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# OF A TEMPORARY CHARACTER



## A HISTORIC STRUCTURE REPORT OF FIRST FORT, SECOND FORT, AND THE ARSENAL AND HISTORICAL BASE MAP

### FORT UNION NATIONAL MONUMENT FORT UNION, NEW MEXICO

by  
Laura Soullieré Harrison  
and  
James E. Ivey



**Southwest Cultural Resources Center**

**Professional Papers No. 43**

**Division of History  
Southwest Cultural Resources Center  
Southwest Region  
National Park Service  
Department of the Interior**

As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The Department also has major responsibility for American Indian reservation communities and for the people who live in island territories under U. S. administration.

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Santa Fe, New Mexico  
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## INTRODUCTION

In 1988, the Division of History, Southwest Regional Office, National Park Service, wrote the task directive for the completion of this Historic Structure Report for the First Fort, Arsenal, and Second Fort. The directive noted that although Fort Union had been part of the National Park System for more than 30 years, the area lacked much of the basic data required for properly managing and interpreting its resources. The lack of architectural and archeological survey work and the lack of a Historic Resource Study severely hampered decisions on appropriate preservation treatments. The project was funded as Package 148.

The projects was a multi-year study completed between 1988 and 1991. The project was divided into six components:

- the **Administrative Data Section** (included in this volume and written by Superintendent Harry Myers);

- the **Historical Data Section** (included in this volume and written by architectural historian Laura Soulliere Harrison);

- the **Architectural Data Section** (included in a separate volume entitled *Historic Structure Assessment Report* by historical architect Barbara Zook);

- the Recommendations Section (included in this volume and written by the team);

- the **Archeological Data Section** (a separate volume entitled *A History of Archeological Investigations at Fort Union National Monument* by Dr. Frances Levine and William Westbury with contributions by Lisa Nordstrum;

- the **Historical Base Map** (included in this volume, compiled and written by archeologist James E. Ivey).<sup>1</sup>

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<sup>1</sup>Fran Levine and William Westbury, with Lisa Nordstrum, *A History of Archeological Investigations at Fort Union National Monument*, Southwest Cultural Resources Center, Professional Papers no. 44 (Santa Fe: National Park Service, 1992); Liping Hzu, *Fort Union National Monument: An Administrative History*, Southwest Cultural Resources Center, Professional Papers no. 42 (Santa Fe: National Park Service, 1992); Leo Oliva, *Fort Union and the Frontier Army in the Southwest*, Southwest Cultural Resources Center, Professional Papers no. 41 (Santa Fe: National Park Service, 1993); Jerome Greene and Dwight Pitcaithly, *Historic Structure Report: Historical Data Section, The Third Fort Union, 1863-1891, Fort Union National Monument, New Mexico* (Denver: National Park Service, 1982).

These reports, together with Pitcaithley and Greene's Historic Structure Report on Third Fort, make up a comprehensive set of documentation of the history and structures of Fort Union. However, to be complete, the Historical Structure Reports for First, Second, and Third Fort and the Arsenal require the preparation of an Architectural Data section and treatment recommendations for these areas. Funds should be made available for the completion of this section.

## Acknowledgements

First, the authors give heartfelt thanks to Nick Bleser, who did most of the research in the 1960s and left very little for the rest of us. We hope we answered some of your leftover questions with this, Nick. If not, you can always come back to Fort Union and try again.

Thanks to Regional Historian Melody Webb, who got the projects started, and Regional Historian Neil Mangum, who saw them through to the end; to Bob Lister for his memories of playing among the ruins; and special thanks to Mike Meier and Stewart Butler at the National Archives and the staff of the Donnelly Library at New Mexico Highlands University.

Many thanks to the field crew, who measured things that only Jake Ivey could see, some of the time: Debbie King, Amy Halsband, Kaisa Barthuli, Mary Gervasini, Ted Connolly, Wu Chien Lem, and Rae Taylor; and to Will Ivey, who spent many hours of his weekends helping with crosscheck and correction surveying shots. Thanks to Harry Myers, the superintendent of Fort Union National Monument, who knows all and sees all, and to Leo Oliva, for sharing his research.

Special thanks to Stella Moya of the National Park Service, who got this one together on time like she always manages to do, no matter how much the rest of us mess up.

This work is dedicated to the memory of T. J. Sperry, who always knew where to look, always knew something about what the answer probably was, and didn't get to see it finished. We'll miss you, TJ.





## ADMINISTRATIVE DATA

### **A. Name and Number of Structures.**

The First and Second Forts and the Arsenal consist of 205 structural remains occupying approximately 230 acres. None of these remains are on the List of Classified Structures, but should be listed as soon as possible. Fort Union was located 100 miles northeast of Santa Fe on the Santa Fe Trail. Both the Mountain and Cimarron Routes connected with the fort. Modern access is via New Mexico Highway 161, eight miles from Interstate 25 (exit 366), at Watrous, Las Vegas, New Mexico is approximately thirty miles to the south.

### **B. Proposed Use of the Structures.**

Continuation of public visitation for the purposes of historical interpretation and research.

### **C. Justification for Use.**

The ruins of the First and Second Forts and Arsenal represent a major supply depot along the Santa Fe Trail, a symbol of Federal Dominance in New Mexico, a defensive point during the Civil War, a major economic factor in the Southwest, and a point where several cultures met, worked cooperated, and had conflict. Consisting of a Garrison, Quartermaster and Commissary Depots, and an Arsenal, Fort Union during the two different periods of the First and Second Forts played an important role not only in the history of New Mexico, but that of the entire West. The Santa Fe Trail is inextricably linked to Fort Union and has significant historical associations dating back to as early as, if not earlier than 1200 A.D. Fort Union's influence spread through the military posts in the Southwest through the Depot functions, reached in all directions through the Indian Campaigns its troops participated in, and reached both east and west all along the Santa Fe Trail both as a supply and destination point and through the protection function of the fort. The Second Fort Union is one (if not the only one) of the best preserved earthworks of Civil War vintage, west of the Mississippi River.

### **D. Provisions for Operating Structures.**

Fort Union National Monument is operated by the National Park Service in accordance with an approved General Management Plan approved in 1985, a draft Statement for Management dated 1993, and other planning documents. The Director of the National Park Service testified during congressional hearings establishing the monument that no reconstruction would be performed at this site. Current preservation efforts are directed toward protection and preservation of the ruins in their present form.

### **E. Cooperative Agreements.**

Local cooperative agreements exist for the purpose of providing wild land and structural fire protection.



Part I

THE FIRST FORT, THE SECOND FORT,  
AND THE ARSENAL:  
HISTORIC STRUCTURE REPORT

HISTORICAL DATA SECTION

Laura Soullière Harrison  
Architectural Historian



## CHAPTER I

### PROTECTION, DEFENSE, AND ECONOMY

*The Santa Fe Trail.* The Santa Fe Trail was part of the skeleton of a burgeoning nation. The trail evolved out of Native American trade and Spanish exploration routes across the plains. It became a somewhat tentative connection between two countries—the United States and Mexico—and it developed into a vital trade link, and then a route for settlers and the military. Passage over the trail was fraught with danger, excitement, hard labor, boredom, misery, and sometimes even death. The trail was a catalyst that irreversibly altered cultures and entire countries.

The development of Fort Union was linked to a long series of events, and its history is inseparable from that of the Santa Fe Trail. Although trading among the French in Missouri and the Spanish in Santa Fe and even as far south as Chihuahua had gone on intermittently during the eighteenth century, the trade began in earnest following 1821. During that year, Mexico declared its independence from Spain and established free trade. That same year, William Becknell returned to Franklin, Missouri after a successful trading expedition to Santa Fe and quickly spread the word that trade with Mexico was possible. The following year the large caravans began crossing the plains from the vicinity of Franklin, Missouri southwest to Taos and Santa Fe.

In Kansas, the trail divided into two routes. The Mountain Branch followed the north bank of the Arkansas River and crossed over into New Mexico at Raton Pass. The Cimarron Branch was one hundred miles shorter than the Mountain Branch, but it followed the dry bed of the Cimarron River into the Oklahoma panhandle and came into New Mexico near the present-day town of Clayton, New Mexico. The two routes came back together near Watrous, New Mexico at the junction of the Mora River and Sapello Creek.

The federal government recognized the importance of the Santa Fe Trail, and by 1825 the United States Congress passed a bill to survey the trail. The trade route was essential for the development of both countries, and the push for westward expansion of the United States was on. As early as 1831 tourists began to appear on the trail along with the traders and settlers. By that time, the trading operations had changed so that the normal trade goods (pans, needles, calico, knives) were fairly common in Santa Fe, which meant that profits were not as great as they had been at first. To maintain reasonable profit levels, traders often took specific orders and usually had more than one wagon. When the Mexican government started to levy taxes on the number of wagons, the size of the wagons increased.<sup>1</sup>

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<sup>1</sup>Jack D. Rittenhouse, *The Santa Fe Trail: A Historical Bibliography* (Albuquerque: The University of New Mexico Press, 1971), 16-17.



The Santa Fe Trail was a topic of national interest, and it was the first road surveyed west of Missouri. The expansion of commerce along the trail also included improvements in transportation, the development of freighting enterprises, and the development of stagecoach and mail lines. As trade expanded along the trail and the wagon trains became targets for Indians, protection of the caravans became necessary. The first military escort for Santa Fe traders accompanied the caravans in 1829.<sup>2</sup> During 1833 President Andrew Jackson organized the Dragoons as the first full-time cavalry branch of the services. Jackson and his military advisors realized that foot soldiers were extremely limited in frontier combat. In 1834, the dragoons escorted a wagon caravan along the Santa Fe Trail. This protective strategy was just the beginning of further military involvement.

By 1840, St. Louis traders discovered that they could make higher profits by freighting their goods to Chihuahua, so half of the trade goods on the trail during that year continued further south to the interior of Mexico.<sup>3</sup> Although the Mexican government tended to view the trail to Santa Fe as a military highway leading straight to its northern border, the traders in both St. Louis and Santa Fe viewed the commerce as highly beneficial, and the trade continued with a vengeance.

*The Arrival of the U.S. Army.* In 1846, the fears of the Mexican government—that the Santa Fe Trail was a military highway—were realized when Brigadier General Stephen Watts Kearny peaceably conquered New Mexico and made it United States territory. At that time, New Mexico was designated Military Department Number 9, and the army established a handful of garrisons throughout the newly acquired territory in part to quell anti-U.S. sentiment.

At the close of the Mexican War, the United States Army was divided into the Eastern and Western Divisions and eleven departments. Beginning on August 31, 1848, New Mexico was the Ninth Military Department. From October, 1853, until the eve of the Civil War it was designated the Department of New Mexico and merged into the Western Department.<sup>4</sup>

The need for increased federal involvement in this new territory was of great concern in Washington, D.C. The cost of supplying the army in New Mexico was high, and the federal government sought ways to diminish that expense. On April 1, 1851, Secretary of War Charles M. Conrad wrote to Colonel Edwin Vose Sumner of the First Dragoons, St. Louis, Missouri. As head of the War Department, Conrad believed that definite

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<sup>2</sup>Louise Barry, *The Beginning of the West: Annals of the Kansas Gateway to the American West, 1540-1854*, (Topeka, Kansas: Kansas State Historical Society), 160.

<sup>3</sup>Rittenhouse, *The Santa Fe Trail: A Historical Bibliography*, 17.

<sup>4</sup>A.V. Bender, "Government Explorations in the Territory of New Mexico, 1846-1859," *New Mexico Historical Review*, 9:1 (January, 1934), 242.



changes were necessary in his department, and he very much intended to have them implemented. First, Conrad announced in his letter that Sumner was to take command of the Ninth Military Department (New Mexico). In the next sentence, Conrad stated that he wanted to see changes of more efficient protection of the country with a "diminution of expense."

That letter to Sumner also included other orders. The secretary told Sumner to consider revising the whole system of defense within the Department of New Mexico and to make changes wherever he deemed necessary. Conrad's order went on to say that Sumner could choose new locations for garrisons based on:

- 1st. The Protection of New Mexico.
- 2nd. The Defense of the Mexican Territory, which we are bound to protect against the Indians within our borders.
- 3rd. Economy and facility in supporting the troops, particularly in regard to forage, fuel, and adaptation of the surrounding country to cultivation.<sup>5</sup>

The secretary noted that the War Department was convinced that moving the troops out of the towns, toward the frontier, and closer to the Indians was the best course of action. He also cited the enormous expenditures of the Army in New Mexico, and he encouraged Sumner to keep economy in mind. Conrad gave Sumner a great amount of latitude for implementing the orders because communications were so slow.<sup>6</sup>

These orders were the foundation for Fort Union, New Mexico. The first two items of the orders—protecting and defending the territory—were based on traditional elements of military strategy: presence, defense and, when necessary, offense. At the time, the northern tribes of Apache and Ute Indians were causing problems. The third item of economy and subsistence, however, was a key factor in understanding how and why the buildings of Fort Union were constructed and in understanding how the land area was used.

Sumner arrived in Santa Fe on July 19, 1851, and he assumed command of the department. His first act as commanding officer was to "break up the post at Santa Fe, that sink of vice and extravagance, and to remove the troops and public property to this place [Fort Union]. I left one company of Artillery there . . . These evils are so great that I do not expect to eradicate them entirely until I can bring the troops together in

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<sup>5</sup>Annie Abel, compiler, *The Official Correspondence of James S. Calhoun While Indian Agent at Santa Fe and Superintendent of Indian Affairs in New Mexico* (Washington: Government Printing Office, 1915), 383-4.

<sup>6</sup>*Ibid.*, 384.

considerable bodies . . ."<sup>7</sup> Sumner's rag-tag frontier army did not come close to meeting his career military standards, and he believed that removing all of the troops from the town would improve discipline and morale. He also took very seriously the aspects of his orders that dealt with subsistence and economy.<sup>8</sup> Sumner was, after all, a career military man determined to execute his orders with a scrupulous discipline. In later years Sumner stated that he moved department headquarters from Santa Fe because of "the *vile* conditions there, unfavorable for soldiers—referring to moral life in part."<sup>9</sup> In addition, he keenly resented the townspeople of Santa Fe living in one way or another at government expense through the exorbitant costs they charged the army for goods and services. He was absolutely determined to change that which he saw as a waste of government funds.

*The First Fort.* Sumner ordered the headquarters of the Ninth Military Department transferred to Rio Mora, and then in June and July, 1851, the two companies of the First Dragoons and two companies of the Third Infantry moved out of Las Vegas to the area of Fort Union.<sup>10</sup> They were under the command of Captain Edmund Alexander. Then another company of the Third Infantry from Fort Marcy in Santa Fe joined the group and made the total command 339 officers and men.<sup>11</sup> The War Department considered the new garrison established on July 26, 1851, the date of the first arrival of the troops. On August 2, 1851, Sumner issued the order designating the place Fort Union".<sup>12</sup>

The army arrived in 1851 and began construction at a strategic location five miles from the Rio Mora on El Arroyo del Coyote near the Turkey (or Gallinas) Mountains. The site was six miles northeast of the confluence of the Cimarron and Mountain routes of the Santa Fe Trail, twenty-six miles from Las Vegas, and eighteen miles from Mora. One army summary stated that "the location was on the line of the great traveled route to Santa Fe, with a view to the protection of passing trains and the isolated settlements

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<sup>7</sup>Robert Frazer, ed., *Mansfield on the Condition of Western Military Forts* (Norman, Oklahoma: University of Oklahoma Press, 1963), xvi-xvii.

<sup>8</sup>Military historian Robert Frazer noted that "Sumner sought the reduction of expenses with a vigor that made a virtual fetish of economy." See Frazer's *Fort and Supplies: The Role of the Army in the Economy of the Southwest, 1846-1861* (Albuquerque, New Mexico: The University of New Mexico Press, 1983), 62.

<sup>9</sup>Microfilm 167, Reel 1305, Returns from U.S. Military Posts 1800-1916, Fort Union, July 1851-December 1865, Chronology.

<sup>10</sup>For further information on the choice of location of Fort Union, see Leo Oliva's Study, *Fort Union and The Frontier Army*, Southwest Cultural Resources Center, Professional Papers No. 41.

<sup>11</sup>Leo Oliva, *Soldiers on the Santa Fe Trail* (Norman: The University of Oklahoma Press, 1967), 105.

<sup>12</sup>Microfilm 617, Reel 1305, Returns from U.S. Military Posts 1800-1916, Fort Union July 1851-December 1865.

from the Apaches who roamed over the wide district of country to the east and south".<sup>13</sup> Because the property was located on the Mora land grant, the United States government was supposed to pay rent on the reservation's land.

*Land Problems.* Under Special Orders No. 30 of the Ninth Military Department, the military reservation for the post was provisionally declared to cover eight square miles with the Fort as the central point, but no record was filed with the General Land Office because the President did not order it. In 1868, the War Department ordered that all posts in the Department of the Missouri that had not been declared by the President be officially surveyed if the Army intended to keep them for military purposes. Thus, the J. Lambert survey of 1868 that covered the 51.5 square miles of the post reservation and 53 square miles of the timber reservation were declared and noted in the records of the General Land Office.<sup>14</sup> At the corners of the post reservation and on main roads through the reservation, the army set wooden posts with signs that read "U.S. Mil. Res." to identify the property.<sup>15</sup> An additional 5,120 acres was set aside for the subsistence farming operation of Fort Union.

The military and timber reservations, however, remained a problem because the secretary of the interior had issued a land patent to the Mora land grant claimants. Although the secretary tried to issue an amendment to the patent so that the improvements belonged to the United States, it turned out that amending the patent was not legally possible. The grantees, however, could not compel the government to abandon the post.<sup>16</sup> So, the government concluded that it owned the buildings and improvements, and could not be forced to leave the post. Thus, the federal government had no land ownership at Fort Union.

*Subsistence and Survival.* Trying to make the Army rely on subsistence by making it self-sufficient in many areas was an experiment that failed miserably. A General Order (No. 1) issued from the Adjutant General's office on January 8, 1850 explained the plan. In order to promote the health of the troops and to reduce the expense of subsistence, the army instituted a system of kitchen gardens in the permanent posts and stations. The soldiers themselves were supposed to do the work in the gardens.<sup>17</sup> Fort Union also tried field cultivation of grain for human and animal consumption. Not only did the

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<sup>13</sup>Arrott, Reel 6, File 1, 1889, transcript of "Records of the War Department," Office of the Adjutant General, Reservation File under Division of the Missouri, 1889.

<sup>14</sup>*Ibid.*, no pagination.

<sup>15</sup>*Ibid.*, 119.

<sup>16</sup>*Ibid.*

<sup>17</sup>A.V. Bender, "Frontier Defense in the Territory of New Mexico, 1846-1853," *New Mexico Historical Review*, 9:3 (July, 1934), 264.



experiment in farming fail, but it created a debt of approximately \$14,000. When those costs showed up at the War Department in Washington, the experiment ended.<sup>18</sup>

Although much of the official subsistence efforts ended in 1853, even as late as 1855 two companies of Dragoons were detailed to provide the annual supply of hay that Fort Union needed. The letters of Catherine Bowen, wife of Fort Union's Captain Isaac Bowen, to her family in New York also showed how much families and individual soldiers in the Army needed more than the rations allowed them in order to survive. Barter exchanges in chickens, pigs, herbs, butter, and various staples was common. Letters in army correspondence of the period showed that cash was so scarce in the territory even the commanding officer of Fort Union asked for \$100,000 in coin to run his quartermaster department. Other letters of the same decade indicated that there was not only a scarcity of money but also a scarcity of flour, corn, candles, and just about every other commodity.<sup>19</sup>

Colonel Sumner designated Fort Union the principal supply depot for the department, but during the 1850s, the quartermaster depot kept shifting between Fort Union and Albuquerque. The construction of the third fort that started in 1863 changed that situation, and then Fort Union became the chief supply center for the Army in New Mexico until 1879 when the railroad arrived.

The multiple functions at Fort Union—army post, supply depot, and arsenal—led to some animosity between the various units. The quartermaster, the fort, and the arsenal all employed civilian employees. The depot quartermaster often outranked the post commander. The military storekeeper who ran the arsenal reported directly to the chief of ordnance in Washington instead of to the post commander. All of these elements contributed to friction among the officers and men. Although the fort was known as one large unit, it was really three functioning units whose leaders reported to distinctly separate superiors.

*The Star Fort.* In the fall of 1861, Captain Cuvier Grover ordered the construction of a bastioned earthwork to the east of the original post under the bluffs.<sup>20</sup> The Army anticipated an attack from Texas troops who were advancing to seize and hold New Mexico for the confederacy because Fort Union was the main supply depot for the territory. After the earthwork was constructed, nearly all stores and troops were moved into it.

In March of 1862, the threat turned into stark reality. Confederate troops in search of supplies, matériel, and control of the southwest threatened to invade Fort Union. Union

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<sup>18</sup>Emmett, *Fort Union and the Winning of the Southwest*, 166-167.

<sup>19</sup>NARG 92, Entry 225, Box 1168, *passim*.

<sup>20</sup>Shortly thereafter Grover became a Brigadier General of the volunteers.

forces repelled the confederate troops at the battle of Glorieta Pass, and the threat to Fort Union was relatively minimal during the remainder of the Civil War. The Battle of Glorieta Pass was the turning point for the Civil War in the far west. The importance of Fort Union during that period of time remained high not only because of its status as the principal supply and munitions depot in the Southwest but also because of the military necessity of keeping the Santa Fe Trail open despite Apache and Navajo uprisings.

*The Expansion of Fort Union.* In May of 1862, Orders No. 30 from department headquarters in Santa Fe extended the reservation at Fort Union to eight square miles with "the Fort" as its central point. The order also called for posts to be erected at the corners of the reservation and for all citizens to be removed from the reservation.<sup>21</sup> This was the beginning of the fort's expansion.

In July, 1866, the commanding officer of Fort Union saw the need to extend the military reservation to include the Gallinas (or Turkey) Mountains. As General James H. Carleton, commander of the Post at the time, stated in his request for the extension: "The reasons are that those mountains are clad with fine lumber, wood, and grazing, indispensably necessary to the military post, and the various depots at Fort Union."<sup>22</sup> Under directions from the chief quartermaster District of New Mexico, J. Lambert made a survey of the military reservation, ordnance, and timber reservations. Following the completion of his survey, the secretary of war approved the recommended changes to revise the reservation boundaries and establish the timber reserve.<sup>23</sup>

Conditions in the first fort and also in the Star Fort—both of which continued to be occupied—were so bad that construction began in 1863 on the third fort and its huge quartermaster depot.<sup>24</sup> Brigadier General Carleton, the commander of the Department of New Mexico, wrote to the quartermaster general in Washington about the condition of Fort Union in November, 1862. At that time, Carleton noted that the log quarters, storehouses, and corrals built at the first fort were decaying, and that other buildings erected since that time were in a tolerable state of preservation. The problem, according to Carleton, was that there was not sufficient space for the quartermaster depot. Carleton

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<sup>21</sup>Arrott, Reel 2, File 4, 1861, Orders No 30 from Headquarters 9th Military District, Santa Fe, May 11, 1862.

<sup>22</sup>Arrott, Reel 3, File 2, 1866, Brevet Brigadier General James H. Carleton, Commanding, to Colonel Joseph Bell, Assistant Adjutant General, Department Headquarters, July 15, 1866.

<sup>23</sup>Arrott, Reel 4, File 3, 1868, Assistant Adjutant General J.C. Kelton to Major General P.H. Sheridan, Department of the Missouri, September 17, 1868. The survey notes and the maps were submitted to the General Land Office. The General Land Office microfilm at the Bureau of Land Management in Santa Fe includes the maps but no survey notes.

<sup>24</sup>That group of buildings is studied in the *Historic Structure Report, Historical Data Section, The Third Fort Union, 1863-1891, Fort Union National Monument, New Mexico* by Dwight T. Pitcaithley and Jerome A. Greene (Denver: National Park Service, Denver Service Center, 1982).

wrote about the new construction proposed but also mentioned that the pools of water (Los Pozos) adjacent to the first fort were disappearing quickly and local springs were drying up. That issue concerned him considerably.<sup>25</sup>

*The Arsenal.* By August of 1864, Fort Union's strong point was its use as a supply depot for all of the troops in the southwest. At about the same time, a reorganization in the Army resulted in major changes to the ordnance department. On May 8, 1866, a portion of the military reservation one mile long and a half mile wide was set aside by the war department for an arsenal. Captain William Rawle Shoemaker, Military Storekeeper (MSK), began construction of the Fort Union Arsenal (also known as simply "Union Arsenal") on the site of the first fort. As a separate military installation, Shoemaker reported directly to Washington and received his orders from the chief of ordnance.

