrements. This rivet was found at the base of the west slope of First Fort Hill. The rivet without the washer (NC575) has a five-pointed star embossed on its base and was located near the base of Overlook Ridge (Figure 27). What the star stands for and what item the rivet was used on is unknown.



Figure 27. A rivet (NC575) with a star on its base.

One small, round-headed boot tack (NC762) was located at the west skirmish line near the ambush site. A second boot tack (NC827) was found on the route of Sergeant Fountain's advance toward the Apache breastworks. Both tacks are probably battle-related.

One of the more personal items recovered during the survey is a small, reddish-brown, reed-stem clay pipe bowl (NC561) (Russell 1996:10–11). This type of pipe consisted of a bowl and a short, finished stem (Figure 28). Any type of hollow stem could be inserted into the clay stem, the most common being a reed from certain plants. The partial bowl and stem is unmarked. This bowl was found on the path of Sergeant Fountain's assault on Apache breastworks located on the east end of Overlook Ridge.



Figure 28. Pipe-bowl fragment (NC561).

Artillery-Related Artifacts

Captain Thomas Roberts's command was issued two Model 1841, 12-pounder mountain howitzers mounted on prairie carriages before they left California for New Mexico. Second Lieutenant Jeremiah Phelan gave the gun crews, made up of 20 infantrymen and unassigned recruits, training on the fundamentals of artillery usage (Masich 2006:35). They had extra practice with the howitzers during ceremonies, salutes, and the Fourth of July (Hand 1862). Although these crews obtained a good understanding of artillery drill and firing, not wanting to enter combat without some type of small arm, the gun crews were allowed to retain their rifled muskets (Masich 2006:22), a decision that would create problems for their officers during the battle.

The Model 1841 mountain howitzer had a bore of 4.62 inches and fired a wrought-iron ball 4.52 inches in diameter (Thomas 1985:32). During the Battle of Apache Pass, California artillerymen fired two types of howitzer ammunition, shell and spherical case. Both types of ammunition were “fixed,” meaning the ball was strapped to the top of a wooden sabot and the powder bag tied to the bottom of the sabot (Kupke 1996:40). At the time of the battle, the smooth fuse hole in the ball was filled with a predrilled conical wooden fuse plug. A hole in the plug was large enough to accept a paper-cased time fuse. This fuse, with graduated markings, was cut for the length of time needed to get the ball to its intended target before exploding. It was lit by igniting gases as the cannonball left the gun’s barrel (Thomas 1985:26).

Each gun had two ammunition chests that, in theory, contained eight rounds: five spherical-case, two shell, and one canister (McFeaters 2008:35). It is not known if General Carlton maintained the standard number and percentage of rounds as per regulation or adopted a standard of personal preference. Based upon the determination that around 19 spherical-case and four shell rounds were fired, it would appear that shell made up 17.4% of the rounds fired, well below their 25% representation in the ammunition chest. The four fired shell rounds would represent firing half of the shell rounds available in the chests. Apparently, spherical-case rounds were the preferred ammunition. Because no canister-round artifacts were recorded during the survey, either the gun crews chose not to use canister, or perhaps the canister round was substituted for another spherical-case round. Based on what is known of General Carlton’s personality, it would not be unusual for him to adapt the regulations to better meet his needs.

It is a relatively simple matter to differentiate between shell and spherical-case fragments in the field. Identification between the two types of fragments can be determined quickly by looking at the thickness of the fragment wall (Figure 29). Although there are slight variations in the iron walls, shell fragments are approximately 0.7 inches thick and spherical-case fragments are closer to 0.45 inches thick (McFeaters 2008:50).

Artifacts recorded representing artillery were iron shell and spherical-case fragments, .69-caliber lead spherical-case shrapnel balls, pieces of iron sabot strapping, copper friction primers, an underplug for a Bormann fuse, and an unexploded shell. Together, these artifacts tell the story of the effectiveness of the artillery during the battle.



Figure 29. Wall-thickness differences between cannonballs. Left, spherical-case fragment (NC519) and right, shell fragment (NC527).

Shell Fragments (N=11)

Shell artillery rounds (NC7, 9, 12, 525, 527, 528, 551, 567, 614, 616, 751) were thick-walled, hollow iron balls, filled with a black-powder bursting charge. They had an effective range of between 170 and 1,005 yards, and were designed to be used against earthworks, buildings, and troops under heavy vegetation cover. Although the rounds had a smaller bursting charge that broke the ball into fewer pieces, they produced a psychological advantage by creating a loud, explosive flash (Haecker 1994:63–64).

One of these fragments (NC527) has a partial, smooth fuse hole and a well-defined mold seam. The smooth fuse hole indicates the use of a wooden fuse plug and paper fuse, the primary type utilized during the battle.

Another shell round that exploded south of the previously mentioned one is represented by only two fragments, but one in particular is very important. Fragment NC616 has a partial fuse hole but unlike the others, has two sets of threads consistent with the Bormann fuse system (see Figure 32 right). This is the only known howitzer round fired during the battle that utilized the Bormann fuse; all the other rounds used paper fuses. It was thought that the California troops may not have been issued artillery rounds using the Bormann fuse but this discovery suggests otherwise. The second shell

fragment (NC614) is another part of the Bormann fuse round and fits together with the fuse-hole fragment.

One complete shell cannonball (NC525, Cat. No. 8292) was found within a few feet of the north corner of the hospital steward's quarters (HS34) by two relic hunters in 1958. The heavily corroded, unexploded round was located approximately six inches below ground level using an early version of a recreational metal detector (Figure 30). The item was donated back to the park in 2002, along with documentation and photographs that allowed National Park Service staff to determine the cannonball's exact discovery location within a few inches. The smooth fuse hole in the ball makes it consistent with nearly all other artillery rounds fired during the battle; therefore, it can be reliably assumed that the round was fired during the battle.



Figure 30. Unexploded cannonball (shell) (NC525, Cat. No. 8292) found near the Hospital Steward's Quarters.

The hospital steward's quarters was a small, three-room adobe structure constructed in May 1889 (Greene 1980:214). The cannonball would have been found under what had been the front porch of the building. Two explanations for the cannonball's disposition are possible. With the ball's close proximity to the hospital steward's quarters, it may have been discovered in a different location and brought to the quarters to be utilized for some other purpose, such as a novel door stop or weight. However, the cannonball is in perfect line for having been fired at Apache positions around Apache Spring and, not exploding, could have bounced and rolled nearly 700 yards past its intended target, coming to rest near what would become the hospital steward's quarters. Either way, the round could have been covered with more soil when the foundation of the hospital steward's quarters was dug or later, after the fort's abandonment, when the crumbling adobe walls would have buried it even deeper.

As discussed earlier, each howitzer had two ammunition chests containing eight fixed rounds of ammunition. The four rounds of shell fired would have expended about 50% of the shell rounds in the ammunition chests for both guns. These rounds were probably replaced in the ammunition chests after the first day's fighting. With this in mind, and considering the number of spherical-case rounds fired, the ammunition chests for both guns would have been considerably depleted by the end of the first day's fighting.

Bormann Fuse Underplug (N=1)

Although the vast majority of cannonballs fired during the battle used paper fuses, one iron Bormann fuse underplug (NC611), recorded in Section K, suggests that at least one shell round (previously discussed) used the Bormann fuse (Figure 31). Developed in Belgium in the 1830s, the Bormann fuse arrived in the United States in 1851 (Carlson-Drexler, Scott, and Roeker 2008:43). Although its appearance brought an end to the use of the paper fuse, it apparently did not exist in sufficient quantity in California, given that the Volunteers used paper fuses for most of the Battle of Apache Pass. Another scenario suggests that the officers may have ordered their troops to use up older ammunition before newer rounds, but this is purely speculation.

The fuse plug is a nearly one-inch threaded disk with one .24-inch hole through its center and two smaller holes that go partially through on each side of the fuse hole. The two holes facilitated the use of a special, two-pronged wrench used to install the plug (Figure 32, left). The fuse itself was made of a tin/lead alloy, was screwed into the threaded hole (although of larger diameter), and came to rest atop the fuse plug. The plug kept the fuse from getting pushed into the shell when the howitzer fired. A circular powder channel inside the fuse terminated at a small powder charge in the center of the fuse. After the target distance was determined, the gunner pierced the index plate of the fuse at the desired flight time. At the time of firing, the powder in the channel ignited at the punched hole, traveled to the powder reservoir, ignited the powder reservoir that in turn exploded through the center hole in the underplug, and ignited the main charge in the cannonball (Carlson-Drexler, Scott, and Roeker 2008:43).



Figure 31. Bormann fuse underplug (NC611).



Figure 32. Bormann fuse underplug (NC611) and a fuse hole fragment (NC616) that it screwed into.

Spherical-Case Fragments (N=148)

Spherical-case fragments represent about 17.9% of total artifacts recorded at both the ambush site and the main battle site. Although there were 148 of these artifacts recorded, they probably represent between 18–20 spherical-case rounds fired. All but one were fired at the main battle site.

The not-collected numbers for spherical-case fragments are as follows: NC1, 2, 8,10,13,14, 20, 22, 23, 83, 85, 87, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 191, 218, 219, 233, 234, 235, 236, 237, 238, 242, 243, 261, 262, 272, 274, 278, 281, 283, 286, 295, 296, 297, 298, 299, 300, 301, 302, 304, 306, 312, 313, 314, 316, 317, 318, 319, 323, 329, 330, 333, 335, 336, 339, 341, 343, 346, 349, 350, 352, 354, 357, 358, 359, 360, 365, 366, 368, 369, 370, 374, 381, 382, 383, 384, 387, 395, 397, 398, 399, 400, 401, 403, 405, 406, 492, 493, 494, 497, 499, 502, 505, 507, 509, 511, 512, 513, 517, 519, 520, 521, 526, 529, 530, 533, 552, 553, 562, 576, 577, 578, 579, 580, 587, 601, 604, 620, 621, 625, 626, 629, 630, 632, 639, 685, 706, 707, 710, 712, 744, 745, 746, 747, 786, 787.

The thinner-walled spherical-case ball employed a center bursting charge surrounded by a sulfur matrix containing seventy-eight .69-caliber lead balls (Coggins 1962:67). When the ball reached its intended target, it exploded, showering the area with lead balls and iron fragments. For maximum effectiveness, spherical-case shot should detonate about 50 yards in front of and 6–7 yards above the target (Haecker 1994:64). With an effective range of between 150 to 800 yards, spherical case produced good results against clusters of troops (Kupke 1996:40).

Spherical-Case Shrapnel Balls (N=130)

Each spherical-case cannonball was packed with 78 lead balls of .65–.69 caliber that were broadcast over large areas around the target when the cannonball exploded (Greene and Scott 2004:133). Their pattern density was usually based on the cannonball's proximity to the ground or some type of obstruction (Figure 33). Rounds that went off 20 feet above the ground broadcast their shrapnel balls in a much wider pattern than one that exploded on the ground or just above it. Because of this, just the sheer numbers of these artifacts made them one of the most commonly recorded items during the survey, comprising 16.6% of the artifacts recorded. This was the primary type of howitzer ammunition used by members of the mountain howitzer's gun crews.

The not-collected numbers are listed are as follows: NC03, 04, 05, 06, 11, 15, 16, 17, 18, 19, 21, 82, 84, 86, 88, 89, 190, 215, 216, 217, 223, 224, 225, 226, 227, 235, 239, 240, 241, 244, 245, 247, 253, 254, 255, 256, 257, 258, 260, 271, 273, 275, 276, 277, 279, 280, 282, 284, 285, 287, 288, 289, 290, 291, 292, 293, 294, 303, 305, 307, 308, 309, 310, 311, 325, 337, 340, 342, 344, 347, 351, 355, 362, 363, 367, 371, 372, 379, 380, 393, 496, 498, 500, 501, 508, 510, 515, 518, 560, 581, 582, 583, 591, 608, 612, 613, 617, 633, 643, 652, 655, 657, 679, 686, 688, 696, 698, 699, 701, 702, 704, 705, 727, 782, 783, 784, 785, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800.



Figure 33. Two shrapnel balls. The ball on the left (NC367) impacted on something solid, while the ball on the right (NC363) impacted a softer object.

Sabot Strapping (N=19)

These short pieces of ½-inch, tinned sheet-iron strapping (NC495, 516, 565, 566, 713–726, 748) are what held the cannonball to the wooden sabot for fixed howitzer ammunition. A powder bag was then tied to grooves around the base of the sabot, creating the intact, “fixed” ammunition round. Crisscrossing the cannonball and nailed into the sabot, these straps would be torn into smaller pieces when the cannonball exploded (Kupke 1996:40 drawing). Away from the context of other artillery-related artifacts, these pieces can often be mistaken for pieces of scrap metal or barrel banding. One fragment had a sharp bend with a nail hole above it where the strap was attached to the wooden sabot and is nearly identical to the one in the drawing on page 40 of Kupke’s book.

Seventy-nine percent of the sabot strapping came from the south side of Overlook Ridge. Normally hard to find, the large quantity of strapping found in this area was rather unusual. The pieces found here were scattered among spherical-case fragments, shrapnel balls, and lead fragments. Several pieces of strapping showed evidence of nail holes’ being elongated or ripped apart and stretch lines in the metal from the strap’s being pulled apart at the time of the cannonball’s detonation (Figure 34). Virtually no non-battle-related artifacts were recorded on this hillside. Their pattern is linear on an east–west alignment, which is consistent with being fired from the west. The primary reason why so much sabot strapping was found on this hillside is that the slope in this area is nearly all exposed bedrock, with no soil depth. The strapping has nowhere to go on this hard, rocky surface and cannot settle into the soil because there is none. When all the sabot strapping lengths were added together, their total was enough to represent two different cannonballs. One round exploded lower down on the hillside, while another exploded higher up on the ridge line, probably depositing most of the

spherical-case fragments and shrapnel balls on the other side of the ridge, where they landed in what would become the fort dump. This area has so much metal in it that it is impossible to metal-detect; therefore, we were not able to verify their presence.



Figure 34. Sabot strap fragment (NC722). Note stretch lines in the metal.

Friction Primers (N=4)

By the early years of the American Civil War, mountain howitzers were fired by inserting a copper friction primer into the gun's vent hole near the breech of the barrel (Figure 35). The primer was an L-shaped, copper tube with sulphuret of antimony and chlorate of potassa in the short tube and musket powder in the longer portion of the tube (Fiege 1984). When the long end of the friction primer was pushed into the main powder charge inside the barrel, with the other end extending out of the top of the barrel, the lanyard hook could be attached through the wire loop on the primer. When the lanyard cord was pulled, the serrated wire inside the primer would spark, igniting the primer and in turn showering sparks into the main charge of the round, which propelled the cannonball down the barrel (Peterson 1969:116).

As discussed under the artillery introduction, friction primers were inserted into the breech of the barrel through the vent hole. When the gun was fired, the friction primer was forced out of the barrel and straight upward, usually landing within 30 feet of the gun. These three primers (NC385, 523, 524), found in a linear pattern along the north edge of Siphon Wash, indicate three separate howitzer firing positions of one shot each. This is consistent with the firing pattern produced by firing the gun, pushing it forward a short distance, and then firing again. This method of fire supports historical reports stating that the howitzers were pushed along with the skirmishers (Roberts 1862). One friction primer (NC545), located south of a small hill near the base of Overlook Ridge, may provide evidence of a howitzer firing position where historical documentation indicates the gun was rolled up a slope in order to gain more barrel elevation. The outcome of this practice on such a steep slope would have produced recoil capable of flipping the gun over onto its back, supporting the historic record. Cavalrymen with ropes had to help right the howitzer (Walker 1971).



Figure 35. Howitzer friction primer (NC524).

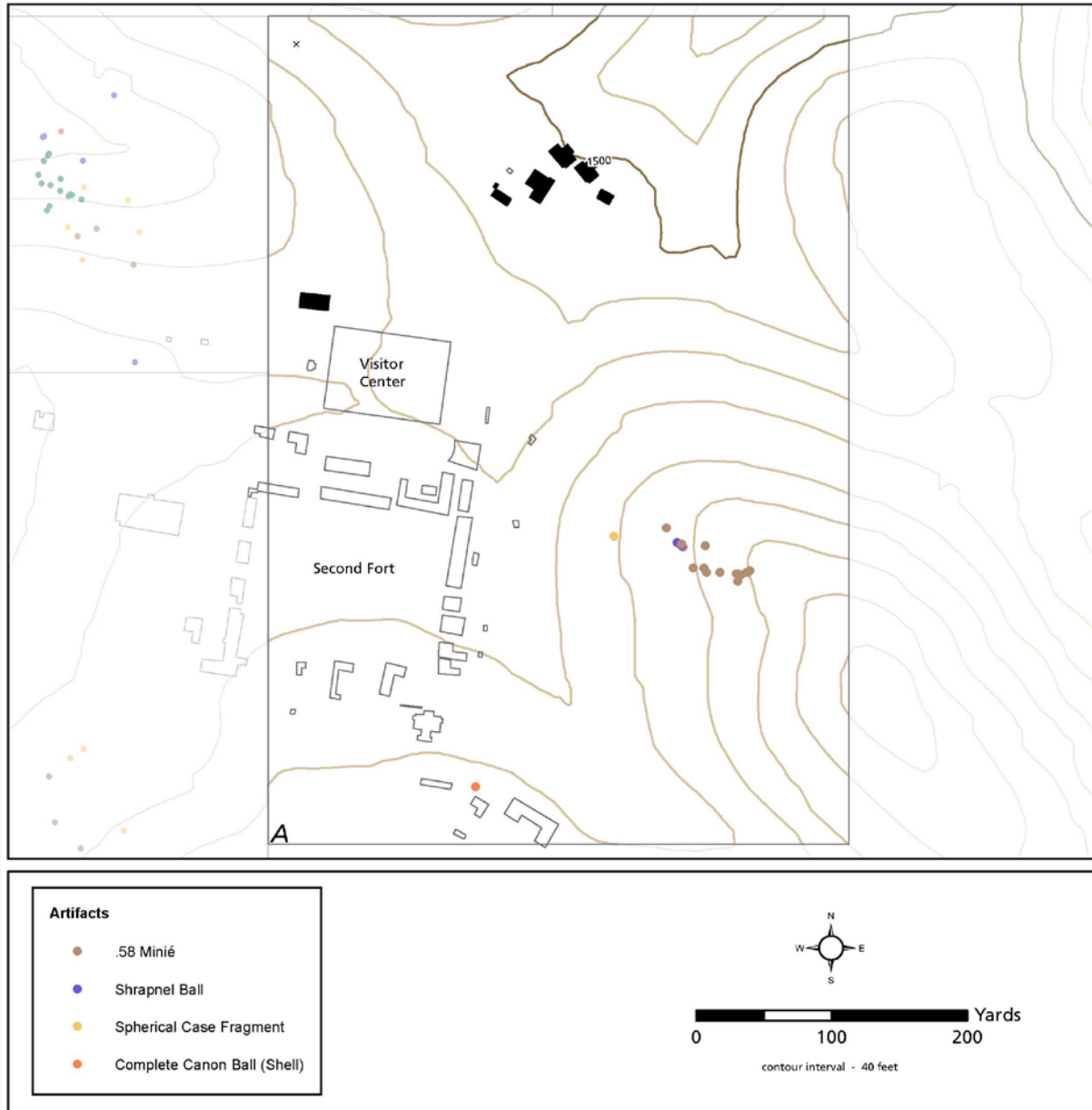
Interpretations

Section A, Hill East of Parade Ground (16 Artifacts)

Although Section A is by far the largest section, it contained only 16 artifacts: one spherical-case fragment, one shrapnel ball, one unexploded shell cannonball, and 13 Minié balls (Figure 36). The spherical-case fragment and shrapnel ball recorded on the west slope of the hill east of cavalry barracks (HS008) suggest that a spherical-case shot exploded over or on the east side of what became the fort's parade ground. Because these two artifacts were the only ones found after extensive survey, indications are that the case shot exploded relatively high in the air over the parade ground. In a situation like this, spherical-case fragments and shrapnel balls would be widely dispersed, accounting for the few artifacts recorded. This shot would have been at the gun's maximum range and was probably intended to drive Apache warriors away from their positions around Apache Spring; however, it exploded well behind them.

There are two possible explanations for an unexploded artillery round (shell), found near the hospital steward's quarters at the second fort, as discussed previously. The most likely scenario would be that the intact cannonball (Cat. No. 8292, NC525) was an overshoot of the Apache positions around Apache Spring, and after failing to detonate, it bounced and rolled until it came to rest on the hillside, where the hospital steward's quarters would later be constructed. Another explanation may be that the cannonball was found by one of the soldiers stationed at Fort Bowie and used as some type of prop such as a door stop or souvenir and was discarded at some point under the porch of the Hospital Steward's Quarters. There is no doubt that the shell round was fired during the battle. The question is where and how it finally came to rest.

Section A
Hill East of Parade Ground



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Figure 36. Section A, hill east of parade ground.

The cluster of 13 Minié balls, located along the east side of Section A, may not be associated with the battle. If they are battle-related, they are more than likely overshots of Apache positions on First Fort Hill by troops advancing on the hill from the west. Another scenario is that they may not be associated with the battle and instead were fired at a target on the side hill during the early years of the first fort. However, the fact that these artifacts were found in an area of 2,478 square yards, a fairly large area, makes a stronger case for their being battle-related than for being fired at a target, which would have made a tighter pattern.