The arsenal was surrounded by an adobe wall approximately 1000 feet on each side. It contained a number of buildings including quarters, one large storehouse, three small storehouses, and various armorers and blacksmith shops. The arsenal remained an active military depot until 1882 when Captain William Rawle Shoemaker retired. At that time, the war department began shutting down the arsenal operation and transferring the stores to other locations. Shoemaker was granted his request to stay on as caretaker of the arsenal buildings. He remained at his arsenal until his death in 1886.

*The Last Days.* By the latter part of the nineteenth century, Fort Union had undergone considerable physical and social change. Physical changes were evident in the lowered water table and in the thinning vegetation in the immediate vicinity of the fort. At the time that Mrs. Catherine Bowen lived there in the 1850s, blowing dust was a problem, but the grasslands and woodlands were lush and productive. By the time Mrs. Orsemus Boyd was at Fort Union (1860s), vegetative conditions had changed dramatically. She noted: "The hope of having any trees, or even a grassy parade ground, had been abandoned long before our residence there; for either the grass-seed would be scattered by the wind, or the grass actually uprooted and blown away after it had grown."<sup>26</sup> Although Mrs. Boyd was discussing the third Fort Union, the impact of so many people and so much stock on the sensitive grassland environment was overwhelming. Numerous reports also discussed evaporation of Los Pozos. During the 1850s, the pools of water were ten feet deep in places. By the 1860s, the Fort Union soldiers walked across dry sand beds where the pools had existed.

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<sup>25</sup>Brig. General James H. Carleton, Headquarters, Department of New Mexico, Fort Union, to Brig. General Montgomery Meigs, Quartermaster General, Washington, D.C., November 3, 1862.

<sup>26</sup>Mrs. Orsemus Boyd, *Cavalry Life in Tent and Field*, (Lincoln, Nebraska: University of Nebraska Press, 1982), 199-200.



The physical plant of the fort was deteriorating, too. An 1885 inspection showed Fort Union to be in dilapidated condition. Part of that deterioration was the result of too much delayed maintenance, and part was the result of the ravages of nature. In January of 1883, two years before the inspection report, a severe storm hit Fort Union. The violent wind blew dust and sand into every crack, ripped roofs off buildings, and knocked down fences, walls and chimneys. The force of the wind blew over the flagstaff, and when it fell it punched a hole in one of the quarters. Following that storm, some of the buildings needed to be propped up.<sup>27</sup> A letter of April, 1883 also noted damage to the buildings—doors and roofs blown off, gates damaged, and bricks blown off cornices.<sup>28</sup> Whether this was a separate storm or just cumulative damage from years of deferred maintenance on top of the January storm was immaterial. What mattered was that Fort Union was self-destructing.

Environmental and physical changes were only a part of evolution and demise of Fort Union. Progress that was occurring throughout the west also affected it. By July, 1868, the telegraph arrived at the post which improved communications with the east, and the railroad, too, was steaming its way west.<sup>29</sup> In January, 1878, the Department of the Missouri indicated its intention to abandon the Quartermaster Depot. The Army recognized that the railroad was on its way and that many of the mule-drawn vehicles at Fort Union would be obsolete.<sup>30</sup> The railroad reached the vicinity of Fort Union in 1879. The troubles between native americans, anglos, and hispanics that required military action were decreasing as more and more settlers came west.

The army post had outlived its usefulness. Like Forts Laramie and Yuma, Fort Union was rendered obsolete by the railroads. Indian dangers had subsided, and the railroads took over army and civilian freighting operations. The reasons for the fort's existence were no longer there.

By 1890 the fort was no longer needed for a defensive position, as a military staging area for campaigns, or as an army supply depot. Its chief *raison d'être* at that time was as

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<sup>27</sup>Arrott Reel 6, File 1, 1883 citing "Medical History" record for January, 1883; also Emmett, *Fort Union and the Winning of the Southwest*, 398.

<sup>28</sup>NARG 92, Entry 225, Box 1167, letter April 24, 1883 from Assistant Quartermaster to Post Adjutant.

<sup>29</sup>The author came across a copy of a telegram sent from Santa Fe to Fort Union on September 14, 1869 concerning the arrival of a Company at the Fort in the Arrott Collection, Reel 4 File 3, 1869. Also, NARG 393, Records of the U.S.A. Continental Command, Unregistered Letters Received, includes a copy U.S. military telegraph (dated September 5, 1864) from the adjutant general's office saying that the secretary of war directed that 100-gun salutes be fired at Santa Fe and the arsenal at Fort Union in honor of the victories at Mobile and Atlanta. So, a military telegraph line did reach Santa Fe by 1864; but the date at which it reached Fort Union remains unclear.

<sup>30</sup>Emmett, *Fort Union and the Winning of the Southwest*, 385.



a troop garrison for Indian prisoners. And even the Native Americans did not like it. They much preferred being back at San Carlos where they could work, where they had good crops, horses, and money. By that time, too, the Indians were no longer incarcerated. They camped between the post and the old arsenal.<sup>31</sup>

In early 1891, the War Department ordered the withdrawal of troops from Fort Union. They were to move out no later than May 15 of that year. On October 6, 1891, the secretary of war recommended to the president that the military reservation be transferred and turned over to the secretary of the interior under the Act of Congress, approved July 5, 1884 that provided for the disposal of reservations no longer needed for military purposes. Although some thought was given to making the fort an Indian school run by the department of the interior, no specific action was taken on that recommendation.

On February 12, 1892, the remaining soldiers at Fort Union were given the order to go to Fort Wingate, New Mexico. On May 15, 1891, the last detail and the commanding officer left Fort Union.<sup>32</sup> The fort remained unused. On February 16, 1894, the secretary of war directed the relinquishment of Fort Union Military Reservation. On April 1, 1894, the land and its buildings reverted to the owners of the Mora Grant.<sup>33</sup>

*Salvage, then Preservation.* Fort Union then reverted to the original claimants of the Mora Grant. As soon as the Army withdrew, the local people—some from as far away as Las Vegas—began salvaging the site for building materials that they could re-use. Some felt, in a way, that the materials belonged to them. They had manufactured them, or their fathers had installed them, or they had hauled them to the site when the buildings were under construction. Many of the people who began removing bits and pieces of Fort Union were the same ones who had constructed parts of it in the first place. Also, materials such as glass, windows and frames, and roofing tin were still at a premium in Las Vegas. The wealth of well-crafted cut stone also proved too good a material to pass up. Hauling it from Fort Union to Las Vegas was still cheaper than quarrying it, cutting it, and then hauling it. So, the dismantling started.

According to one informant, the dismantling followed a logical pattern. A ranch foreman sold lumber or other building materials and allowed them to be removed from the structures. First they were taken from the officers' and company quarters, then the mechanics corral, the warehouses, and finally the hospital.<sup>34</sup>

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<sup>31</sup>*Ibid.*, 400-403.

<sup>32</sup>*Ibid.*, 407-409.

<sup>33</sup>NARG Microfilm M-617, Roll 1305.

<sup>34</sup>Fort Union Fact File, Interviews with Pedro Archuleta, Watrous, New Mexico, July 24, 1960 and Oliver Mayhan, Shoemaker, New Mexico, July 24, 1960.

Despite its use as a cattle ranch after the army abandoned the post, the ruins remained a favorite destination for picnickers from Watrous and, after the advent of the automobile, Las Vegas. Southwestern archeologist Robert Lister had fond memories of Sunday afternoons in the ruins. As a boy growing up down the road in Watrous, he was fascinated by the huge adobe walls and the old army trash piles. He spent hours on hot, dry afternoons playing cowboys-and-Indians and digging through the dirt to see what the army had left behind.<sup>35</sup>

With ranching operations came the responsibility of ensuring the security of the cattle. Because the surrounding landscape offered no shelter for the animals, they tended to congregate around the walls of the fort and arsenal. In search of shade on hot days, or a wind break on cold or stormy days, they huddled around the bases of the walls. After the ranch hands lost cattle to collapsing cisterns and tumbling adobe walls, they decided that bulldozing a few of the most hazardous areas was necessary to protect the ranch's mobile, hoofed investments. In about 1949, bulldozer operator Louis Timm filled in all the cisterns and wells including one in the area of the sutler's store. He also knocked down about 20 chimneys to prevent them from collapsing on cattle. He worked his dozer in both the third fort and arsenal areas.<sup>36</sup> This increased deterioration in parts of the fort and arsenal.

Finally through the efforts of local citizens the area became Fort Union National Monument. Authorized in 1954 and established in 1956, the legislation for the monument called for preservation and protection of the remaining structures at Fort Union. The National Park Service agreed during the congressional hearings that it would undertake no reconstruction of Fort Union. Instead, efforts since 1956 have concentrated on preservation and stabilization of the ruins and features.

*Summary.* The United States established more military posts than any other nation that possessed the west, and it also had a greater variety than any other nation. Fort Union was the key to successful trade and military operations in the southwest through the 1880s. The army's need to rely in part on subsistence for survival meant considerable reliance on the natural resources the area provided. This included looking toward the local surroundings for building materials that could be easily manufactured with simple technologies: stone, earth, adobe, brick, and timber.

Fort Union was phased out as a military installation for several reasons. The railroad had taken over trade, freight and passenger operations, so the Santa Fe Trail was obsolete. Military activity in the west had calmed down to such an extent that the quartermaster depot, arsenal, and troop presence were no longer required at Fort Union.

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<sup>35</sup>Author's conversation with Dr. Lister, February, 1989.

<sup>36</sup>Fort Union Fact File, Interviews, Interview with Louis Timm, Las Vegas, New Mexico, June 8, 1959.

The buildings had been deteriorating at the fort and arsenal for a long period of time prior to abandonment by the army. Delayed maintenance and the ravages of nature were the prime culprits. A steady stream of people who salvaged building materials from the structures further contributed to the decay. Bulldozing operations to protect investments-on-the-hoof from falling bricks and adobe walls destroyed other remnants of the fort. What began with private preservation efforts in the local community resulted in the establishment of Fort Union National Monument under the jurisdiction of the National Park Service.

## CHAPTER II

### LOGS, ADOBES, OR MERE HOLES IN THE GROUND

Some of what are called military posts,  
are mere collection of huts  
made of logs, adobes, or mere holes in the ground,  
and are about as much *forts*  
as prairie dog villages might be called *forts*.  
William Tecumseh Sherman

*Army Construction.* Although the term "military" connotes order and discipline, Army structures during the nineteenth century were for the most part haphazard affairs particularly on the western frontier. Despite various Army regulations that governed building construction and even standard plans that appeared in the final quarter of the century, frontier army construction was often rag-tag at best. As one historian pointed out, the only thing uniform about the army in the nineteenth century was its uniform.<sup>1</sup> A brief look at the U.S. Army during this time period aids in understanding its architecture on the western frontier and at Fort Union.

During the 1850s, four-fifths of the U.S. Army was stationed west of the Mississippi.<sup>2</sup> Because of constantly shifting priorities and the relatively transitory nature of the military in the west, western posts were of simple but effective construction. The Army, because of its nature, had temporary and permanent structures. During the early nineteenth century the army most often was housed in temporary barracks of various materials—of wood, but sometimes even stone, brick, or adobe. Dugouts or trenches with log construction above grade or puncheons embedded in the earth were common types of construction. Around the period of the Civil War hewn horizontal log construction and timber frame construction were common. Portable sawmills existed by the 1820s, but they became especially common during the 1850s, so balloon frame construction<sup>3</sup> appeared as a typical building technique at army posts as it had in the private sector—contingent of course on the availability of sawn lumber. On the western frontier, a more mobile army had tents for the summer and tools and limited (usually onsite) materials to build "winter quarters" that might be occupied for many years.

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<sup>1</sup>David Clary, *These Relics of Barbarism: A History of Furniture in Barracks and Guardhouses of the United States Army, 1800-1880* (Harpers Ferry, West Virginia: National Park Service), 315-317.

<sup>2</sup>Robert W. Frazer, *Forts of the West*, (Norman: University of Oklahoma Press, 1986), xviii-xix.

<sup>3</sup>Balloon framing is a structural system where all of the vertical structural elements of the exterior bearing walls and partitions consist of single studs which extend the full height of the frame, from the top of the soleplate to the roof plate. All of the floor joists are fastened by nails to studs.



*Tents.* Many men were housed in tents—the Sibley tent, the wedge tent, and the hospital or wall tent, and the dog (pup) or shelter tent. The creation of the Sibley tent was credited to Henry Sibley who served at Fort Union and left Union forces prior to the Civil War when he led the unsuccessful assault on New Mexico by Texas troops in 1862.<sup>4</sup> The Sibley tent was 12 feet high with a diameter of 18 feet. It was supported by one pole that rested on an iron tripod. The pole was the radius of the tent circle. A hole in the top of the tent at its center was for ventilation or a stovepipe. A cone-shaped stove sat in the middle of the tent. The tents were supposed to hold 12 men.<sup>5</sup> Although they were cumbersome, they remained available in the post-war era, and they were frequently in use on the frontier.

The wedge tent was a simple canvas tent that stretched over a horizontal bar about 6 feet tall. Two upright posts, also about 6 feet long, supported the bar. Usually four men were assigned to one of these tents, but most often six would occupy one. The troops often found ways to improve on their assigned piece of canvas. Frequently the men would make a more comfortable shelter by building a small stockade wall of vertical or horizontal logs and placing the canvas tent on top of the logs for a roof.<sup>6</sup> The log portions of this type of structure might often have walls of two to five feet in height. Sometimes the interiors were excavated so that they would be warmer in cold climates. The troops most often filled in the spaces between the logs with mud, and often had to replace the chinking after severe storms. Chimneys most often appeared at a gable end, but sometimes the soldiers built the chimneys in the middle. Fireplaces were built of available materials (brick, stone, or wood lined with mud). The soldiers did not consider a shelter like this complete until it had a door that closed and a sign over the door.<sup>7</sup>

The hospital or wall tent had four upright sides with an entrance at the gable end. They were made in various sizes. Before the Civil War, the tents were 24 feet by 14 1/2 feet and 11 1/2 feet high. In 1860 the size was reduced to 14 feet by 14 1/2 feet, and 11 feet high. At the edges, the walls were 4 1/2 feet and a fly of 21 1/2 feet by 14 feet could be attached to the tent. The larger ones were used for hospitals and could hold from six to 20 patients double-loaded along the long sides of the tent. The smaller ones were used to house commissioned officers.<sup>8</sup> Sometimes the occupants would cut through the gable

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<sup>4</sup>Billings stated that the Sibley tent may have been designed by a private in Sibley's command. John D. Billings, *Hardtack and Coffee: The Unwritten Story of Army Life* (Chicago: R.R. Donnelley & Sons Co., 1960), 37.

<sup>5</sup>*Ibid.*, 37-39.

<sup>6</sup>*Ibid.*, 40.

<sup>7</sup>*Ibid.*, 41-47.

<sup>8</sup>*Ibid.*, 41.

end seam and join two or more tents together, as Mrs. Katherine Bowen did at Fort Union.

*Standardized Plans.* The Army attempted to improve more permanent quarters in 1860 when it officially adopted a series of comprehensive building plans, materials lists, and regulations for the construction of barracks, hospitals, officers' quarters, storehouses, and other buildings. Prepared under the direction of Lieutenant Don Carlos Buell, the plans for some reason went undistributed, and even ten years later when an officer of the Surgeon General tried to find out why the plans never were distributed, he could find no explanation other than the onset of the Civil War.

By 1864, the Quartermaster Department was issuing standardized plans for buildings and their contents. Although the information was supposed to culminate in a handbook, it never was published as a single manual. Also, an order issued on April 29, 1865 stated that construction on all army buildings would cease unless the structure were authorized on special report or unless the building received immediate approval by telegraph.

Further complicating the issue of building construction was the authorization process. Since 1859, any permanent building required a separate authorization and appropriation for its construction. In 1872, Congress allowed the War Department more freedom by letting it build any structure up to \$20,000 without separate legislative action. But in 1873, all construction monies dried up, so construction of new buildings and repair of old ones at Army posts virtually stopped.

Another big impact on the architecture of the army was the contribution from the Medical Department after the Civil War. During and shortly after the Civil War, the Army had some of the best physicians and surgeons in the country. These Army doctors began monitoring the way the army housed its men.

In 1870 the surgeon general assigned assistant surgeon John S. Billings to study conditions at military posts from the medical standpoint. Among the studies he produced in the next few years were his "Report on Barracks and Hospitals with Descriptions of Military Posts" (1870) and his "Report on Hygiene of the United States Army with Descriptions of Military Posts" (1875). He compiled information gathered by post surgeons at each military post and made a number of conclusions about building materials, square footage of plans, and building conditions. He concluded that army buildings, especially hospitals and prisons, needed additional air and light. Billings recommended other ways to vent rooms. He stated that the Army had no acceptable living conditions anywhere, and that the regulations did not even require proper conditions for health and sanitation. The Billings report also recommended the construction of a separate bathhouse for each post—separate from the other buildings. The report also criticized the lack of standard plans.

To ameliorate the situation, the Quartermaster drew up and distributed standard plans for temporary barrack and quarters in the west. It abolished the standard double bunks, and began introducing footlockers, chairs and pillows into barracks. This allowed the men both more comfort and privacy in addition to improving sanitary conditions.

After the Civil War, there was a shortage of money, so it took a while to get construction going again in the Army. Even when the money became available, the buildings were not constructed with any kind of quality assurances, so they varied from post to post despite the availability of standard plans. The appropriations for construction and repairs were inconsistent, so building programs might get underway only to be halted after partial completion. In general, however, the troops were less crowded than they had been prior to the war. Also, sanitary conditions improved when the army began using disinfectants.

The size of the army decreased during the 1870s just as conditions in the army were improving. As the overcrowding problems passed, the army had reached a point where it was distributing new standards for buildings at temporary as well as "permanent" army posts.<sup>9</sup> In 1877, the secretary of war ordered the establishment of separate reading rooms, libraries, and schools at temporary posts.<sup>10</sup> Like the Civilian Conservation Corps in the 1930s, the army sought to provide diversions for the troops like chapels, schools, reading rooms, libraries, bowling allies, and billiard tables.

*Fort Union.* Just as the army concentrated on food and forage subsistence in its early years in the west, it looked toward the land for the natural resources to build. After the fort had been at its first location for a few years, it was obvious that it would be there for some time to come. New, more permanent construction was warranted, and the army assessed native materials in the area that could be used for construction. The assistant quartermaster of Fort Union reported that white sandstone, clay for bricks and adobes, and pine in the mountains supplied sufficient building materials for the fort. The report also stated that all other building materials (glass, hardware, etc.) would have to be shipped from the east.<sup>11</sup>

Fort Union's architecture possessed those characteristics of an overall order, use of available materials, incorporation of local architectural traditions. The resourcefulness of the troops and other fort occupants under the constraints that they had for housing themselves was phenomenal. By interpreting the army regulations and orders, studying what worked for local people, the architecture of Fort Union took shape.

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<sup>9</sup>Clary, *These Relics of Barbarism*, 336-340.

<sup>10</sup>*Ibid.*, 242.

<sup>11</sup>Alice Ann Cleveland, "Bricks in new Mexico," April 16, 1965, no pagination, citing NARG 92.



*Summary.* The army, then, had traditions of architecture that were based on use of available materials—some of which were rationed out and some of which the soldiers and their families improvised upon using available materials to survive. Despite its inflexibility in certain matters, the army did tend to bend to a few local building traditions, such as the stone buildings at Fort Davis, Texas, the balloon frame buildings at Benecia Arsenal, and the adobe buildings at Forts Union, Davis, Lancaster, Quitman, and Miller. Conditions slowly improved after the Civil War when the Surgeon General's office and the Quartermaster's office both worked on housing troops. The Surgeon General's office concentrated on sanitary conditions including sunlight and ventilation in buildings—topics that had direct impacts on architecture. The Ordnance Department had regulations that guided the storage of materials that impacted the architecture of powder magazines and storage facilities. The Quartermaster's office concentrated on producing acceptable housing plans that had the kind of architectural uniformity for which the Army became famous.



### CHAPTER III

#### "PRIMITIVE LOG HOUSES . . . CHINKED AND COVERED WITH EARTH"

*The Beginnings of the First Fort.* The year was 1851. New Mexico had been a United States Territory for a year. Herman Melville had just published *Moby Dick*; and Nathaniel Hawthorne had just completed *The House of Seven Gables*. In New York, the *New York Daily Times*, which later became the *New York Times*, was founded. The nation's first pictorial magazine, *Gleason's Pictorial Drawing-Room Companion* appeared in the parlors of better homes. American textile mills were switching to steam power. In New Orleans, a group of Spanish refugees and American southerners were planning an expedition to Cuba in hopes of starting an uprising against Spain. It was during this year that Lt. Colonel Edwin Vose Sumner of the 1st Dragoons established Fort Union, New Mexico, on July 26.

When the Army moved in to the area of Fort Union in 1851, the first order of business was construction of temporary shelters while the more permanent ones were under construction. Also, the army considered its position in terms of subsistence because of the numbers of animals it supported. A report prepared in August, 1851, summarized the resources of the area. Corn and hay were available for purchase, and the grazing around the post was considered very good during the summer and fall. The report noted:

There is sufficient building materials near the post for all purposes, consisting of a very fine white sand stone, clay for bricks and adobes and pitch and spruce pine in the mountains from 9 to 30 miles of the Post. *All other articles* required for building would have to come from the East, as they are not produced in this Department . . . The greatest objection to this point as a military post is the want of running water for stock . . . The only possible mode of transportation in this section of the country is by land . . . The usual and only transportation used here are wagons, carts and pack mules.<sup>1</sup>

The new soldiers and families at Fort Union arrived during the late summer. With fall and winter fast approaching, construction of quarters was the first order of business. Captain Isaac Bowen and his wife Katherine were among the early arrivals to Fort Union. Katie and Isaac wrote home frequently to her family, and her letters provided a very graphic picture of life in the early days of Fort Union. The new occupants lived in army tents while the buildings were under construction. Katie Bowen noted that the location of Fort Union was well suited to farming operations, had an ample water supply,

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<sup>1</sup>NARG 92, Entry 225, Box 1168, August 4, 1851, Captain McFerran to Captain Easton, Assistant Quartermaster, Santa Fe.

and was surrounded by hills covered with pine trees with a supply of wood so good that it would "not fail in thousands of years." At the time she wrote that statement, she also noted that the hospital, company quarters and the commander's quarters were nearly completed, that Major Sibley's quarters were started, and theirs were next. Although houses were built in priority sequence according to rank, the commanding officer of the post had ordered that all the married officers' quarters should be built first.<sup>2</sup>

The Bowens began their life at Fort Union by living in one army tent, but soon they expanded into three attached tents of double thicknesses of duck. They cooked their food outdoors on an open fire, and ate their meals in a "bower" that was wet at times.<sup>3</sup> Charlotte Sibley, the wife of Major Ebenezer Sprote Sibley described her temporary tent quarters when writing home to her family. She wrote: "Our tents are put upon frames and are floored and carpeted. I have arranged them so that the word cozy would more properly apply in description of the interior than any word else."<sup>4</sup> The tents they spoke of most likely were the wall tents discussed in the previous chapter.

In early September, 1851, Major E. S. Sibley wrote to the Quartermaster General in Washington because he was concerned that the new post did not have enough stores of grain to get through the winter. Also, he increased by half an estimate that Colonel Sumner had sent in earlier for building materials. The estimate requested stationary, horse and muleshoe nails, horse equipments, scythe stones, rope, wagon timber, 2 kegs of #10 nails, 1 keg of #12 nails, 1 keg of #20 nails, 2 boxes of 7 x 9-inch window glass, 1 box of 8 x 10-inch window glass, and 15 pounds of putty. For tools, he requested felling axes, axe handles, spades, shovels, stone masons' hammers, stone masons' sledges, bricklayers trowels, and mattock handles.<sup>5</sup> That list of requested materials probably meant: 1) that some of the buildings were not receiving stock windows and some of the windows were being custom-made to fit buildings; 2) that logs used in construction were not hewn (otherwise adzes, too, would have been on the list of tools; 3) that stonework for building construction was common.

A letter to the Quartermaster General the following day stated:

We are progressing rapidly in the erection of buildings at this place & have already raised log cribs for quarters for two companies, one of

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<sup>2</sup>Arrott Collection, Katie Bowen Letters, Katie Bowen to her mother, August 24, 1851.

<sup>3</sup>*Ibid.*, Katie Bowen to her mother, August 24 and September 2, 1851. Since the tents would not support structurally any weight of significance, the "bower" that Katie Bowen described most likely was a free-standing structure of four upright poles in the ground with a shading "roof" of branches.

<sup>4</sup>Copy of letter from Charlotte Sibley to "Cousin George" August 31, 1851, included in correspondence to Superintendent Harry Myers from Wade Shipley, Lovington, New Mexico, October 3, 1989.

<sup>5</sup>NARG 92, Entry 225, Box 1167, September 1, 1851, Major Sibley to Quartermaster, Washington.



Infantry & one of Dragoons, for a hospital & quarters for the commanding officer of the post & three staff officers—I have found limestone in our immediate vicinity which having been tested proves of good quality & I have had a kiln made which will be filled & burnt immediately—as soon as the mill which is now being built is in a state of readiness to saw lumber which will be the case I trust tomorrow. We shall commence covering the buildings & laying the floors & if no accident occurs I expect the quarters will be in readiness to receive the troops by the 1st day of November next at furthest.<sup>6</sup>

By mid-September, 1851, the quarters were still under construction. Besides gathering raw building materials from the surrounding landscape, the troops and the handful of civilians at Fort Union were expected to supplement their own rations through subsistence—growing their own vegetables, making butter, and even having a few animals. Because of all of the time devoted to survival on the frontier, building construction took longer than anticipated.

As the late fall and then winter approached in 1851, Katie Bowen was still concerned about the slow construction of the quarters. The fort residents built fires in front of their tents to keep warm. As they stood around those fires warming themselves, they watched the stone chimneys going up on the new rough buildings. Katie Bowen noted that the chimneys on the hospital and company quarters were drawing well and throwing out lots of heat. She approved of the overall quarters design. Also, she noted that their room allotment for that winter would be three rooms for each officer, either 18 x 18 or 18 x 20.<sup>7</sup>

By the beginning of October, 1851, log cribs were completed for quarters for two staff officers, the department commander, and two company captains. The commanding officers quarters had a roof, and the Dragoons' quarters were in the process of getting one. The letter complained that the sawmill was constantly breaking down and the saws kept wearing out. Because of those delays, they were compelled "to cover the officers quarters with earth, the custom of the country." The rough, unpeeled log buildings went up slowly.<sup>8</sup> At that point, the staff thought that the only buildings that would get board roofs during the winter of 1851-1852 were the company quarters and the hospital. The earth coverings were considered temporary, and were meant to hold through the winter

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<sup>6</sup>NARG 92, Entry 225, Box 1167, Major Sibley to General, Head of Quartermaster Department, Washington, September 2, 1851.

<sup>7</sup>Arrott Collection, Katie Bowen Letters, Katie Bowen to her mother, September 14, 1851 and Isaac Bowen to his father, September 30, 1851.

<sup>8</sup>*Ibid.*, Katie Bowen to her father, May 1, 1852.

until spring, 1852, when the lumber supply would be adequate enough to cover the remaining buildings.<sup>9</sup>

By December, 1851, the quarters were still short of completion, but the availability of boards for roofs and floors had improved. A progress report noted:

The quarters for one company & the hospital are completed except the glazing of the windows, & the hanging of the doors, & I am now busily occupied in sawing the lumber necessary to cover the other set of soldiers quarters. —The officers quarters are all covered and, with a few exceptions, floors are laid in one room of each set and the quarters are occupied by officers & their families.<sup>10</sup>

The quarters were not fully completed, but work on them had gotten to the point where the structures were considered suitable for winter shelter. The hospital, however, did "not exactly answer the purposes for which it was intended, another building will at once be erected & the present one will be converted into store houses to cover the public stores which are now in tents, as they have been since the establishment of this post."<sup>11</sup>

*First Fort Occupancy.* By April, 1852, Major E.S. Sibley reported to his superiors that with the exception of a few shops and a storehouse, all of the buildings had been erected and were in a relatively habitable condition. He planned to finish them completely and as rapidly as possible using the labor of the enlisted men he had. He also said that "I hope by the close of the ensuing summer to be able to announce to you that everything has been done that was originally contemplated & agreeably to the original design." He boasted that with the exception of a small quantity of lumber, all of the timber was sawn at the post. Also, he was "having both lime & coal burned thus providing the necessary materials with enlisted labor & reducing to some extent the expenses of the Quartermaster Department in this Territory."<sup>12</sup>

One year later, the first Fort Union was operating fairly efficiently in its physical plant. A summary of the fort in September, 1852, described the fort buildings as follows:

Nine sets of officers' quarters (HS-126 through HS-132, and HS-134 and HS-135); each set—with one exception, which is composed of three rooms and a kitchen—eighteen feet long and fifteen feet wide. These

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<sup>9</sup>NARG 92, Entry 225, Box 1167, October 3, 1851, Sibley to Chief Quartermaster, Washington, D.C.

<sup>10</sup>*Ibid.*, Box 1168, November 3, 1851, Sibley to Quartermaster General.

<sup>11</sup>*Ibid.*, Sibley to General Jesup, December 3, 1851.

<sup>12</sup>*Ibid.*, Sibley to "General" April 1, 1852.

quarters have earthen roofs; and five of them have, in addition, board roofs. The other sets of quarters will also be covered with board roofs, as soon as lumber for the purpose can be sawed, and it can be conveniently done.

Two barracks (HS-138 and HS-139)—each one hundred feet long and eighteen feet wide, each two wings fifty feet long and sixteen feet wide; board roofs.

Hospital (HS-140)—forty-eight feet long and eighteen feet wide, with a wing forty-six feet long and sixteen feet wide; board roofs.

Storehouse—(probably HS-136) one hundred feet long and twenty-two feet wide, with a wing forty-five feet long and twenty-two feet wide; board roofs.

Commanding Officer's office and court-martial room—forty-eight feet long and eighteen feet wide; earthen roof.

Offices for assistant quartermaster and commissary of subsistence—thirty-eight feet long and eighteen feet wide, earthen roofs.

Smoke-house (probably HS-163)—one hundred feet long and twenty-two feet wide; board roof.

Guard-house and prison—forty-two feet long and eighteen feet wide; earthen roof.

Blacksmith's and wheelwright's shop—fifty feet long and eighteen feet wide; board roof.

Bakehouse (HS-159)—thirty-one feet long and seventeen feet wide; earthen roof.

Ice-house—twenty feet long and thirty feet wide; earthen roof, covered by a board roof.

Quarters for laundresses (HS-144)—one hundred and fourteen feet long and eighteen feet wide; six rooms; earthen roof.

In addition, yards to five sets of officers' quarters have been enclosed, and two corrals have been made, each one hundred feet square.



The lumber used in the construction of these buildings, with the exception of fourteen thousand eight hundred and seventy-two feet, has been sawed at this post.<sup>13</sup>

*Organization and Function: Houses, Yards, and Post.* The Bowen letters contained a great deal of information about the organization of the officers' quarters and their yards. The general layout had the typical army regularity and relative symmetry. Katie Bowen noted to her mother that their side of the garrison where the officers were quartered was known as "Aristocrats' Row."

When the Bowen house finally was completed, it contained a central hall that the family used for a dining room flanked by one bedroom and a parlor. They also had a kitchen, a store room, and a servant's sleeping room.<sup>14</sup> The central hall floor was covered with a small carpet. The building originally had a flat dirt roof, but the house had a gable roof of flat boards above the dirt by 1852.<sup>15</sup> Although the Bowens had brought a cook stove with them when they arrived at the fort, they did not have it set up and working in the kitchen until 1852.<sup>16</sup>

Katie Bowen noted that the winds at Fort Union were very strong. According to her, they blew hard for a week from the north, then quieted down, and then they blew hard from the south. She had trouble keeping the dirt out of her new house, and she wrote home that the dirt drifted in like snow into every unprotected crevice. Occasionally she even had to shovel out her house because it was so deep. Despite the ever-present dirt problem, she found her house "pleasant and comfortable as any I ever lived in. The rooms are well arranged and are large and [ceilings] very high."<sup>17</sup> But she also missed the comforts of her childhood home. She wrote to her parents: "How I would like that you could look in and see how primitive we are in our log houses, white-washed logs overhead, chinked and covered with earth to shed snow and rain."<sup>18</sup>

The yards at the officers' quarters contained multiple functions. Because of the necessity of supplementing army rations, the Bowens had cows, three pigs, at least one horse,

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<sup>13</sup>32nd Congress, 2nd Session, *Senate Executive Documents*, No. 1, Part II 75, Captain E.S. Sibley, Assistant Quartermaster, Fort Union, September 1, 1852.

<sup>14</sup>Arrott Collection, Katie Bowen Letters, Katie Bowen to her mother, April 28, 1853.

<sup>15</sup>*Ibid.*, Katie Bowen to her mother, May 28, 1852.

<sup>16</sup>*Ibid.*, Katie Bowen to her mother, May 28, 1852.

<sup>17</sup>*Ibid.*, Katie Bowen to her mother and Father, February 29, 1852.

<sup>18</sup>*Ibid.*, Katie Bowen to her parents, November 2, 1851.

chickens, and a team of mules.<sup>19</sup> Isaac Bowen built a "cow house," a barn, and chicken houses in their yard. The Bowens had started making their own hay rather than paying the quartermaster \$20 a ton—which also meant they needed a place to store it. They had chicken coops in their yard and kept as many as 80 chickens at one time.<sup>20</sup> To conduct water away from the house when it rained, the Bowens dug large trenches around the foundation of their house.<sup>21</sup> They were in the process of making plans for small cellars in their yard for keeping milk, but records do not indicate whether or not any were constructed.<sup>22</sup> Although the post had a large, irrigated public garden for growing vegetables, the Bowens had a small garden plot in their yard for raising herbs for medicinal purposes.<sup>23</sup> Katie Bowen noted that all of the "outdoor work is done by the police party and a man in Isaac's department takes care of the horse, cows, pigs and chickens. The dog oversees the whole and watches at night."<sup>24</sup>

Because army rations on the frontier were inadequate, families and individual soldiers often took it upon themselves to supplement their allotment, as Katie Bowen did. The barter system was a significant part of daily life on the frontier, and families in particular traded and exchanged vegetables, butter, eggs, and herbs. The system was more of a social exchange than a true barter, but the families tried to provide each other with what they needed out of what they had available.

This reliance on supplementing army rations had an impact on the physical experience of the post. The troops often became creative in providing for extra food they needed by growing small garden plots and raising stock. In September, 1859, the post commander issued an order stating that from that time forward hogs were prohibited from running loose through the garrison.<sup>25</sup> The hogs ate anything they found and the troops in turn ate them.

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<sup>19</sup>*Ibid.*, Katie Bowen to her parents, January 2, 1853; and Katie Bowen to her father, May 1, 1852.

<sup>20</sup>*Ibid.*, Katie Bowen to her mother, November 1, 1852; November 28, 1852; and May 29, 1853.

<sup>21</sup>*Ibid.*, Isaac Bowen to Katie Bowen's mother and father, October 3, 1852. The trench was treacherous enough that Katie fell and broke her leg when she tripped on the edge of the trench as she stepped from the kitchen.

<sup>22</sup>*Ibid.*, Katie Bowen to her mother, January 30, 1853.

<sup>23</sup>*Ibid.*, Katie Bowen to her mother, May 28, 1852.

<sup>24</sup>*Ibid.*, Katie Bowen to her mother and father, February 29, 1852.

<sup>25</sup>Arrott Collection, Reel 2, File 2, 1859, Excerpting Orders No. 58, September 7, 1859, from NARG 93, Fort Union Orders, 46A.

The Army also provided its own grain. In 1861, the fort had an operating mill that crushed corn (location unknown). The quartermaster's office complained that the mill took three men and eight mules to operate it, but that it did grind corn from the ear. The post quartermaster complained that the army could already purchase shelled corn for about the same price, so he did not think it was worth the government's effort to use the mill.<sup>26</sup>

The fort also housed many non-military functions, some of which were of a transient nature, and so the first fort also contained a number of ancillary buildings. By March of 1853, a hot house (HS-164) existed, and Katie Bown noted that it was "a beautiful building, 50 feet long by 20 deep and the whole southern front of glass. A gardener's house (also HS-164) attached and fires kept night and day." The fort had two large ice houses for storing the ice needed during the summer months.<sup>27</sup> Bowen's enthusiasm for the hot house diminished six weeks later when she noted that the building had not been erected following "scientific principles" so it only yielded plants suitable for transplanting rather than full-grown ones.<sup>28</sup>

While Katie Bowen was concerned about the buildings that affected her domestic world, Military Storekeeper William Rawle Shoemaker was busy constructing the buildings he needed for his arsenal. In June, 1852, Shoemaker wrote to Colonel Craig, the chief of ordinance in Washington, ordering lightning rods (stems and conductors) for his buildings (HS-141). He noted that the highest points of his buildings did not exceed 20 feet in height, but that they covered "four sides of a square of 100 feet." He also wanted enough lightning rods for their future needs, since he was planning to extend the buildings. Also, his buildings were constructed in a fairly exposed location and they had no taller objects near them. Shoemaker was concerned about the prevalence of severe lightning storms in the area. He stated that he needed to construct a "larger & substantive" building for a magazine, but that its construction had been deferred until "after the other storehouses &c are completed."<sup>29</sup>

Shoemaker's request for a better magazine was approved, and in December of 1852, he requested permission to have some of the magazine and the wall surrounding it constructed by hired labor. He noted that making adobes and properly building with them could be best accomplished by hired labor since his own force was occupied with so many other duties. In the same letter he requested "fastenings & hinges suitable for

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<sup>26</sup>NARG 92, Entry 225, Box 1168, Letter from Acting Assistant Quartermaster (name illegible) to Major Donelson in Santa Fe, April 3, 1861.

<sup>27</sup>Arrott Collection, Katie Bowen Letters, Katie Bowen to her father and mother, March 3, 1853.

<sup>28</sup>*Ibid.*, Katie Bowen to her mother, April 28, 1853.

<sup>29</sup>NARG 156, Entry 121, 1852, S 215, M.S.K. Shoemaker to Colonel H.H. Craig, June 15, 1852.



a magazine with *two* doors and *two* windows . . . As the Magazine will be located at a distance from the other buildings, very secure fastenings will be required."<sup>30</sup>

Also in 1853, M.S.K. Shoemaker reported to the Assistant Adjutant General for the 9th Military District that his detachment consisted of 12 men "in the various grades of mechanics and artificers of ordnance, and in addition there is 1 hired armorer." Shoemaker had six of his detachment on detached service: one working the garden and five taking care of public animals. The remainder were "engaged in construction of shops and depot structures."<sup>31</sup>

Less than one year after the army moved in to Fort Union, other service-related businesses were well established in the vicinity. When the area of the reservation was declared eight square miles in 1852, an order went out to clear the reservation of all of its "shanties and grogeries" and the "keepers put in irons and sent to that town for trial."<sup>32</sup> Some of these "shanties and grogeries" were in caves in the cliffs in a canyon to the southwest of the fort. A high rate of venereal disease among the troops and large amounts of missing goods appearing in the "wastage or stolen report" for the first part of 1852 indicated that a vital subculture thrived in the vicinity.<sup>33</sup> Prostitution and black market trading were transient occupations that required only a modicum of shelter.<sup>34</sup>

*Contemporary Descriptions.* An 1853 inspection of the fort by Joseph Mansfield (see figure 1) noted some points about Fort Union and its location. Mansfield wrote that seven miles to the south of Fort Union was Barclay's Fort on the Moro River. The farm for Fort Union was about 23 miles north of the fort. He noted that the buildings for Fort Union were "of all kinds . . . as good as at any post and there seems to be enough of them to satisfy the demands of the service." He criticized the location of the fort, saying that it was too close to the mesa for adequate defense against the enemy unless a blockhouse were constructed on the mesa edge.

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<sup>30</sup>NARG 156, Entry 21, 1853, S 41, Shoemaker to Col. Craig, Chief of ordnance, December 1, 1852.

<sup>31</sup>NARG 393, Entry 3206, Department of New Mexico, Quartermaster Letters and Reports Received 1853-1860, "Reports of Ordnance and Ordnance Stores ready for issue at the Depot of Fort Union, New Mexico, August 1, 1853."

<sup>32</sup>Arrott Collection, Katie Bowen Letters, Katie Bowen to her parents, May 29, 1852.

<sup>33</sup>Emmett, *Fort Union and the Winning of the Southwest*, 141-143.

<sup>34</sup>Because these are outside the park boundary, they have not been surveyed and are not included in this report.

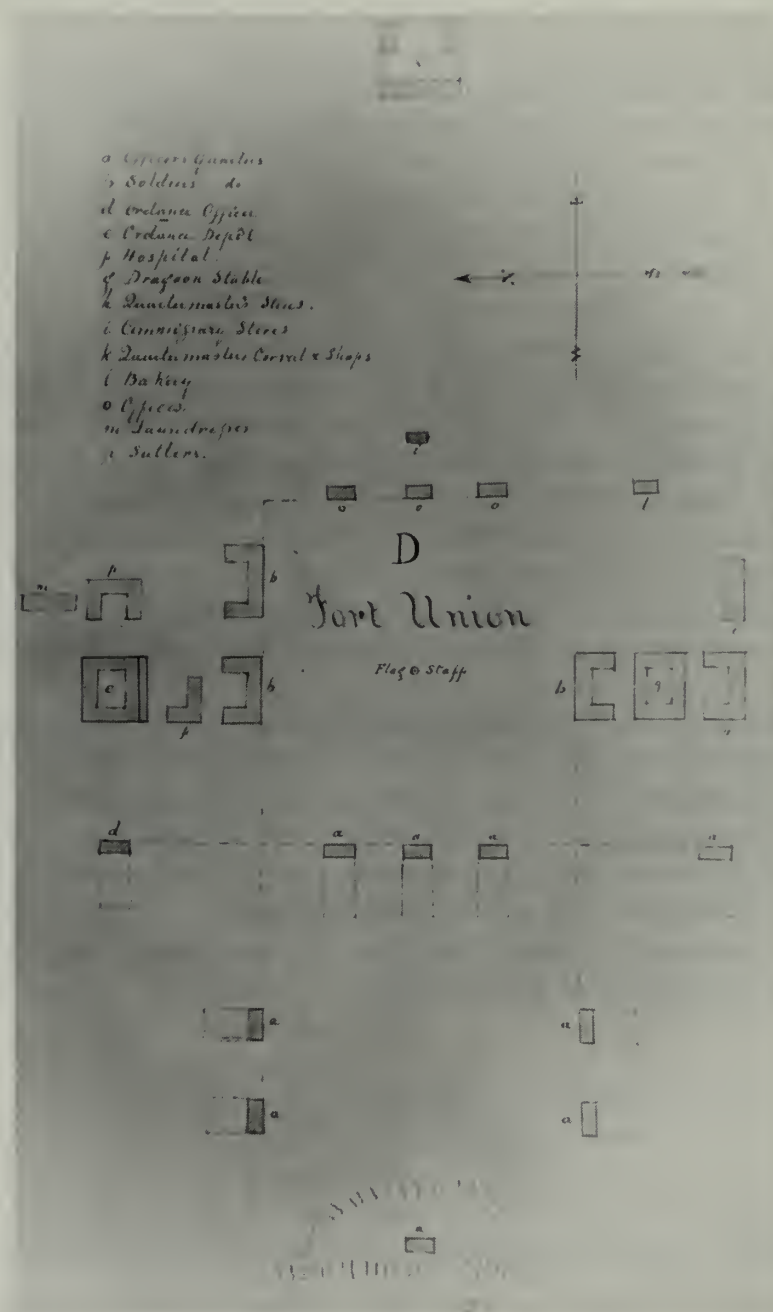


Figure 1. This plan of the first Fort Union accompanied the 1853 Mansfield inspection report. The plan shows the principal structures and the layout of the fort at that time around a central rectangular parade ground. Missing are the small ancillary structures adjacent to the main buildings. Outhouses, chicken coops, small storage buildings, and small personal barns do not appear on this plan although they did exist. Also, this map should be considered a relatively schematic representation rather than a thorough plan.



Figure 2. This building, identified in the files at Fort Union as the first fort, was taken from the east-southeast about 1865. It is either HS-129, 130, 131, or 132. The building has no foundation, and the sill logs lie on the ground. The building has a board roof, gable-end chimneys, a log addition (kitchen) to the rear behind which is the stockaded fence for the yard. Katie Bowen described her house (which would have been similar) as containing a central hall, one bedroom, and a parlor for the principal rooms, with a kitchen, store room, and servant's room at the rear of the building, and servant's sleeping room attached. Museum of New Mexico.





Figure 3. This 1859 drawing of the first Fort Union depicts the general layout of the installation. The Commanding Officer's Quarters sat on a rise above the fort proper. Note the layout of the officer's quarters with their fenced yards, the paths and roadways connecting different areas of the fort. Of particular note is the Commanding Officer's Quarters on the left of the sketch. The ridge line and placement of the chimneys is different than that of the other structures, possibly indicating expansion between the time of construction in 1851 and this drawing (1859). Drawing by Joseph Heger. Arizona Historical Society.





Figure 4. This primitive sketch of Fort Union in 1853 appeared in *A Cannoneer in Navajo Country: Journal of Private Josiah M. Rice, 1851*. Although the sketch lacked the detail given by more accomplished artists, the drawing showed certain architectural features. On the right, some of the buildings retained flat, earthen roofs. Kansas Historical Society.

Mansfield noted that the fort was the general supply and quartermaster depot for the department. Mansfield found the post "in a high state of discipline and every department of it in good order," especially when the troops had to do everything from building quarters, gathering timber and hay, farming, escorting trains, and pursuing Indians. The troops also cultivated a garden "which is irrigated by raising water by mule and hand power, and thus they are supplied with vegetables in part. A farm is also cultivated under the regulations established by the Honorable Secretary of War Conrad." The public garden was located by the side of the pond, and it had a six-horsepower pump to irrigate it.<sup>35</sup> Mansfield wrote about the good bakery, and how the quartermaster buildings were "as good as circumstances would admit." Because Major E.S. Sibley of that department had built a mule-powered circular saw mill which cut all of the boards and planks for the buildings, ample lumber for construction was available. The crew burned wood for charcoal and hauled wood.

Mansfield's report included information on M.S.K. Shoemaker and his ordnance department—responsible for all of the ordnance depot supplies for the territory. The report stated that the ordnance buildings for storehouses, quarters, and the gun shed were considered sufficient. Also, Mansfield wrote that Shoemaker had a six-mule team which he used in building construction. Shoemaker's ordnance outfit also had a good garden approximately 3/4 mile away from the fort which gave the men good vegetables.<sup>36</sup>

During 1853, a civilian named W.W.H. Davis visited Fort Union and described it as an "open post, without either stockades or breastworks of any kind, and . . . it has much more the appearance of a quiet frontier village than that of a military station. It is laid out with broad and straight street crossing each other at right angles. The houses are built of pine logs, obtained from the neighboring mountains, and the quarters of both officers and men work a neat and comfortable appearance."<sup>37</sup> Although Davis' view of Fort Union from a traveler's standpoint differed considerably from that of resident Katie Bowen, both views hinted at a fond attachment to the rustic fort: Davis enjoyed his first real view of civilization on the frontier after crossing the plains, while Katie Bowen struggled with daily life at the fort.

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<sup>35</sup>Arrott Collection, Katie Bowen Letters, Katie Bowen to her mother, May 28, 1852.

<sup>36</sup>Robert Frazer, ed., *Mansfield on the Condition of Western Military Forts* (Norman: University of Oklahoma Press), 14-16.

<sup>37</sup>W.W.H. Davis, *El Gringo: or, New Mexico and Her People* (New York, 1857), 32-33. Davis was travelling from the states to Santa Fe by mail wagon in 1853 to take over the job of attorney general of New Mexico.



FORT UNION.

Figure 5. This depiction of Fort Union showed the simplicity of construction of the buildings of the fort, along with the apparent regularity of the development around the flagstaff. This appeared in the W.W.H. Davis book *El Gringo; or New Mexico and Her People*, published in 1857. Davis visited Fort Union in 1853.



*Deterioration.* The first Fort Union was built rapidly and with minimal concern for permanence. The fort underwent an inspection three years after its construction, and the report noted that most of the buildings were constructed in haste because autumn was setting in and the post commander wanted to house his men before winter. The report stated that the rough pine logs that were used in construction of the buildings still had their bark on, and many had begun to rot only three years later. By that time many of the buildings still had flat roofs covered with dirt, although some had board roofs over the dirt. When the logs rotted, the roofs fell in.