The rest of Section A makes up the area around and between the other sections and contains no other recorded battle-related artifacts. The lack of battle-related items found in these areas could indicate two possibilities: the area was surveyed and no artifacts were found, or for some reason the area was not surveyed. Reasons for not surveying an area might be that it was outside of the battle site by a considerable distance, it did not correspond with the historical record, the terrain did not allow for the deposition of battle-related artifacts, or the area was so dense with artifacts associated with post-battle military occupation that it was very hard to metal-detect.

Section B Ambush Site

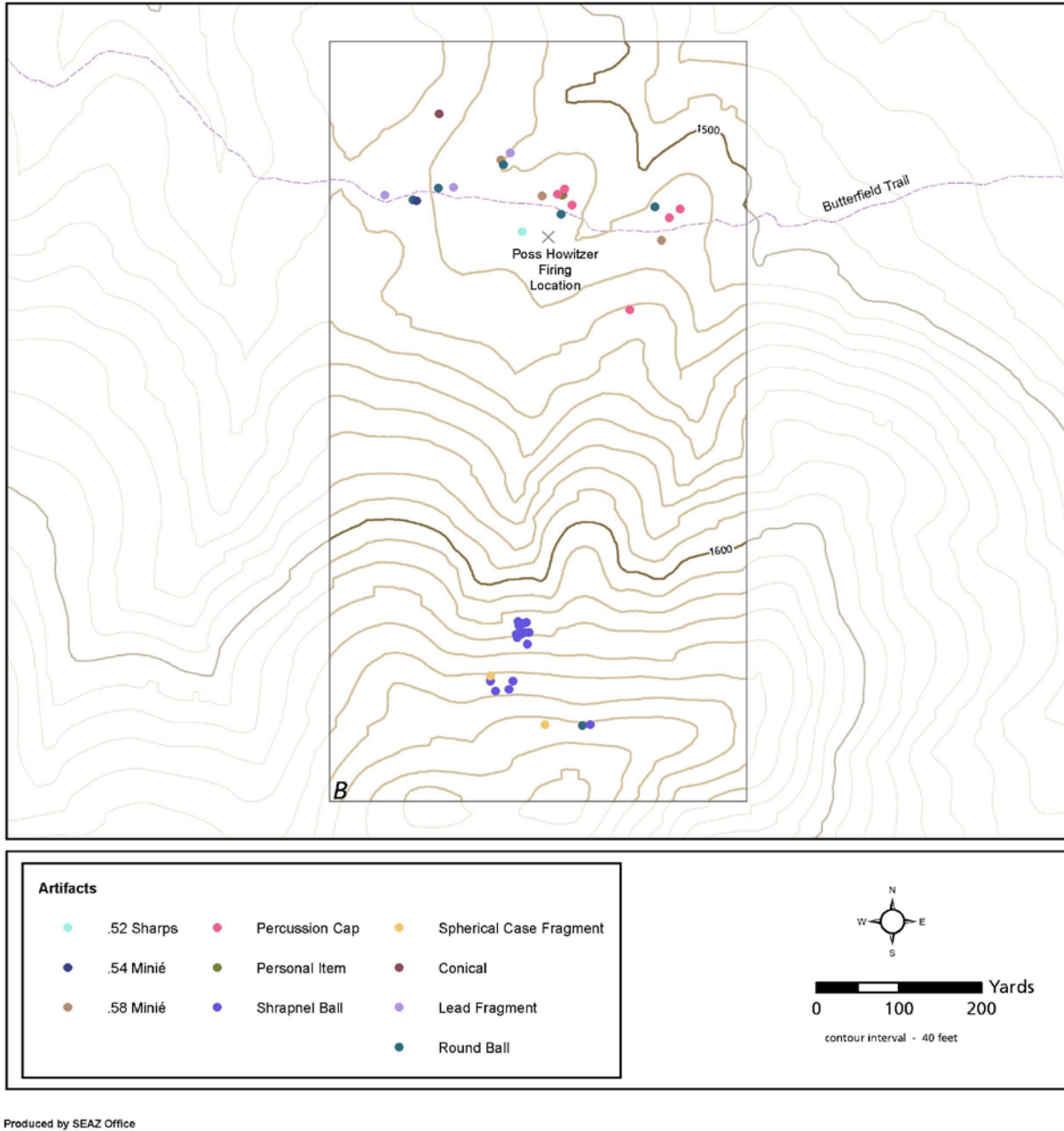


Figure 37. Section B, ambush site.

Section B, Ambush Site (42 Artifacts)

Section B consists of two distinct areas: a cannonball detonation site and the actual ambush site (Figure 37). Together, they contain 42 artifacts. The artifacts include seventeen shrapnel balls, seven percussion caps, six round balls (three .50-caliber, one .45-caliber, one .38-caliber, and one .36 caliber), three lead fragments, three .58-caliber Minié balls, two spherical-case fragments, one .44-caliber conical bullet, one .54-caliber Minié ball, one .52-caliber Sharps bullet, and one personal item (boot tack). Artifactual evidence found at this location is consistent with that of an ambush and the firing of one round of spherical-case shot at retreating Apaches. This site fits the description and distance better than any other. As the troops entered Apache Pass, their column had spread out over a distance of nearly three-quarters of a mile. The cavalry had reached the stage station, and the infantry was straggling in. Supply wagons and two mountain howitzers were at the end of the column, still one half-mile west of the stage station when they came under attack. They were protected by the gun crews, about 21 men, and a few teamsters. Fountain's account leads one to believe that the howitzers may even have been captured by the Apaches for a short period of time, until infantry skirmishers recaptured them.



Figure 38. Ambush site. Note the Butterfield Road in center.

The Apaches sprang their initial ambush on the rear of the column. The stage road at this point goes down a steep slope from the west, with a drainage running along its north side (Figure 38). Rocky outcroppings are prevalent on the north side of the drainage, as well. Together, they provided excellent cover for warriors during the ambush. Some of the Apaches on the north side of the road were firing on the troops at a range of 50–70 yards.

The terrain on the south side of the road was more open, although washes and vegetation would have provided good cover for warriors south of the road. Apaches firing at troops from the south would have been firing at a range of between 50 and 100 yards. Troops on the road at the base of this slope would be in poor position, with high ground all around them and within close range of protected shooters on both sides of the road. It was here that Roberts's command suffered its heaviest casualties: Private Charles O'Brien was killed, and Teamster Andrew (Shorty) Sawyer and a hospital steward were slightly wounded. It is surprising that the troops did not suffer more casualties.

When the infantry at the stage station heard the gunshots at the rear of the column, they formed up as skirmishers and advanced west toward the sound of the ambush (Fountain 1891). The terrain between the stage station and the ambush site is steep and broken, with two ridge lines running perpendicular to the Overland Mail Road (Figure 39).



Figure 39. California infantrymen moved up this slope as skirmishers to reinforce troops under attack at the rear of the column.

The first (east) ridge the skirmishers encountered produced five battle-related artifacts, suggesting the troops advanced over it. Three fired percussion caps and a dropped, .58-caliber Minié ball were found in a linear pattern consistent with the passage of the skirmish line. Even though they were still

a short distance away from the ambush, the soldiers started to receive fire from the Apaches, as indicated by the presence of one incoming .50-caliber round ball.

Proceeding on, the troops crossed a deep drainage and then advanced across a second (west) ridge. From this position, the troops got their first look at the ambush site and the confusion surrounding it. Artifacts supporting the passage of the skirmish line over this ridge included four fired percussion caps and a boot tack. Two fired .58-caliber Minié balls recorded along the skirmish line suggest that the advancing infantry was still receiving some fire. However, as the troops crossed this ridge, they began taking heavier fire from retreating Apaches. Artifacts here included one .45-caliber round ball, one .52-caliber multi-groove Sharps bullet, one .36-caliber round ball, and a lead fragment, all incoming.

The ambush site was directly west of this ridgeline, in the drainage below. This area produced seven artifacts associated with the ambush. Scattered across the site were two .50-caliber round balls, one .54-caliber Minié ball, one .44-caliber conical bullet, one .58-caliber Minié ball, and two lead fragments, all fired. The condition of the .54-caliber Minié ball was good enough to allow us to determine that it was fired out of a weapon having seven lands and grooves, which is consistent with the Model 1841 Springfield, sometimes called the Mississippi Rifle. Although teamsters with the “Column” were issued the .54-caliber Mississippi rifles and .44-caliber Colt revolvers, the Apaches were also armed with some of these weapons, so either side could have fired them. The .50-caliber round balls and the .58-caliber Minié ball were probably fired by Apaches at the time of the initial ambush.

At this point, many of the Apaches were retreating over the high hill to the south and would later take up positions near Apache Spring. Although pines and dense north-slope vegetation provided some cover for their retreat, they were within howitzer range long enough for the troops to get at least one shot of spherical case fired at them. This action is supported by statements in Hazen’s notes (Hazen 1862). Apaches retreating northward would have been out of sight and range quickly, due to the hilly terrain.

Evidence of one detonated spherical-case round was found high up on the mountain slope, south of the ambush site. Two spherical-case cannonball fragments and seventeen .69-caliber lead, shrapnel balls, representing 22 percent of those in one howitzer round, were found in this area. Dense vegetation and an extremely steep slope made survey of the area difficult and likely affected the quantity of artifacts recorded. Located near the artillery artifacts was a dropped, .38-caliber round ball, probably for an early civilian rifle or musket of some type. The ball may have been dropped by one of the retreating Apaches.

Section C, Approach to Apache Spring (42 Artifacts)

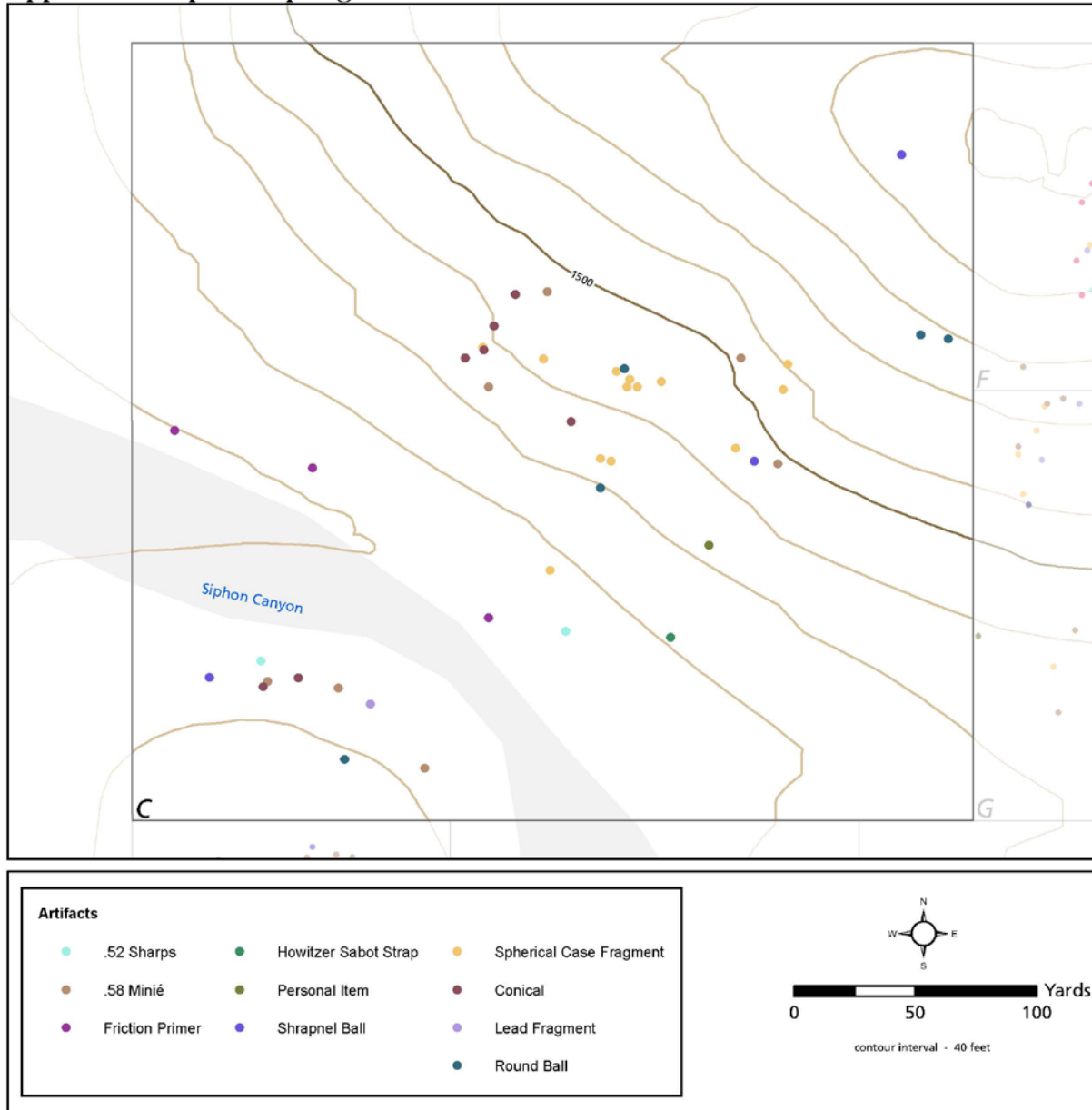
Section C contained 42 battle-related artifacts: thirteen spherical-case fragments, two shrapnel balls, seven .58-caliber Minié balls, seven conical bullets (six .44-caliber and one .36-caliber), two .52-caliber Sharps bullets, five rounds balls (two .45-caliber, one .44-caliber, one .36-caliber, and one .30-caliber), three howitzer friction primers, one sabot-strap fragment, one lead fragment, and one personal item (roller buckle). Although this section does not contain nearly the quantity of artifacts that other sections do, several initial actions took place here (Figure 40). As the soldiers advanced up Siphon Canyon toward Apache Spring, they began to take fire from Apaches posted on First Fort Hill and the west peak of Overlook Ridge. The soldiers formed up in a skirmish line that extended from about the mid-slope of Overlook Ridge, across Siphon Wash, and over a small ridge running parallel to Siphon Wash. The skirmish line was supported by one or two mountain howitzers and a few cavalrymen in the center of the line. On the east end of the low ridge along the south side of Siphon Wash is a large rock outcropping that not only provides an unobstructed view of First Fort Hill but also was good cover for the troops. Here, some of the soldiers on the right flank of the skirmish line took advantage of the cover and took up positions. It was Apaches, on First Fort Hill firing at these soldiers, who created the impact area located in the southwest corner of Section C.

This impact area is made up of eight artifacts: three .58-caliber Minié balls, two .44-caliber conical revolver bullets, one .52-caliber Sharps bullet, one .44-caliber round ball, and an unidentified bullet fragment. The distance from First Fort Hill is too great for .44-caliber revolver bullets to travel, indicating they were either lobbed in from the hillside of Overlook Ridge or are not battle-related. The latter is probably the case. The other bullets, .58-caliber Minié balls, .52-caliber Sharps, .44-caliber round ball, and the unidentified fragment were probably fired from Apache positions on First Fort Hill. This would suggest there were at least 3–4 Apache shooters firing at this position. The distance between First Fort Hill and the rocky outcropping is around 400 yards, with a drop of about 42 yards, making the odds of overshooting this position high.

Section C also provides the first evidence of mountain howitzer use. Located along the north side of Siphon Wash and in front of what became the Indian Agency Building, the westernmost howitzer friction primer was recorded (Figure 41). This location does not represent the site of the howitzer's first shot, but rather one of its earliest shots. Based upon spherical-case fragments on Overlook Ridge, the position of the howitzers when firing their first shots was probably 75–100 yards west of this location and has not been identified. This firing position may be in what is now a dense grove of mesquite trees or in Siphon Wash. The wash has more than doubled in width since the battle, washing away much of the flat bench that ran along its north bank. Based upon the provenience of these spherical-case fragments, they may represent one of the first shots fired on the second day.

The second friction primer was about 55 yards east of the first one and may represent the shot that deposited spherical-case fragments and shrapnel balls in Section H. It was probably aimed at Apache positions in the rocks on the west peak of Overlook Ridge, but was an overshoot. The goal of the artillerymen was to have spherical-case shot explode above and in front of the target; a fuse cut too long would cause the shot to go over a ridgeline target and explode well behind it.

Section C Approach to Apache Spring



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Figure 40. Section C, approach to Apache Spring.



Figure 41. Spherical-case fragments were found among the juniper trees on the left hillside.

A third friction primer was located 79 yards southeast of the second one and along the north edge of Siphon Wash, just south of a small hill. At this point in the fight, gun crews had pushed the howitzers too close to Apache positions. They could no longer get barrel elevation by turning the screw on the gun. In order to get more elevation, gun crews pushed the howitzers on to the slope of a small hill. Friction primer number three was probably from one of these hillside shots. Although this attempt at gaining more elevation worked, the howitzer's recoil flipped the gun upside down. At this point, cavalymen rushed forward to up-right the guns, using their horses and ropes. At the base of this small hill was a .52-caliber Sharps bullet, possibly dropped by one of the troopers as they wrestled with the overturned howitzers.

The historical record states that after the howitzers were fired they were pushed forward for the next shot. This tactic was pursued until the guns were pushed too close to their target. This series of three friction primers in a linear pattern along Siphon Wash strongly supports the historic record for this portion of the fight.

On the north side of Siphon Wash and about a third of the way up the hillside of Overlook Ridge were 11 spherical-case fragments and one shrapnel ball. These case-shot fragments represent the most westerly cannonball fragments recorded, and probably the first artillery round fired during the

second day of the battle. The shot may have been intended for Apaches posted in the rocks on the hillside and was probably an undershot. Nevertheless, it probably cleared the area so the skirmish line could advance across the hillside. After the howitzer round cleared some of the lower Apache positions, infantrymen advanced across the slope of Overlook Ridge in skirmish line.

Mixed in with artillery artifacts were several different calibers and types of bullets, indicating the soldiers were beginning to receive fire from Apaches on First Fort Hill, or from rocky outcroppings along the upper portion of Overlook Ridge. Located within this area were four .58-caliber Minié balls, three .44-caliber conical bullets, one .36-caliber round ball, one .36-caliber conical bullet, and one .30-caliber round ball. The four .58-caliber Minié balls were probably fired from captured Model 1855 Springfields. The three .44-caliber conical bullets were fired from a revolver, and although the Apaches had them, it is doubtful that they could have produced the tight pattern of these bullets at the distance from which they were firing. It is more likely that these .44 rounds were not associated with the battle but were fired years later from someone near the Agency Building. The .36-caliber conical bullet was fired from a revolver and may have been fired from an Apache in the rocky outcroppings above the soldiers' skirmish line. The .36-caliber round ball could have been fired from a revolver but because of the distance of the shot, it was likely was fired from a plains rifle or some other early percussion rifle. The .30-caliber round ball suggests that it may be No. 1 buckshot and may have been fired from a muzzle-loading shotgun by Apaches shooting from the rocky outcroppings above.

The distance from First Fort Hill to this area is about 450 yards, with a drop of around 46 yards. A shot from this distance would mean that only the .58-caliber Minié balls could have reached the target area from First Fort Hill, and the rest from the rocky outcroppings along the hillside. If some or all of the shots were fired from the rocky outcroppings, then the distance was much closer, at 225 yards with a drop of between 38 to 55 yards, depending on which outcropping the firing position was located. It is probably more reasonable to assume that these shots were fired from the rocks along the hillside of Overlook Ridge, and represent some of the first shots fired at soldiers as they advanced along Overlook Ridge.

The single personal item, a roller buckle, may or may not be battle-related. It was found on the lower slope of Overlook Ridge, which is consistent with where the skirmish line would have passed. It may have been lost from a Model 1855 cartridge box or a harness strap of similar size.

Section D, South Side of Siphon Wash (62 Artifacts)

Although Section D was the smallest section surveyed, it contained a high concentration of artifacts (Figure 42). Section D consists of a low, northwest–southeast-aligned ridge on the south side of Siphon Wash. Running the length of the ridge and separating Section C from Section D is a low, rocky outcropping that culminates at a large boulder formation on the southeast end of the ridge. Artifacts south of the outcropping represent Section D. Troops advancing toward First Fort Hill traversed the length of this ridge, taking up firing positions in the rock formations (Figure 43). Evidence indicates that as troops went across this exposed area, they were taking fire from Apaches on both First Fort Hill and Overlook Ridge.

Minié balls of .58 caliber were by far the most common artifact in Section D. The large number (40) of this type of round, and a concentrated impact area in a completely exposed position, suggest that most of this ammunition is not battle-related. This impact area may reflect the presence of another stationary practice target for troops occupying the first Fort Bowie. Other than .58-caliber Minié balls, incoming fire from the western peak of Overlook Ridge and First Fort Hill consist of six round balls (two .36-caliber, two .38-caliber, two .45-caliber), one .44-caliber conical bullet, and one .50-caliber bullet. All of the round balls would have been fired from civilian or plains rifles of mixed calibers. Although most of this ammunition appears to have come from Apache positions on First Fort Hill, the .50-caliber bullet, a modified .58-caliber Minié ball, and a few of the round balls were fired from Overlook ridge. The single .44-caliber conical bullet is probably not battle-related.