The report did concede that the buildings were in "habitable condition" for the two companies of the 2nd Dragoons and the one company of the 3rd Infantry that occupied them. Of note at the time of the inspection was a new stable constructed for the dragoon horses (HS-161). The building was 190 feet in length and 30 feet wide. It was made of "upright logs set in the ground with a sharp board roof. Also [constructed was] a large corral made with upright logs and plank gates for the preservation of hay probably [HS-184]."<sup>38</sup>

At the time the 1854 inspection was completed, a company of artillery was being transferred out of Fort Union and replaced with a company of dragoons. This meant that the fort needed a second dragoon stable. They intended to construct it to the same dimensions as the first, but to build it with a flat roof instead of a gable (plank-covered) roof. The transfer of the quartermaster and commissary depots to Albuquerque at about the same time freed up some space, but Fort Union remained a sub-depot to supply the northern posts of that department.<sup>39</sup>

Four years after construction had started, the post commander reported that "all the quarters of this Post want extensive repairs, many entirely rebuilding . . . a whole set of Company quarters were in a state of rapid dilapidation & the stables for one Company have to be rebuilt entire." Living at Fort Union at the time were 238 men forming three companies and one company of artillery, the latter of which was assigned there temporarily.<sup>40</sup> A year later a new commander, Bvt. Major Grier, took over the command and Fort Union and voiced similar concerns. He also stated that even making repairs to the buildings that they could, the structures would not be either safe or comfortable for even one more year.<sup>41</sup>

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<sup>38</sup>NARG 92, Entry 225, Box 1168, July 15, 1854, Lt. Col. George Moore, Assistant Quartermaster, Fort Union, to Maj. Gen. Jesup, Quartermaster General, Washington, "Annual Inspection of the Barracks, Quarters &c. &c. at Fort Union, made in obedience to General order No.1 14 of May 23, 1853.

<sup>39</sup>*Ibid.*

<sup>40</sup>Emmett, *Fort Union and the Winning of the Southwest*, 192, quoting Colonel Fauntleroy.

<sup>41</sup>*Ibid.*, 198-199.

Conditions continued to deteriorate, and in the latter part of 1856 Assistant Surgeon Jonathan Letterman did an inspection report on Fort Union. He wrote that the fort was shut in on the east by the Turkey Mountains and on the west "by a precipitous mass of sandstone, about 150 feet in height." When the rains came, the run-off drained down the mesa sometimes with such force that the buildings were flooded. Letterman discussed how the building timbers and firewood came from six or eight miles away (the Turkey Mountains), and how the existing water supply was adequate although at times it gave people the runs. He estimated the area that the fort occupied as about 80 acres and that the fort presented "the appearance more of a village . . . than a military post."<sup>42</sup>

As far as the quarters were concerned, he described them as made of "unseasoned, unhewn, and unbarked pine logs, placed upright in some, and horizontal in other houses." He noted that the logs were decaying fast, and that his own house had decayed so much that the walls would not hold a nail. By 1856, one set of barracks had been torn down, and others were in imminent danger of collapse. But, he mentioned, the dangers posed by potential accidents from the collapse of buildings were "less awesome than the consequence from using the quarters which stood . . . for the unbarked logs afford excellent hiding places for that annoying and disgusting insect, the cimex lectularius [bedbug]."<sup>43</sup>

Conditions were so uncomfortable that troops often slept outside in the open air. Also, Letterman noted that all of the hospital rooms were wet, so the hospital staff had moved the sick to tents, and they laid out canvas to protect the hospital equipment. He concluded that the original fort was not well laid out or built, and he recommended rebuilding the post and erecting buildings "with some regard to the welfare of those who are destined to occupy them, and not on the principal of shortsighted and extravagant economy."<sup>44</sup>

While the Surgeon General was concerned with living conditions for the inhabitants, the Adjutant General's office saw things differently. The Brigadier General's office in Santa Fe did not like having to lease the grounds of Fort Union at "an extravagant rate" based on the court decision that the land still belonged to owners of the original land grant; the army risked losing the property if it did not comply with the court decision. So, the district office in Santa Fe recommended transferring some stores to Albuquerque.

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<sup>42</sup>*Ibid.*, 201-202 quoting from 36 Congress, I Session, Senate Executive Documents.

<sup>43</sup>*Ibid.*, 201-202.

<sup>44</sup>*Ibid.*, 201-202, quoting from 36 Congress, I Session, Senate Executive Documents.



General Garland did not see much sense in repairing and rebuilding structures on land the army did not own or might lose.<sup>45</sup>

The buildings continued to deteriorate as the years passed. They were, after all, not constructed as permanent buildings. When Bvt. Major William Grier took over the command of Fort Union in June, 1856, he commented on an inspection report that had just been completed. He noted that even making repairs to the quarters would make them "barely tenable, but not really comfortable or very safe for another year."<sup>46</sup> An inspection report to the quartermaster general in Washington at the same time noted that Fort Union was built in a very economical style. The bark was left on the green pine logs, and "the logs laid on the ground without any thing under them to protect them from the moisture &c of the earth.— Some of the buildings are constructed by placing the logs upright with one end in the ground like picket work. The logs are rapidly decaying, and the post will have to be repaired or abandoned." Captain Easton, the author of the report, also noted that he had brought this matter of fort decay to the attention of the Quartermaster General two years earlier.<sup>47</sup>

Shortly after Captain Easton submitted his report to the Quartermaster General in Washington, Captain John McFerran submitted an inspection report to Captain Easton. McFerran stated in no uncertain terms that the entire post needed to be rebuilt before the rainy season started. He commented: "At present some of the company quarters have to be propped up outside & in, to prevent them falling and all of the quarters & public buildings at the post are very much decayed, out of repair, unsafe & filled with insects & vermin."<sup>48</sup>

Living conditions at the fort were still in bad shape in 1859, when post commander Captain Robert M. Morris wrote to the acting assistant adjutant general of the Department of New Mexico. Morris wrote that the company quarters for two companies of rifles were not habitable for winter, and also that Fort Union did not have sufficient space for the companies. Morris requested the employment of "citizen mechanics" to build more space.<sup>49</sup> In response, Morris was denied his request and told to suspend all

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<sup>45</sup>Arrott, Reel 1, File 1, 1856, Bvt. Brigadier General John Garland to Adjutant General Col. S. Cooper, Washington, April 29, 1856.

<sup>46</sup>Emmett, *Fort Union and the Winning of Southwest*, 198-199.

<sup>47</sup>NARG 92, Entry 225, Box 1168, June 27, 1856, Captain Easton to General Jesup, Washington.

<sup>48</sup>*Ibid.*, Captain John G. McFerran to Captain Easton, July 4, 1856.

<sup>49</sup>Arrott, Reel 2, File 2, Captain Morris, post commander to Lt. Jno. Wilkins, Company D 3rd Infantry, Acting Assistant Adjutant General, Department of New Mexico, August 23, 1859.

improvements until instructions came from Washington.<sup>50</sup> Those orders arrived, but in the meantime, Captain Morris was still required to take immediate action. He moved Company G of the Mounted Riflemen out of their quarters because they were in a dangerous, deteriorated condition; then he ordered those quarters to be partially demolished. He temporarily moved that company into the quarters of Companies K and H, which were away from the fort at the time. He requested that the quartermaster at that post reconstruct the buildings quickly, otherwise Company G would be forced to winter in tents, which he felt was impractical, or be shipped elsewhere for winter quarters.<sup>51</sup>

Although no response to that letter appeared in the files, the situation remained grim even two years later. An inspection noted that the buildings:

with scarcely a single exception [are] rotting down, the majority of them almost unfit for occupation and in fact, all of them in such a dilapidated state as to require continual and extensive repairs to keep them in an habitable condition. The Hospital, Commissary and Quarter Master's Buildings are entirely unfit for the purposes for which they are required. There have been no additions to nor alterations of consequence at the Post during the Past Year. Several complained of troops now here are occupying tents because of the lack of quarters for their accommodation. In previous letters from this Office, Plans and estimates have been submitted, to which I beg to refer you.<sup>52</sup>

In January, 1861, the buildings of the fort continued to decay, and the dilapidated condition of the quarters took a particularly strong toll on their occupants. One soldier wrote that the men were "compelled to keep fires all night in Officers (sic) Quarters, and in the Soldiers', they have to leave their bunks, and collect around the fire, so cold are the nights."<sup>53</sup>

Work was still underway to expand the existing storehouses at the first fort in 1861 when construction began on the earthen fortification—the second Fort Union. When it became evident that the entire garrison was necessary to defend the post, work on the storehouses

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<sup>50</sup>*Ibid.*, 1859, Jno. Wilkings, 1st Lt., 3rd Infantry, A.A.A.G., to Captain R.M. Morris, R.M.R., Commanding, Fort Union, August 25, 1859.

<sup>51</sup>*Ibid.*, 1859, Captain Morris, Fort Union to Lt. Jno. Wilkins, A.A.A.G., Santa Fe, August 30, 1859.

<sup>52</sup>NARG 92, Entry 225, Box 1167, Letter to Quartermaster General, Washington for 2nd Lt., 2nd Rifles, A.A.Q.M., Fort Union, July 8, 1861.

<sup>53</sup>NARG 92, Entry 225, Box 1169, Captain W.K. Van Bokkelen to Major General T.S. Jesup, January 2, 1861.

"laid out as joining the old ones was suspended."<sup>54</sup> During the summer of 1861, an order came through that pickets would be stationed near the spring to prevent any individuals from washing or bathing in the spring or the irrigating pond adjacent to it, and to protect the public gardens. Also, the orders called for the construction of a sink for use of the volunteers. The sink was to be screened by brush.<sup>55</sup>

*New Construction Ordered.* In 1862, General Edward R. S. Canby ordered the Quartermaster Depot and Post to be reconstructed on grounds "contiguous to the Old Post." Major James Lowrey Donaldson, the post commander at Fort Union at the time, did not want to make any recommendations to spend money on the old buildings at the first fort other than what would be necessary to make the structures habitable. In fact, Donaldson admitted that he had \$13,000 that he had been authorized to spend on the buildings of the first fort, but he had chosen not to spend the money because he considered that spending it on the old buildings of the first fort would be equivalent to throwing the money away. Thus, he left the money in the Treasury.<sup>56</sup>

Even in 1863, when most of the troops occupied the earthen fortification, at least two officers remained living at the first fort—Majors George W. (?) Burns and Archibald H. Gillespie—because living space was limited in the post.<sup>57</sup> An 1862 inspection noted that: "The old Post, built in 1851, is in a state of dilapidation, having been reported some years ago unfit for occupancy; there are a few buildings which have been repaired and are now used temporarily as quarters and storehouses; it is impossible to render this place fit for permanent use without rebuilding it."<sup>58</sup> Finally in February, 1863, the order came through to "tear down the old house on the hill, known as Col. Sumner's house, which was formerly used as a Hospital at Fort Union—and as far as possible use the lumber and doors and windows now in it to make a set of officers quarters, say four

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<sup>54</sup>Arrott, Reel 2 File 2, 1861, Maj. Chapman, Fort Union to Lt. Anderson, A.A.A.G., Santa Fe, August 17, 1861.

<sup>55</sup>Arrott, Reel 2, File 2, 1861, General Orders No. 46, July 10, 1861, excerpted from NARG 93, Fort Union Orders, 46A.

<sup>56</sup>NARG 92, Entry 225, Box 1168, Major Donaldson to Quartermaster General, September 21, 1862.

<sup>57</sup>NARG 393, Records of the U.S.A. Continental Command, 1821-1920, Fort Union New Mexico, Unregistered Letters Received, June 1862-December 1865, Capt. Plympton at Fort Union to A.A.A. General, Department of New Mexico, April 20, 1863.

<sup>58</sup>NARG 92, Entry 225, Box 1168, Alexander Robb to A.A.Q.M. to Major Wallen, 7th Infantry, Commanding Post, Fort Union, June 30, 1862.



rooms and a Kitchen, with a yard &c., complete and comfortable-over near the Redoubt."<sup>59</sup>

Because the troops needed the space, a group of the Fort Union buildings remained in use through April, 1863. At that time an order issued out of department headquarters in Santa Fe ordered the commanding officer of the post of Fort Union to moved into the new quarters (probably HS-224) near the earthwork. Also, all enlisted men and laundresses belonging to the garrison were to move into the demi-lunes or into tents for shelter, pitched near the redoubt. At that time, the depot quartermaster was to take possession of all of the buildings of old Fort Union (with the exception of the ordnance depot buildings, presumably because they were a separate command) for the use of the quartermaster and subsistence depots and for quarters for general staff officers.<sup>60</sup>

Although most reports discussed the dilapidation of the buildings at the first fort, one observer presented a more lyrical view. Mrs. Eveline Alexander visited Fort Union in 1866 and described the buildings at the old fort as "one story houses . . . [with] a flat roof made of logs filled in with mud and this affords but a poor protection against the rain." She also wrote that she visited the old Fort to return the calls she had received from the Shoemaker family. While she was there, she noted that some of the old houses "had quite a flower garden on their roofs which had sprung up from the mud. Most of the old houses here have been torn down."<sup>61</sup>

Structures on the edge of the first fort also became worn out from bad construction and overuse. During the summer of 1866, authorization came through to construct a new butcher corral. The first one had "the accumulated blood of the winter, as well as the bones of years" that made it offensive.<sup>62</sup> In November, 1866, the officers' quarters in the third fort were not yet completed, so the officers were living "in the unoccupied quarters of the Depot's old Garrison."<sup>63</sup> Other than the arsenal buildings, this was the last time the army officially used any of the old buildings at the first fort.

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<sup>59</sup>Fort Union Fact File, First Fort, February 22, 1863, and Arrott, Reel 2, File 1, 1863, Brig. General James Carleton, Commanding, Headquarters, Department of New Mexico to Captain William Craig, Depot Quartermaster, Fort Union, February 22, 1863.

<sup>60</sup>Fort Union Article File, Q 160 Star Fort, NARG 98, Department of New Mexico Orders, v. 40, 246-247, Headquarters, Department of New Mexico, April 10, 1863.

<sup>61</sup>Arrott Collection, Reel 9, File 1, Eveline Alexander Troop Diary, August 15, 1866.

<sup>62</sup>Arrott Collection, Reel 3, File 2, 1866, *passim*.

<sup>63</sup>Arrott Collection, Reel 4, File 5, 1866, Major E.G. Marshall, Fort Union to Bvt. Major Cyrus DeForrest, A.A.G., District of New Mexico, November, 1866.

*Summary.* When the army moved into the area around Los Pozos during the summer of 1851, the first order of business was construction of buildings to house the troops and supplies. Temporarily the soldiers, their families, civilian staff, and supplies were housed in tents on the prairie. During that time, the troops cut ponderosa pine timber—the primary building material. They also manufactured other building materials including lime, cut stone, and adobes. After the sawmill arrived at the fort, boards were available to cover roofs and to serve as floor material.

The buildings, however, were erected in such haste that most were not constructed with foundations under them. Because the unpeeled logs lay directly on the ground, rot set in quickly. The installation of gable roofs made of sawn boards on top of the flat earthen roofs slowed deterioration from above. Because the buildings were so shoddily constructed, deterioration began within the first two years of construction. Constant patching and refitting held the buildings together for use through 1861; but then work began on the second fort and in 1863 work began on the third Fort Union.

While these were under construction, salvaging building materials from the first fort was common practice because those items were so scarce on the frontier. As the materials—boards, windows, glass, and stone—were salvaged, additional deterioration set in to the first fort buildings. Although the remaining buildings did receive some intermittent use through the fall of 1866, the army set aside a separate reservation for the arsenal that same year. The arsenal reservation included nearly all of the area of the first Fort Union.



## CHAPTER IV

### THE STAR FORT

*Defense.* With the advent of the Civil War, Fort Union mobilized for possible action. Because it housed an arsenal, supplies, and material, Fort Union became a prime target for the Confederate Army in the west. Fort Union was, after all, the principal supply depot for federal troops, and control of the fort meant command of its arms and materiel and command of the Santa Fe trail and communication with the States.



Figure 6. The second Fort Union was an earthen fortification laid out in the shape of an eight-pointed star. This photograph was taken from the southwest in 1930. Fort Union National Monument.

Major William Chapman, commander of Fort Union, began construction of the second fort (HS-200) when the threat of the Confederates attacking the fort was imminent. The first fort, directly below the bluffs, was in an indefensible position. Chapman noted to his superiors in Santa Fe that he could construct nothing for its defense, since anything he constructed could be "commanded by higher ground in the rear and on both flanks."<sup>1</sup> The idea was to move the post "out of range of field pieces & small arms . . . construct an entrenched camp with bomb-proof Magazine and store houses sufficient to contain all the stores."<sup>2</sup> Also, Chapman planned to burn the old post before allowing it to fall into the hands of the enemy.

*Earthen Fortifications.* In terms of tactics, entrenchments and earthworks had well-known advantages. The function of earthworks was one of defense, with the added advantage that good troops within an earthwork could withstand an assault of three to four times as many equally good troops. Most commanding generals made their battle calculations accordingly.<sup>3</sup>

During the Civil War, the size of entrenchments and fortifications varied tremendously based on the time allotted for construction, the strategic location of the fortification, and the available materials. Each entrenchment had a mass or embankment covering it called a parapet. The purpose of the parapet was to "intercept the enemy's missiles, to enable the assailed to use their weapons with effect, and to present an obstacle to the enemy's progress."<sup>4</sup> Each fortification also had a ditch constructed with the twofold purpose of providing material for the construction of the parapet and for increasing the size of the fortification.<sup>5</sup> Often the top of the parapet was capped with a head log from which the men could fire. The parapet was often 10 to 15 feet of solid earth to protect against cannon fire.<sup>6</sup> The fortification at Fort Union was no different.

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<sup>1</sup>Arrott, Reel 2, File 2, 1861, Maj Wm. Chapman to Lt. Anderson, A.A.A.G., Santa Fe, August 2, 1861.

<sup>2</sup>*Ibid.*

<sup>3</sup>Francis Trevelyan Miller, ed., *The Photographic History of the Civil War: Forts and Artillery* (New York: Castle Books), 210.

<sup>4</sup>D.H. Mahan, *A Treatise on Field Fortifications, Containing Introductions on the Methods of Laying Out, Constructing, Defending, and Attacking Entrenchments, with the General Outlines Also of the Arrangement, the Attack, and Defense of Permanent Fortifications* (New York: John Wiley, 1852), 2.

<sup>5</sup>*Ibid.*, 2.

<sup>6</sup>Miller, *The Photographic History of the Civil War: Forts and Artillery*, 212-217.

*The Star Fort.*<sup>7</sup> The construction of the fort, then, followed fairly standard contemporary army practice. When the fort was officially completed on August 26, 1861, Chapman stated that all it needed was some dressing off, and that it could be defended with 600 men. He had 1,034 troops.<sup>8</sup>

The plan of the fieldwork was done by Captain Cuvier Grover of the 10th Infantry. Captain Grover and Lieutenant William Nicodemus of 11th Infantry oversaw construction of the fortification.<sup>9</sup> Work on the fortification had progressed at a fever pitch. At one point, the army was rotating a force of 200 men—volunteers and regulars—every four hours day and night to complete the entrenchments.<sup>10</sup>

While the star fort was still under construction, other strategic concerns weighed on the minds of the officers of Fort Union. Military Storekeeper William Rawle Shoemaker wrote to his superiors in Washington about the gravity of the situation at the beginning of August, 1861. Shoemaker noted that they had just received word that Fort Fillmore, New Mexico with its garrison of 500 regulars, had been surrounded and taken without a fight by 300 Texans who were said to be headed next to Fort Union. Shoemaker noted that at the time there were 1,000 men at Fort Union, and two or three hundred more were expected to arrive shortly. The army, he said, would soon be putting 14 pieces of artillery in the earthwork. He noted that the earthwork was constructed a mile to the east of the first fort in the open prairie near water. Shoemaker wrote: "It is intended to get all of *our* (Ordnance) stores within the works and if necessary to destroy all the present buildings, and possible much property.— I will do the best I can for the preservation of the stores with the determination, however, that nothing shall fall into the hands of the enemy."<sup>11</sup> Women and children were removed and sent to Las Vegas or Mora shortly thereafter.<sup>12</sup> The length of their stay in neighboring towns did not appear in the record.

While the fortification was under construction, the various departments erected temporary storehouses in and around the star fort to protect their goods while they awaited new

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<sup>7</sup>Although some researchers protest the use of the term "star fort" for the second Fort Union, contemporary accounts refer to it as the "earthworks", the "fortification," and the "star fort."

<sup>8</sup>Emmett, *Fort Union and the Winning of the Southwest*, 247. Based on the calculations listed above, the star fort in theory could withstand an assault of 1800 to 2400 troops.

<sup>9</sup>Fort Union Fact File, Star Fort, quoting letter from Maj. William Chapman, Commander of Fort Union to Col. E.R.S. Canby, Commander of the Department of New Mexico, August 26, 1861.

<sup>10</sup>Fort Union Fact File, Star Fort, quoting letter of August 7, 1861 from Chapman to Lt. A.S. Anderson, Department of New Mexico.

<sup>11</sup>NARG 156, Entry 21, 1861, S, 639, Shoemaker to General Ripley, August 5, 1861.

<sup>12</sup>Arrott, Reel 2, File 2, 1861, Lt. A.L. Anderson, A.A.A.G., Santa Fe to Lt. Col. Wm. Chapman, Fort Union, August 11, 1861.



spaces within the bombproof structure. Storehouses were under construction at the fieldwork by September, 1861, but some perishable goods had to be kept outside under tarpaulins while construction was underway.<sup>13</sup> Canby in Santa Fe approved using the demilunes for storehouse construction.<sup>14</sup> Military Storekeeper Shoemaker wrote to the chief of ordnance in Washington that all of his stores would not fit in the earthwork, so that "we shall be obliged to erect temporary storehouses of some kind, as the other departments are doing."<sup>15</sup>

Apparently all of this temporary construction caused enough confusion that the department commander entered into the picture to resolve some conflicts. A letter to the commander of Fort Union from Department headquarters in Santa Fe stated that "The construction of all works of a defensive character are under the charge of the Engineer Department...The entrenchments at Fort Union are of that character, and all buildings, and structures of any kind within the work, or within the range of its fire are under the superintend of the officer charged with the execution of the work."<sup>16</sup> By October 20, 1861, work had slowed to a point where all of the men were relieved of extra duty "and work on the storehouses and barracks," and they were put back to their regular duties.<sup>17</sup>

Even Mr. Levi Spiegelberg, the sutler of the volunteers encamped at Fort Union at the time, began constructing buildings at the volunteer camps to serve the troops. Fort Union's commanding officer quickly forbade that situation when he noted that the structures might interfere with the line of fire from the fieldwork (which meant that Mr. Spiegelberg's buildings were probably somewhere between the first fort and the second fort). Also, the commander expected the volunteers to be moved out of Fort Union at a moment's notice, so he recommended that the sutler be ready to move with his troops.<sup>18</sup>

In October of 1861, troop movements out of Fort Union left the fort with so few regulars that the commander thought that all remaining stores should be moved to the fieldwork so that he would not have to split his command in case it was attacked. This meant that some of the stores remained at the first fort up until that time.<sup>19</sup> By January of 1862,

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<sup>13</sup>Arrott Reel 2, File 3, 1861, *passim*.

<sup>14</sup>*Ibid.*, Col. Canby September 5, 1861, to Colonel ? at Fort Union.

<sup>15</sup>NARG 156, Entry 21, 1861, S 735, William Shoemaker to General Ripley, September 9, 1861.

<sup>16</sup>Arrott Reel 2, File 4, 1861, Lt. Anderson to Lt. Col. William Chapman, October 6, 1861.

<sup>17</sup>*Ibid.*, Chapman to Nicodemus, October 20, 1861.

<sup>18</sup>*Ibid.*, Reel 2, File 3, 1861, Maj. Chapman to Capt. Chapin, A.A.A.G., September 25, 1861.

<sup>19</sup>*Ibid.*, Reel 2, File 4, 1861, Maj. Chapman to Capt. Chapin, A.A.A.G., October 2, 1861.



nearly all of the quartermaster property, ordnance stores, and provisions had been moved into the fieldwork.<sup>20</sup>

*Contemporary Descriptions.* An article in Denver's *Rocky Mountain News* in February, 1862, described the star fort as:

. . . one of the strongest forts in the Western frontier. Its size is seven hundred and fifty feet square, parapets seven feet high. From the level of the ground on the inside with a ditch on the outside eight feet deep and fifteen feet wide. Quarters for two companies built on the insides with a large magazine, and quarters are built outside of the fort in an acute angular form from the sides of the fort, on each of the four sides with officers quarters intervening. The ordnance will be put in position early in May. Also other necessary buildings will be erected as soon as weather permits. The force at this fort is six companies numbering about three hundred men.<sup>21</sup>

Undoubtedly the publication of this description provided additional material for confederate military intelligence; the confederate troops, however, had been spying on the fort since August, 1861.

Contemporary with that description is one written (then later published) by one of the Colorado volunteers. In March, 1862, Ovando Hollister described the area:

Within a mile of the west side of the vale, on a gentle swell, is the fortification. A simple field-work of moderate size, with bastioned corners surrounded by dirt parapet and ditch, with a slight abatis at exposed points. The armament is poor, consisting mostly of howitzers, but the supply of ammunition is deemed sufficient for any emergency. It has bomb-proof quarters in and surrounding it forming part of the works, sufficiently large to accommodate 500 men besides the necessary room for stores.<sup>22</sup>

Hollister noted that he and his command were quartered in a log house below the fortification.