One round of spherical case fired at this ridge supports the idea that when the fight was in its initial phase, there were probably Apache positions here. The shot exploded just west of the west end of the ridge, with one shrapnel ball striking the end of the hill. The rest of the round went over the ridgetop, with ten balls and one case-shot fragment landing at the east end of the ridge, and the rest landing in Siphon Wash. The shot probably cleared the ridgetop of Apaches, enabling the infantry to advance up the hill and across the ridge. It is not known how long the soldiers took up positions in the rocky outcroppings, but when they moved forward toward First Fort Hill, they went down slope, crossed Siphon Wash, and then veered south, finding cover in a wash that entered Siphon Wash from the east in Section E.

One small general-service button (NC684) and one four-hole iron trouser button (NC 676) were found within this impact area. Although they may have been lost by troops as they advanced across this ridge, there is also a chance they are not battle-related.

Section D
South Side of Siphon Wash

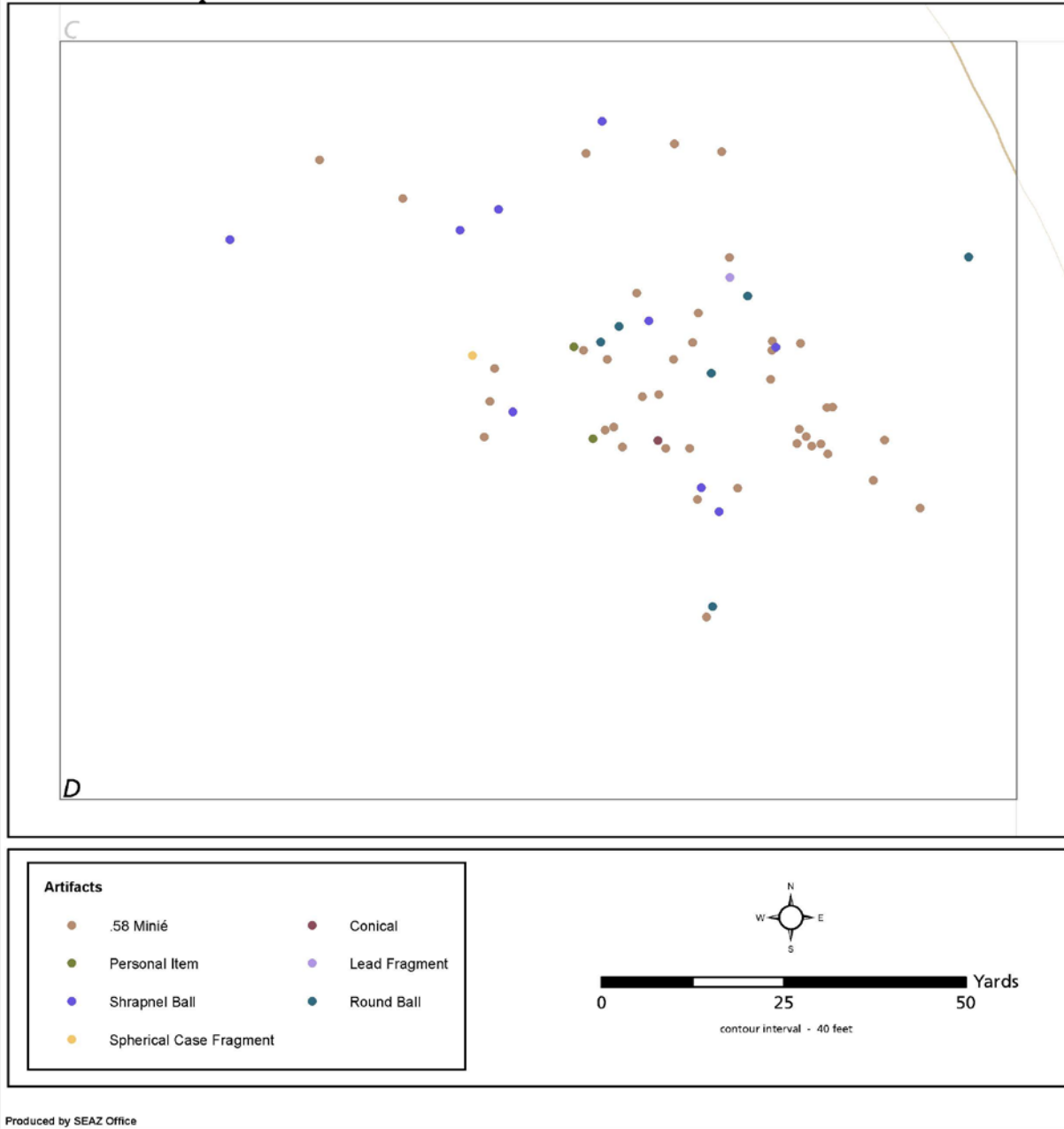


Figure 42. Section D, south side of Siphon Wash.



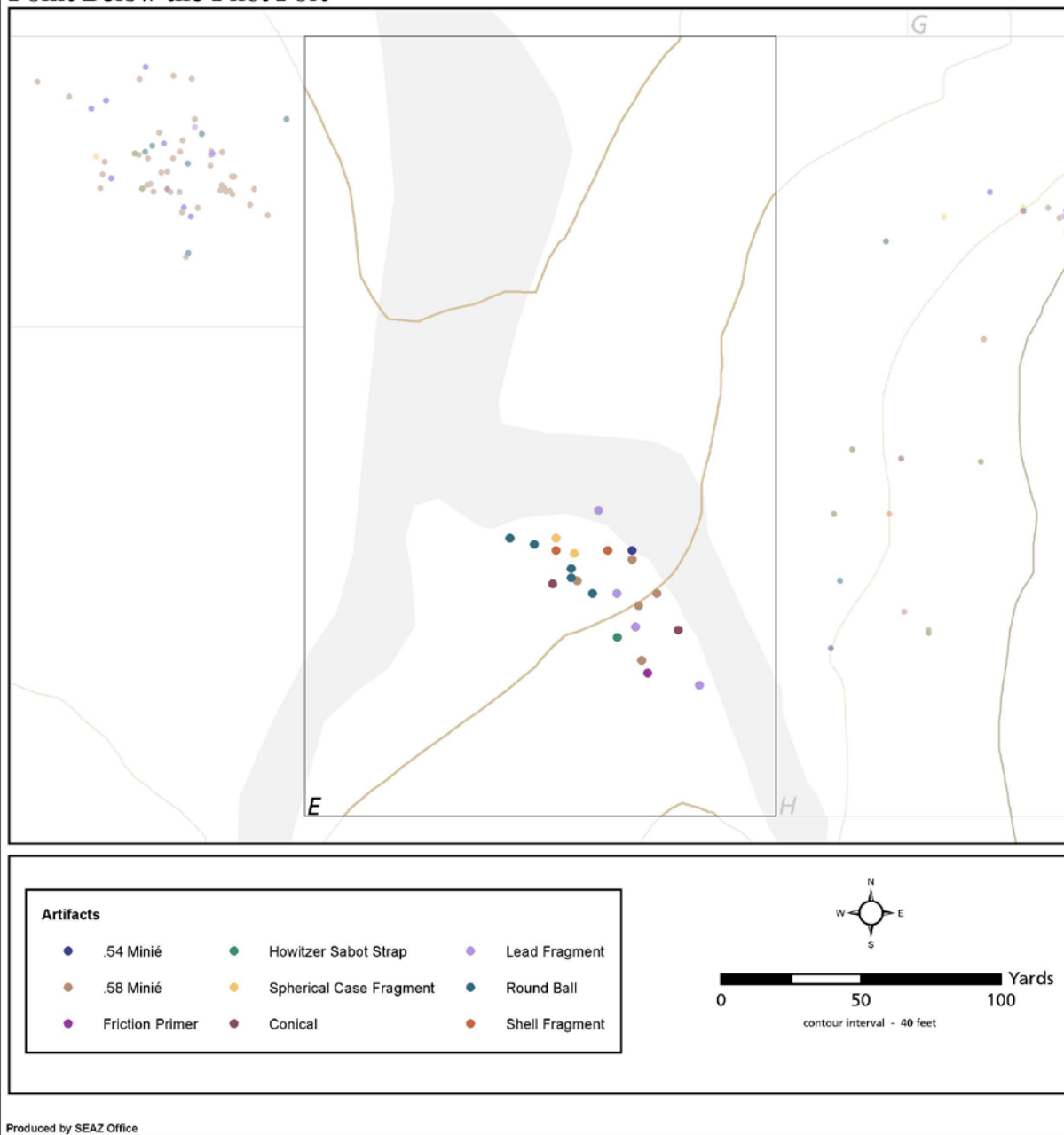
Figure 43. Troops moved along the low hill, taking up positions in the rock outcroppings on the right and center.

Section E, Point Below the First Fort (22 Artifacts)

This small area is a point of land formed by the junction of Siphon Wash and a large northwest-flowing wash below the First Fort Bowie (Figure 44). This area may represent the site where troops on the right flank of the skirmish line advanced to take First Fort Hill. Five artillery-related artifacts were recorded in this area. Two shell fragments, two spherical-case fragments, and a piece of sabot strapping were identified. Although the artifacts are small in quantity, they do include two separate howitzer rounds—one spherical-case and one shell—that detonated in this area. These two rounds were probably fired to clear the area of Apache warriors that may have been in the trees, so troops advancing on First Fort Hill could do so with minimal fighting. Troops passing through this area still received fire from Apaches on the west side of First Fort Hill, as determined by other artifacts recorded in Section E.

The mixture of conical bullets and round balls indicates that Apaches along the west side of First Fort Hill were firing down on the soldiers as they advanced on their positions. All of the bullets and balls in this section are incoming from Apache warriors. This impact area contained five .58-caliber Minié balls, one .54-caliber Minié ball, two .44-caliber round balls (one possessing teeth marks from being chewed into shape), one .41-caliber round ball, one .36-caliber round ball, and two .36-caliber conical bullets. There were also five deformed bullets of unknown calibers. Based on size and weight, three were large-caliber, probably between .50 and .69, and two would have been smaller, or less than .44.

Section E
Point Below the First Fort



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Figure 44. Section E, point below the first fort.

Although not all of the guns that produced this assortment of ammunition can be identified, it is safe to say that the five .58-caliber Minié balls were fired from a Model 1855 Springfield rifled musket (a captured military weapon), and the .54-caliber Minié ball from a Model 1841 Springfield rifled musket, possibly another captured military weapon. The two .36-caliber conical bullets were

probably fired from a Model 1851 Colt revolver or some other .36-caliber revolver. Unless the Apaches had a firing position much closer to the troops that was not located during the survey, revolvers fired at these ranges lacked accuracy. The five mixed-caliber round balls may have been fired from some type of plains or civilian rifle. All of these bullets represent a wide variety of captured military and civilian weapons.

This assemblage probably came from overshots at troops in the wash as they advanced to attack Apaches on First Fort Hill. The range of these shots was around 240 yards, with a drop from the top of the hill to the soldiers below at about 50 yards—creating a perfect scenario for Apaches to overshoot their intended targets (Figure 45).



Figure 45. The troops advanced along the wash (center of photo) from right to left on their way to attack the south side of First Fort Hill. Shots fired at them impacted on the flat bench above the wash.

Section F, Saddle Area (125 Artifacts)

Containing 125 total artifacts, Section F includes the upper saddle area of Overlook Ridge and the slope directly below it (Figure 46). The artifact assemblage in Section F contains twenty-eight spherical-case fragments, forty shrapnel balls, twenty-three .69-caliber Minié balls, nineteen .58-caliber Minié balls, five lead fragments, one .54-caliber Minié ball, two .52-caliber Sharps bullets, one .45-caliber chewed round ball, four percussion caps, and two large general-service buttons.

The quantity of spherical-case fragments probably represents two case-shot rounds that exploded in the same area, one above the other and fairly close to the ground. The compact patterns of fragments and shrapnel balls indicate that at least one, if not both, of the rounds exploded either on or nearly on the ground. These rounds were overshots of Apache positions on the south slopes of the west peak of

Overlook Ridge (Figure 47). Rounds exploding close to the ground confine the case-shot fragments and shrapnel balls to a much smaller area than is normally observed.

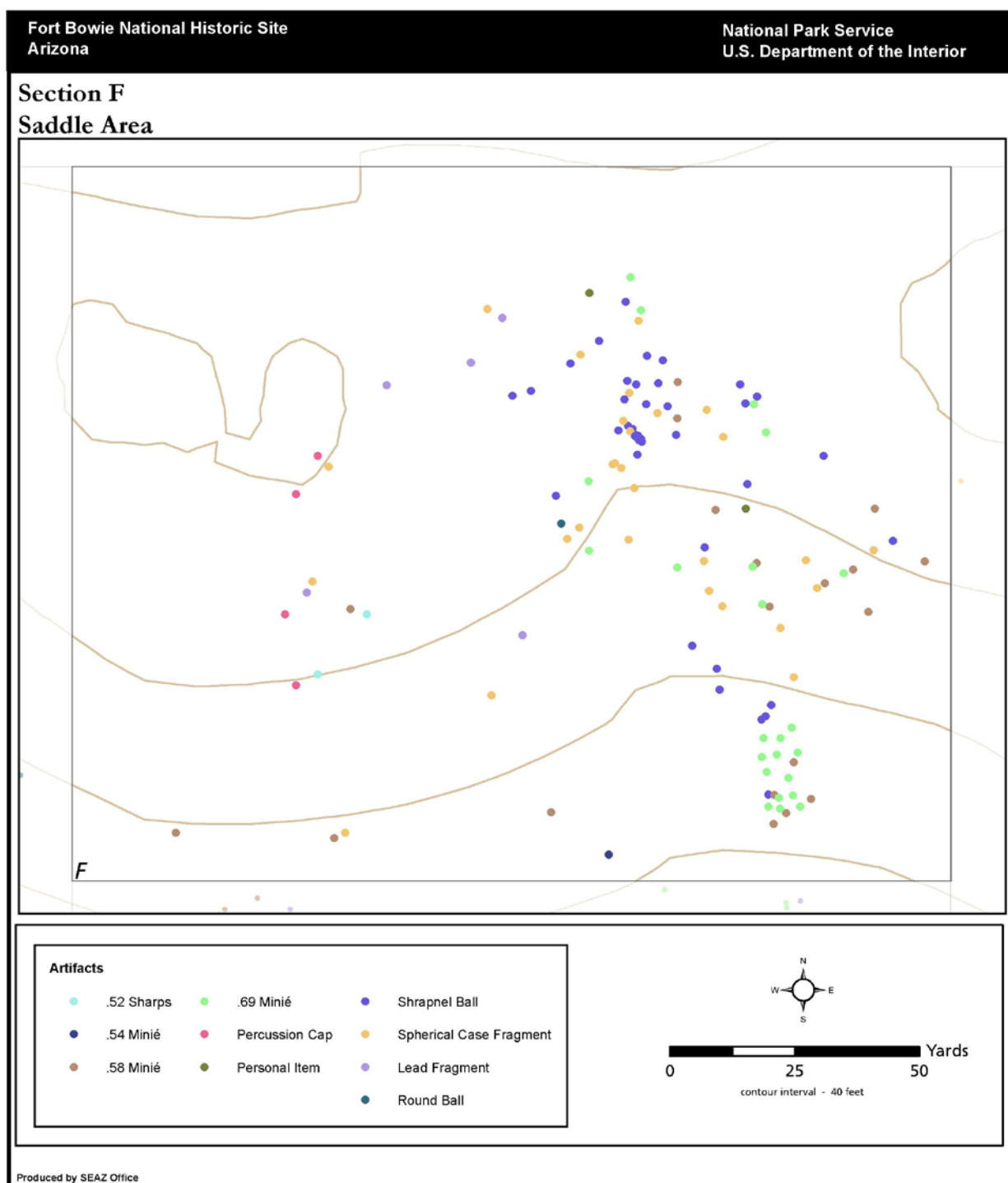


Figure 46. Section F, saddle area.



Figure 47. Troops took up positions on the slopes of the peak to the left of the saddle.

In the southeast corner of Section F is an elongated impact pattern that extends into Section G. The ammunition in this area consists primarily of .58 and .69-caliber Minié balls. This impact area is located in an exposed area of the southern slope of Overlook Ridge, about midway between the east and west peaks of the ridge. It may have been the site of a target first established by members of the California Volunteers and later by the 1st New Mexico Volunteers during their occupation of Fort Bowie from June 1864 to June 1866, as previously discussed under “.69-caliber Minié balls.” Soldiers coming off of guard duty unloaded their weapons by firing at the target. The 1st New Mexico Volunteers were the only troops stationed at Fort Bowie who were armed with .69-caliber weapons. Infantrymen before and after them were armed with .58-caliber weapons until January 1868, when breech-loading, metallic-cartridge rifles were issued. The lack of other assorted-caliber bullets mixed in with the .69s and .58s means it does not fit the pattern of other battle-related impact areas. The scatter of .58 and .69-caliber Minié balls above the target area may represent, in part, bullets that skipped upslope from the target. Some of them, however, were battle-related.

In contrast, the area directly above and slightly west of the target is an impact scatter containing .58 and .69-caliber Minié balls; .44, .45, .52 and .54-caliber bullets; and bullet fragments. Bullets recorded in this area were likely fired at soldiers who had taken up positions on the rocky slopes of

the west peak and saddle. This fire came from Apache positions on the east peak of Overlook Ridge, or from their positions around Apache Spring. These positions probably represent the easternmost firing positions attained by troops on the left skirmish line, and were probably occupied late in the battle.

Although many of the .58 and .69-caliber Minié balls in Section F are not battle-related, as discussed previously, two .52-caliber Sharps bullets, a .54-caliber Minié ball, one .45-caliber bullet, and five lead fragments appear to have been fired at soldiers on the west peak of Overlook Ridge and on the rocky slopes below. The five lead fragments were fired at soldier positions in the rocks on top of the west peak of the ridge. A .45-caliber round ball, showing teeth marks from having been chewed into shape, was also recorded on the slope below the saddle. The ball was probably fired from an early percussion rifle at soldiers positioned behind rocks on Overlook Ridge. The .54-caliber Minié ball was fired at soldiers taking cover in the drainages below Overlook Ridge.

The four percussion caps (NC812–815) were recorded among rocks near the top of the west peak of Overlook Ridge. They were fired by soldiers aiming at Apaches on the east peak of the ridge—a shot of around 200 yards.

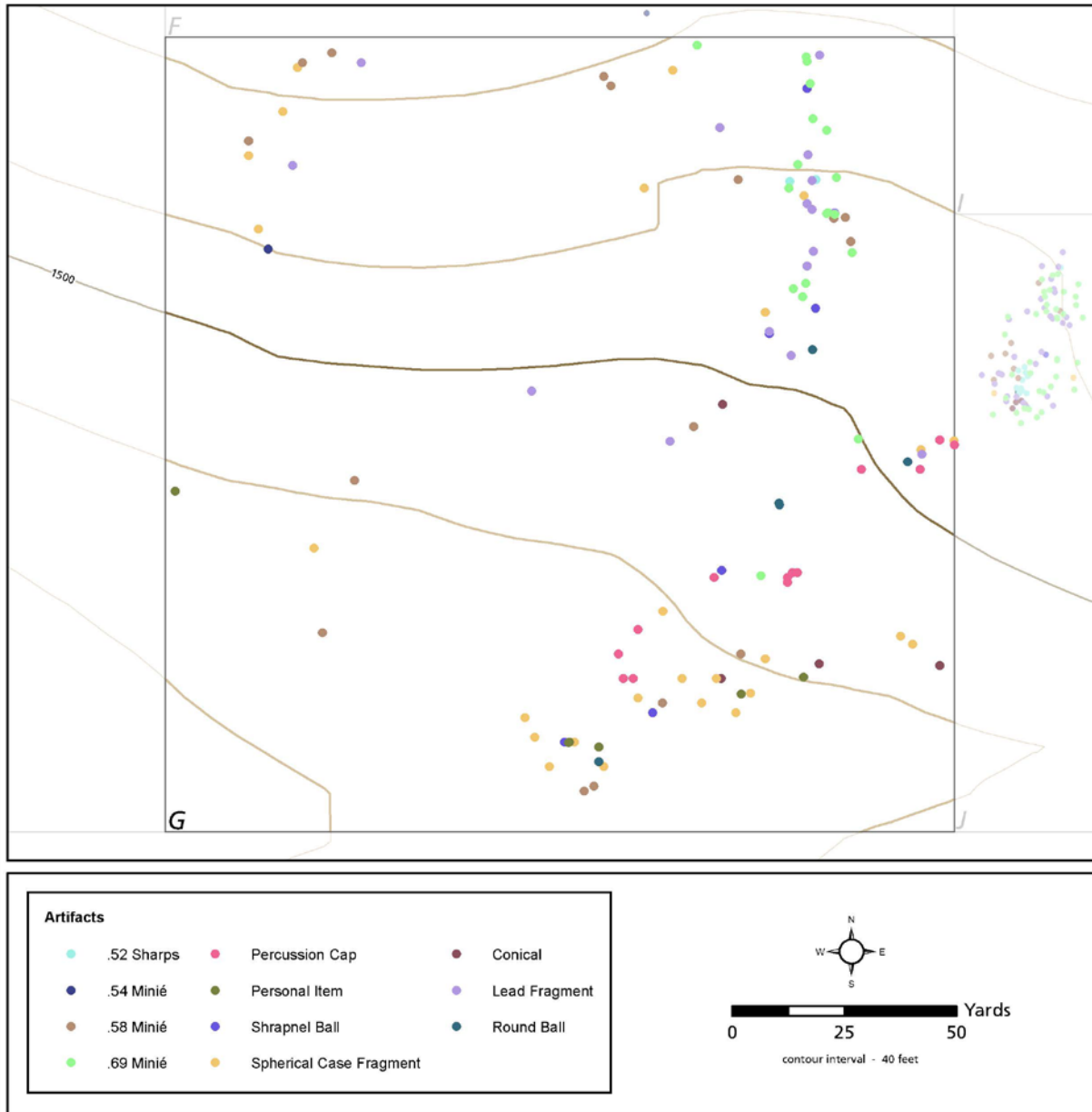
Two large, general-service buttons (NC575, 753), found in the saddle and in a small drainage to the east, are probably battle-related and may represent the easternmost positions attained by troops on Overlook Ridge. Any soldier advancing past these two points would have been totally exposed to Apache fire from the breastwork and First Fort Hill.

Section G, Area Below the Saddle (117 Artifacts)

Section G, located below Section F, contains 117 artillery, small arms, and personal artifacts. Artillery-related items include six .69-caliber shrapnel balls and 27 spherical-case fragments, representing at least two but no more than three howitzer rounds (Figure 48). The northernmost shot exploded well above ground, disbursing shrapnel and spherical-case fragments over a wide area (Figure 49). In contrast, the southernmost round exploded at or just above ground level, creating a much more compact artifact scatter. Both rounds were probably fired at Apache positions around Apache Spring. It was here that the Apaches took up positions in the beargrass, rock outcroppings, and trees around the spring. The first attempt at dislodging them from these positions failed, resulting in the death of Private John Barr and orders from Captain Roberts to withdraw from the area. These shots were fired to clear the area of Apache warriors as a prelude to a second infantry assault on the Apache positions around the spring. Both rounds came up short of their intended target.

Section G contained 78 battle-related artifacts representing small arms. There were eighteen .69-caliber Minié balls, sixteen .58-caliber Minié balls, one .54-caliber Minié ball, two .52-caliber Sharps bullets, five .44-caliber conical bullets, five round balls (one .50-caliber, three .44-caliber, one .45-caliber), 16 lead fragments, and 15 percussion caps. As with Section F, many of the .58 and .69-caliber Minié balls were not battle-related but instead correspond to two post-battle targets. The two .52-caliber Sharps rounds and the .54-caliber Minié ball were fired at troops positioned around the base of the hill from the breastworks area. Based upon their mass, many of the lead fragments were from large-caliber weapons.

Section G
Area Below the Saddle



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Figure 48. Section G, area below the saddle.



Figure 49. The area below the saddle contained heavy concentrations of spherical-case fragments, shrapnel balls, and small-arms ammunition.

Others were so small that it was impossible to determine the size and type of bullet they came from. Of the five round balls, two .44-caliber balls were dropped and, based upon their location, they may not be battle-related. Of the three remaining round balls, one .50 and one .44-caliber ball had been chewed into shape. The other ball was .45 caliber. All of them were probably fired from early percussion civilian or plains rifles. The five .44-caliber conical bullets could have been fired from percussion revolvers from the breastwork area above. Distances between the combatants in Section G were much closer than in most of the other sections. These revolver shots would have been inaccurate but they could have been more or less lobbed down the hill. There is also the chance that some of them are not battle-related. The vast majority of these bullets were fired at soldiers taking cover in the deep drainages along the base of the hill.

In the southern part of Section G is a soldier-firing position that contained four fired rifle percussion caps. The caps were located on the downslope side of a small rise where soldiers were using terrain as cover. Troops firing from this position probably focused on the Apache breastworks on the east peak of Overlook Ridge. Eleven more percussion caps extended in a linear pattern toward the base of Overlook Ridge, suggesting the route taken by Sergeant Fountain and his men as they advanced toward the breastworks on the east peak.

Soldiers took positions in Section G during the later phases of the battle. These positions were selected to provide cover fire for the squad of infantry that advanced up Overlook Ridge. Troops utilized vegetation, terrain, and drainages for cover. The Apaches fired at them from the breastworks and other positions on Overlook Ridge, and perhaps from some of their positions around the spring.

The six personal items located in this section support the presence of troops taking up positions there. They consist of one copper rivet (NC575), one canteen stopper (NC780), two four-hole trouser buttons (NC569, 570), and two large, general-service buttons (NC568, 572). Troops in this area provided covering fire for Fountain and his men as they advanced up Overlook Ridge.

Section H, First Fort Hill (50 Artifacts)

Section H comprises two artifact scatters and one concentration (Figure 50). One scatter is near the top of the north and northwest slopes. Another scatter is located on the upper west slope, and a denser concentration is on the lower slope of the northwest side of the hill. The artifact count for Section H is 50. The twenty-nine artillery-related items include eighteen spherical-case fragments, nine shrapnel balls, one shell fragment, and one sabot-strap fragment. Small arms are represented by 17 items: nine .58-caliber Minié balls, three round balls (two .36 and one .45 caliber), three .44-caliber conical bullets, one .54-caliber Minié ball, and one lead fragment. There were four personal items: three large general-service buttons and a copper rivet with washer.

As the battle unfolded, Apaches occupied firing positions at the base of the northwest slope of First Fort Hill (Figure 51). Pressure from the soldiers pushed the Apaches uphill, where they occupied new firing positions on the top of First Fort Hill. When the soldiers attempted to outflank them from the west, many of the Apaches shifted their positions to that side of the hill in order to meet the soldiers' advance. This left a much smaller group of Apaches on the northwest side of the hill to oppose the advancing troops.

A dense artifact concentration was identified in the northwest corner of Section H, on the base of the northwest slope of the hill. This probably represents the troops' assault on the lower Apache firing positions. Twelve spherical-case fragments and six shrapnel balls representing at least one but no more than two howitzer rounds were found in a dense, compact concentration, indicating the round or rounds exploded very close to the ground. The dense concentration of spherical-case fragments and shrapnel balls indicates that if this howitzer round was fired at the Apaches in these positions, then the shot was right on target and likely caused the abandonment of the positions.

Mixed in with the artillery artifacts were a lead fragment (caliber unknown), five incoming .58-caliber Minié balls, two .36-caliber round balls (one dropped and one chewed), and two dropped .44-caliber conical bullets that were in a linear pattern running east to west along the base of the hill. The patterns would be consistent with troops shooting at Apache-occupied positions on the hill's lower slopes. One .36-caliber round ball and two .44 conicals may have been dropped by Apaches occupying these lower positions. The other .36-caliber round ball may have been fired by one of the cavalymen.

The five artifacts making up the upper north scatter consist of one .58-caliber Minié ball, two shrapnel balls, and two spherical-case fragments, all fired at Apache positions on the north and northwest sides of First Fort Hill. The upper 60% of these slopes were later used as the first fort's dump. Trash is very dense here, making a metal detector survey nearly impossible. These artifacts were not located during the survey but rather recorded on the surface over many years of walking through the site by park personnel. Coordinates were taken to facilitate mapping at a later date. As

the battle progressed, the Apaches worked their way upslope from their lower positions and occupied positions near the top of the hill. Many of the rounds fired at Apaches in these higher positions were probably overshots and are discussed in Sections A, K, and L.

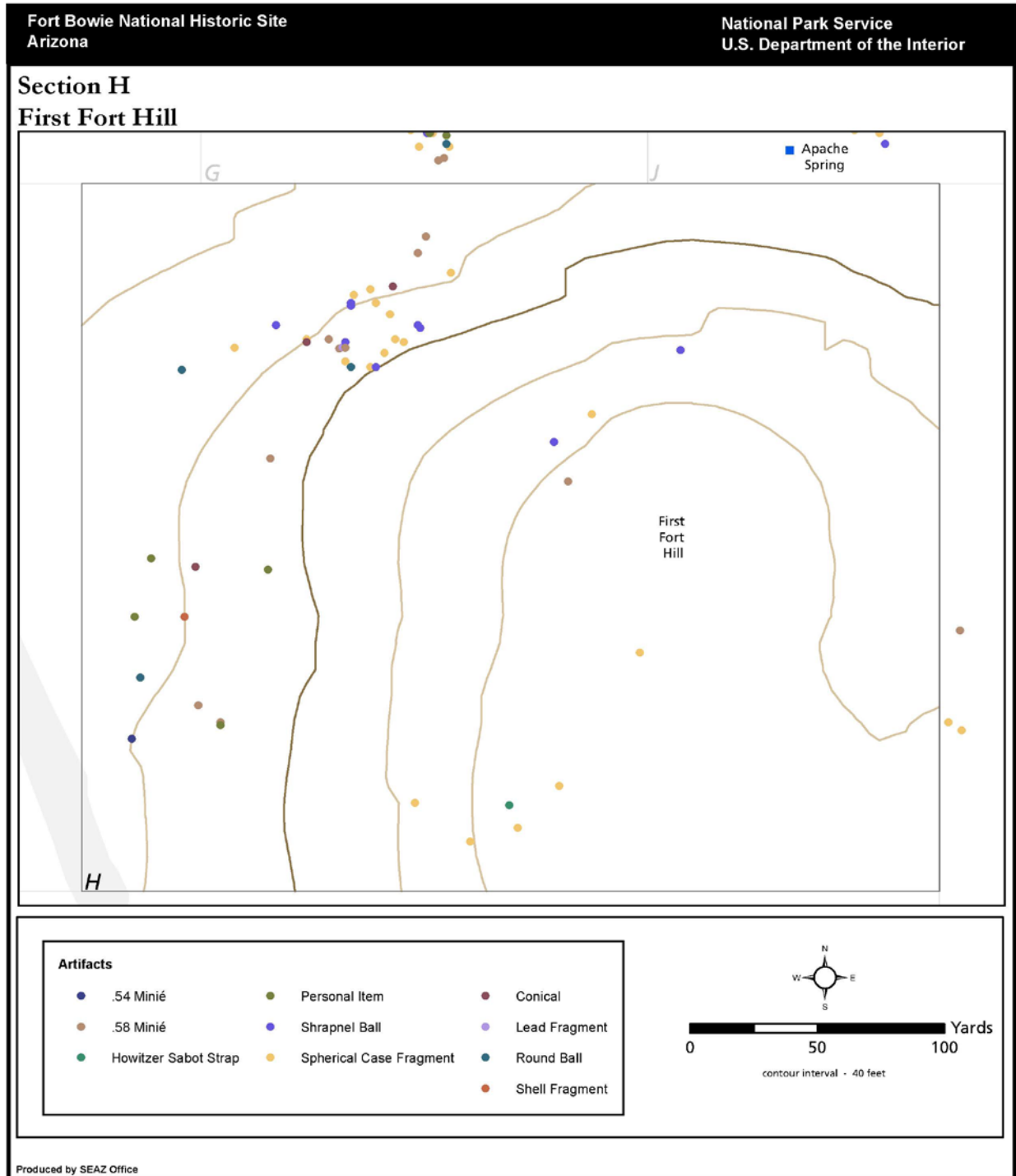


Figure 50. Section H, First Fort Hill.



Figure 51. Apaches on First Fort Hill watched as troops moved toward them along Siphon Wash.

Around the top of First Fort Hill are five battle-related artifacts. Near the top of the northwest slope of the hill were a .58-caliber Minié ball, two shrapnel balls, and one spherical-case fragment. On the back side of the hill was one spherical-case fragment, probably part of the round that exploded near the top of the hill. Together, the fragments and shrapnel balls represent one spherical case round that exploded near Apache positions on the top of the hill. The Apache positions on First Fort Hill were the last to be abandoned on the first day's fighting, and were secured only after Sergeant Fountain and his men took the breastworks on the east peak of Overlook Ridge (Figure 52). It was at this time that Fountain, having high ground, dislodged the Apaches on First Fort Hill.



Figure 52. First Fort Hill as California troops saw it from below.

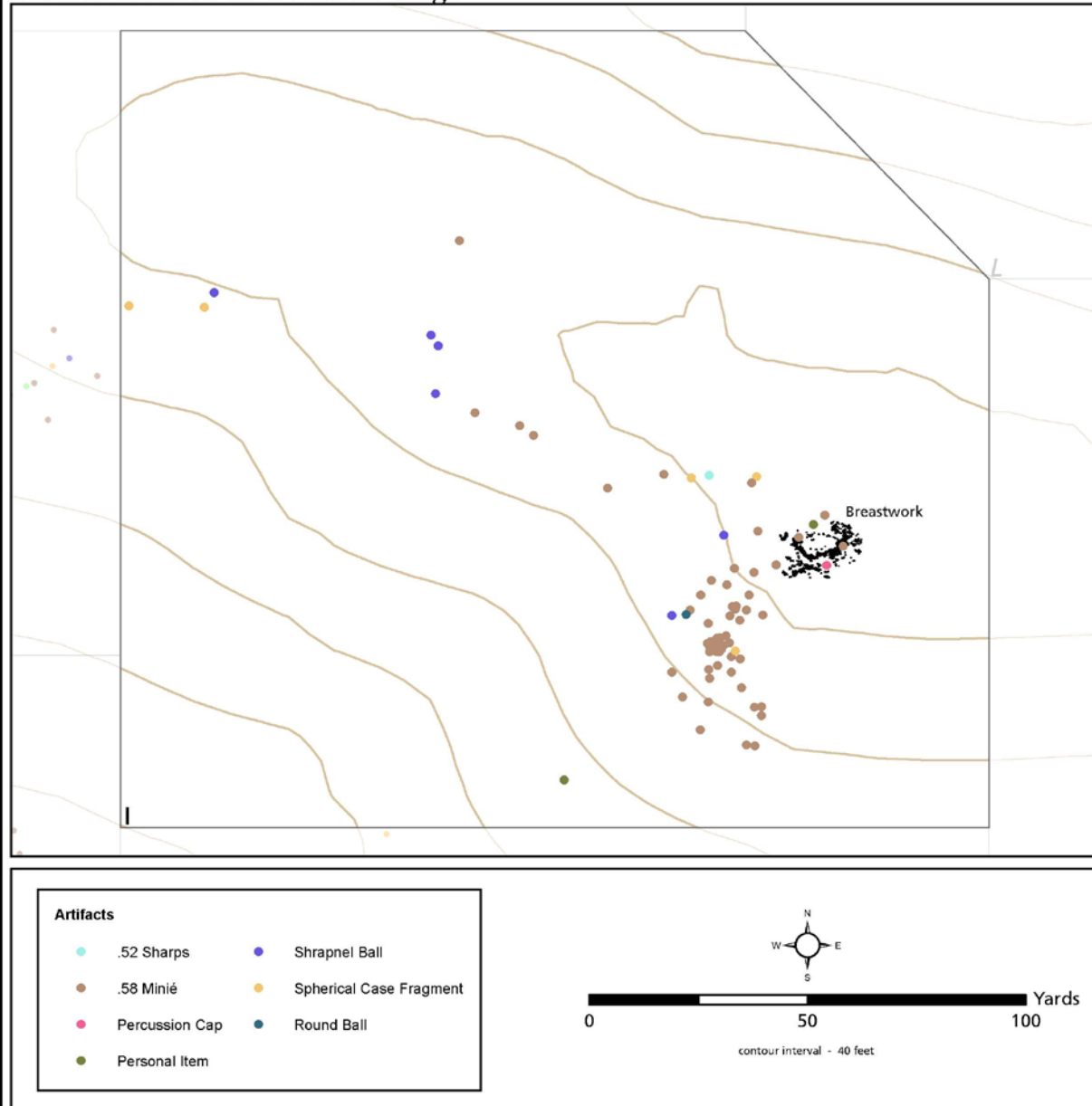
Section I, Breastwork Area on Overlook Ridge (78 Artifacts)

Section I contains one of the densest artifact concentrations of the entire site. Seventy eight battle-related artifacts were recorded (Figure 53). They include sixty-two .58-caliber Minié balls, six shrapnel balls, five spherical-case fragments, one .52-caliber Sharps bullet, one fired percussion cap, one .50-caliber round ball, and two personal items: a roller buckle and a boot tack.

Near the top of the east peak of Overlook Ridge is a stone breastwork (FOBO 2002 B-36, Feature 5) approximately 32 feet in diameter (Figure 54). This was the final and highest Apache position on Overlook Ridge. Although it appears that the breastwork was never over 18–24 inches high, it provided ample cover from the troops far below (Figure 55). The structure, however, does not really fit the style of a normal Apache breastwork, which usually involves adapting natural rock outcroppings by adding more rocks. It was usually done quickly and without much labor. The defensive position on the east peak of Overlook Ridge is relatively large and either took considerable effort and time or a large labor force to construct. With this in mind, there is another possibility to consider. The structure may have been built by 2nd Lieutenant George Bascom's men in February 1861 during his confrontation with Cochise's band in what became known as the Bascom Affair. On February 8, Lieutenant Bascom's horse herd came under attack while being watered at Apache Spring.

Section I

Breastwork Area on Overlook Ridge



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Figure 53. Section I, breastwork area on Overlook Ridge.



Figure 54. Breastworks above Apache Spring.

It was at this time that the detachment under command of Sergeant Daniel Robinson was ordered up a hill to gain high ground on the Apache warriors posted on First Fort Hill. He describes his men as keeping up a steady fire from the high position behind some rocks. The hill he describes in his narrative is the east peak of Overlook Ridge and is the location of the breastwork. The rocks that his troops may have been firing from behind may have been this hastily constructed stone breastwork. Whether the breastwork was built by the Apaches or re-used by them, it became the scene of the heaviest fighting in 1862 (Robinson 1891).

The area around the breastwork and especially in front of it contained the vast majority of the 78 artifacts in this section. Approximately 80% of these artifacts were .58-caliber Minié balls fired by troops in Sections G and F who used washes, drainages, and rock outcroppings for cover. Shooting at the breastworks from the lower elevations of Section G was a steep, uphill shot of between 200 and 300 yards, with a rise of between 60 and 83 yards. This would have affected the soldier's aim, producing overshots that landed far behind the intended target, which may explain the impact areas in Section L. Soldiers in the rocks near the top of the west peak of Overlook Ridge would have made shots that were less severe but still about 230 yards with a rise of about 33 yards. Although troops occupying both of these positions would have fired primarily at the breastwork, at least for a short

time, it appears there was a second Apache firing position about 10–13 yards below the breastworks. Apaches here may have been using juniper trees, sotols, or yuccas as cover.

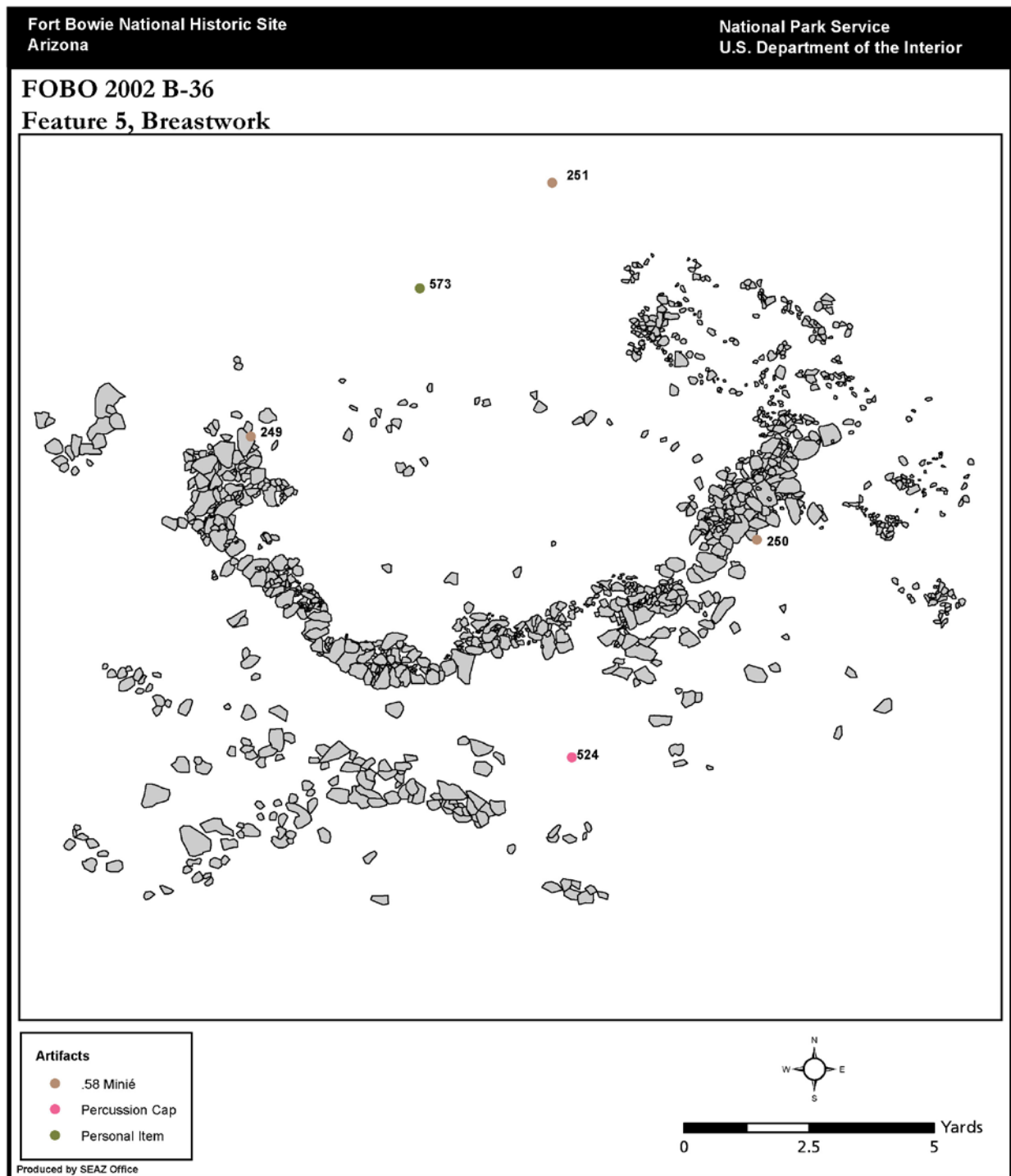


Figure 55. FOBO 2002 B-36, Feature 5, Breastwork. Dry-laid masonry elements digitized from close-range photogrammetric orthophoto.