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<sup>20</sup>*Ibid.*, Reel 2, File 1, 1862, Col. G.R. Paul to A.A.A.G Nicodemus, January 7, 1862.

<sup>21</sup>Fort Union Fact File, Star Fort, quoting *Rocky Mountain News*, Tuesday, February 24, 1862.

<sup>22</sup>Arrott, Reel 2, File 2, 1862, Ovando Hollister, *Boldly They Rode: A History of the First Colorado Regiment of Volunteers* (1863 edition, republished by Golden Press, 1949).



Figure 7. This photograph shows the approximate scale of the earthen fortification as well as some aspects of its construction. This is the south angle of either HS-206 or 207, the enlisted barracks in the redans. The branches overlying the parapet retarded erosion. Log framing outlined the entrance. Fort Union National Monument.

*Completing the Star Fort.* On August 27, 1861, the department commander sent word to Fort Union expressing thanks to Captain Grover and Lieutenant Nicodemus for their zeal, energy, perseverance and alacrity in completing the fieldwork.<sup>23</sup> Although Chapman felt that all the star fort needed at the time was some dressing off, other correspondence indicated that Fort Union was a tad short of completion one year later in the summer of 1862. An inspection that summer found that:

The new Post, which is being built, according to plans of Capt. C. Grover, was commenced in 1861, and is not yet completed, as orders were received from Dept. HQrs. to discontinue the work. The four angles (HS-204, 205, 206, 207), designed for store houses and company quarters are completed, each wing is 200 feet in length and 26 feet in depth, which is subdivided into a storehouse 100 feet in length and 6 rooms designed for the use of one company. The condition of these houses are good, being just completed, but being partly underground, when heavy rains occur, the roofs being of earth, leak badly, and the water collects and runs in at the doors.

According to the plan, there should be eight sets of officers quarters, two of which are occupied (HS-201, HS-202). The rest now being completed. Each set forms an angle and is composed of eight rooms. One side of the angle is composed of three rooms, two of which are 16 feet by 18 feet, and one 12 feet by 16 feet, the other side is composed of five rooms, two of which are 14 feet by 16 feet, one 12 feet by 16 feet, one 16 feet by 16 feet, and one 8 feet by 16 feet. They are built partly underground and during heavy rains the rooms are subject to inundation.

The parapet (HS-200), forming the breastwork, is fast washing away and filling up the ditch around the works. This cannot be prevented, unless the slopes are sodded. There are two sets of Company Quarters and one set of Officers Quarters of four rooms, inside the works, which are put up temporarily which to render substantial buildings, would have to be rebuilt. The only board floors in the garrison are in the two sets of Officers Quarters outside the field works, all the rest are dirt floors. I would respectfully state that the buildings forming the Officers Quarters, Company Quarters, and Storehouses cover the curtain of the field works, to such an extent, as to weaken the defence of the place and as stated before, all being underground and without ventilation are unhealthy to men and subject all the stores placed in them damaged.<sup>24</sup>

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<sup>23</sup>Arrott, Reel 2, File 2, 1861, Lt. Anderson to Lt. Col. Chapman, August 27, 1861.

<sup>24</sup>NARG 92, Entry 225, Box 1168, Alexander Robb, A.A.Q.M. to Major Wallen, 7th Infantry, Post Commander, Fort Union, June 30, 1862.



Figure 8. This photograph of the star fort shows the deterioration of the earthwork due to erosion. The brick chimneys pierce the roof of the redan, HS-205, at fairly regular intervals. The Third Fort Union is in the background. National Archives, Still Pictures Branch.



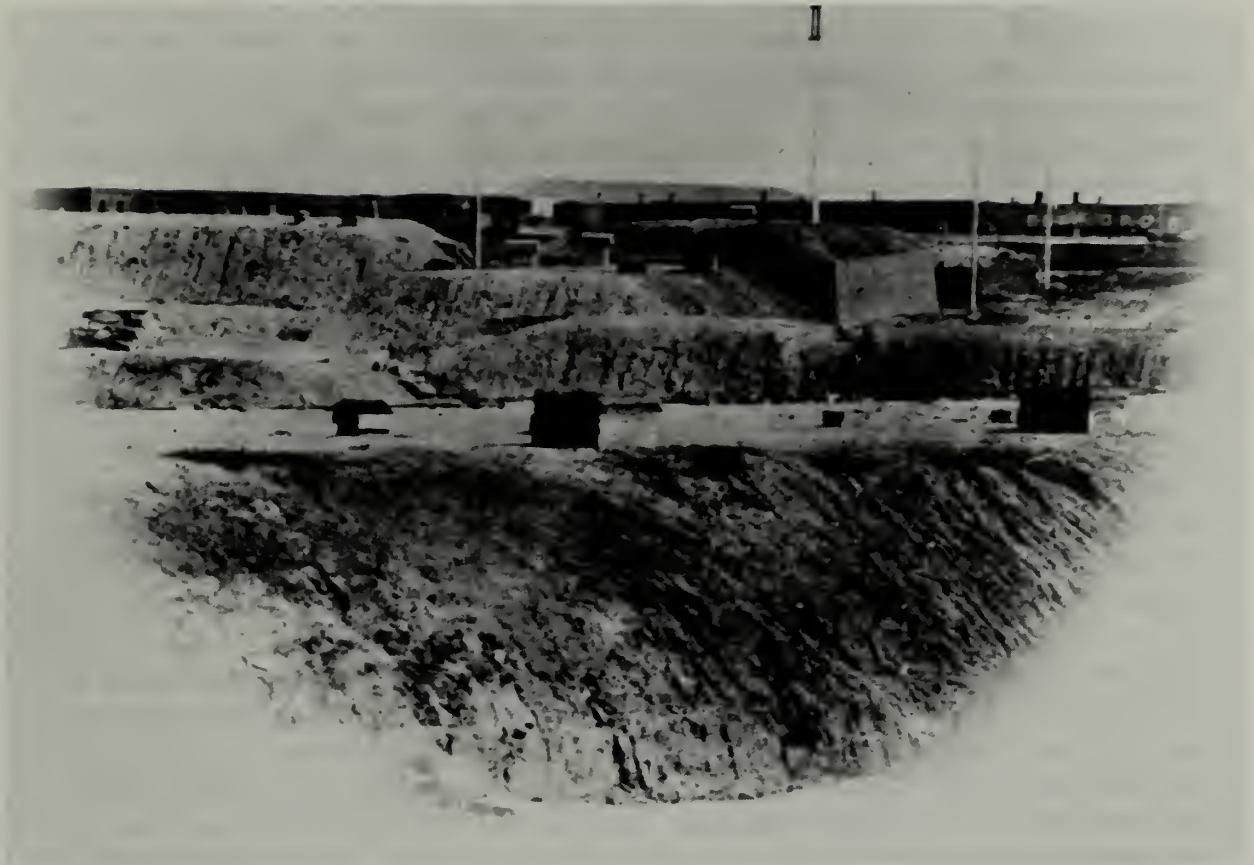


Figure 9. The rivulets of erosion are again obvious in this photograph of the earthworks taken in 1865. The lack of sod on the structures accelerated deterioration. National Archives, Still Pictures Branch.

The star fort had a flagstaff by the summer of 1862 (HS-225), and the quartermaster sent a request to Santa Fe for a garrison flag and halyards so that the flagstaff could be put to use on the Fourth of July.<sup>25</sup>

*Additional Problems.* The strategic vulnerability of the star fort was disclosed in June, 1862, when the post commander arranged for a test involving a six-pound and a 12-pound howitzer and the fortification. The six-pounder was placed at the foot of the hills, and the twelve-pounder at the crest of the hills above the first fort. Both were loaded with ordinary charges and shot off. Both guns had the fort within range. When a six-pounder was set off from the western bastion of the earthwork, its range only reached halfway to the hills. Also, the commander commented that the fortification "has a 'dip' towards these hills which causes its whole interior to be revealed."<sup>26</sup>

2nd Lt. A.W. Robb told Capt. Peter Plympton (then commander) that not only was the fort vulnerable, but also it was wholly unsuitable for occupation. Excessive dampness in the walls and flooring was causing disease among the men. Canby came to check it out personally, and decided that because of its location Fort Union would make a decent site for a depot; but he also conceded that just about all forts could be made vulnerable by contemporary gunfire. As a result of the visit, Canby gave the order to proceed with additional structures above ground.<sup>27</sup> That same month, Plympton received another letter from headquarters in Santa Fe asking him to examine "the field work for the purpose of seeing whether the interior of the work can be defiladed and if it can, to suggest the best method of doing so."<sup>28</sup>

Captain Plympton looked into the possibility and concluded that the star fort could not be defiladed to protect it from fire from the mesa above because of the size of the work and its type of construction. Because the sets of quarters, store houses, shops, and offices formed the demilunes and were outside the flanks, Plympton concluded that any system of traverses would afford minimal protection from shelling. Plympton wrote: "In a word the site should have been selected at a point beyond the reach of the shot, and shells of the enemy or if it had be necessary to put it where it is, *which was not the case*,

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<sup>25</sup>NARG 393, Records of U.S.A. Continental Command, 1821-1920, Fort Union, New Mexico, Unregistered Letters Received, June 1862-December 1865, Quartermaster J.L. Donaldson to Captain McFerran, June 27, 1862.

<sup>26</sup>Arrott, Reel 2, File 4, 1862, Post Commander to A.A.A.G., Headquarters, June 8, 1862.

<sup>27</sup>Emmett, *Fort Union and the Winning of the Southwest*, 247-281, citing Canby to Adjutant General, July 22, 1862, NARG 98, Department of New Mexico Letters, Volume 12, 330-334.

<sup>28</sup>NARG 393, Records of U.S.A. Continental Command, 1821-1920, Fort Union, New Mexico, Unregistered Letters Received June 1862- December 1865, [illeg] Captain, 7th Infantry, A.A.A. General, Headquarters, to Captain Plympton, June 12, 1862.

its interior should have had a much greater command."<sup>29</sup> Plympton also complained that the storehouses and quarters were badly ventilated, that the magazine (HS-208?) was too damp to store ammunition, and that the soil contained a large percentage of clay so it retained moisture for long periods of time. Despite Plympton's dim view of the fortification, a company was sent up from Fort Union to cut trees for *abatis* for the fort.<sup>30</sup>

Other controversies arose that summer about the suitability of the star fort. The commander of the Department of New Mexico wrote to his superiors in Washington defending the fort. First, he noted that the site of the fort was chosen to be at a good location point for a general depot—a spot that was accessible and easily defensible at the same time. Although other points on the Mora and Gallinas had been considered, both were rejected, and by that time Fort Union had already been in use as a general depot or sub depot for a few years, so it had storehouses and barracks available for occupancy while the earthwork was under construction. He noted that even if a more strategically opportune location had been available to construct the fieldwork, he did not want to separate his command and supplies and take a chance on losing both his men and materiel.

He noted that when Grover and Chapman chose the site for the fieldwork, it was thought to be beyond the range of field guns—which turned out to be false. But also the fieldwork had to be located there to control the water supply needed for a thousand men and a thousand animals. The commander went on to say that the original idea was to build storehouses and barracks to the right and rear of the fieldwork "and to complete the arrangements for defense of the Depot by the construction of a similar fieldwork at the opposite angle, but this was changed upon the recommendation of Col. Chapman and Captain Grover by making provision for the storehouses, &c. in outworks (demi lunes) of the original work, bringing the whole into smaller space & rendering them defensible by a smaller number of men." He went on to say that the original redoubt was completed shortly after construction began, but the out works and storehouses were not completed and work was suspended on them in early June, 1862.

The commander concluded that: 1) the fieldwork was within range of field guns; 2) the places he approved earlier for barracks and storehouses did not really meet the need; 3) the construction of a redoubt on the hill above the earthwork would prevent "the establishment of batteries within the range of any except rifled guns"; 4) that the construction of a redoubt would cover depot buildings from fire; 5) that the redoubt was necessary to control the water supply. So the commander ordered a survey of the area

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<sup>29</sup>Fort Union Fact File, Star Fort, including copy of letter of Jun 20, 1862 from Capt. Plympton to Adjutant General's Office in Santa Fe.

<sup>30</sup>*Ibid.*, citing NARG 98, Department of New Mexico Letter, Volume 13, 181, Headquarters to Captain Plympton, November 20, 1862.



to pick a suitable spot for the construction of a redoubt.<sup>31</sup> The plan was submitted in November, 1862, but it was never built.

At least part of the arming of the fortification took place in October, 1862. With the arrival of the Colorado Volunteers, the Department Commander issued an order arming the volunteers with two 32-pounder field howitzers, two 12-pounder field guns, and two 3-inch parrott guns to defend Fort Union.<sup>32</sup>

Also in the late fall of 1862, General Carleton visited Fort Union and noted that the buildings were in bad shape, but some of the structures were in a tolerable state of preservation. His greater concern was that there was not enough room in the extant structures to meet the needs of the quartermaster. So Carleton ordered that a roof be put on the completed adobe walls of the first storehouse being built at Third Fort (HS-40, 41, or 42), and he had the soldiers pile up the adobes that were already finished to save them from disintegration in the winter weather.<sup>33</sup>

By mid-December, 1862, the *abatis* were in place. They had been under construction since November, 1862.<sup>34</sup> An article in the *Mesilla Times* that was carried in other papers described the fort as follows:

New Fort Union, situated one mile due east of the old fort, is considering its position and the material at hand, one of the best pieces of engineering ever done in America. It is an octagon . . . the walls are double rows of large pine logs en palisade, 12 feet between the rows, and filled with sod. The ditch is 20 feet wide at the top, 16 feet at the bottom, and 12 feet deep. The abatis is firmly studded with dwarf cedar trees, the branches trimmed short, case hardened with fire and sharpened to a point. These are firmly driven in, and present a bristling array upon which it would be impossible to force cavalry. The cannon enfilade the ditch at all points, and there is no cover for the approach of an attacking party within cannon shot. The magazine, quarters and all the garrison buildings are half basement, bomb-proof buildings, some of these are entirely under ground. Four large bomb-proof ware-houses have been built, fronting the salient angles of the fort, and in the shape of a wedge. There are in this post two

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<sup>31</sup>Arrott, Reel 2, File 5, 1862, excerpted from NARG 98, Department of New Mexico letters, 12, 330-334, no signature, letter from Brigadier General Vols., Department Commander, to General, the Adjutant of the Army, July 22, 1862. The redoubt was never constructed.

<sup>32</sup>*Ibid.*, Reel 2, File 6, 1862, Special Orders 177, October 1, 1862, excerpted from NARG 98, District of New Mexico Orders, volume 40, 176-177.

<sup>33</sup>Emmett, *Fort Union and the Winning of the Southwest*, 281.

<sup>34</sup>Arrott, Reel 2, File 1, 1862, Carleton to Plympton, November 16 and November 20, 1862.



years supplies of all kinds for two regiments. Ten 12 pounders are mounted, and several guns of larger calibre were being mounted.<sup>35</sup>

*Additional Changes to the Star Fort.* When queried by Fort Union's commanding officer about the appropriate way to construct a magazine inside the earthwork, M.S.K. Shoemaker responded that the troops should make an excavation about 60 feet long by 25 feet wide, and eight feet deep, "the walls to be formed by setting timbers upright and lined with rough boards, to the height of fourteen feet to receive a plate, on which the roofing timbers will spring to a longitudinal view, supported through the center by uprights, the roofing timbers to incline *one* foot in *twelve*, and a half, with boards to receive the earth which has been excavated. The room to be floored with 1 1/2 inch plank on sills or joists. The rooms to have a ventilation, and a door at each end with steps to descend, these doors to be protected by splinter proofs composed of inclined timbers. The whole to be covered with earth at least three feet in thickness, in order to be Bombproof."<sup>36</sup>

Ten days after Shoemaker described plans for the magazine within the fieldwork (late fall of 1862), Captain Plympton received a letter from department headquarters in Santa Fe enclosing an approved copy of a report entitled "Changes deemed necessary in the defense of Fort Union N.M and the means of conducting its defense in case of attack." Lieutenant Anderson, "acting as an Engineer officer" drew up the plans.<sup>37</sup> Plympton was directed to have one whole company—officers included—work on the fieldwork "until the work is done commencing at once . . . The work must be done with a will, and as soon as possible." The order also encouraged Plympton to proceed quickly to implement all of the changes, and noted that the brigadier general was counting on Plympton's personal supervision of the work.<sup>38</sup>

In December, 1862, the commander of Fort Union received a directive from headquarters in Santa Fe to construct additional bombproof spaces in the fieldwork. On the chance that Colonel St. Vrain headed down to the fort with over 100 men from Taos, headquarters wanted to have a large, underground room "made for contingencies." The order stated that the room's interior should measure 100' x 25' with a ceiling 12' high.

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<sup>35</sup>Fort Union Fact File, Star Fort, quoting *Mesilla Times*, December 12, 1862.

<sup>36</sup>NARG 393, Records of U.S.A. Continental Command, Fort Union, New Mexico, Unregistered Letters Received, June 1862-December 1865, M.S.K. Shoemaker, Fort Union, to Captain Plympton, Commander, Fort Union, November 26, 1862.

<sup>37</sup>The plans were not attached to the copy of the letter in NARG 393.

<sup>38</sup>NARG 393, Records of the U.S.A. Continental Command, 1821-1920, Fort Union, New Mexico, Unregistered Letters Received, June 1862-December 1865, Brigadier General James H. Charleton, headquarters, Department of New Mexico, to Captain Plympton, Commander, Fort Union, November 30, 1862.

The purpose was to shelter part of St. Vrain's troops in case of bad weather.<sup>39</sup> Other directives concerning construction also appeared about the same time. Special Orders 209 stated all building materials that had been collected to construct the Quartermaster Depot but might be required to strengthen the defensive fieldwork would be used for that purpose at the discretion of the fort commander. The orders also approved the employment of thirty "first rate" laborers to build a magazine within the fieldwork at Fort Union, so Shoemaker's new building was being realized.<sup>40</sup>

Also in early December, 1862, Carleton wrote to Ceran St. Vrain in Taos that "The defenses at Fort Union need a great deal of work to make them strong, and we are bending all our energies toward completing them."<sup>41</sup>

*More Construction.* In February, 1863, 1st Lieutenant Cyrus DeForrest of headquarters, Department of New Mexico wrote to Captain William Craig, the depot quartermaster at Fort Union, directing him to tear down "the old house on the hill known as Col. Sumner's house which was formerly the hospital at Fort Union [HS-126]." DeForrest ordered Craig to salvage lumber, doors, and windows and to construct a new set of officers' quarters of "say four rooms and a kitchen, with a yard &c, complete and comfortable—over near the Redoubt." The directive went on to say that the building would be the new commanding officer's quarters (probably HS-224) and that the commanding officer could select whichever side of the fieldwork he chose for its construction. The building was to be a temporary structure built of logs plastered on the interior "with blinds for the windows and a gallery [porch] running along its front, say ten feet broad." The building was supposed to have a roof of lumber and chimneys of stone. Craig was also ordered to complete the project quickly and report its completion to headquarters as soon as possible.<sup>42</sup>

In April, 1863, Captain John Court McFerran of the Quartermaster's Office in Santa Fe gave orders to Captain N. S. Davis of the same office to go out to Fort Union and complete the new quartermaster depot and post at Fort Union (the third fort) and to finish

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<sup>39</sup>NARG 393, Records of the U.S.A. Continental Command 1821-1920, Fort Union, New Mexico, Unregistered Letters Received June 1862-December 1865, Brigadier General James Carleton, Headquarters, Department of New Mexico, to Captain Plympton, Commander, Fort Union, December 20, 1862.

<sup>40</sup>Arrott, Reel 2, File 1, 1862, Special Order 209, December 9, 1862, excerpted from NARG 98, Department of New Mexico Orders, volume 40, 207.

<sup>41</sup>Arrott, Reel 2, File 1, Brig. Gen. Carleton to Col. Ceran St. Brain, December 8, 1862, excerpted from NARG 98, Department of New Mexico Letters, volume 13, 226.

<sup>42</sup>NARG 393, Records of U.S.A. Continental Command 1821-1920, Fort Union New Mexico, Unregistered Letters Received June 1862-December 1865, 1st Lieutenant Cyrus DeForrest at headquarters, Department of New Mexico, to Captain William Craig, Depot Quartermaster, Fort Union, New Mexico, February 22, 1863.

the work as soon as possible using "the strictest economy, consistent with a rapid completion of the work." McFerran also ordered him to salvage windows, doors and all other building materials in the quarters of the demilunes of the field work. The demilunes were slated for demolition specifically because the building materials in them needed to be salvaged for use in the new post. McFerran also requested an estimate of roofing zinc or tin for covering the new officers' and soldiers' quarters and the storehouses for the third fort.<sup>43</sup>

Four days after the above order was issued, Carleton issued Special Orders 23 stating that Fort Union's commanding officer was to move into the new set of quarters (probably HS-224) near the field work. Also, all enlisted men and laundresses were to be quartered in the demilunes of the fieldwork (HS-204, 205, 206 and 207) until they ran out of room, at which time they were supposed to pitch tents near the redoubt.<sup>44</sup>

In 1865, an inspection of Fort Union described the situation at the Fort:

Fort Union is near the western limits of the great plains which extend uninterruptedly from Fort Leavenworth to the Rocky Mountains. Here there is a defensive earthwork with temporary quarters in the demi-lunes for some eight companies. There are but five companies of infantry at present at Fort Union.

The depot for quartermaster stores and the depot of subsistence stores are building by order of the War Department at Fort Union: and new permanent quarters for four companies are also in process of erection at that post. When the latter are completed, the temporary quarters in the demi-lunes will be abandoned, and the materials of which they are constructed will be used for other purposes.<sup>45</sup>

*Later Occupancy.* Despite the problems that appeared in the star fort in its first two years and the fact that the imminent threat of invasion by confederates diminished after the end of March, 1862, the Army continued to occupy and use the second fort into the autumn of 1866. The temporary nature of the earthworks again became apparent in comments that M.S.K. Shoemaker wrote to his superiors in Washington. Shoemaker was dissatisfied with the magazines within the earthworks. In particular, he was not happy

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<sup>43</sup>NARG 393, Records of the U.S.A. Continental Command 1821-1920, Fort Union, New Mexico, Unregistered Letters Received, June 1862-December 1865, Captain John McFerran to Captain Davis, April 6, 1863.

<sup>44</sup>Arrott, Reel 3, File 2, 1863, Special orders No. 23, excerpted from NARG 98, Dept of New Mexico Orders, volume 40, 246-7.

<sup>45</sup>*Ibid.*, File 5, 1865, Brigadier General James H. Carleton to Col Richard C. Crum, A.A.A.G., San Francisco, September, 1865.



with his ammunition storage space, and he wanted to get his stores properly taken care of before the next rainy season.<sup>46</sup> By 1864, Shoemaker had moved his entire ordnance operation back to the first fort area, but most of the other Fort Union operations remained in the vicinity of the second fort. Even when the commanding officer's quarters (possibly HS-224) burned on November 25, 1864, the troops remained entrenched in the fortification.

The constantly damp conditions in the star fort increased the incidence of disease among the troops. A report from General Carleton, Commander of the District of New Mexico, noted in September, 1865 that the earthwork at Fort Union had "temporary quarters in the demi-lunes for some eight companies." The report noted that the depot for the quartermaster's stores and subsistence stores, as well as the quarters were under construction (the third fort). At the time the new buildings were completed, the commander intended to abandon the demilunes and salvage any usable building materials. Carleton also complained that at that time all of the ordnance stores for New Mexico were stored in "a confused group of log and adobe buildings [the first fort] which have been erected from time to time since 1851 as temporary shelter until a proper arsenal could be constructed."<sup>47</sup> This again emphasized the need for a new arsenal.

On October 16, 1866, a huge rainstorm flooded out the barracks of the star fort with 8 to 12 inches of water. A report written by the post surgeon the following day said that all the men were damp. The dampness coupled with the intermittent storms convinced the surgeon that the incidence of disease including fever, rheumatism, and heart complications were "due in great part to the casemated barracks occupied by the troops at this post." He told the post commander that the only way to ameliorate the situation was to repair the old barracks, move into tents, or move early into the new quarters at the third fort.<sup>48</sup> Authority to occupy the new quarters "any time you desire" was granted the same day, pending their completion, of course.<sup>49</sup>

After that last flood, the troops moved out into tents because nothing at the third Fort Union had been completed by that time except one new officers' quarters. At the same

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<sup>46</sup>NARG 156, Entry 21, 1865, F 410, Shoemaker from Union Arsenal, New Mexico to General A.B. Dyer, Chief of Ordnance, Washington, Nov. 16, 1865.

<sup>47</sup>Fort Union Fact File, quoting Carleton to Assistant Adjutant General Richard Drum on September 15, 1865 in *War of the Rebellion: Official Records of the Union and Confederate Armies*, series 1, vol. 48, part 2, 1230-31.