The one .52-caliber Sharps bullet likely represents a shot fired by one of the cavalryman from a position far below, possibly in Section G. Not many percussion caps were recorded during the survey due to rocky terrain, steep slopes, erosion, and vegetation, but one cap was discovered near the breastwork and could be associated with either the battle or the Bascom Affair.

The .50-caliber round ball, located just below the breastwork, could have been fired during the battle or the Bascom Affair. By determining its angle of impact, it becomes apparent that it was fired from First Fort Hill. Given its location and the fact that only a few Apaches remained on First Fort Hill by the time troops captured the breastworks, this round was probably fired during the Bascom Affair.

One of the personal artifacts found in this section was an iron roller buckle (NC573), typical of those found on the Model 1855 cartridge box and some horse equipment. This buckle may be battle-related or may have been dropped post-battle. The other personal item was a boot tack (NC827) found along Fountain's route as he advanced toward the breastwork. This item is probably battle-related.

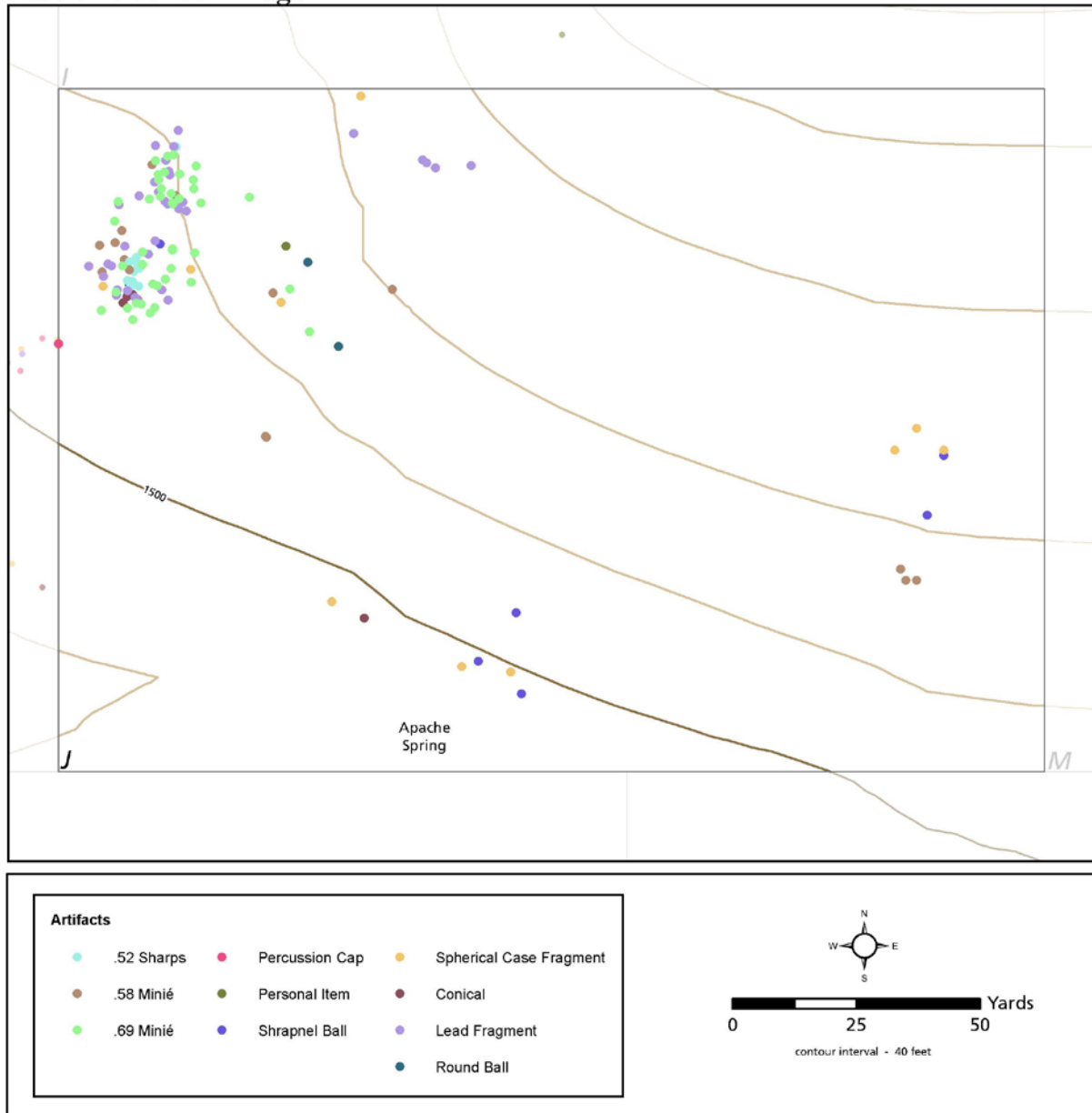
Five spherical-case fragments and six shrapnel balls were located in Section I. Two of the fragments are in the northwest corner of the section and are associated with one of the rounds that exploded in Section F. The other three fragments, two located on the west side of the breastwork and one south of the breastwork, likely represent a round that exploded just west of the breastwork, showering fragments that just clipped the top of the east peak. The four shrapnel balls in the northwest corner of the section are likely associated with one of the rounds that exploded in Section F. The other two shrapnel balls, located near the breastworks, are associated with the round that exploded just west of the breastworks. The case-shot fragments and the shrapnel balls near the breastworks represent another howitzer round that exploded near to its intended target, probably causing real concern for the Apaches occupying the breastwork. This round may also represent one of the last howitzer rounds fired during the battle.

Section J, Base of Overlook Ridge (128 Artifacts)

Section J contained 128 artifacts. Sixteen were artillery-related, 111 were small arms-related, and there was one personal artifact, a clay pipe bowl (Figure 56). Small-arms ammunition consisted of forty-two .69-caliber Minié balls, thirty-four lead fragments, sixteen .58-caliber Minié balls, eleven .52-caliber Sharps bullets, four .44-caliber conical bullets, and four round balls: one .28-caliber or no. 2 buckshot, one .41-caliber, one .44-caliber, and one .45-caliber ball that had been hammered into shape. Artillery-related artifacts are comprised of 10-spherical-case fragments and six shrapnel balls. The personal item was a red clay pipe bowl fragment.

Sergeant Fountain and his men were given the unenviable job of making a 180-yard ascent up the steep slope of Overlook Ridge, under heavy fire, to take the Apache positions near the top of the hill (Figure 57). With this being said, how is it that Fountain and his 20 men not only accomplished their mission but suffered no casualties in the process? There are three reasons why he was able to take the Apache breastworks on Overlook Ridge. First, Sergeant Fountain used tactics that were quite advanced for the time. He divided his men into two groups of 10 and then ordered them, "to advance alternately, that is, ten men would dash ten or twelve yards to the front, lie down, and cover the other ten as they made a dash, and so on" (Fountain 1891).

Section J
Base of Overlook Ridge



Produced by SEAZ Office

Figure 56. Section J, base of Overlook Ridge.



Figure 57. Sergeant Fountain's men advanced uphill from the lower juniper trees to the top of the hill. By lying down between dashes, the troops became less exposed than when advancing up the hill in formation, a practice that was common at the time.

Second, as Fountain's men leap-frogged toward the breastwork, they were only clearly visible to the Apaches about 60 percent of the time; add to this the fact that they also laid down between runs to make themselves smaller targets. The first 75 yards of their advance was over open, exposed ground. After crossing this field of fire, and for about the next 35 yards, the Apaches had a more difficult time seeing them, because the ocotillos, yuccas, and slight dips in the terrain provided some cover. At this point they had covered about 110 yards and now the hill sloped back, creating a ridge that completely hid the soldiers from the Apaches' view for about 40 more yards. When they reached the end of this cover, they were at a rocky ridge with only about 40 yards of exposed ground between them and the Apache breastwork. It was at this point that Fountain and his men prepared for the final push to the breastworks by taking one last drink and fixing bayonets. They then charged up the remainder of the hill, knowing that the Apaches would be firing one more volley; and they hoped that they could reach the breastworks before the Indians had time to reload. As expected, the Apaches fired one last volley and retreated down the brushy back slope of Overlook Ridge.

Finally, as was the case for most of the fight, the Apaches had high ground and so were forced to shoot down the steep slope. As the soldiers began their advance, the plunging fire from the Apaches went over their heads and created the impact area at the base of the hill. The drop of over 66 yards, coupled with the fact that the Apaches did not understand what that would do to their aim, resulted in

overshots that allowed the troops to take the hill without casualties. Sergeant Fountain and his 20 men were able to accomplish their mission because of excellent tactics, limited Apache visibility, and the extreme downhill shots the Apaches were forced to make.

A red clay pipe stem (NC561) was the only personal artifact recorded in this section. Located part way up the slope, and in line with Fountain's advance, it is in a perfect position to have been lost by one of his men.

The impact area at the base of Overlook Ridge alone contained 77 artifacts, consisting of twenty-five .69-caliber Minié balls, twenty-three lead-bullet fragments of unknown caliber, sixteen .58-caliber Minié balls, five .52-caliber Sharps bullets, four .44-caliber conical bullets, and four round balls: one .28-caliber, one .41-caliber, one .44-caliber, and one hammered, .45-caliber (Figure 58). Many of the .58 and .69-caliber Minié balls in this area are not battle-related, as previously discussed in Sections G, F, and the ".69-caliber Minié ball" section. Much of this type of ammunition comes from early target practice and overlaps the impact area. However, some of it likely represents Apache overshots of the troops as they advanced up the hill, and others may have been fired from First Fort Hill. By the same token, the lead fragments not only represent pieces of bullets fired at the troops but also pieces of bullets from the target area, causing the large number of recorded fragments. Once again, an unknown percentage is battle-related because we know that the Apaches possessed .69-caliber weapons.

Many of the sixteen .58-caliber Minié balls and five .52-caliber Sharps are battle-related and were fired by Apaches from weapons captured during the previous year. The .44 and .45-caliber round balls were probably fired from early plains rifles or some other type of muzzle-loading rifle. The .45-caliber round ball had been hammered into shape. The .28-caliber ball may have been fired from a shotgun and might be a No. 2 shot. Although two of the three .44-caliber conical bullets were in the impact area and are probably battle-related, the other .44-caliber bullet is closer to the spring and was more than likely fired at Bascom's men during the Bascom Affair.

Located in the west half of Section J is a cluster of eight spherical-case fragments and four shrapnel balls. These artifacts are related to a case shot that exploded in Section G, throwing fragments and shrapnel balls into Section J. The three spherical-case fragments and two shrapnel balls in the east half of Section J represent one case shot round that exploded in this section.



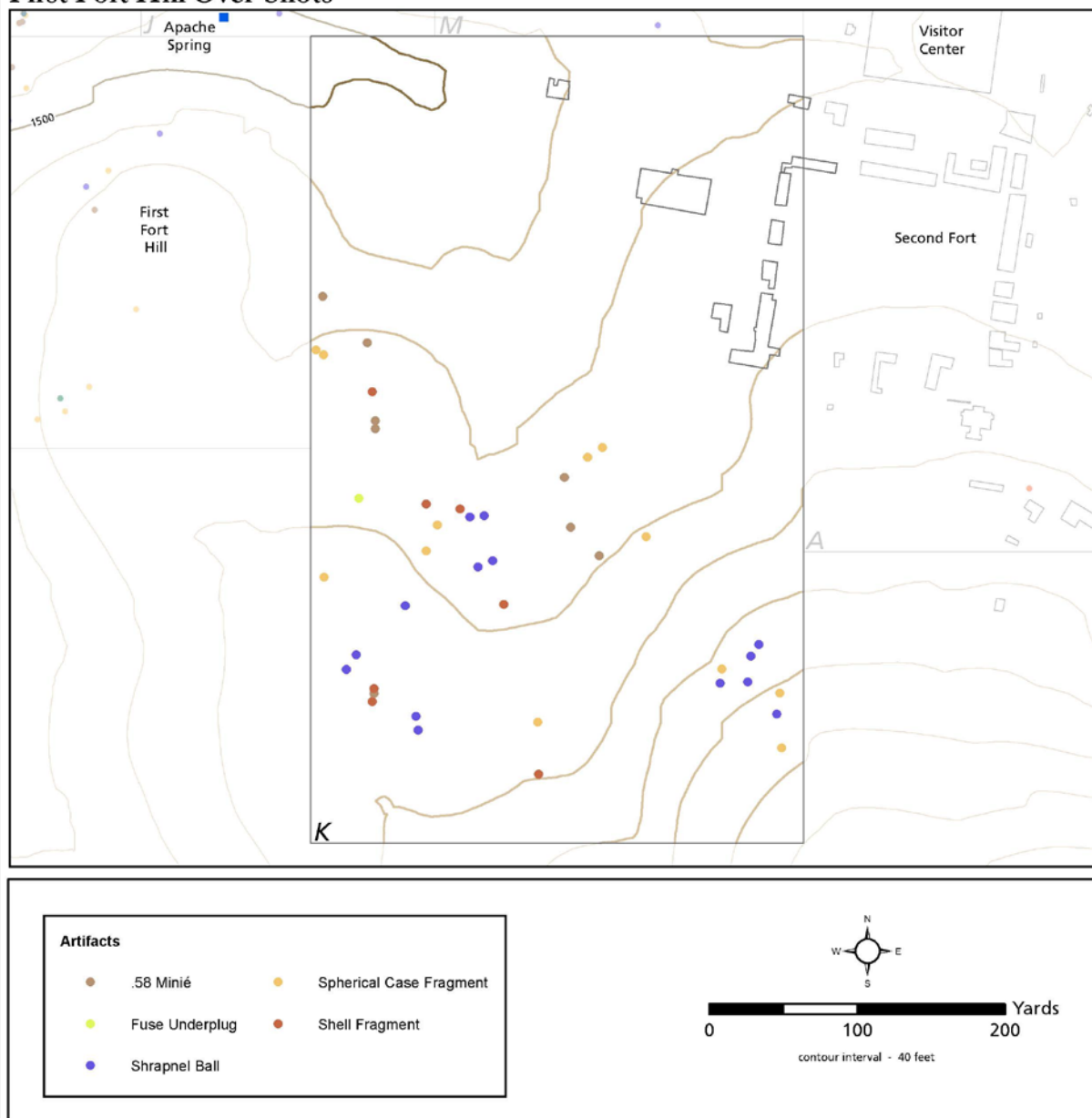
Figure 58. The impact area between the four junipers and the wash is from Apaches overshooting Sergeant Fountain's men as they advanced uphill.

Section K, First Fort Hill Overshots (42 Artifacts)

Section K contains 42 battle related artifacts: fourteen shrapnel balls, twelve spherical-case fragments, eight .58-caliber Minié balls, seven shell fragments, and one Bormann fuse underplug (Figure 59). The artillery-related artifacts represent 3–4 mountain howitzer rounds, all overshots of Apache positions on First Fort Hill. The 12 spherical-case fragments and 14 shrapnel balls represent at least one but no more than two spherical case rounds fired into Section K. Three spherical-case fragments and six shrapnel balls were found in a linear northwest–southeast pattern running diagonally across the west half of Section K (Figure 60). The other six spherical-case fragments and five shrapnel balls also run in a linear northwest–southeast pattern running diagonally but were found across the east half of Section K.

Seven shell fragments and one Bormann fuse underplug representing two rounds of shell were recorded in linear northwest–southeast patterns, and are consistent with overshots of Apache positions on First Fort Hill. These shots parallel each other, one at mid-section and the other south of it. The round at mid-section is represented by five fragments, while the southernmost shell pattern consists of two fragments.

Section K First Fort Hill Over-Shots



Produced by SEAZ Office

Figure 59. Section K, First Fort Hill overshoots.



Figure 60. The hills behind First Fort Hill contained many spherical-case and shell fragments, shrapnel balls, and .58-caliber Minié balls.

The five shell fragments from the mid-section shot were found in a linear pattern running north–south behind First Fort Hill and were relatively close together. Of these fragments, one hit the top of the hill and has a partial smooth fuse hole; the other four fragments are scattered behind it in a linear fashion. The round is an overshoot of Apaches posted along the top north side of what is now called First Fort Hill and overlaps two spherical-case rounds found in the same area.

Another shell round exploded south of the one previously mentioned and is represented by two fragments. Based upon the threaded fuse hole fragment and the presence of a Bormann fuse underplug nearby, it is the only known howitzer round fired during the battle utilizing the Bormann fuse.

The eight .58-caliber Minié balls are in a similar, northwest–southeast pattern as the artillery rounds. Like the artillery rounds, they are probably overshoots of the Apache positions on First Fort Hill. In order for the Minié balls to have the same angle of fire as the artillery rounds, the infantrymen who fired them were either in close proximity to the howitzers or may have been members of the howitzer crews.

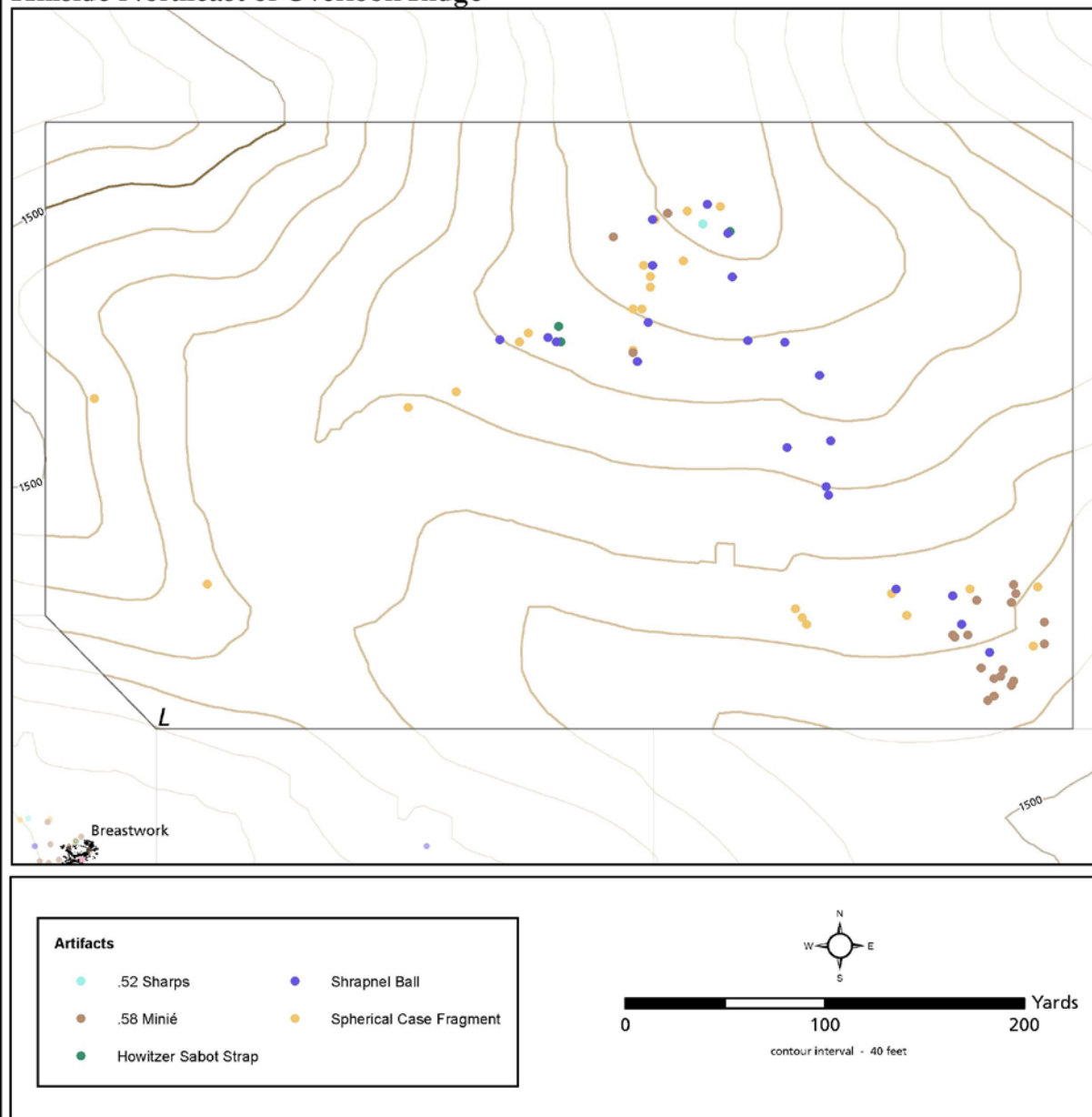
If the Apache positions on First Fort Hill were stone breastworks, as described by historical accounts, then they were probably dismantled and used for building foundations when the first fort was constructed two weeks after the battle. No evidence of these positions exists today.

Section L, Hillside Northeast of Overlook Ridge (69 Artifacts)

Section L consists of the southwest slope of the hill northeast and behind Overlook Ridge (Figure 61). The hillside can only be termed an overshoot concentration of artillery and small arms fire from troops firing at Apache positions on both peaks of Overlook Ridge. Section L contains 69 battle-related artifacts. These include twenty-four spherical-case fragments, twenty-one shrapnel balls, twenty .58-caliber Minié balls, three sabot-strap fragments, and one .52-caliber Sharps bullet. There are two dense artifact concentrations in Section L, connected by a more sparse shrapnel-ball scatter (Figure 62). The assemblage higher up on the slope consists of 30 artifacts: 14 spherical-case fragments, 10 shrapnel balls, 2 sabot-strap fragments, 3 (three) .58-caliber Minié balls, and 1 (one) .52-caliber Sharps bullet. The 14 spherical-case fragments represent one but no more than two spherical-case rounds that exploded on the hillside. Twelve of these fragments are in a 164 × 55-yard linear pattern running up slope near the northeast corner of the section. A pattern of the eight shrapnel balls and two iron sabot straps parallels and intermixes with the spherical-case fragments. Two other fragments (NC494, 521), although more isolated and closer to the southeast corner of the section, belong to the upper concentration, based upon refitting and fragment patterns.

Mixed in with the artillery artifacts were three .58-caliber Minié balls from the infantry and a .52-caliber Sharps bullet from the cavalry, all probable overshoots of Apache positions on Overlook Ridge. The fact that small-arms ammunition is mixed in with the artillery artifacts indicates that the soldiers firing them were in very close proximity to the mountain howitzers, producing the same angle of fire. It is possible that the infantrymen firing them may even have been part of the gun crew, since they were allowed to keep their rifled muskets and were known to have fired back at the Apaches. Because the cavalry was assigned to support the mountain howitzers, they also would have been in close proximity to the howitzers, once again producing the same angle of fire if firing at the same target on Overlook Ridge.

Section L Hillside Northeast of Overlook Ridge



Produced by SEAZ Office

Figure 61. Section L, hillside northeast of Overlook Ridge.

Section L

Hillside Northeast of Overlook Ridge - Spherical Case Refits

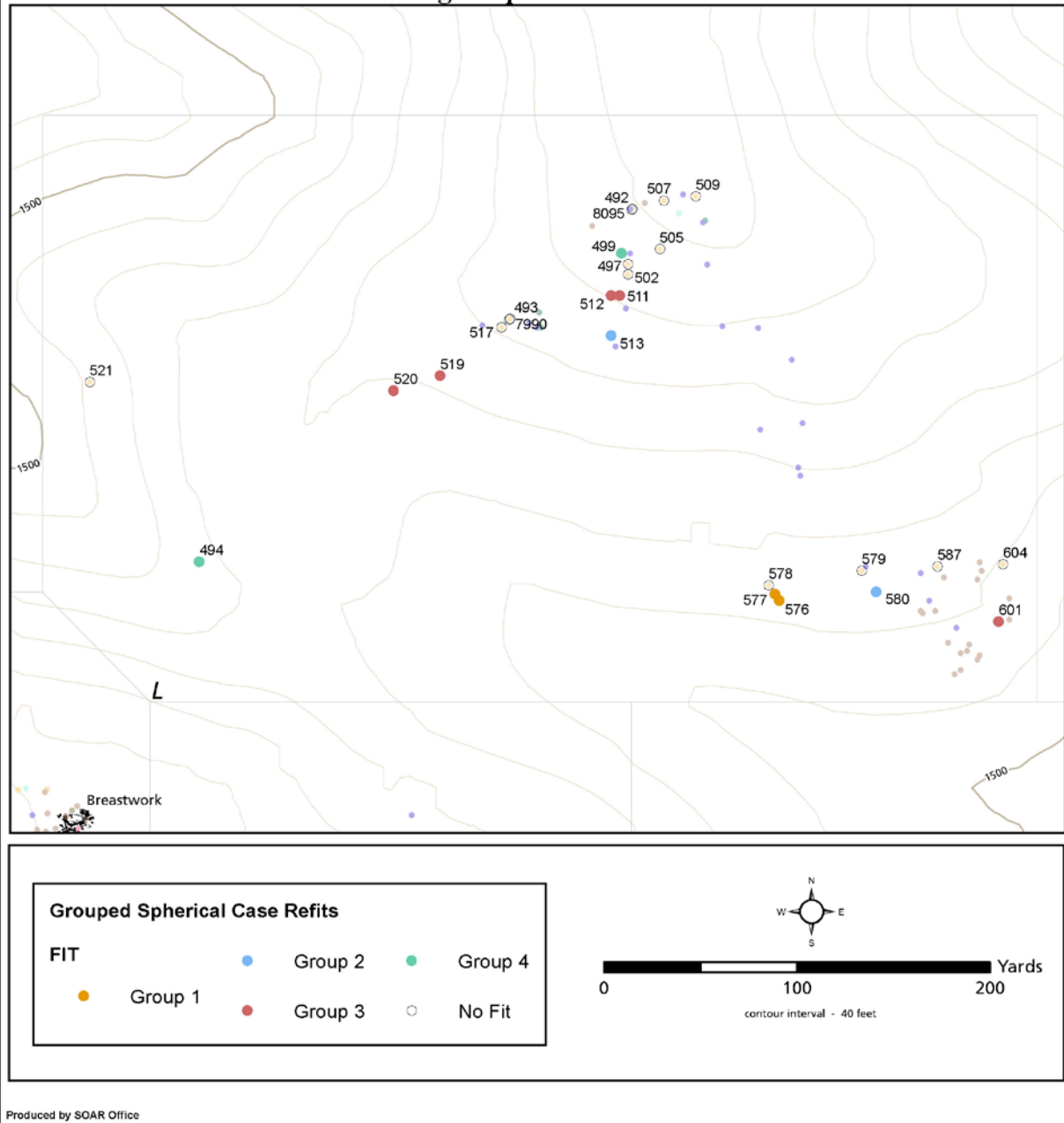


Figure 62. Section L, spherical-case refits on hillside northeast of Overlook Ridge.

Connecting the upper and lower assemblages, and filling a 153-yard gap between them, is a line of seven shrapnel balls (NC812–815, 823–825) and one sabot-strap fragment (NC822). They may be included with either of the assemblages but more than likely are a mixture of both.

The lower artifact assemblage, located in the southeast corner of Section L, contains 29 artifacts: eight spherical-case fragments and four shrapnel balls representing one round of case shot, and seventeen .58-caliber Minié balls consistent with a small-arms impact area (Figure 63). This concentration represents overshoots of Apache positions on the east peak of Overlook Ridge. As mentioned previously, with some of the .69-caliber Minié balls, many of the .58s at this location impacted in ways other than nose-first (Figure 64). In this case, however, the reason is different. The Minié balls at this site had travelled such a great distance that, having reached their terminal velocity, they became unstable as they fell to earth. This allowed them to impact sideways or, in some cases, even backwards (D. Scott, personal communication, 2014).



Figure 63. Spherical-case fragment in situ on the hillside of Section L.

Case-shot fragments and shrapnel balls of this lower assemblage were found in a linear pattern of approximately 120×49 yards in a nearly east–west direction (Figure 65). Unfortunately, with the intermixing of spherical-case fragments from both concentrations, it is extremely difficult to determine which fragments belong to which assemblage. Table 1 identifies the fragments that refit.



Figure 64. Two overshot Minié balls (NC593, 594) (left and center) still retain some of their shape compared to the Minié ball (NC196) on the right, which impacted at a higher velocity.



Figure 65. The hill east of Overlook Ridge, Section L, produced one pattern of spherical-case fragments on the left side of the hill and another toward the center.

Table 1. Section L spherical-case fragment refits.

Number	Fits with fragment	Distance between fragments	Assemblage
576	493	202 yards	Upper/Lower
513	580	177 yards	Upper/Lower
511	601	259 yards	Upper/Lower
520	511	125 yards	Upper
601	520	339 yards	Upper/Lower
519	512	97 yards	Upper
577	576	4 yards	Lower
494	499	271 yards	Upper
511	512	4 yards	Upper

Of the nine pairs of fragments from Section L that refit, four contained fragments from both artifact assemblages. The distances between the two refitting fragments varied from 4 yards to 339 yards, with an average of 164 yards. Of the eight fragments recorded, two had a partial fuse hole. One fuse-hole fragment (NC511) refit with another one (NC601), the distance between them being approximately 259 yards (Figure 66).



Figure 66. These two fuse-hole fragments (NC511, 601) were found 259 yards apart.

Because these two assemblages are separated by some distance, it would be understandable to treat them as separate rounds. However, the intermingling of fragments between the two shots becomes apparent when an attempt at refitting the assemblages takes place. Of the 13 fragments that were refit, seven were of mixed assemblages, meaning that one fragment from each area fit together—thus the possibility that they might represent one round. Upon measuring the thickness of the fuse holes on some of the fragments, however, it was determined that they represented two separate rounds. The fuse hole of fragment NC497 is 0.12 inches shorter than the fuse holes in the other four fuse-hole fragments. Unfortunately, with the intermingling of fragments from both shots, it becomes impossible to determine the number of fragments a spherical-case round breaks into. This hillside produced enough case-shot fragments to represent at least two but not more than three spherical-case rounds.

Section M, East Slope of Overlook Ridge (25 Artifacts)

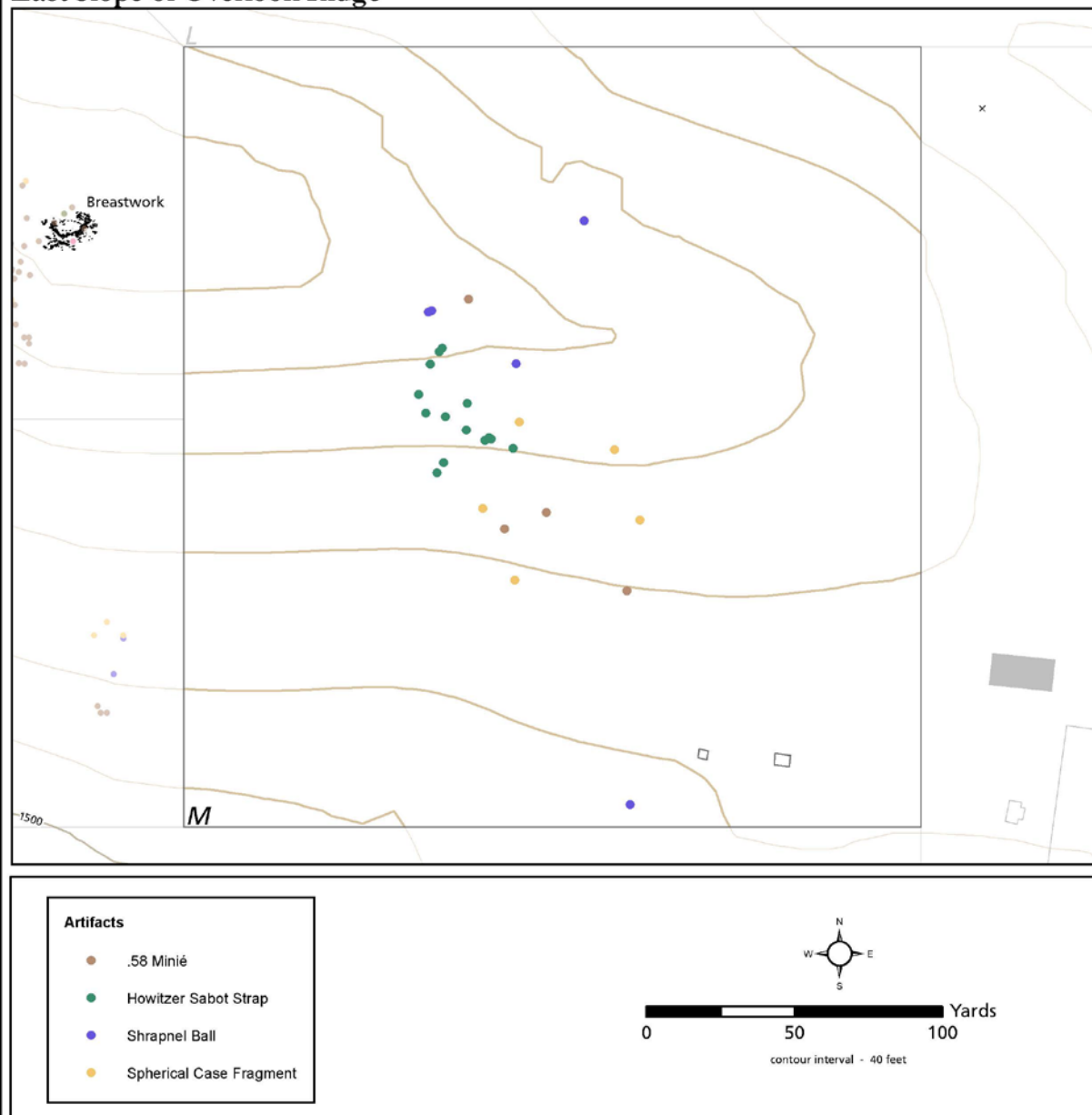
Of the 25 artifacts recorded in Section M, 21 were related to howitzer ammunition (Figure 67). There were five spherical-case fragments, four shrapnel balls, and 12 pieces of sabot strap. The remaining four artifacts were .58-caliber Minié balls. As with some of the other sites around the periphery of the main battle, Section M consists of artifacts related to at least one artillery overshoot of Apache positions on the west peak of Overlook Ridge (Figure 68).

Sixty-three percent of all sabot strapping came from the south side of Overlook Ridge in Section M. Normally difficult to find, the large quantity of strapping found in this area was unusual. The pieces found here were scattered among spherical-case fragments and shrapnel balls. Several pieces of strapping showed evidence of nail holes' being elongated or ripped apart, and linear stretch lines in the metal from the strap's being pulled apart at the time of the cannonball's detonation. Virtually no other artifacts were recorded on this hillside. Their pattern is linear, aligned east–west, which is consistent with being fired from the west. The primary reason for finding so much sabot strapping on this hillside may be because the slope in this area is nearly all exposed bedrock, having little or no soil depth. The strapping has nowhere to go on this hard, rocky surface and cannot settle into the soil because there is none.

When all of the sabot strapping lengths are added together, they total 40.2 inches, suggesting they represent two different cannonballs. The amount of strapping per round could vary between 26 and 28 inches, so there are two rounds represented based on the total length. One round exploded lower down on the hillside, where it produced the lower artifact assemblage, while the other round exploded above the ridge line, depositing most of the spherical-case fragments and shrapnel balls on the other side of the ridge, where they came to rest in what would become the fort's dump site. This area contains so much metal from the dump that it is extremely difficult to survey with a metal detector; therefore, we were not able to verify.

These two shots were fired from a position near what is now the Indian Agency building and may have been some of the first shots fired by the howitzers. Of the four shrapnel balls recorded, two were found fused together (NC701) from the heat of the explosion (Figure 69).

Section M
East Slope of Overlook Ridge



Produced by SEAZ Office

Figure 67. Section M, east slope of Overlook Ridge.



Figure 68. The east end of Overlook Ridge produced spherical-case fragments, shrapnel balls, and sabot strapping.



Figure 69. Two shrapnel balls fused together (NC701).

Conclusions

The archeological survey located several areas that were previously unknown. Probably the most important discovery was the location of the ambush site one half-mile west of the stage station, just as the historic record suggests (Roberts 1862).

Fountain commented that the initial ambush took place west of the stage station and caught everyone by surprise. He went on to say that the infantry formed up in a skirmish line and advanced toward the end of the column to engage the Apaches. Archeological evidence supports Fountain's narration. Two skirmish lines are evident on the two ridgelines immediately east of the ambush site. From the east skirmish line, the troops could not see the actual ambush site but were probably firing at Apache positions on the hillsides, and a few Apaches were returning their fire. From the west skirmish line, advancing troops could observe the entire ambush site, although by then most of the Apaches returned fire as they were retreating.

The initial Apache ambush on the rear of the column hurt the Apaches more than it helped them. True, the ambush inflicted casualties upon the California troops (one killed and two wounded), and the Apaches may have even captured the howitzers for a short time. However, doing this removed the element of surprise that was so important to the Apaches' method of warfare. The element of surprise would have been more effective had they waited until the troops entered the narrow defile near Apache Spring.

Apaches retreating south from the ambush site were fired on at least once by soldiers manning one of the mountain howitzers. Although pines and north-slope vegetation provided some cover for Apaches retreating over the mountain to the south, they were within howitzer range long enough for the troops to get at least one shot of spherical case fired. Apaches retreating northward would have been quickly out of sight and range due to the hilly terrain.

The stone fortification near the top of Overlook Ridge was a breastwork used by Apaches during the Battle of Apache Pass. Although it provided excellent cover for the Apaches on Overlook Ridge, it is quite possible that it was constructed by Lt. Bascom's men the year before, when the horse herd was captured by Apaches. It is crescent-shaped and measures about 32 feet in diameter (Sergeant Fountain's account called it 30 feet in diameter). A heavy concentration of .58-caliber Minié balls around this position suggests it came under heavy fire from troops below.

The high density of .58-caliber Minié balls located approximately 40 feet below the breastworks indicates that another Apache firing position was located lower down on the slope. Because this area is free of any stone breastworks and is quite exposed to enemy fire, cover for this position was probably provided by vegetation, such as juniper trees (of which some still exist), or perhaps yuccas or sotols.

Of the 23 artillery rounds fired, nine (39.1%) exploded near their intended target, 13 (56.5%) were overshots, and one (4.4%) failed to go off. Section A contained one overshoot and one dud. Sections E and H contained one overshoot each. Sections F, L, and M contained at least two overshoots each, with the possibility of an extra one. Four overshoots were represented in Section K. Targets along the

ridgelines would have been very hard to hit because fuses would have had to be cut extremely accurately. A fuse cut too long would produce an overshoot.

Apache firing positions were located on both sides of the road at the ambush site, along the base and top of the west and southwest sides of First Fort Hill, on the west and east peaks of Overlook Ridge, around Apache Spring, and on the low hill on the south side of Siphon Wash. The soldiers occupied positions along two skirmish lines at the ambush site, on the low hill along the southside of Siphon Wash, in the wash on the southside of the First Fort Hill, on the west peak of Overlook Ridge, around the south base of Overlook Ridge, along the approach to Apache Spring, and finally on the east peak of Overlook Ridge. By locating six new overshoot areas and the direction of travel of the army's right flank, the known size of the battlefield nearly doubled.

The Apaches were well-supplied with firearms. Captain Thomas Roberts observed that they had both rifles and revolvers. We know they had some .58-caliber rifles captured from U.S. soldiers and Confederate deserters. They also had some .52-caliber Sharps New Model 1859 carbines and .36-caliber Colt revolvers captured from Colonel James Eyre's cavalymen killed in the Pass several weeks before the battle. The rest of their guns would have been a mix of all calibers they obtained from raiding and trading. There is no mention of their having bows and arrows, and no arrow points were found. Knowing this about the weapons possessed by the Apaches, it would be safe to say that any impact areas producing mixed-caliber bullets should be attributed to the Apaches.

It was also determined that Apaches would occasionally modify bullets to fit in different-caliber guns. Small pieces of lead or used bullets were sometimes chewed into round balls of a caliber close enough to be fired from a weapon. Bullets that were chewed into shape possess teeth marks from the maker. At other times, lead would be hammered into a round ball. One .50-caliber bullet was altered by scrapping off the sides of a .58-caliber Minié ball until it was roughly the correct size. Nonetheless, the ball was still a tight fit, as shown by the deep ramrod ring on the nose of the bullet. This ring was created when the bullet was forced down the barrel.

Although the Apaches were well-armed, their acquisition of this weaponry was relatively recent, giving them little time to become proficient in its use. The concept of firing low at targets downhill was probably not understood by them at the time, which consequently produced inaccurate fire during the conflict.