<sup>48</sup>NARG 393, Records of U.S.A. Cont. Com. 1821-1920, Fort Union, New Mexico, Headquarters Unregistered Letters Received, Box 6, January 1866-March 1868, Post Surgeon DuBois to commander Bvt. Col. Marshall, Fort Union, October 17, 1866.

<sup>49</sup>*Ibid.*, Capt. Henry Inman to Col E.G. Marshall, October 17, 1866.



time, the Army issued an order to move the district headquarters of the Department of the Missouri from Santa Fe to Fort Union.<sup>50</sup>

*Demolition.* By March, 1867, the endorsement came through on the order to demolish the remaining buildings "known as 'Old Post of Fort Union'" except those necessary for housing authorized laundresses (HS-204, 206, and 207) and stabling horses and mules (HS-205). The order also said that any woodwork that could be salvaged from the demolition would be turned in to the depot quartermaster.<sup>51</sup>

Although the order specified the old post, another contemporary report noted what was left of buildings "around the 'Old Post' or Earthwork, and find them to consist of three rows of partially underground frame structures in a very dilapidated state, fast falling to decay and ruin." The report recounted that a number of people still living in the structures were causing problems. The inspection stated: "There are always a lot of Mexicans and unknown Americans harbored around these buildings, Gambling, Drinking, and Prostitution seems to be the principal use to which many of the rooms are appropriated, and soldiers of the Garrison are enticed and harbored there to carouse all night."<sup>52</sup> At that time, the post commander requested permission to demolish all of the buildings of the old post "with the exception of sufficient quarters for the authorized Laundresses, and two angles of buildings, one of which is now used, and other can be used for Cavalry Stables (HS-205)."<sup>53</sup>

In April, 1867, the final order came through: prior to demolishing the buildings at the old post, all window frames, sashes, doors, and other serviceable materials were supposed to be taken out of the buildings and turned over to the depot quartermaster.<sup>54</sup> Apparently not all of the buildings were demolished, because the infantry was storing

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<sup>50</sup>Emmett, *Fort Union and the Winning of the Southwest*, 283-300.

<sup>51</sup>Arrott, Reel 4, File 1, 1867, Cyrus DeForrest, A.A.A.G. to Commanding Officer, Fort Union, March 28, 1867. The term "old post" is misleading unless viewed in its entire context in the correspondence—where it becomes evident that the "old post" referred to is the second fort. Also by 1867 the arsenal had its officially assigned reservation in the area of the first fort, so it would have been most often terms "the arsenal."

<sup>52</sup>Arrott, Reel 4, File 1, 1867, A.A.Q.M. Lt. Granville Lewis to Bvt. Lt. Col. William Lane, Fort Union, March 22, 1867.

<sup>53</sup>*Ibid.*

<sup>54</sup>*Ibid.*, Reel 4, File 2, 1867, Bvt. Lt. Col W.B. Lane, Post Commander, to Lt. Granville Lewis, A.A.Q.M., Fort Union, April 4, 1867.

fresh vegetables in the "(Bomb-proof Hospital) Old Fortifications" six months after that order came through.<sup>55</sup>

*The Tunnel (HS-222).* Access to a convenient and steady water supply was a principle reason for deciding the location of the second fort. In 1861 the soldiers built a tunnel that began in the ditch of the fort and connected it to a cistern beside the creek. This tunnel collapsed soon after its completion, but wells excavated inside the fortification made it unnecessary.<sup>56</sup> In January, 1862, a well was under construction in the star fort. Period correspondence stated: "A well has been commenced inside the fortification & every arrangement has been made to receive the enemy properly should they come here."<sup>57</sup>

The presence of the tunnel was discussed in a letter from Harry LaTourette Cavanaugh to James Arrott in 1950. Cavanaugh spent 1882 and 1883 at Fort Union. He reported to Arrott: "We four boys, playing near the old earthwork, discovered a deep hole in the ground. It was explored and it was found to connect the earthwork with the creek (about 1/4 mile away). I was told that the tunnel was later filled up as it was dangerous."<sup>58</sup>

The tunnel was small and was lined with boards.<sup>59</sup> Park employees traced the route of the tunnel in 1961, and found enough remnants to ascertain its approximate dimensions—three feet, widening to five feet, and with a circular, cistern-like depression of ten feet in diameter near its outlet at the creek.<sup>60</sup>

*Summary.* The site for the earthen fortification at Fort Union was chosen for its proximity to the water supply needed to maintain the troops and the animals for the fort. The fort was vulnerable to howitzer fire from the mesa above for two reasons: its distance from the mesa, and the way its interior was exposed by its slant toward the mesa. Although the army acknowledged its vulnerability, based on a field test on the fortification in June, 1862, the earthwork never saw a battle. When the confederates

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<sup>55</sup>Arrott, Reel 4, File 6, 1867, Francis B. Jones, Lt., 3rd Infantry, to Lt. L. Wightman, 3rd Cavalry, Post Adjutant, Fort Union, October 25, 1867. This structure remains unidentified.

<sup>56</sup>"Fort Building in New Mexico," *Santa Fe Republican*, July 5, 1862, p. 1.

<sup>57</sup>Fort Union Article File, Q 160, Star Fort, Colonel G.R. Paul, Commdg. Post, to Capt. Nicodemus, A.A. General, Santa Fe, January 7, 1862.

<sup>58</sup>Arrott, Reel 10, File: Fort Union Information, Letter Harry LaTourette Cavanaugh to James Arrott, November 12, 1950.

<sup>59</sup>Fort Union Fact File, Star Fort, Interview with Roy Glasier, October 24, 1964.

<sup>60</sup>*Ibid.*, Memorandum of February 13, 1961 from Historian to Superintendent. Additional field work by Archeologist James E. Ivey has pinpointed its location.

were repelled at the Battle of Glorieta Pass in March, 1862, the Civil War in the west virtually ended. After that, the vulnerability of the second fort was most likely of lesser concern at the time of the field test than it had been at the beginning of the war.

The earthwork was of simple construction: digging the ditches outlining the interior of the fort provided earth for the parapets. Interior room features included shoring timbers, board ceilings with dirt above, brick chimneys, and either dirt or board floors. Although the exterior never received a sod covering, the branches and abatis protected parts of the exterior. Living conditions were far from satisfactory due to dampness, lack of light, and lack of ventilation. The slope of the land and the partial construction underground made the fort susceptible to flooding. By the time construction began on the third Fort Union in 1863, this army facility, too, had outlived its usefulness. Like much of the first fort, the army salvaged building materials from the fortification for re-use in the third fort.





## CHAPTER V

### THE ARSENAL

*U.S. Arsenals.* By the end of 1860, the United States had 13 arsenals, two armories, and one depot for manufacturing and housing ordnance and ordnance stores.<sup>1</sup> At that time, the United States had a small regular army, and it did not have large stores of arms and munitions. Also, the size of the arsenals was comparatively small. When the Civil War began, the war department was confronted with a problem. Prior to the war, the ordnance department had been responsible for the fabrication and testing of ordnance required by a small regular army. With the onset of war, that same department had to furnish weapons and munitions for military operations on an unprecedented scale.<sup>2</sup>

During the first part of the war, the army had started contracting out the manufacture of arms and munitions because it was cheaper and faster to do so. Also, the army became more lenient with its interpretation of rules governing the manufacture and acceptance of arms. Earlier, arms with small blemishes were rejected. Because the need for great production was so high, the arsenals began accepting some of those minor flaws as long as the calibers were standard enough to accept government ammunition and the arms were stout in construction.<sup>3</sup>

By 1863, the chief of ordnance in Washington had begun expanding his arsenals because he saw how it was impossible to depend on private manufacturers of materiel. The manufacturers could not control labor and raw material costs, and could not keep as much stuff on hand as the federal government needed, so the chief of ordnance expanded the number of arsenals to include those at Watertown, Massachusetts; Watervliet, New York; Allegheny, Pennsylvania; St. Louis, Missouri; Washington, D.C.; and Benecia, California.<sup>4</sup>

Officers who commanded arsenals and armories had major responsibilities including the control of large amounts of federal funds, and the supervision of all types of mechanics and craftsmen. The ordnance department had both commissioned and enlisted men in its service, and included a great number of civilian employees.

Despite a rough start at the beginning of the Civil War, the amount of munitions that arsenals produced increased dramatically, and the quality of the articles that they made

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<sup>1</sup>Francis Trevelyan Miller, ed. *The Photographic History of the Civil War: Forts and Artillery*, (New York: Castle Books), 126.

<sup>2</sup>*Ibid.*, 124.

<sup>3</sup>*Ibid.*, 134.

<sup>4</sup>*Ibid.*, 142-144.

was highly praised. The quality of ordnance surpassed anything that had been used up to that point by the armies of the world.<sup>5</sup> By the end of the Civil War, the ordnance department began the task of repairing, cleaning, storing, and preserving all of the materiel that it had accumulated during the Civil War.<sup>6</sup>

*Fort Union Arsenal.* Fort Union Arsenal did not start out as a separate military installation in a physical sense. Instead, it was incorporated into the physical plant of Fort Union for its first years. In an administrative sense, however, the ordnance depot (arsenal) was a separate military facility in that its chief reported directly to the chief of ordnance in Washington, D.C. In March, 1851, the army had made an application to Congress for an appropriation to build an arsenal in New Mexico. The chief ordnance officer for the Department of New Mexico, the man assigned the task of erecting an arsenal in New Mexico was William Rawle Shoemaker.

Shoemaker was born on October 11, 1809 in Philadelphia, Pennsylvania. He was the civilian military storekeeper at the U.S. Arsenal at Fort Armstrong (Rock Island), Illinois from 1836 until 1841. He received a civil appointment to the U.S. Army on August 3, 1841, and he transferred to St. Louis Arsenal. There, he was in charge of casting the shells and manufacturing ammunition for use in the Mexican War. In the spring of 1848, he transferred to Leavenworth, Kansas. Slightly more than a year later, he joined the expedition of Lt. Col. John Monroe to Santa Fe. He, his wife, and seven children arrived in Santa Fe on September 15, 1849.

By the time that Shoemaker arrived in New Mexico, he had thirteen years of military experience under his belt, and he was just shy of forty years of age. His position as military storekeeper for the Department of New Mexico was one of considerable responsibility that entailed among other tasks choosing the site for the new arsenal in New Mexico. Although the ordnance department in Washington had considered locating an arsenal in Santa Fe, Shoemaker recommended against that for several reasons. First, he noted that the land in the vicinity was extremely barren and that the small Santa Fe River could barely supply the water the town needed. Also, he noted that "Santa Fe is probably the worst place on the continent to keep enlisted men in, temptation of every kind is so great, and access to vice so easy that anything like good discipline or order in a detachment stationed here is out of the question. Besides the great insecurity, and the prejudices common to citizens against soldiers in their midst has to be encountered and not without its effect as we have frequent evidence." Instead of Santa Fe, Shoemaker recommended that the arsenal be constructed in Albuquerque or somewhere

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<sup>5</sup>*Ibid.*, 144-146.

<sup>6</sup>*Ibid.*, 146-154.

else along the Rio Grand del Norte.<sup>7</sup> His concerns about Santa Fe were identical to those that Sumner expressed before he moved the troops to Fort Union.



Figure 10. William Rawle Shoemaker in 1859. Shoemaker was appointed Ordnance Storekeeper, Ordnance Department on August 3, 1841, and then appointed Captain and Ordnance Storekeeper, July 28, 1866. He proudly ran the arsenal at Fort Union from its inception in 1851 until his retirement in 1882.

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<sup>7</sup>NARG 156, Entry 21, 1851, S 140, Ordnance Department, Letters Received, W.R. Shoemaker to Capt. William Maynadier, Ordnance Department, Washington, March 31, 1851.

Although Shoemaker believed that the ordnance depot should not be constructed in Santa Fe, he was livid when he received orders to move to the proposed Fort Union. He argued that the location, about "one hundred miles northeast of this on the extreme frontier and about six miles from the nearest house," was contrary to his recommendation. Because of the strategic advantages it would offer, he still believed that the "*proper*" (his emphasis) location for an arsenal was somewhere along the Rio Grande del Norte near the geographical center of the territory. He was also furious that the only protection that Colonel Sumner could offer for the ordnance stores were tents until structures could be built or rental storage space could be arranged in Las Vegas.<sup>8</sup>

Shoemaker refused to divide his valuable stores, and proposed two courses of action to his superiors in Washington. First, he said that he would proceed without orders to Las Vegas to see Colonel Sumner and to make arrangements to store his ordnance goods in Las Vegas for the winter. He believed that there was no way that the army, specifically his detachment, could build storehouses for his ordnance stores in time for winter. Second, he did not want to have to depend on the vagaries of the quartermaster department or Colonel Sumner in accommodating his stores. Shoemaker cited experience with the quartermaster department while he was stationed at Fort Leavenworth, Kansas. He stated that it would be impossible for him to get along under the quartermaster department. He stated that he would "endeavor to keep my Depot as separate & distinct from the other departments as possible."<sup>9</sup> He succeeded in this last item throughout his entire career.

*Construction Begins.* Apparently Shoemaker gained the attention of his superiors in Washington. Although he did not get all of his requests accommodated, Colonel Sumner did facilitate matters in getting Shoemaker and his precious stores into quarters and storehouses that autumn. Shoemaker reported that because the move out of Santa Fe was so fast, half of his stores were temporarily in Santa Fe while the other half were "in tents

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<sup>8</sup>NARG 156, Entry 21, 1851, S 252, W.R. Shoemaker to General George Talcott, Ordnance Department, Washington, D.C., 1851.

<sup>9</sup>*Ibid.* Attached to that July 30, 1851 letter from Shoemaker to General Talcott is a letter dated July 31, 1851 from H.L. Kendrick to "Dear Captain"—probably Shoemaker. The letter refers to the Mora as: an extreme point of the Territory. The propriety of removing Hd.Qtrs & the depots to such a point is caustically enough criticized by citizens & officers; they *may* remain there just so long as Col Sumner is in command—but not one hour after he is relieved. It is very clear that the Moro [sic] is no place for a permanent *Ord Depot*. It is too far from the ancient military & political centre—the geographical, commercial, agricultural, social centre of the territory for any purpose save that of a small post. I understand that Col. Sumner is a Samson in his way. —If so, he is a Samson with his eyes [illeg] out . . . he is only making sport for the bystanders, useless expense to the Treasury. It is said that the removal to the Moro [sic] has been decided upon in Washington—it so it is also understood that it has been brot about by undue & malign influences.



on the Prairie." He assigned his own small detachment to building quarters and storehouses, and Sumner also assigned him a small detail from the troops of the line.<sup>10</sup>

By November, 1851, Shoemaker and his crew were still constructing quarters and storehouses. He explained that the buildings they constructed were of "rough unhewn logs, and barely sufficient in extent to afford shelter for the detachment & small amount of stores brought here from Santa Fe for this winter. They will be partially completed and occupied within ten or twelve days, whence all will be secure for the winter." He explained that buildings were very temporary ones, and that most of the ordnance stores remained in Santa Fe because there was no transportation out to Fort Union. Shoemaker could not help but put in another jibe at the location of Fort Union. He commented that leaving most of his stores in Santa Fe was a fortunate circumstance, since "as every days expression goes to show the many disadvantages and objections to this place as a permanent location for an ordnance depot. Its remoteness from the centre of the Territory, added to its want of common natural advantages seems to indicate the absolute necessity of its abandonment as an Ordnance Post so soon as there is an appropriation to build an Arsenal for New Mexico which must ultimately be done on the Rio Grande del Norte."<sup>11</sup>

Apparently the alliance formed between Shoemaker and Sumner continued. A subsequent letter to the ordnance office in Washington stated that Sumner was about to abandon Fort Union as department headquarters, and that when he did Shoemaker anticipated that he would receive the order to go along with Sumner to that more central position. Shoemaker's attitude toward Sumner also had changed. He wrote that Sumner's "views are most intelligent and sensible."<sup>12</sup> This was a dramatic change from his earlier opinion of Sumner.

Shoemaker, however, did not get the chance to move out with Sumner to a more suitable location as he had planned. Instead, he and his stores stayed at Fort Union. Up until the time that Colonel Sumner moved out of Fort Union to headquarters, the quartermaster department, under orders from Colonel Sumner, had supplied all of the building materials and the transport of those materials to the building site. When Sumner left, he informed Shoemaker that all future construction would be at the expense of the ordnance department.

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<sup>10</sup>NARG 156, Entry 21, 1851, S 280, Shoemaker to General George Talcott, Ordnance Department, Washington, August 31, 1851.

<sup>11</sup>*Ibid.*, 1851 S 327, Shoemaker to Colonel H.K. Craig, Ordnance Department, Washington, D.C., November 3, 1851.

<sup>12</sup>*Ibid.*, 1851 S 33, W.R. Shoemaker to Colonel H.K. Craig, Ordnance Department, Washington, December 29, 1851.

Shoemaker reported this objectively to his superiors in Washington, and the tone of the letter showed that he bore no animosity toward Colonel Sumner. Before the Colonel left, Shoemaker procured a team of six mules to use for hauling building materials. He noted that "timber & lumber for building have to be hauled a considerable distance, the latter from near Las Vegas." He also wrote that he would have sufficient shelter built for his stores by late spring, 1852, but that the buildings were temporary and should only be expected to last a year or two. He stated that he only built the buildings there because that was the planned site for the fort; he still believed that the location was not built for convenience or safety from fire. Also, he noted again that every day he lived in New Mexico pointed out to him that the best building material for the climate, especially for his ordnance, was fireproof adobe.<sup>13</sup>

In June, 1852, Shoemaker wrote to Colonel Craig at the Ordnance Department in Washington asking for lightning rods (stems and conductors).<sup>14</sup> Shoemaker wrote that he also wanted Craig to send additional rods because he planned to add more buildings, including a magazine. He intended to complete all of the storehouses before starting on the magazine. He also requested a bell "to call the men in the morning & to sound the work hours &c.—I must respectfully request that one similar to that at St. Louis Arsenal may be sent out at the same time with the lightning rods."<sup>15</sup>

Six months later, Shoemaker came closer to having his magazine constructed. He wrote to Colonel Craig in Washington requesting that hired labor construct a portion of the magazine and enclosing wall (the back yard of HS-133) he planned. Shoemaker wrote: "The making and laying up of the adobes cannot be done well by our force which will have as much as it can possibly do on the other work during the next season." In the same letter, he enclosed his estimate for ordnance and ordnance stores for 1853. In addition to requesting rifles, rifle powder, cartridges, he also requested fastenings and hinges "suitable for a magazine with *two* doors and *two* windows . . . as the Magazine will be located at a distance from the other buildings, very secure fastenings will be required."<sup>16</sup>

In 1853, Shoemaker had started construction on a gun shed. He wrote in his report to the ordnance department in Washington that the building was "like all the rest of our

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<sup>13</sup>*Ibid.*, 1852 S 94, M.S.K. Shoemaker, Fort Union to Colonel H.K. Craig, Ordnance Department, Washington, February 23, 1852.

<sup>14</sup>The Army *Ordnance Manual* required lightning rods on magazines.

<sup>15</sup>NARG 156, Entry 21, 1852, S 215, M.S.K. Shoemaker, Fort Union Ordnance Depot to Colonel H.K. Craig, June 15, 1852.

<sup>16</sup>*Ibid.*, 1853, S 41, M.S.K. Shoemaker, Fort Union to Col H.K. Craig, Ordnance Department, Washington.

building here, constructed in a very cheap manner, the chief expense being in the labor and of the detachment and Team."<sup>17</sup>

By 1855, Shoemaker complained to his superiors in Washington again that his buildings were collapsing. They had been constructed with such rapidity to get the stores out of tents in the fall of 1851. He was concerned that the ordnance department understand that so much of his monthly reports showed building repairs, and he doubted that any other ordnance depot that the government had was constructed of unpeeled logs and earthen roofs. He recommended to his superiors in Washington that permanent buildings would be needed at Fort Union as soon as possible; he also volunteered to make "some suggestions in regard to mater. &c. that will have to be procured in St. Louis or perhaps further east." He added in a post script to that letter the following: "I have made a cross examination of the logs, foundations &c of these houses. They are really so decayed that I cannot urge too strongly some immediate action to secure new buildings for the stores . . . and I am not certain but that a site within a very short distance of our present location would answer every purpose for the Depot for New Mexico. Certain it is that we have since we built these, supplied every demand without inconvenience or trouble to any one. And for all kinds of material for building & fuel &c. for the future this neighborhood has more advantages than any other situation in New Mexico."<sup>18</sup>

In the autumn of 1855, Shoemaker reported that in anticipation of receiving a large account of "horse equipments" that he was in the process of turning his mess room and barracks into store rooms, and he was going to build new structures to take their place. He hoped to accomplish it expeditiously.<sup>19</sup>

One year later, Shoemaker wrote to the ordnance department in Washington in September, 1856, asking the chief of ordnance to give orders for selection of a site of a permanent arsenal and to ask for appropriations for new construction as soon as possible. He stated that the dilapidated state of the present buildings the arsenal occupied left his people and his stores at the mercy of the elements. He wrote: "The entire

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<sup>17</sup>*Ibid.*, 1853, S 292, Shoemaker to Colonel Craig, Ordnance Department, Washington, September 2, 1853.

<sup>18</sup>*Ibid.*, 1855, S 106, Shoemaker to Colonel Craig, Ordnance Department, Washington, March 1, 1855. Note that Shoemaker mentions the advantages of the neighborhood of Fort Union. This was contrary to his statements a few years earlier where he stressed that the only "*proper*" [his word and emphasis] location for an arsenal was a site along the Rio Grande del Norte.

<sup>19</sup>*Ibid.*, 1855, S 351, Shoemaker to Colonel Craig, Ordnance Department, Washington, September 1, 1855.



foundation of some of our large storehouses is decayed & given way so that the buildings are supported by props."<sup>20</sup>

Shoemaker's requests for new construction were not approved, because two months later he was writing to Washington with one of his repeated requests for a saw mill. He justified it by saying that he could not preserve the extant structures or build a shell over the other property under his charge without one. For some reason he did not discuss in the letter, timber was unavailable from the quartermaster department under any circumstances and there were no mills in New Mexico that would guarantee providing lumber. At the time that he wrote, his troops had to trek 70 miles to get one load of lumber.<sup>21</sup>

Nor was his request for a sawmill approved yet. In October, 1857, Shoemaker wrote to his superiors in Washington that he had been acquiring a great deal of lumber on his vouchers. He wrote that the lumber was used for roofing storehouses, quarters, shed, and stables, flooring store rooms and quarters, and making packing crates for shipping old arms to St. Louis.<sup>22</sup>

Apparently his superiors were finally able to answer his repeated requests for a sawmill, because he had one in his possession by May, 1858.<sup>23</sup> Because he was anticipating a possible relocation for his arsenal, he had not set up his new sawmill by that time. He did not want to expose it to the elements or to the wear and tear of setting up and taking down if a move was imminent. He also requested authorization to buy four mules to work in his sawmill operation. He anticipated a much larger need for lumber than his earlier estimates because he wanted to put weatherboards on his existing log buildings to make the quarters and storehouses more weathertight. During the spring of 1858, Shoemaker reported that he was in the process of constructing "two rooms exactly such as are now occupied by our own men" to house a married mechanic and his family. He stressed that it was necessary to do that in order to keep his hired mechanics. He had his own detachment construct the "two rooms."<sup>24</sup>

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<sup>20</sup>*Ibid.*, 1856, S 303, Shoemaker to Colonel Craig, ordnance Department, Washington, September 1, 1856.

<sup>21</sup>*Ibid.*, 1857, S 4, Shoemaker to Colonel Craig, ordnance Department, Washington, December 3, 1856.

<sup>22</sup>*Ibid.*, 1857, S 355, Shoemaker to Colonel H.K. Craig, Ordnance Department, Washington, October 21, 1857.

<sup>23</sup>Note that this sawmill was separate from the sawmill that the remainder of Fort Union possessed.

<sup>24</sup>NARG 156, Entry 21, 1858, S 198, Shoemaker to Colonel H.K. Craig, Ordnance Department, Washington, May 1, 1858. The letter does not say whether the "two rooms" were one log structure or two log structures; the letter refers to log houses in a general manner.



In January, 1859, the word was out among the troops that the new Fort Union would be constructed about a half mile away from the first site. Upon receipt of this information, Shoemaker wrote to the Ordnance Department in Washington for a few reasons. First, he wanted his superiors to understand that since his ordnance depot had been located there in 1851, the quartermaster's department from the fort supplied his depot with water. He and the fort commander had made a special arrangement for the water. Shoemaker argued that his depot needed new "houses" [storehouses] more than the other detachments stationed at Fort Union because of the kind of stores that he had to preserve. He concluded that he would "encounter the expense & inconvenience of hauling water about 3/4 of a mile. & I do not feel safe, without a magazine & some new houses.—"<sup>25</sup> He also asked if the Ordnance Department in Washington was planning to spend its appropriation for an arsenal in New Mexico that year; Shoemaker offered his service to any officer sent out to New Mexico to accomplish that. He believed that he could still run his depot operation and help out with the new arsenal, and get the arsenal site chosen and construction underway within a few months.<sup>26</sup>

By May, 1859, he had enough adobes to construct a magazine.<sup>27</sup> By the end of August of that year, Shoemaker had completed construction on his new storehouse and wrote to his superiors that the depot stores were in a better state of preservation than they ever had been. Shoemaker felt so good about it, in fact, that he took a trip back to Washington and points east.<sup>28</sup> Although the specific reason for Shoemaker's trip back east did not appear in the correspondence, at least one of the reasons was that he wanted to meet with Colonel Craig and work out as many agreements as possible on the new construction that Shoemaker was going to be undertaking at Fort Union.<sup>29</sup>

Shoemaker was constantly on the lookout for ways to improve the structures he had, and for ways to improve construction on the buildings he was planning to build. He sought to add to his depot a "man that understands making & burning brick." Shoemaker hoped to construct a number of his new buildings out of brick.<sup>30</sup> Apparently the approval for the construction of a new arsenal in New Mexico had been approved by that time, because Shoemaker referred to his new construction as that for the arsenal. He wanted

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<sup>25</sup>NARG 156, Entry 21, 1859, S 94, Shoemaker to Colonel Craig, Ordnance Department, Washington, January 24, 1859.

<sup>26</sup>*Ibid.*

<sup>27</sup>*Ibid.*, 1859, S 242, Shoemaker to Col. Craig, Ordnance Department, Washington, May 13, 1859.

<sup>28</sup>*Ibid.*, 1859, S 397, Shoemaker to Colonel Craig, August 15, 1859.

<sup>29</sup>*Ibid.*, 1860, S 13, Shoemaker to Colonel Craig, January 7, 1860.

<sup>30</sup>*Ibid.*, 1860, S 84, Shoemaker to Colonel Craig, Ordnance Department, Washington, February 21, 1860.

to hire a carpenter and a brickmaker, but stated that he would not expend any work or money on the site for the new arsenal until the title to the property was settled.<sup>31</sup>

Shoemaker had been gone from Fort Union and his depot for about eight months when he returned after a trip of 28 days across the plains. While in St. Louis on his way home from Pennsylvania and Washington, he made certain that a shipment of stores that he ordered were loaded and headed west. Also, he hired some master workmen and two laborers for his detachment. While Shoemaker was away, however, a power play had occurred that temporarily altered the chain of command for the ordnance depot. Problems had arisen in 1859 when a new commander, in Shoemaker's view, was having trouble understanding that the ordnance depot did not fall under his command and was not there to fulfill his needs exclusively.<sup>32</sup> The problems continued during Shoemaker's absence.

Upon returning in the spring of 1860, Shoemaker was under orders stating that he was directed to remain in command of the ordnance depot at Fort Union until relieved by orders from headquarters, the Department of New Mexico, or from the secretary of war. He complained to the ordnance department that the commander at Fort Union believed that he was in charge of all of the ordnance for the territory; in addition, plans for the new arsenal—contrary to ones he had worked out with the ordnance department in Washington—were proceeding without his recommendations.<sup>33</sup> In his absence, the department was in the process of acquiring land for an arsenal on the Rio Mora. Shoemaker was reinstated to his position of Military Storekeeper in charge of the ordnance depot on June 16, 1860.<sup>34</sup> The fort commander's plans were halted.

*Delays in the New Arsenal.* On June 22, 1860 the supplies that Shoemaker had loaded in St. Louis arrived, and he was busy making preliminary arrangements for constructing new buildings at Fort Union.<sup>35</sup> About one month later, Shoemaker was requesting that someone from the ordnance department who possessed full powers in such matters come out and do the final choice on the site for the new arsenal.<sup>36</sup> Also, Shoemaker did have plans drawn up for the new arsenal buildings, but he kept no copies of them and ordered

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<sup>31</sup>*Ibid.*, 1860, S 118, Shoemaker to Colonel Craig, March 29, 1860.

<sup>32</sup>*Ibid.*, 1859, S 79, Shoemaker to Colonel Craig, January 15, 1859. This may have been the department commander in Santa Fe.

<sup>33</sup>*Ibid.*, 1860, S 292, Shoemaker to Colonel Craig, Jun 12, 1860.

<sup>34</sup>Arrott, Reel 2, File 1, 1860, D.H. Maury, Assistant Adjutant General, Department of New Mexico, to Captain R.A. Wainwright, Chief Ordnance Officer, Department of New Mexico, June 16, 1860.

<sup>35</sup>NARG 156, Entry 21, 1860, s 294, M.S.K. Shoemaker to Colonel Craig, June 22, 1860.

<sup>36</sup>*Ibid.*, 1860, S 339, Shoemaker to Colonel Craig, July 23, 1860.

additional ones from the ordnance department in Washington.<sup>37</sup> His carpenter needed them to begin fabricating doors and windows.

The choice of site apparently remained up in the air for some time. At the end of August, 1860, Colonel Craig at the Ordnance Department in Washington wrote to Shoemaker and told him to not procure any building materials for construction.<sup>38</sup> Despite that order, Shoemaker busied himself by continuing with preparations for construction. He had his detachment fabricate 12,000 bricks as an "experiment." He noted in his correspondence that the use of larger kilns would substantially reduce the cost.<sup>39</sup> Shoemaker's next letter to Colonel Craig again mentioned the success of the brick-making operation, but he noted that he and his crew had kept at the 12,000 brick limit—it was the smallest kiln that could be burned. Shoemaker also mentioned that the laborer working with the bricks was busy repairing chimneys and ovens with the brick in the old depot. The laborer also burned lime for his operation. Shoemaker summarized to his boss: "At any rate, your instructions and wishes in regard to the most rigid economy in expenditures under my control will be strictly observed."<sup>40</sup>

By the fall of 1860, the ordnance depot still occupied the old buildings of the first fort. A great deal of Shoemaker's appropriation went to the employment of workers in the building trades. Although he laid off the civilian bricklayer and builder, he retained a plasterer and "mud worker engaged on the old houses." He planned on keeping them only through October. Also, he kept his framing carpenter employed, working on window frames and the like, so that he would have a stockpile ready to use in construction when the site for the new arsenal was determined. He acknowledged the necessity of building a mule stable. Also, he noted that the incessant repairs of the old buildings of the first fort was "unavoidable, and the latter work will continue to be a large item in our monthly reports, so long as we are compelled to occupy these old and decayed huts."<sup>41</sup>

By December of 1860, Shoemaker's new arsenal construction was still not underway. The secretary of war had not decided on a site for the arsenal, so Shoemaker remained very concerned that he would have to spend additional funds on the deteriorated buildings of his original ordnance depot group. He noted that, with the exception of one storehouse and magazine built of adobe in 1859, all of his buildings were threatening

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<sup>37</sup>*Ibid.*, 1860, S 370, Shoemaker to Colonel Craig, July 28, 1860.

<sup>38</sup>Fort Union Fact File, Arsenal, letter dated August 31, 1860.

<sup>39</sup>NARG 156, Entry 21, 1860, S 393, Shoemaker to Colonel Craig, September 1, 1860.

<sup>40</sup>*Ibid.*, 1860, S 425, Shoemaker to Colonel Craig, September 25, 1860.

<sup>41</sup>*Ibid.*, 1860, S 428, M.S.K. Shoemaker to Colonel Craig, October 1, 1860.



human safety, and they chanced exposing his ordnance stores to ruin. The buildings were in danger of falling down or being blown down by storms.<sup>42</sup>

Following the outbreak of civil war, Shoemaker reported a shortage of ammunition. The shortage was so bad that one company commander had to issue orders to not fire even one cartridge unless in battle.<sup>43</sup> Shoemaker still anticipated construction of his new arsenal despite the war. In his annual estimate of stores, he submitted a request for some of the usual items needed in an arsenal: 400 yards of cotton cloth, 400 yards of flannel, iron spikes, 100 large padlocks, 100 feet of hickory, 100 feet of oak, brushes, and mule shoes. He also requested 1,000 8x10 sheets of window glass. Construction remained on his brain, and he had been gearing up for his new arsenal for years.<sup>44</sup> He was not about to quit despite the war.

*A Temporary Move.* In June, 1862, when most of the troops at Fort Union occupied the second fort (star fort), Shoemaker's old friend General Canby transferred the "old Hospital building" (probably HS 140, possibly HS 126) at Fort Union to the ordnance department on a temporary basis. The building was to be used for storage of ordnance stores.<sup>45</sup>

Undoubtedly due to changes that occurred during 1862 and 1863, little correspondence appeared in the files concerning the ordnance depot during those years. Like all of the operations of Fort Union and its depots, it, too, was temporarily moved over to the earthworks. By 1864, however, Shoemaker was back at his buildings around the first fort and writing his superiors in Washington requesting that Fort Union Depot's name be formally changed to Union Arsenal to prevent confusion with the quartermaster and commissary depots located a mile and a quarter away from his ordnance depot.<sup>46</sup>

*Shoemaker and Construction.* M.S.K Shoemaker was an efficient bureaucrat who took great care in watching over his stores and in expediting working procedures of the army. In 1864, he wrote to department headquarters in Santa Fe and recommended that the post commander direct his troops to requisition six months supply of stores to be drawn at one time because the paperwork for the small requisitions had to be sent first to department

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<sup>42</sup>*Ibid.*, 1861, S 55, Shoemaker to Colonel Craig, December 24, 1860.

<sup>43</sup>*Ibid.*, 1862, S 26, M.S.K. Shoemaker to General Ripley, December 16, 1861.

<sup>44</sup>NARG 156, Entry 21, 1862, S 115, Annual Estimate of stores, submitted to Ordnance Department, Washington, December 30, 1861.

<sup>45</sup>Arrott, Reel 2, File 4, 1862, citing NARG 98, District of New Mexico orders, v. 40, 121, Special Orders 103, June 15, 1862.

<sup>46</sup>NARG 156, Entry 21, 1864, F, 436, Shoemaker to General George Ramsay, Chief of Ordnance, Washington, September 10, 1864.



command in Santa Fe and then to Washington for approval.<sup>47</sup> This was typical of his way of running operations.

He remained sensible about construction of the new arsenal. In his annual estimate for 1865, he only included enough building materials to repair his old storehouses and quarters from the first fort construction. Although he did plan on building a simple adobe storehouse in the spring of 1865 on the site of his present arsenal, he intended to wait to construct new good buildings for his arsenal when he could use the appropriation for it. The price of materials and labor had skyrocketed during the war, so Shoemaker did not feel that the work that needed to be done justified the expenditures. Also, he was concerned about the pulse of the territory. He wrote: ". . . if this neighborhood should be again invaded as it was by the Rebels in 1862, when we had to remove all the Ordnance to the Field Works, the Arsenal buildings however odd they might be, would be subject to abandonment & destruction." He intended to keep the extant buildings as serviceable as possible with as little cash outlay for their repair as possible to "protect the stores until after the country becomes settled and new buildings can be erected at a reasonable cost."<sup>48</sup>

On June 8, 1865, Shoemaker wrote to department headquarters in Santa Fe and requested that the adjutant general issue an order to have all ordnance and ordnance stores "not absolutely necessary for the use of the troops and posts in this military department sent in to this arsenal with proper invoices with as little delay as practicable."<sup>49</sup> Shoemaker based his request on General Orders 77, which called for reducing expenses and which his superior, the chief of ordnance in Washington, had brought to his attention. This must have caused some consternation, because other power plays ensued.

Carleton had requested that Shoemaker return to him all monies, expenditures, contracts and the like for Union Arsenal. In June of 1866, the chief of ordnance in Washington wrote to Carleton and enclosed a letter signed by General Grant reminding Carleton that

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<sup>47</sup>NARG 393, Records of the U.S.A. Continental Command 1821-1920, Fort Union, New Mexico, Unregistered Letters Received, June 1862- December 1865, Box 5, MSK Shoemaker to Assistant Adjutant General Captain Cutter, Headquarters, August 19, 1864.

<sup>48</sup>NARG 156, Entry 21, 1865, Box C-F, 6, M.S.K. Shoemaker, Union Arsenal, to General Dyer, Ordnance Department, Washington, December 5, 1864.

<sup>49</sup>NARG 393, Records of U.S.A. Continental Command 1821-1920, Fort Union, New Mexico, Unregistered Letters Received, June 1862-December 1865, M.S.K. Shoemaker to Captain Ben Cutler, June 8th, 1865.

"Disbursement of Ord. appropriats. are under exclusive control of the Chief of Ordnance, and no Dept.- or Dist. Commander should interfere with the same."<sup>50</sup>

By early 1866, Shoemaker was well into the study of appropriate building technology for the Fort Union vicinity. He wrote:

In reply to your inquiry as to whether the purpose of covering of earth on the upper floors of the buildings is necessary and why, I will state that, owing to the dryness of this climate, where no rain or snow falls for four or five months at a time, the roofs become so dry & shrink so much that the first rains, which fall very heavily about midsummer, are certain to run through. To a greater or lesser extent, the leakage is thus absorbed by the dry earth before it reaches the upper floor. This earth overhead also preserves the temperature of the rooms, and when the building is well constructed, it renders it almost fireproof. The roof and entire superstructures might burn off without a spark of fire getting below the upper floor, which itself is a second roof. Tin roofing *may* obviate the necessity of the earthen covering, but I see that it is the practice in the QM General Department at Fort Union Depot when they are building extensively to put heavy layers of concrete under their tin roofs.<sup>51</sup> it is no better & costs ten times as much as earth. If it is determined to cover the magazines with Tin and I do not advocate it, it will be necessary to send mechanics here that understand the business of putting it on. This will augment the expense of the buildings, and my experience here leads me to the conclusion that it is unnecessary.<sup>52</sup>

*Ordnance Reservation.* Although Shoemaker had been referring to his arsenal as an arsenal, the land was not officially assigned for it until 1866. General Orders No. 28 stated that "a portion of the Military Reservation at Fort Union, New Mexico to the extent of one mile in length and a half a mile in breadth is hereby set apart as a site for the Arsenal at that Fort. This portion of the public land is appropriated as an ordnance Reservation and will be laid off so as to include the site of the old Fort in mid center."<sup>53</sup>

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<sup>50</sup>NARG 393, Records of the U.S. Army Continental Commands 1821-1920, Fort Union, New Mexico, Box 24, Quartermaster Miscellaneous Records 1861-1880, Arsenal Miscellaneous Records 1856-1866, General A.B. Dyer, Chief of Ordnance transmitting Order of General Grant relative to the duties of M.S.K. Wm. R. Shoemaker at Union Arsenal, N.M..

<sup>51</sup>Note that the original document really does say "concrete."

<sup>52</sup>NARG 156, Entry 21, 1866, M.S.K. Shoemaker to General Dyer, February 26, 1866.

<sup>53</sup>Arrott, Reel 3, File 1, 1866 citing General Orders Number 28, May 8, 1866, Washington, D.C.

The assignment of land for a separate ordnance depot angered the head of the quartermaster depot at Fort Union. In a letter to the quartermaster general in Washington, Fort Union's quartermaster criticized the fact that the ordnance reservation included the cemetery. Also, he expressed his concern that the new reservation could include some of the most important springs of water in the vicinity depending on who made the survey. He concluded in his remarks that all of the depot officers had shared equal rights and privileges up until that time, and that if any depot deserved a separate reservation, it was the quartermaster depot because of the large number of stock it had that were dependent on the reservation for grazing.<sup>54</sup>

Shoemaker permitted a small sutler's store to be established within the limits of his post. He justified its establishment saying that it was for the good of the service and that the other sutler's store was a mile away.<sup>55</sup> He also assured his superiors in Washington that he had nothing to do with the business of its operation.<sup>56</sup>

*New Arsenal Construction.* The formal assignment of land for the ordnance reservation allowed Shoemaker to pursue construction of his depot. In October, 1866, his detachment had completed the construction of two magazines for fixed ammunition (HS-109, HS-110). Also, his men had nearly completed the large storehouse (HS-103). The enclosing wall around the magazine compound was under construction, and only several hundred feet of it remained to be completed. Shoemaker explained that they had lost some adobes to rain, and then the weather became too cold to make them.<sup>57</sup>

The onset of winter did not slow down Shoemaker's pace. By January he had employed a local mason. Shoemaker hired him to construct cisterns (any or all of HS-117, HS-121-123). The workman had done some of the finest work of that type that he had seen in New Mexico. Although he was still waiting for approval to construct the cisterns, Shoemaker asked the chief of ordnance to arrange for six barrels of hydraulic cement to be shipped from Fort Leavenworth to Fort Union by the first wagon train. He believed that was enough cement for the cisterns he proposed to make: two cylinders 12 feet in diameter and 18 feet deep. He proposed constructing the ducts from the building to the cisterns of stone lined with cement. He intended to have the water pass through a charcoal filter. By using this method of construction, he would not need cast iron pipes.

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<sup>54</sup>NARG 92, Entry 225, Box 1167, Bvt. [illegible, but possibly McFerran], Chief Quartermaster, Fort Union to Bvt. Major General M.C. Meigs, Quartermaster General, Washington, July 2, 1866.

<sup>55</sup>NARG 156, Entry 21, 1866, F 224, Shoemaker to General Dyer, July 23, 1866.

<sup>56</sup>*Ibid.*, 1866, F 284, Shoemaker to General Dyer, October 16, 1866. One of Shoemaker's sons was the sutler until ordered to shut down operations.

<sup>57</sup>*Ibid.*, 1866, F 307, Shoemaker to General A.B. Dyer, November 14, 1866.



He estimated that the cisterns would each hold 15,000 gallons of water and would cost \$500 each to construct.<sup>58</sup>

In May, 1867, Shoemaker was recommended to be appointed Colonel by brevet because of his loyalty to the Union during the Civil War. The justification for his brevetting included a description of his accomplishments at the arsenal. The statement said that Shoemaker started with a small group of deteriorated log houses and, through economical expenditure, he constructed warehouses sufficient for all of the arms and ammunition under his care. Shoemaker carefully oversaw the construction of the adobe buildings, and Colonel A.J. Alexander, author of the recommendation, wrote that the adobe buildings were the best constructed that he had ever seen and that they were built at two-thirds the cost of the ones that the quartermaster depot constructed. Alexander went on to say that "The interior of the warehouses are models of neatness, the ventilation is perfect and the security against fire as great as can be effected with the materials."<sup>59</sup> Although the brevetting did not come through, Shoemaker did increase his power when he was appointed chief ordnance officer of the District of New Mexico on September 1, 1867.<sup>60</sup>

Even as late as 1868, Shoemaker was still using the old buildings of the first fort. Rather than using his appropriated funds for completing the adobe walls that enclosed the compound, he wanted to build the arsenal barracks. He wanted his men to be more comfortable than they were in the old huts. When sending in his letter requesting permission to build the barracks, he noted that the plans for the barracks were authorized by the War Department in 1860, and that the plans for them were in the Ordnance Office in Washington.<sup>61</sup>

Apparently the barracks (HS-113) were constructed, for in future letters to the ordnance department in Washington, Shoemaker requested \$10,000 for construction. He planned to use the money to complete the adobe walls around the complex and to build simple

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<sup>58</sup>*Ibid.*, 1867, F 35, Shoemaker, Union Arsenal to General A.B. Dyer, Chief of Ordnance, Washington, January 19, 1867.

<sup>59</sup>Fort Union Fact File, Arsenal, citing NARG 94, 3775 ACP, W.R. Shoemaker, Appointment Commission Branch Document File. The letter describes Shoemaker's loyalty as follows: "In 1861 when Colonel Loring was using every means to turn over New Mexico to the Rebels he was assisted by almost every soldier in the Territory - by the Southern men openly, and by the Northern men by their silence and inaction. At this serious conjuncture Captain Shoemaker stood forward and denounced Loring and his coadjutors as traitors and told them he would never surrender his arsenal, that he would defend it to the last extremity and then blow it up. He threw up entrenchments and made every arrangement to defend himself." This is the only reference to separate entrenchments for the ordnance. Colonel Alexander may have been mistaken when Shoemaker explained that he protected them within the fortification.

<sup>60</sup>Arrott, Reel 4, File 5, 1867 citing NARG 98, District of New Mexico orders, v. 38, 397.

<sup>61</sup>NARG 156, Entry 21, 1868, F 34, Capt. Shoemaker to General Dyer, February 17, 1868.



quarters for men with families. He wrote that the commanding officer's quarters were sufficient for the time being, and that his former estimates were too low.<sup>62</sup>

The following month, Shoemaker requested approval on a set of plans for quarters for hired personnel (figure 11). The single set of quarters was to consist of an adobe building with three rooms, each 16x16 feet. Additional aspects of the building included a kitchen to the rear, a porch across the front of the building, and a cellar under one room. In the letter that accompanied the drawings, Shoemaker wrote that his civilian employees lived in the "old log huts that were built in order to shelter the men about fifteen years ago. They stand in the way, and have become almost unlivable, requiring constant repairs." He went on to say that his plan included three sets of quarters, and he intended to complete those and the enclosing wall (HS-100) around the arsenal for \$10,000 during 1869.<sup>63</sup>

In June 1869, Forts Lowell and Sumner, New Mexico, were abandoned and discontinued as military posts. All of the ordnance and ordnance stores from those forts were transferred to Fort Union Arsenal.<sup>64</sup> Apparently Shoemaker's physical plant was able to absorb all of the property transferred to him. The closing of these two forts, however, was indicative of changes occurring throughout the west.

In 1869, Fort Union Arsenal underwent an inspection for the office of the Inspector General. The inspection described the arsenal as follows:

Buildings: The storehouses and shops are of quality constructed of adobe and shingles of sufficient capacity and convenient in their arrangement. A part of them, including magazine enclosed by an adobe wall.

Quarters: The quarters for the Commanding Officer is an old log building of inferior quality and will soon be required to be replaced by a better building.

Cisterns: Cisterns are being constructed at this Arsenal. Water is supplied by water tanks and hauled from a spring some half mile distant.

Fire Engine: There is an old hand fire engine here which is of little or no account.

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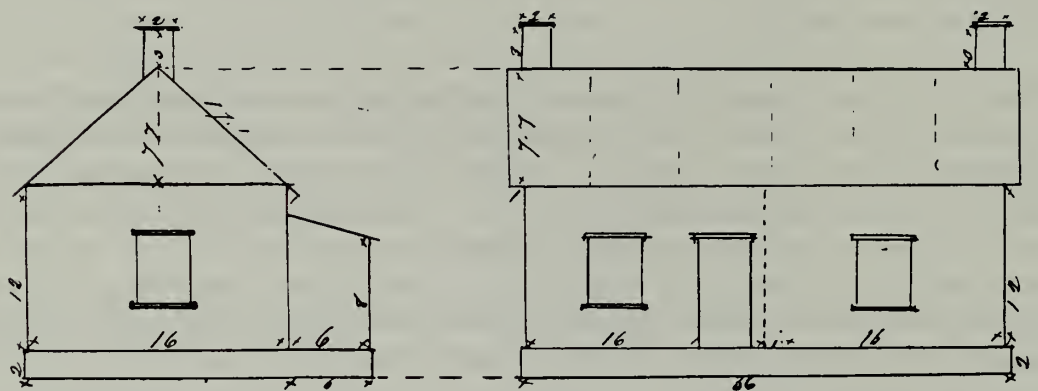
<sup>62</sup>*Ibid.*, 1868, F 219, Captain Shoemaker to General Dyer, October 10, 1868.

<sup>63</sup>NARG 156, Entry 21, 1868, F 229, Shoemaker to General Dyer, Ordnance Department, Washington, November 9, 1868.

<sup>64</sup>Arrott, Reel 4, File 2, 1869, citing NARG 98, District of New Mexico orders, v. 150a, 49, General Orders No. 27, Headquarters, District of New Mexico.

*Plan of a Set of Quarters for Hired employees at  
Union Arsenal, or other man with a family.*

REPRODUCED AT THE NATIONAL ARCHIVES.



*The house to be built of adobes & consisting  
of three rooms of 16x16 feet each. The third one,  
or kitchen, to be in rear of the main building  
a porch to extend the front of the building and  
a cellar under one room.*

*Union Arsenal  
J.M. Nov. 9, 1868.*

*M.R. Shoemaker  
Capt. M. D. C. 9th Regt.  
Geo. —*

Figure 11. In November, 1868, Shoemaker submitted this plan of quarters for a hired employee to the ordnance office in Washington for approval. The caption under the drawing reads: "The house to be built of adobes & consisting of three rooms of 16x16 feet each. The third one, or kitchen, to be in rear of the main building a porch to extend the front of the building and a cellar under one room."