Since the park's establishment, National Park Service employees have interpreted that the California Volunteers fired 40 rounds of howitzer ammunition, and that only through the use of these howitzers were the troops spared annihilation by the Apaches. Both of these statements are incorrect. The "40 rounds" number comes from a report written by First Lieutenant William Thompson to Lieutenant Colonel J. R. West, stating that "in the two days forty rounds" were fired. Field evidence suggests the number was much lower. Although results of the survey did not provide us with an exact number of fired rounds, we can say that the number was probably around 22 or 23, a little over half of what Thompson claimed. Using the average number of 23 to calculate howitzer accuracy, it can be estimated that 14 rounds were probably overshoots and one failed to explode. That means 65.2% of the howitzer rounds were either overshoots or duds. Only eight shots (34.8%) exploded close to their

intended targets. At this rate, it is easy to see why the Apaches suffered minimal (9) casualties, and why Captain Roberts stated that most of the Indian casualties were from rifle fire. This being said, it is possible that because of the inaccuracy of the howitzers, Thompson may have wanted the 40 rounds of ammunition not only to replace what had been used, but also to have extra on hand for practice.

The California troops used two types of howitzer ammunition, firing four rounds of shell and around 20 rounds of spherical case in two days of fighting. One of the shell rounds was a dud. All of the howitzer rounds used the paper fuse except one shell round that used a Bormann fuse. This was supported by the discovery of a Bormann fuse underplug and threaded shell fragments at an overshoot site southeast of the First Fort.

As the battle wore on, the howitzers were pushed forward until they were positioned too close to the Apache positions, creating several problems for the gun crews. The closer they got to the enemy, the more accurate the fuse cutting needed to be. A fuse cut a split second too long would cause the cannonball to fly harmlessly over the heads of the ridgetop positions, exploding behind them. By getting too close to the Apaches, the gun crews came under rifle fire. Still possessing their rifles, these infantrymen-turned-artillerymen abandoned their howitzers to return fire with their rifles from covered positions. This problem slowed the rate of howitzer fire to nearly a standstill. Finally, by getting in too close to the hilltop positions, the two howitzers' elevation screws were maxed out, making it impossible to get enough elevation to reach their targets. Attempts to alleviate the problem by positioning the gun on a slope or digging the trail into the ground came to no avail and only succeeded in breaking the gun's trail-stocks and axle-trees.

The three howitzer firing positions along the north side of Siphon Wash support documentation that the howitzers were pushed forward as the infantry skirmish line advanced toward Apache Spring. Based upon a photograph taken by William Bell in 1867 (see Figure 14), there was a wide, flat bench along the north side of Siphon Wash at the time of the battle. It was along this bench that the gun crews pushed their howitzers forward during their advance. Since the battle, most of this bench has eroded away, taking with it any of the friction primers that would have identified other firing positions. As discussed in Section C, only three firing positions can be identified based upon the presence of friction primers. The three firing positions represent shots fired after the battle had been going on for a while. If the site of the initial howitzer firing position still exists, it would be further west, in an area of thick vegetation, making metal detection nearly impossible.

Although several participants wrote about the Battle of Apache Pass, the three best accounts are probably Captain Thomas Roberts's report, the articles by Sergeant Albert Fountain, and the "Notes" written by Eli Hazen. Fountain's detailed account generally agrees well with Roberts's and Hazen's, but provides more information. Each account adds to the others, providing a detailed description of the action. Fountain's details made some historians feel that his account may have been embellished. However, information gained from this archeological survey supports Fountain's account, for the most part. There is no way to verify the accuracy of everything he wrote, but many of the descriptions can be supported.

The types of artifacts comprising the impact area below the breastworks consisted of several calibers and types of rifle and pistol ammunition fired at Fountain's detachment as it assaulted the hill. The lack of certain artifacts in quantity on the hillside, such as spherical-case fragments and .69-caliber shrapnel balls, suggests the mountain howitzers played a smaller part in taking the final Apache firing positions on Overlook Ridge than previously believed. The artifacts confirm Fountain's detailed account of the howitzers' being too damaged to fire on Apache positions in and around the breastworks, and of a frontal assault by the infantry. Fountain's men were able to take Breastworks Hill by using smart tactics, vegetation and terrain for concealment, and the inability of the Apaches to produce accurate downhill fire.

The low casualty numbers on both sides can probably be attributed to steep terrain and long-distance shooting. Neither side had a thorough understanding of shooting uphill for the troops and downhill for the Apaches. Apaches were able to inflict casualties on California troops twice. Both times, the terrain was relatively flat and the range was between 50 and 70 yards. At both the ambush site (where Private O'Brien was killed and two others were wounded) and the area near the spring (where Private Barr was killed), these two conditions were present. At all other times during the fight, Apaches and soldiers were firing at targets between 35 and 102 yards above or below them, and at ranges between 200 and 450 yards. As for Apache casualties, Captain Roberts claimed that nine were killed: four at the ambush site and five during the fight around Apache Spring. Once again, although the terrain around the ambush site is quite broken, there is little elevation change, and the ranges to the lower Apache positions were not extreme.

Of the approximately 23 howitzer rounds fired during the battle, only two can be studied for pattern analysis (the other rounds are too contaminated by overlap). These two rounds are located in Section L, the "Hillside Northeast of Overlook Ridge." Although these two rounds are close enough to have overlapping fragments, their level of cross-contamination appears to be small enough to allow the collection of good information. There are 16 spherical-case fragments in the upper assemblage and eight in the lower one. Two of the fragments were refit with fragments from a different assemblage than the one in which they were found, and the numbers have been adjusted to reflect this. This does not mean that some of the other fragments may not also refit across assemblages; it means that they have either not been found or we couldn't refit them. The following figures are only correct assuming that none of the other fragments cross assemblages.

Based upon a method devised by Andrew McFeaters in his thesis (2008), each fragment was measured for outside area in square inches. The outside surface area of a spherical-case round for a 12-lb. mountain howitzer is 64.0 square inches (in^2); subtracting the area of the fuse hole, the total area of the ball is 62.9 in^2 . Using the caveats above, it was determined that the eight fragments from the lower assemblage totaled 24.8 in^2 , or 39.5% of the cannonball. The majority, 87.5%, of these fragments fit into a slightly conical, east-west pattern and within an area of 32 × 97 yards. The westernmost fragment had a partial fuse hole, and the easternmost artifact had a partial fuse hole. These two fragments refit but were 259 yards apart. This round was probably fired at Apache positions at the breastworks and from the small hill between what is now the Apache camp and the Indian Agency Building.

The assemblage higher up on the hillside contains 16 spherical-case fragments totaling 32.9 in². They are oriented in a northeast–southwest conical pattern in an area 72 × 84 yards. The majority of this round (99.3%) fits into this area. This round was probably fired at Apache positions on the west peak of Overlook Ridge.

Both assemblages together total 57.7 in², which is 91.8% of a complete spherical-case round. The odds of finding that percentage of a single cannonball in the rough terrain and vegetation of Section L are extremely small. With this in mind, the 24 total fragments likely represent two rounds of spherical case, with the upper assemblage representing 52.3% of one round, and the lower assemblage representing 39.5 % of another.

Although survey work on the Battle of Apache Pass Site was performed periodically over many years, it produced information valuable to understanding the battle from both sides. Most of the firing positions and movements for both the Apaches and the troops have now been located and investigated, providing critical information for establishing the battle's flow. The location of the ambush site, one half- mile west of the stage station, supports historic documentation and produced evidence of the howitzer gun crews' firing at least one shot at retreating Apaches. The suspected variety of Apache weaponry was verified by artifacts recorded at Apache firing positions and impact areas across the site. The propensity for the troops and Apaches to overshoot their targets became apparent as the survey progressed, and careful study of terrain and firing positions explains why casualties were so minimal. Artifactual evidence also indicated that howitzer fire may not have been as effective as it was once thought to be. Finally, for both sides, a pattern emerged that would typify Apache warfare for the next 25 years. Ambushes, Apaches occupying high ground, and troops trying to advance on them from below came to represent how the Apache Wars would be fought.

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Part 3: Appendices

Appendix A: Captain Thomas Roberts's Report

July 15. – Arrived at Apache Pass Station 12.30 p.m. About half a mile from the station the Apaches attacked the rear of my command, and, I am sorry to add, killed Private C.M. O'Brien, of Company G, First Infantry, attached to Thompson's battery, who was one of the rear guard, and wounded Andrew Sawyer, teamster, in the thigh; not seriously, however. They, however, met with a warm reception, my men killing four of them. As soon as possible I formed as skirmishers, and after a sharp little contest drove them off, bringing everything in safe except as above stated.

On going to the spring for water deployed skirmishers, supported by one of Lieutenant Thompson's guns. Proceeding up the canon cautiously, found the Indians posted high above us, from where they kept up a rattling fire upon us. Called my men out and divided them into two parties of skirmishers, sending them up the hills on either side of the canon, shelling the high points ahead of them. The Indians seemed very loath to let me have water, and fought determinedly, but they found us too much for them; but they kept us from water until after 4 p.m.

In the first engagement for water they killed Private John Barr, of Company E, First Infantry California Volunteers. As soon as I could get water for the horses I dispatched Sergeant Mitchell and cavalry with an express to Captain Cremony, informing him of the condition of things ahead, and that I would come to meet him as soon as I possibly could with a portion of my command; which party were also attacked, full particulars of which you will find in the report of Captain Cremony to me, herein inclosed.

As soon as I could get water enough for night and morning I withdrew my men, not having enough to hold both the camp and water and go to the relief of Captain Cremony, and as soon as they could get a cup of coffee I started with twenty-eight men and marched back fifteen miles, where I found the train parked and safe. We marched this on my canteen full of water, being all we had, but my men did it without a murmur.

July 16 – Started with train in the morning without breakfast, there being no wood to cook with. Before entering the pass made the following disposition of my forces, viz: In front a line of skirmishers; dismounted the cavalry, excepting three, to assist the three men driving the cattle, and distributed them one to each wagon, the cattle immediately behind the train, and in the rear of all another line of skirmishers, and brought everything in safe.

Had to repeat the performance of yesterday to obtain water, which I succeeded in doing without the losing a man. Dug the spring out so as to increase its capacity fourfold; walled a portion of it and fixed everything as well as I could; putting 200 gallons in tank for drinking and cooking, when commenced watering animals, which is rather slow work, as the spring runs but a small stream, and it was late in the night before all the animals were watered. Held the spring until ready to start the next day. Found the graves of privates of First Cavalry, viz, Albert Schmidt, James F. Keith, and Peter Maloney, killed by Apaches June 25, 1862.

Appendix B: Excerpts for Old Time Reminiscences, The Battle of Apache Pass

Albert J. Fountain's Article, *Rio Grande Republican*, January 2, 1891,¹

In the summer of 1862, General James H. Carlton's Column from California was being pushed with all speed to the Rio Grande to aid General Canby in driving back the Texas invasion of New Mexico. The "column" consisting of the First Infantry California Volunteers, commanded by Col. J.R. West, Cremony's company of the Second California Cavalry, two companies of Col. Bowie's Fifth California Infantry, and Shinn's Battery "A", Third U.S. Artillery, in all about eighteen hundred fighting men, had rendezvoused at Tucson, where, at a dress parade held on the 4th of July 1862, the announcement was made that the column would proceed by forced marches to the Mesilla Valley for the purpose of driving the Confederate enemy under Sibley from that portion of New Mexico. Two companies of the First Cavalry under Lt. Col. Eyre had been sent in advance to reconnoiter, but no reports had been received from them, and it was apprehended that they had met with disaster.

This was the situation when Captain Thomas L. Roberts, commanding Company "E", First California Infantry, was ordered to push on to the San Simon, there fortify and establish a depot and afford relief to Col. Eyre should he be driven back. Roberts' command consisted of twenty-six wagons. No information had been received of hostile Indians, and no apprehension was felt of any attempt to obstruct our progress from such a source.

The command reached Dragoon Springs on the 13th of July, and experienced some difficulty in obtaining sufficient water to supply the requirements of men and animals. The heat was very oppressive, the mercury standing at 118 in the shade, and the infantry, encumbered with their arms, accoutrements, forty rounds in their cartridge boxes and sixty rounds in their knapsacks, found marching anything but pleasant over the Arizona deserts. On the evening of July 14th the infantry and howitzer battery with seven of Cremony's cavalry left Dragoon Springs to make a night march to Apache Pass, forty miles away. Cremony, with the balance of his cavalry, was left with the train at Dragoon Springs with orders to push on to Apache Pass the next morning.

The march to Apache Pass was one never forgotten by those who made it; all night long the burdened infantry marched over the forty miles of dusty road, the heat was oppressive and the pace fast enough to test the muscles of men who had become hardened by their march from the Pacific coast.

At sunrise on the morning of the fifteenth of July, the weary and thirsty column staggered into the mouth of Apache Pass. The tired men, animated by pleasant anticipations of soon obtaining water to allay their thirst and breakfast to allay their hunger, quickened their pace, and joked and sang; the old stone station was in sight, the march was nearly ended and water, food and rest were at hand to compensate for the weary night march.

The head of the straggling column had nearly reached the stone station, the rear was half a mile distant, when from both sides of the canon [sic] the crack of rifles broke the stillness of the morning air and a murderous volley was poured into the unsuspecting column at short range.

The surprise was complete; from both sides of the battlement gorge, eight hundred well armed Apaches poured a fearful rain of fire and lead into the devoted column. Not an enemy was to be seen,

but from behind the natural and almost unassailable defenses afforded by the rocky sides of the canon [sic] came the storm of the angry and hissing missiles, tearing up the ground. Sergeant O'Brien, of "G" company, first California infantry, who was part of the detail in charge of the howitzer battery, was the first victim; he fell with a bullet through his brain. Then came a hideous and exultant yell from the savage foe as they hurled themselves upon the rear guard, and after a desperate hand to hand conflict succeeded in dragging off O'Brien's body.

When the first volley came, the writer was conversing with Captain Roberts. That gallant officer quickly realized the situation, he shouted "Fall in, men! Fall in! Form as skirmishers! Keep cool! We'll whip H- -l out of them yet! Fall in!"

Quickly, vigorously and bravely the men responded to their officer's command; there was no thought of a stampede, no danger of panic. The men fell into line as coolly [sic] as if on drill, and swept down on the Indians who had assailed the rear guard. There was desperate hand to hand fighting; many an Indian bit the dust. They were driven nearly two miles, and until we had recovered O'Brien's stripped and mutilated body. Then by order of Roberts we fell slowly back to the stone station, the men under perfect discipline.

It was now nearly noon, and water was indispensable for the continuation of life. We had marched forty miles over alkaline plains, and had fought nearly six hours under an Arizona midsummer sun. Water we *must* have, and the spring was six hundred yards up a canon [sic] between two steep hills 300 feet high, their summits crowned with fortifications filled with well-armed Apaches. The situation was by no means an enviable one. Men and officers were faint, worn out with fatigue, want of sleep and intense privation and excitement, but water we *must* have, and to obtain it we must force the enemy's almost impregnable position: garrisoned with seven times our number of the bravest warriors of the combined Apache tribes. Roberts did not hesitate. "Boys," he said, "there is the water, we must have it or die; I ask no man to do more than I shall try to do, I expect no man to do less. This is no place for cowards or skulkers [sic]; if I fail to do my duty men shoot me down for by G-d I will shoot down the first man who shows the white feather here today." The men responded with a cheer that shook the rocky ribs of the canon [sic], and told the enemy they still had no easy task before them.

I was ordered to take a platoon of infantry, deploy as skirmishers, make a dash for the spring and try to hold it until we could obtain sufficient water for our immediate necessities. The second platoon, supported by the howitzer whose commander was directed to throw shells over our heads beyond the spring, where it was certain a large number of Indians were lying in ambush to defend the water. Our line dashed forward, and advanced under a continuous and galling fire from both sides of the canon [sic] until we reached a point within fifty yards of the spring. As it came in sight the men cheered. There it lay, water and life, a beautiful pool of limped water, only a few yards from us. Then from the rocks and willows above the spring came a sheet of flame, three hundred rifles sent a hail of hissing bullets into our faces. Private Barr of "E" company fell shot through the head. I saw several of the men stagger back wounded. From the fortifications on the summits of the hills to our right and left came a rapid and scathing fire, which could not be effectually returned. The first platoon was in

danger of annihilation, when Roberts, perceiving our danger, sounded the re-call, and we fell back, taking with us our dead and wounded, but no water.

It did not require the exultant yells of the victorious savages to stir our men to madness; they wept; they raved; they hurled back fierce and brutal curses from cracked lips and swollen tongues; they called upon Roberts to lead them to water-or death. Captain Thomas L. Roberts was as noble a man, as true a gentleman, as gallant a soldier, as ever lived. Impatient and impulsive at times, he was as cool as an icicle, with a nerve of steel, in the face of danger. "Keep cool boys," he said, "I'll get you out of this scrape all right; we are going to whip those Indians and get that water. Obey my orders and we will come out all right."

The howitzers were brought up and an attempt was made to shell the enemy out of his fortifications, on the hills above the spring, which we considered the key to his position, but the elevation was too great. The trails of both pieces were broken, and they were temporarily put out of action.

Roberts looked intently at the highest hill, to the left of the spring, then turning to me he said: "We must have that hill, and you must take it, it can be done. Take twenty men and storm it." I called for volunteers and immediately had the entire command to pick from. I detailed the first twenty, and deployed them as skirmishers. They were ordered to advance alternately, that is, ten men would dash ten or twelve yards to the front, lie down, and cover the other ten as they made a dash, and so on. We pushed slowly up the hill in the face of a galling fire. Below stood our comrades watching our effort, and prepared to make a dash on the spring should we succeed in carrying the hill. When near the summit I lifted my empty canteen to my lips in the vain hope of extracting a drop of water to moisten my parched tongue and there came a flash and report from a loop hole the breast work a few yards above me, and a bullet passed through the canteen within an inch of my mouth. I instinctively dropped to the ground. "My God!" I heard Roberts cry. "Fountain is gone!" I arose, angry with myself, and vindictively angry toward the enemy. I ordered the men to fix bayonets and make one dash for the summit. As engaged, fifty rifle shots came from the breastworks. They overshot us, and the next moment we were over a rough stone wall and on the inside of a circular fortification some thirty feet in diameter; fifty or more Indians were going out and down the hill on the opposite side. Then thirst, hunger and fatigue were forgotten, the men became demons; with savage yells and curses they hurled themselves upon the flying foe and slaked their vengeance in blood.

As we carried the hill a cheer came from below; as our comrades dashed to the spring with camp kettles and canteens, fire was opened upon them from the opposite hill, but we turned a plunging fire upon the enemy, and they were soon in full flight, The howitzers were again brought into action, and from our elevated position we could see hundreds of Indians scampering to the hills to escape the bursting shells. When the enemy had been routed, I lost no time in sending one of the men down to the spring with our canteens, and they were shortly returned filled with clear, cool, delicious water. From the summit of the hill we occupied, the view extended beyond the pass to the plain over which we had marched the night before. The sun was sinking and our train was due. I looked long and anxiously for some sign of it. Then I saw a small group of mounted men riding rapidly from the pass, then another and much larger group, then puffs of smoke and signs of a conflict. When we carried the spring Captain Roberts dispatched the seven cavalymen under command of Sergeant Mitchell, with

orders to Captain Cremony, detailing him to park the train, and not attempt to enter the pass until reinforced. This was the small group of horsemen we had seen emerge from the pass, and they had, no doubt, been attacked by a large body of Indians, and were probably destroyed. I hurried down the hill and informed Captain Roberts what had transpired.

Volunteers were called for to go out and rescue the train, then supposed to be near the pass. Forty men were accepted and under command of Roberts in person, and without waiting for food, we started on the double quick. As we emerged from the pass we encountered the bodies of three of the horses belonging to our cavalry detachment; they had been shot. We also found a cap belonging to one of the men. It was an awful march. The night was dark and as we staggered on we expected every moment to come upon the bodies of our slaughtered comrades and the ruins of our plundered train. Hour after hour we marched, until two o'clock in the morning, when we came upon a body of Indians, evidently upon the watch. They fled in the darkness as we approached. A few minutes afterwards we heard the sound of mule chains and the buzz of a camp; then came the welcome hail, "Halt! Who comes here?" It was our train, intact and safely parked at Ewell's Station, fifteen miles from Apache Pass, surrounded by Indians, through whose lines we had broken at the end of our fifteen mile march.

And now there was joyous congratulations and warm grasping of hands. Captain Cremony had left Dragoon Springs with the train at daylight on the 15th. He reached Ewell's station shortly before dark and camped, intending to rest his mules a few hours and then push on to Apache Pass. What followed is best told in his own words: "Just as I had camped," he said, "we perceived several riders coming toward us with all speed, and they soon proved to be the detachment of my company, which had been detached to act with Captain Robert's company."

"Two of them were mounted behind two others, and all had evidently ridden hard. Sergeant Mitchell approached, and saluting, said: "Captain Roberts has been attacked in Apache Pass by a very large body of Indians. We fought them for several hours, then Captain Roberts directed us to come back through the pass and report to you, with orders to park the train and take every precaution for its safety. On leaving the pass, we were pursued by over fifty well armed and mounted Indians, and we had a fight and lost three horses killed under us. Sergeant Maynard here has his right arm fractured at the elbow by a rifle ball and Private John Teal was cut off from my party, and we think he is killed, as we saw him surrounded by fifteen or twenty Indians, while we were unable to render any assistance."

Private Teal, however, made his escape from the Apaches and reached the train about one o'clock a.m., an hour in advance of Captain Roberts and the rescuing party. His account of his fight and escape is full of interest, I give it as he told it that night.

"Soon after we left the pass," he said: "we came upon a sort of hollow plain or vale about a mile wide, we dashed across this with all speed. I was two hundred yards in the rear, and a body of from fifteen to twenty of the Indians got between me and my companions. I turned to the south and rode along the plain lengthwise in the hope of outrunning them: but my horse was tired and faint with thirst, and I found it impossible to get away from them. They came up onto me and commenced

firing. One ball passed through the body of my horse just forward of the hind quarters. It was then about dark and I immediately dismounted having made up my mind to stop right there and fight it out. My horse fell dead, I laid down behind his body and opened fire on the Indians with my carbine. I expect they never had run against a breach loader before, and the rapidity of my fire must have astonished them. They commenced to circle around me getting an occasional shot in at me. In this way the fight continued over an hour. Then I stopped firing and made believe I had been shot; when my firing ceased; one of them rode up towards me and I got a good sight at him and let him have it; I put a ball into him and he fell off his horse; as his friends came up to drag him off I popped it to them right lively and they got out of range as quick as they could. After this, they seemed as if they didn't want to get too intimate and I could hear them riding off; it being too dark to see any great distance, I thought this was a good time to make tracks, so I took my saddle, blanket and bridle off my dead horse, struck out for the train and here I am, but there are lots of Indians all around us, I came near running into several bands as I approached the train."

It was about two o'clock a.m. when the rescuing party reached the train. Captain Cremony was no doubt as glad to see us as we were to see him. Our arrival changed the situation, pickets were thrown out, fires were lighted, coffee was made, and, in a short time, our weary men, having satisfied their ravenous appetites threw themselves on the ground with rifles in their hands, to snatch an hour of grateful and recuperative sleep.

At five o'clock next morning we were en-route to the pass. The cavalry protected our front and rear, the infantry were deployed as skirmishers on each side of the wagon train that stretched out nearly five hundred yards. In this manner we progressed, seeing at times large bodies of Indians, until we reached the pass. Here we made a short halt to close up the train and then pushed on through the dangerous defile and great stronghold of the Apaches, on the alert and prepared for an attack. We marched on unmolested until we reached the old stone station. Here we found the main command under Lieutenant Thompson, who had been left in charge. During the night the men had withdrawn from the heights covering the spring and the Apaches were again in possession of them, and of the water.

It should be borne in mind that Captain Roberts' company of infantry had marched forty miles without food or water on the night of the 14th; had fought with desperation from daylight until sundown on the 15th, against six times their number of well-armed Apaches occupying a strong natural position and with every advantage in their favor; had defeated them in a fair fight; and then, without food or rest, had marched fifteen miles to rescue the threatened train, and, after a short rest, had brought in the train, marching fifteen miles to do so. I doubt if any other record can be found of an infantry company marching forty miles in twelve hours; then without water, food or rest fighting twelve hours under an Arizonan mid-summer sun against an over whelming force of well-armed Apaches and winning a decided victory; then, almost absolutely without rest, marching thirty miles further, and all within forty hours.

We had saved the train, and our command was again united; but the Indians had possession of the water, and our animals were dying of thirst. It was evident that the enemy intended to put us to another trial of strength. They had again occupied the heights [sic] commanding the spring, and could

be seen watching us curiously from their fortifications lining the sides of the canon [sic]. We were now compelled not only to again drive them from their commanding position, but to protect our train while doing so. Defeat meant utter annihilation, and we knew it.

But we now had advantages of which we had been deprived the day before. We knew the ground; we had not the disadvantage of a surprise; we had food for our men and an abundant supply of ammunition to replenish our empty cartridge boxes and fill the cassions [sic] of our howitzers; and with the coming of Captain Cremony we had a respectable force of cavalry to guard our flanks.

Captain Roberts cut out our work in a style that must have been a revelation to John Apache. The wagons were driven inside of the stone corral at the old station; there they formed in a hollow square, and the mules were unharnessed and chained inside. The teamsters and wagon masters, some twenty-eight in number, were supplied with rifles and ammunition, and detailed to guard the train. In the center of the canon [sic] the two mounted howitzers were placed: their ammunition boxes filled with shells and spherical case shot, and supported by twenty infantry. With the guns in their center, sixty infantry were deployed across the canon [sic] as skirmishers; in the rear of the skirmish line the cavalry, mounted, were held in reserve ready to proceed rapidly to any point of the line where their services would be required.

When all was ready the bugles sounded the advance; the little howitzers, spitefully throwing twelve pound shells and spherical case right and left were pushed up the canon [sic] in line with the skirmishers. The shells burst splendidly, starting the concealed foe from behind their breastworks; and as they fled, the skirmish line accelerated their speed with volleys of Minié balls. The line advanced coolly [sic] and deliberately, the men acting as if on drill.

Shortly, large groups of Indians were seen to decamp hurriedly from the vicinity of the spring; then the cavalry, no longer to be restrained dashed through the skirmish line and hurled themselves on the retreating savages, inflicting severe punishment before the Indians could reach safety in the precipitous hills.

The battle of Apache Pass was fought and won. The plan of Cochise and Mangas Colorado to check the advance of the Column from California by crushing its advance, capturing its trains and whipping it in detail, had been defeated by the stubborn resistance of Roberts and his command. With a loss of sixty-six warriors killed on the field and a large number of wounded, the allied Apaches retreated, demoralized and disheartened. The formidable alliance was broken, and no chief ever succeeded in again bringing eight hundred warriors of the combined Apache tribes into the field as hostiles under one leadership.

Having burried [sic] our dead and cared for our wounded, our command marched out of the pass on the morning of the seventeenth with bugles blowing and drums beating a defiance to our late foe. No Indians were seen, but about three miles east of the pass we came upon the bodies of thirteen white men; they had been way-laid, murdered, and some of them tortured by the savages. One naked body was streached [sic] on a Spanish bayonet plant, his hands and feet staked out, the sharp pointed leaves had penetrated and some of them had passed through his body. Another, stripped naked, had

been tied with his head down to a tall soap weed, which had been fired, and the poor victim of Apache cruelty roasted to death. We subsequently learned that this was a party of miners who had started from Pinos Altos with the intention of proceeding to Tucson. They had reached the point where they were attacked and destroyed, while we were fighting in the pass.

Several years afterwards I had occasion to visit Cochise; he conversed freely about the fight in Apache Pass. He said that he felt confident, when he saw us come straggling into the pass, of killing every one of us. He admitted that his defeat was a great blow to the prestige of the Chiricahua Apaches; "But," said he, "you never would have whipped us if you had not shot wagons at us." Perhaps he was right.

Appendix C: Notes of Marches Made by Co. E 1st Inft, C.V. by Eli W. Hazen

No.9 (Apache Pass) Just before sundown July 14th 1862 Company E 1st Infantry and six Cavalry men of B Co. 2nd Cavalry Cal. Vols. And two mountain Howitzers drawn by mules and commanded by Lt. W A Thompson, the whole under command of Capt. T.L. Roberts E Co. 1st Infantry Cal. Vols. left Dragoon Springs and marched all night and the next day till 12 Oclock where we arrived at Apache Pass a distance of fourty miles. During the night we crossed an alkali flat where the water and mud was about six inches deep it was about a mile wide, but that night it seemed nearer ten miles. It was awful work getting through with the weapons, the mules could hardly haul them, just as the company halted and broke ranks at the station in the Pass our ears were greeted with a volley of musketry accompanied by the war whoop of the Apache Indians who had attacked our train which was but a little ways behind the company coming on its way, in the 1st volley the Indians killed one of our guard and wounded the hospital steward and one teamster, the Indians kept up a brisk fire on the train, but without doing any damage except the Perforation of the wagon bodies and tops with bullets, the company rushed back to the train and after getting it in to the station went to work at the Indians with a will we skirmished the Pass and drove them out while Lt. Thompson with his "Jack Ass Battery" (our boys called it) shelled them from the sides of the mountains, and after whipping them at this point we returned to the station, we were now foot sore and weary with a good Appitite and no water the Spring being about three quarters of a mile from the station up a narrow ravine surrounded on all sides by young mountains, we expected troubles before we could get to the spring and the 1st. Platoon was therefore deployed as skirmishers and started towards the Spring, the Indians opened a brisk fire from their hiding places when we had got within a few yards of the water, we returned their fire and drove them from the Spring in doing which we lost another man, the Indians on withdrawing from the Spring went up the mountains on each side and kept up an occasional fire upon the Springs which would have rendered the watering of our Animals rather a hazardous enterprise. The Bugle sounded retreat and we withdrew from the Spring Assembled the Skirmishers and reformed the Company which was deployed one Platoon to the right and the other to the left for the purpose of climbing the Mountains, here again our little Battery was of essencial service for with it they drove the Indians from the edge of the Mountains while our boys climbed its rugged sides and gained an equal footing with thare red skin foes. After which we made short work of them, after procuring what water we wanted we withdrew from the hills and returned to the station, it was now after sundown and after drinking a cup of coffee Capt. Roberts called for Volunteers to go back towards Dragoons Springs and meet the train that was coming with a small escort of Cavalry and escort it in, nearly half of the company responded to the call and with these Capt R Started back leaving the balance to guard the Station while we engaged with the Indians at the Spring, Capt Roberts sent the Cavalry men back to inform the train, and to tell them that he would meet them that night with an escort, on our way back to meet the train that night we passed one of the Cavalry mens horses which was badly wounded and lying helpless by the road side, we began to fear that they had been cut off by the Indians and probably the train attacked if not captured the night was exceedingly dark and we were unable to see any tracks in the road that might have led us to form some idea of the strength of the Indians. One thing however we were certain of and that was, that the Indians were between us and the train, and we hurried forward as fast as our weary legs could carry us. it, was twelve Oclock that night when we reached the train and found it parked by the road side, a

distance of fifteen miles from the Pass. They expected an attack and made preparation accordingly, we now had the satisfaction of learning that the Cavalry men had reached the train while on their way back they had been fired upon by the Indians and one of their number was wounded in the arm very severely two of their horses had been shot. One of them dropped down a few yards from where he was shot. the other carried his rider to camp and dropped down dead before they could unsaddle him. The Cavalry man whose horse gave out on the road had a narrow escape for the Indians immediately surrounded him but were afraid to close in upon him as long as he retained his carbine and Pistol they popped away at him from a distance without being able to hit him, he hung his blouse and hat on a bush to draw their fire and then crawled off a little ways, And had the satisfaction of hearing them blaze away at the decoy when the night grew darker he managed to effect his escape and reached the train about half an hour before we did as they did not intend to Start the train till daylight we of the Infantry escort threw ourselves under the wagons in order to snatch a few hours rest and sleep. At six A.M. we were called up and immediately got under weigh for the Pass, where we arrived at noon. We now refreshed ourselves with a good square meal the 1st we had received. Since leaving Dragoon Springs, forty miles from Dragoon Springs to Apache Pass along which route there is no water that a person can drink six hours skirmish with the Indians fifteen miles back to meet the train six hours sleep on the ground without any blankets, fifteen miles back to the Pass. All this without grub and the greater portion of the way without water is pretty good work for the Volunteers our whole time from when we left Dragoon Springs till we arrived the second time with the train in Apache Pass was forty three hours.

Appendix D: Letter From Lieutenant Thompson to Lieutenant-Colonel West

San Simon, Ariz. Ter., July 18, 1862

Lieut. Col. J.R. West, Tucson, Ariz. Ter.:

Colonel: I have the honor to inform you in the late fight with the Indians at Apache Pass both of my stock-trails to my howitzers were broken or rendered almost useless on account of the great elevation required. One I think would not have broken were it not for a flaw in the iron strap around the axle-tree. Having fixed on a plan which I think will render the pieces fit for any service required of them, I send with Captain Roberts' permission one of my gunners with a trail and axle-tree. The gunner understands my plans fully, and with your sanction will carry them out. The plan is to raise the guns from the axles, so as to give more wood and strength to the stocks, and then strengthen them with iron plates. If you favor my plan I should like to have made a new trail and axle for the piece which remains here. I am in want of a few bolts, of which Monihon (the gunner) has a list. I also want some ammunition, having fired in the two days forty rounds, leaving me but sixty-five rounds. I would ask if it is possible for me to get pistols and sabers for my men, as it is useless to go in action with both howitzers and rifles. For instance, the Indians were cross firing us from both hills, the balls flying fast, the men would use their rifles as much as possible, rendering the fire from the howitzers very slow.

I am, sir, most respectfully, your obedient servant,

W.A. Thompson

First Lieutenant, First Infantry California
Volunteers

Commanding Howitzer Detachment

Appendix E: Troops at the Battle of Apache Pass

July 15, 1862

First California Infantry, Company E

Captain Thomas L. Roberts	Private Enos Bean
Sergeant Brandt T. Catlin	Private Lawrence Briggs
Sergeant John J. Crosson	Private Frederick G. Brill
Sergeant John E. Dudley	Private Peter Campeon
Sergeant George O. Edgerton	Private John Castile
Sergeant Charles S. Miles	Private Addison V. Conover
Sergeant John W. Van Meter	Private Alonzo V. Corson
Corporal Charles W. Blake	Private George Corson
Corporal Albert J. Fountain	Private John Cunningham
Corporal James Gordon	Private Elwin Davis
Corporal William H. Hyde	Private George W. Dement
Corporal James T. McNamara	Private George L. Eagan
Corporal Patrick O'Grady	Private Wm. H.H. Garritt
Corporal Melvin Pool	Private Cornelius Geary
Corporal James P.M. Rainbow	Private Frederick Gerlach
Corporal Martin Sawyer	Private Henry Gors
Musician James McCormick	Private Frank J. Gould
Musician Andrew Ryan	Private Edward O. Hale
Private Oliver Adle	Private Julius D. Hanks
Private Cornelius C. Allen	Private Frank Harder
Private Horace Arden	Private Francis Hartley
Private Thomas Baxter	Private Patrick Hawkins
	Private Eli W. Hazen

Private John B. Henn
Private Frederick Hiller
Private Frank Hodges
Private Peter P. Hoin
Private Wesley Hollingshead
Private James Jellings
Private Henry C. Johnson
Private George Kaley
Private James Kelley
Private Cornelius V. Kellogg
Private Joseph Kenny
Private Alexander W. La Bean
Private Joseph H. Langdon
Private Anthony Lorr
Private John H. Ludlow
Private William Masters, Jr.
Private Theophilus Melhouse
Private Samuel D. Miller
Private H.S. Mitchell
Private Stephen Moore
Private William Nugent
Private Washington S. Nutt
Private Yelverton O'Bannon
Private John O'Farrell
Private Samuel A. Orne
Private Emanuel Parkus

Private Richard M. Parrish
Private Adam Pierson
Private William F. Proctor
Private William Rader
Private Thomas Reed
Private John Riley
Private Robert W. Roberts
Private Eli Roof
Private Joshua D. Root
Private Critchfield D. Rush
Private George Schneider
Private Matthew Schultz
Private Philo Soper
Private Martin Stanley
Private Giles V. Sullivan
Private John Sullivan
Private Levi Transue
Private Cyrus Tubbs
Private William Van Winkle
Private George Warner
Private Enoch A. Williams
Private Robert Wilson
Private Michael Yager

Thompson's Battery

First Lieutenant William A. Thompson, Company E, 1st Infantry

Sergeant George H. Brooks, Company H, 1st Infantry

Corporal Rufus C. Russell, Company F, 1st Infantry

Corporal John W. Carey, Company C, 5th Infantry

Private Stiles B. Andrews, Company A, 1st Infantry

Private Patrick M. Keho, Company A, 1st Infantry

Private George W. Swan, Company A, 1st Infantry

Private Watson W. Winchill, Company A, 1st Infantry

Private Isaac T. Webber, Company D, 1st Infantry

Private Thomas Baxter, Company E, 1st Infantry

Private John H. Hundertmark, Company F, 1st Infantry

Private Leroy Jay, Company F, 1st Infantry

Private William Magill, Company F, 1st Infantry

Private James D. Monihon, Company F, 1st Infantry

Private John H. Fleming, Company G, 1st Infantry

Private Charles M. O'Brien, Company G, 1st Infantry

Private Christian Pape, Company G, 1st Infantry

Private Frederick Winnell, Company G, 1st Infantry

Private John W. Adney, Company I, 1st Infantry, added 7/8/62

Private John Barbour, Company I, 1st Infantry, added 7/8/62

Private Charles O. Buck, Company I, 1st Infantry, added 7/8/62

Private George A. Lloyd, Company I, 1st Infantry, added 7/8/62

An often overlooked member of Thompson's Battery was "Butch" the dog. Butch had been raised in the army and was given to Thompson's Battery by the regular army troops as they departed for the East. The 10-year-old dog was at all musters, guard mounts, and parades. Always on guard throughout the night, he was a favorite with the troops.

During the Battle of Apache Pass, he distinguished himself by "running around the brush and chaparral barking and hunting Indians." As a result of his actions he was wounded, having a toe shot off. He was later found in "bad company" with officers' dogs and was shot by one of their owners. As George Hand said of the killer, "May he never get out of this country." George Hand's Diary, pages 111–112, May 1, 1863.

Detachment of 2nd California Cavalry

Sergeant Titus B. Mitchell, Company B

Private Oliver F. Keim, Company B

Private Bradley King, Company B

Private Jesse T. Maynard, Company B

Private John W. Teal, Company B

Private George F. Young, Company B

Appendix F: Miscellaneous Bullets (N=17)

The category of “Miscellaneous Bullets” represents bullets recorded during portions of the survey but having no connection to the battle. The group consisted of two .50-caliber, 450-grain bullets; seven .45–55 caliber, 405-grain bullets; one .45–70 caliber, 500-grain bullet; one 216-grain, flat-nosed, Henry bullet; and six .45-caliber, 230-grain, revolver bullets. All of these bullets, with the exception of the Henry bullet, were military-issue ammunition produced well after the battle.

The .50-caliber bullets were so deformed that it was impossible to determine the type of weapon that fired them. Either could have been fired from a Springfield rifle or carbine or a Sharps carbine well after the battle. The troops at Fort Bowie did not receive .50-caliber Springfield rifles until January 1868. Sharps carbines were not modified to fire the .50-caliber round until 1867, and the .50-caliber Springfield carbine was not produced until 1870 (Dorsey 1995: 148,163). The .45–55 caliber bullets could have been fired from either the Model 1873 Springfield carbine or rifle. This 405-grain bullet was first produced in January 1874. The .45–70 caliber, 500-grain bullet was fired from a Model 1873 Springfield rifle. Manufacture of the 500-grain bullet began around January 1882 (Frasca and Hill 2000: 235–236). The .45-caliber revolver bullets could have been fired from either the Model 1873 Colt or Schofield (Smith and Wesson) revolvers adopted by the army in 1875 (Dorsey 1995: 204). The first public sale of the Henry rifle was in June 1862; however, the bullets for this production were round-nosed. The flat-nosed bullets were introduced sometime in 1863 (Barber 1987: 9).

Table 2. Miscellaneous post-battle bullets.

Item	Quantity	Date of availability
.50-caliber, 450-grain bullet	2	1866
.45–55 caliber, 405-grain bullet	7	January 1874
.45–70 caliber, 500-grain bullet	1	January 1882
.44-caliber, 216-grain, flat nosed, bullet	1	1862
.45-caliber, 230-grain, revolver bullet	6	August 1874
Total	17	

Because all of these bullets post-date the battle, they were not given NC numbers and will not be discussed further. They represent a sampling of those found throughout the site. They do not appear on the artifact map.

References

- Barber, John L. 1987 *The Rimfire Cartridge in the United States and Canada*. Armory, Tacoma, Washington.
- Dorsey, R. Stephen. 1995 *Guns of the Western Indian War*. Collector’s Library, Eugene, Oregon.
- Frasca, Albert J., and Robert H. Hill. 2000 *The .45-70 Springfield*, Vol. 1. Frasca, Springfield, Ohio.

Appendix G: Miscellaneous Artifacts (N=49)

The category of “Miscellaneous Artifacts” once again deals with artifacts that were recorded during portions of the survey but have no relationship to the battle. They were either manufactured after the battle, their use would not be required during the battle, or they were located where they shouldn’t be during the battle. Table 3 is a list of the items in this category.

Table 3. Miscellaneous artifacts.

Item	Quantity
Mule Shoes	3
Horse Shoe Nail	1
Wood Screw	1
Square Nails	10
Door Hinges	2
Baking Powder Can Lid	1
Can Fragment	1
Sardine Can	1
Beer Bottle Glass Fragment	1
12-Gauge Shotgun Shell	2
12-Gauge Pinfire Shotgun Shell	2
10-Gauge Shotgun Shell	1
.50–70 Caliber Cartridges	2
.56–50 Caliber Spencer Cartridges	2
.45-Caliber-caliber Revolver Cartridge	1
Firing Pin for 1873 Springfield	1
Broken Scissors Handle	1
Wrought Iron Staple	1
Trouser Buckle	1
4-Hole White Metal Trouser Button	4
Iron Rod	1
Iron Strap	3
Unidentified Iron Fragments	6
Misc. Artifacts	49

Because they are not associated with the fighting, these items were not given NC numbers and will not be discussed further. They represent a sampling of those found throughout the site. They are not on the artifact map.

References

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