Improvements: The cost of the permanent improvement is estimated at \$30,400.<sup>65</sup>

Shoemaker continued on with his construction. Appropriations sometimes lagged behind necessity, so he was writing to headquarters in Washington fairly frequently asking for approval to start spending his anticipated appropriation for construction—which usually happened around the end of June. The problem with that, he pointed out, was that he needed to have his primary building material—adobes—dried and ready to go before the rains came, usually in the months of June and July.<sup>66</sup> Shoemaker repeated his request in May, 1870, and stated that the adobes were progressing rapidly. He said at that time that he did not want to anticipate or ask for anything irregular, but that if he were allowed to undertake the construction work on the adobe wall at that time he could save the Army money.<sup>67</sup>

He did receive approval to proceed with the work. By June, 1870, the officer's quarters that he had started in April and the adobe wall around the arsenal that was started in June were coming along fast. At that time all of the adobe walls and the roof were finished on the quarters, and half of the foundation was laid for the adobe wall around the arsenal compound.<sup>68</sup>

In September, 1870, a circular was issued that forced Shoemaker to discharge all of his hired force with only a few exceptions. Because of that order, the officers quarters that were under construction at the time were left unfinished despite their advanced state. Also, his ordnance workshops were closed.<sup>69</sup> Shoemaker followed up with a letter to General Alexander B. Dyer stating that in order to construct the new officers quarters at the arsenal, it was necessary for him to take down two of the chimneys and close all of the windows on one side of the old quarters he occupied. Shoemaker again begged to complete his new quarters through the employment of carpenters, a mason, and a painter for three months so that they could finish his quarters. Otherwise, he and his family literally would be out in the cold for the winter.<sup>70</sup>

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<sup>65</sup>Fort Union Article File, Q 10, Arsenal, Assistant Inspector General N.H. Davis to Inspector General Major General R.B. Marcy, Headquarters of the Army, September 10, 1869.

<sup>66</sup>NARG 156, Entry 21, 1870, F 71, Shoemaker to General Dyer, Ordnance, Washington, March 12, 1870.

<sup>67</sup>*Ibid.*, 1870, F 136, Captain Shoemaker to General Dyer, May 9, 1870.

<sup>68</sup>*Ibid.*, 1870, F 194, Report of Principal Operation at Fort Union Arsenal during the Fiscal Year ended June 30, 1870.

<sup>69</sup>*Ibid.*, 1870, F 275, Shoemaker to General Dyer, Washington, September 24, 1870.

<sup>70</sup>*Ibid.*, 1870, F 278, Captain Shoemaker to General Dyer, September 26, 1870.

The following spring (1871), work had not yet been completed on the commanding officers quarters (figure 12, HS-114)), but from the tone of the correspondence, the work was nearly done. In his estimate to complete the arsenal plans, Shoemaker suggested replacing the office building and the adjoining clerk's quarters. Both were constructed partly of adobes and partly of logs. He recommended that both of those buildings be constructed first, followed by the permanent walls and outhouses, and a small cistern connected with the commanding officers quarters.<sup>71</sup>

By June, 1872, the construction was nearing completion for the arsenal. The appropriation for Fort Union Arsenal for fiscal year 1873 (starting July 1) included \$3,500 for "repairing storehouses, magazine, barracks, workshops, office, quarters, enclosing wall, and fences."<sup>72</sup> No monies were included for outright construction.

By 1873, the arsenal was virtually complete. In a report for surgeon general, Captain Shoemaker described his feifdom as follows:

Fort Union Arsenal New Mexico is situated on mile due west of Fort Union on a reservation belonging to the ordnance department, one half mile in extent. The arsenal is enclosed by a wall [HS-100] on four sides of one thousand (1,000) feet each. The buildings consists of one set of officers quarters [HS-114], 54 feet front by 75 feet deep, an office [HS-115] 45 feet front by 18 feet deep, one set of barracks [HS-113], 100 feet front by 26 feet deep, with porches front and rear, one set of clerks quarters [HS-116], one armorer [HS-105] and one smith shop [HS-106], one carpenter [HS-108] and one saddlers shop [HS-107], one main storehouse 216 feet long with basement story [HS-101], three smaller storehouses [HS-102, HS-103, HS-118], two magazines for ammunition [HS-109 and HS-110], one stable for public animals with corral [HS-111], small temporary outbuildings to each set of quarters, barracks, shops and storehouses also enclosures.

There is a fine well conveniently situated to supply the Post with an abundance of pure good water, also two cisterns of eighteen thousand gallons each always full in case of fire, with pumps operated by machinery. The buildings, walls and outworks are of adobe, set on permanent stone foundations. The walls of all are heavy and well constructed.

This arsenal is the Depot for supplying the Territory of New Mexico and parts of Texas, Arizona, Colorado and the Indian Territory adjacent

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<sup>71</sup>*Ibid.*, 1871, [no letter] 1852. Captain Shoemaker to General Dyer, April 8, 1871.

<sup>72</sup>Fort Union Fact File, Arsenal 1873, General Orders No. 52.



thereto. There is a detachment of U.S. Ordnance stationed here, consisting of a commanding officer and 14 men, whose dependence for supplies of Quartermaster Commissary and Medical attendance is on the Depot and Hospital at Fort Union.<sup>73</sup>

Besides overseeing construction of all of the arsenal buildings, Captain Shoemaker took pride in the landscape of his immediate territory. One youthful visitor to the arsenal in 1877 remembered the arsenal as his favorite place. He described the area as having lots of water, fountains with ducks, and flowers.<sup>74</sup> Other documentation included mention of a cut stone sun dial in the "yard" of the arsenal. Shoemaker's men presented him with it. The sundial was removed from the arsenal in 1882.<sup>75</sup>

At about the same time, another observer noticed a few other aspects about Shoemaker the man which she noted in her reminiscences years later. Genevieve LaTourette, daughter of the post chaplain wrote the following:

The Arsenal, which was about a mile from the post, was commanded by Capt. W.R. Shoemaker, who had held that position during 35 or 40 years, and was very highly respected in the surrounding country. That very courtly old gentleman, who evidently did not believe in the progressiveness of that part of the frontier—could not be persuaded to ride on the Santa Fe R.R. when it made its appearance in 1879, and had not been to Las Vegas for many years. He preferred his seclusive life within a certain radius of the arsenal and the garrison, and was constantly in the

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<sup>73</sup>Arrott, Reel 5, File 3, 1873, "Fort Union, New Mexico, Locality and History of Post - 1873 - Records of the War Department, Office of the Adjutant General, medical History of the Post, Volume 52," P. Moffatt, Assistant Surgeon, U.S. Army Post Surgeon. This 1873 description is so consistent with what existed on the Kelp map (post-1882) that it confirms that the alleged "1876 map" cited in Ruwet and so many other sources was done prior to 1876.

<sup>74</sup>Arrott, Reel 10, File Fort Union Information, Letter to Mr. Arrott from C.H. Conrad, Jr., of San Antonio, Texas, December 3, 1950. The letter recalls trips to the arsenal, particularly in 1877.

<sup>75</sup>Fort Union Article File, Correspondence between Mrs. William Weeks, Denver, Colorado and Superintendent, Fort Union National Monument, 1957, *passim*. The sundial was moved to the center of the plaza of the quartermaster department at Fort Union. When the fort was abandoned, the sundial went to the backyard of the ranch house of the Phoenix Ranch, Watrous, New Mexico. As of this writing it sits on the parade ground of the Third Fort.



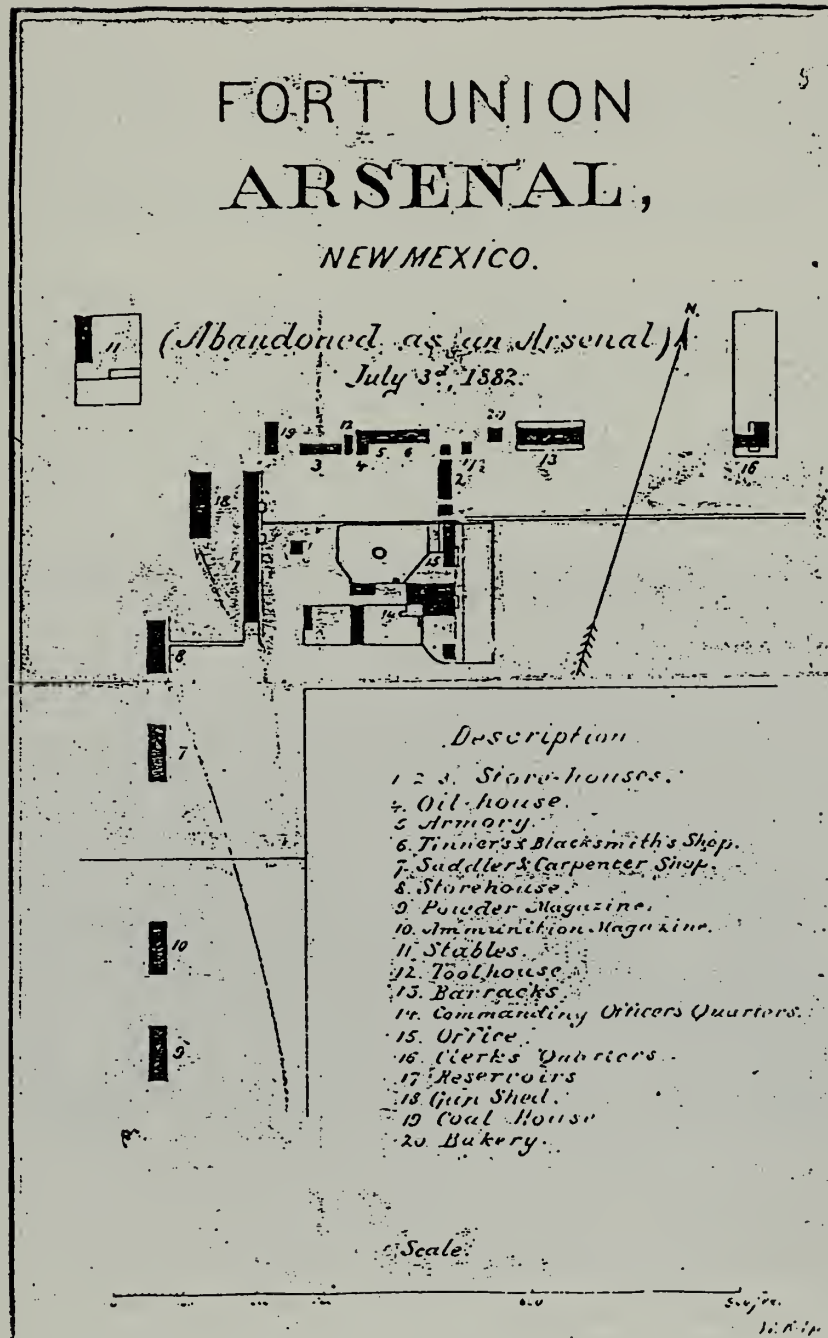


Figure 13. This map shows the final configuration of Shoemaker's life work: Fort Union Arsenal. The arrangement in a sense is a typical of western military sites. Shoemaker designed it so that the visitor came up a tear-shaped drive to the area of the commanding officer's quarters and office. In that way he had tight control of the arrival and departure of all visitors. His landscaped back yard contained considerably more amenities such as shade trees, a duck pond and fountain, all surrounded by a fancy wooden fence. Considering that he lived longer at Fort Union than any one else, it is understandable why his installation was unique in western military construction: he homesteaded. Fort Union National Monument.



Figure 14. This photograph (ca. 1882) shows the arsenal installation at about the time of Shoemaker's retirement. He had completed all construction by this stage. Arizona Historical Society.



saddle, a wonderful horseman, even though in his eighties. His eccentricity, perhaps, was due to his extreme deafness, which was a great detriment, yet he could not be persuaded to use remedies—rather (they used to say) preferred to have the ladies put their arms around his neck in order to make him hear—and very loud they had to speak too!<sup>76</sup>

Another of his acquaintances remembered him fondly as a deaf widower who had the finest quarters at the Fort and gave superb dinner parties. Because of a spring on his grounds, she recalled, he irrigated his land and had a superb garden. He rode a beautiful Arab horse—unusual for the time period and that part of the country—and allowed special visitors to ride another horse that he kept called "Julieka" after his late wife, Julia. His acquaintance recalled: "I suppose we rode with him nearly every day, the Colonel and I. He had been terribly in love with his wife and yet he never spoke of her, though the garden indeed all that he did, was more or less a kind of going over the things she loved. He showed me her miniature once, a thing he had never done to anybody else out there, then."<sup>77</sup>

By 1882, the railroad had reached that area of New Mexico and the need for a standing army in the west was diminishing. Despite the social changes in the west and his advancing age, Captain Shoemaker continued to oversee his arsenal with the care and control he had always exercised. In the spring of 1882, he wrote to the chief of ordnance in Washington complaining that it was impossible to hire good workers for the arsenal because the mines and the railroads paid higher wages. Those same high wages in the private sector also discouraged men from enlisting in the army. Shoemaker requested some tried and true old soldiers from other arsenals to come to Fort Union Arsenal. He entreated: "It is absolutely necessary to keep the detachment at this Arsenal at its full strength. . . the safety of the public property requires this."<sup>78</sup>

*Shoemaker's Last Days.* Captain William Rawle Shoemaker announced his retirement on June 30, 1882, and asked permission to stay in his quarters in return for watching over the arsenal buildings. He was allowed to remain. On July 3, 1882, the Headquarters of the Army transferred 1st Lieutenant A.H. Russell of the Ordnance department from Rock Island Arsenal to the command of Fort Lowell Ordnance Depot "and to the duty of breaking up the Fort Union Arsenal and distributing the stores."<sup>79</sup> The stores were to be distributed between the Lowell Ordnance Depot and Rock Island

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<sup>76</sup>Genevieve LaTourette, "Fort Union Memories," *New Mexico Historical Review*, 26:4 (October, 1951), 277-286.

<sup>77</sup>Fort Union Article File, Ellen Dixon Wilson, "My Aunt's Reminiscences."

<sup>78</sup>NARG 156, Entry 21, 1882, 1183, Shoemaker to Chief of ordnance, Washington, March 20, 1882.

<sup>79</sup>Fort Union Fact File, Arsenal, citing Special Orders No. 153, Headquarters of the Army, Adjutant General's Office, Washington, July 3, 1882.

Arsenal.<sup>80</sup> In the middle of July, 1st Lt. A.H. Russell arrived to abolish the arsenal and begin demolition of the structures.<sup>81</sup>

Shoemaker requested the opportunity to buy a few articles from the ordnance stores before they were shipped back to the other depots. He asked for simple carpenter's tools for rough carpentry including common planes, saws, squared, brace and auger bits, chisels, a grinding stone and an oil stone. He also wanted to purchase a cart, wheel barrow, shovels, hoes and a few other items. He intended to use all of the tools to maintain the buildings.<sup>82</sup>

Apparently Lt. Russell took quite a liking to Captain Shoemaker. After spending a month with him, he wrote:

Captain Shoemaker is active as ever, but it is a sad thing for him to see all his precious stores pass from under his eyes and the idea of having Ordnance buildings *turned over to the Q.M. Dept. and the line of the Army* [his emphasis] goes quite against his grain. He is very much pleased, however, at having his house left to him; and he is very grateful to the Chief of Ordnance for this kind action.<sup>83</sup>

Lt. Russell also commented on the fact that the quartermaster department built all of the new buildings, which was quite a change from Shoemaker's day when the military storekeeper had a direct line to Washington.<sup>84</sup>

In the summer of 1883, the Interior Department questioned the War Department about possibly taking over the Fort Union buildings for an Indian school. The War Department denied the request in June citing that Fort Union was needed for military service, but then issued instructions to transfer the buildings to Interior in November.<sup>85</sup>

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<sup>80</sup>Arrott, Reel 6, File 1, 1882, General Orders No. 71, July 3, 1882.

<sup>81</sup>Emmett, *Fort Union and the Winning of the Southwest*, 395-396.

<sup>82</sup>Shoemaker Letters, Captain Shoemaker to Chief of Ordnance, Washington, D.C., August 21, 1882, 59.

<sup>83</sup>NARG 156, Entry 21, 1882, 3793, Lt. Russell, Fort Union, to Col. J.H. Whittemore, Ordnance Officer, Washington, August 10, 1882.

<sup>84</sup>*Ibid.*

<sup>85</sup>Arrott, Reel 6, File 1, 1883, Secretary of War to the Secretary of the Interior, June 27, 1883; and NARG 92, Entry 225, Box 1167, Robert Lincoln, Secretary of War, to the Honorable Secretary of the Interior, November 24, 1883.



Figure 15. Although this photograph was taken after Shoemaker's death his impact on the land was still overwhelming. The wooden fence, shade trees, architectural details and gutters on the buildings were signs of permanent settlement. This was a dramatic change from the impermanent construction of Fort Union of the 1850s. Fort Union National Monument.



On September 6, 1886, Shoemaker died of "general senile debility" and other problems. He was still living in the house that he had built, and he was still the volunteer custodian of the empty arsenal buildings at the time of his death.<sup>86</sup> His obituary in the *Las Vegas Optic* stated that his title was Captain of Ordnance, and noted that the title had been abolished years before; but Shoemaker was able to retain it because of his age and loyalty to his country for so many years. After a recitation of his military credentials, his obituary continued:

He was well known to many of our older citizens, but the increasing infirmity of deafness prevented his making many acquaintances in the last few years. He was a great hunter, and passionately fond of dogs and fine horses. Of the latter he always kept the best the country could afford. As a man he was courteous and affable, as an officer firm and faithful. Upright in all his dealings, never was the breath of slander upon his name. He will be buried at Fort Union tomorrow, the funeral taking place from his late residence.<sup>87</sup>

Through his years with the army, Shoemaker had invented the Shoemaker bit (a low-port grazing bit) and improved the design of the McClellan saddle. Just before the Civil War he had a pack of greyhounds that he used for hunting; he kept them in a kennel at the commissary corral.<sup>88</sup> He also became famous throughout the southwest for breeding race and pleasure horses.

*The End of an Era.* The arsenal appeared to have received intermittent use following Shoemaker's death. In 1887, a troop of cavalry occupied the buildings.<sup>89</sup> Also, an estimate of materials for fiscal year 1889 included costs for tin roofing and linseed oil for the officer's quarters and lumber for the arsenal barracks and shed for the stables.<sup>90</sup> That same year more correspondence in quartermaster files stated that the arsenal, abandoned that year, contained ample accommodations for a troop of cavalry, and that

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<sup>86</sup>Emmett, *Fort Union and the Winning of the Southwest*, 401, quoting obituary from the *Las Vegas Optic*.

<sup>87</sup>"Death of an Old Army Officer," *Las Vegas Optic*, Friday Evening, September 17, 1886, 4.

<sup>88</sup>Arthur Woodward, "Fort Union, New Mexico—Guardian of the Santa Fe Trail," (Santa Fe: National Park Service, 1958) 133.

<sup>89</sup>NARG 159, Entry 15, Inspection Report by Lt. Col. W.F. Drum, March 16-18, 1887.

<sup>90</sup>NARG 92, Entry 225, Records of the Quartermaster General, Consolidated Correspondence File 1794-1915, Box 1166, "Estimate of Materials required for Fort Union during the fiscal year 1889 for Repairs to Barracks and Quarters."



the commanding officer's quarters there was in good condition.<sup>91</sup> An inspection report also completed in 1889 reported conditions contrary to the other report: it stated that the arsenal buildings "are unoccupied and will soon go to pieces. I know of no use to put them to, and no guard is kept over there."<sup>92</sup>



Figure 16. After the roofing materials and lumber were salvaged from the arsenal buildings, deterioration came rapidly.

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<sup>91</sup>Arrott, Reel 6, File 1, 1889, 1st Lieutenant Fred Wooley, A.A.Q.M. to Quartermaster General, Washington, December 12, 1889.

<sup>92</sup>NARG 159, Entry 15, Inspection Report by Lt. Col. A.P. Morrow, July 2, 1889.

Within three years, however, illegal salvage operations had started dismantling the arsenal buildings. Captain Shoemaker had been meticulous about the quality of his construction materials despite the small appropriations he received for construction. He stretched his dollars often by hiring talented civilian workmen who produced quality work. In 1892, six years after his death, Shoemaker's buildings were coming apart piece by piece. A contemporary report described the situation:

*Arsenal:* located about one mile from post, and consisted of some twenty adobe buildings, which have been completely gutted of doors, windows, mantles, water-pipes, fixtures, &c. The material entering into these structures was of the most substantial kind and much of value in the way of timbers, floors, &c., still remains.<sup>93</sup>

After the turn of the century, winds, rain, and snow, cattle, and bulldozers took their toll on the remnants of the arsenal.

*Summary.* William Rawle Shoemaker was the military storekeeper (M.S.K.) who came out to New Mexico in 1849 as the chief ordnance officer for the Department of New Mexico. In 1851, he began establishing a small ordnance depot within the boundaries of Fort Union; the ordnance depot, however, was a separate military operation from the fort proper. Between 1862 and 1864, Shoemaker moved most of his operation into the relative safety of the earthen fortification, but he was back to the first fort area as quickly as he could be in 1864.

The army's official ordnance reservation was set aside in 1866, and after that time appropriations began to trickle through for building construction. Prior to the reservation designation, Shoemaker's outfit mainly occupied the dilapidated buildings of the first fort. Shoemaker improvised with building materials, funding, and the other vagaries of the army to maintain, and often improve upon what he had. Between 1869 and 1873, when most of the arsenal was constructed, Shoemaker was able to put to use his knowledge of building construction in the New Mexico climate. The design of his installation varied from typical army layouts of the period. Instead of the usual rectangular parade ground and neat rows of surrounding structures, Shoemaker's layout of the large adobe wall, teardrop-shaped drive and subordinate structures adjacent to the main house had a civilian design.

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<sup>93</sup>Arrott, Reel 10, File Fort Union Information, citing NARG 153, Judge Advocate General Reservation files, report to Quartermaster General by Captain William S. Patten, Assistant Quartermaster, June 3, 1892.

Shoemaker retired in 1882, at which time the army began shutting down the arsenal operation. Shoemaker remained on as caretaker of the buildings until his death in 1886. The army continued maintaining the buildings through 1889, but salvage operations were underway on the structures and the buildings were gutted by 1892. The arsenal that Shoemaker had worked so hard on constructing fell into ruin.





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A fine summary of Fort Union in its context of the Santa Fe Trail.

Wilson, Rex, "Archeology and Everyday Life at Fort Union," *New Mexico Historical Review*, 40:1 (January, 1965), 55-64.

This article contains some good leads.

### *Unpublished Materials*

Arrott, James W. "Arrott's Brief History of Fort Union," 1962. On file at Fort Union National Monument.

This short pamphlet was prepared from a tape recording of a speech that James Arrott, the founding father of Fort Union, presented at the Fort in 1957.

Cleveland, Alice Ann. "Bricks in New Mexico," April, 1965. Manuscript donated to the Fort Union National Monument library by the author.

This document discusses early brick-making in New Mexico.

Geise, Dale Frederick. "Social Life at Fort Union, New Mexico in the 1880s." Master's Thesis, New Mexico Highlands University, 1964. Available at Fort Union National Monument.



This document presents only a few items of interest in this report, but it does discuss the water supply for the fort.

Reiter, Robert Louis. "The History of Fort Union, New Mexico." Master's Thesis, University of California, 1963. Available at Fort Union National Monument.

This thesis presents considerable background information on the fort, complete with stories and anecdotes for local color. Some of the information is, however, presented in an extremely biased manner.

Townsend, Steve. "The Earthwork Complex at Fort Union: An Interim Report." Report prepared for the Fort Union National Monument by park volunteer, January, 1988.

The report analyzes some of the background information on the earthwork and includes field-checking of the fortification. The report concludes that Nick Bleser's work on the fortification during the 1960s was basically correct.



## Part II

# FORT UNION HISTORICAL BASE MAP

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## Introduction

The history of the study of the buildings of First Fort Union is as long as the history of the park. After the establishment of Fort Union National Monument in 1956, the archeologist George Cattanaach began excavation and stabilization of the Third Fort buildings, and had little time for the First Fort; not until the late 1950s was his successor Rex Wilson able to relocate some of the buildings of First Fort by excavation. Based on his fieldwork and research, Wohlbrandt, Marsh, and Cotten attempted to draw a map of First Fort in the early 1960s. Nick Bleser of the Fort Union staff carried the research and field work further in the second half of the 1960s, and Wayne Ruwet, working with Bleser, carried out an initial identification of the buildings on the ground and first description of their history in the late 1960s. Using these earlier attempts and his own original research, Richard Sellars began research on the Historic Structure Report for First, Second, and Third Fort in the mid-1970s. When Sellars ran out of time that could be spared for the project, Dwight Pitcaithley carried it further, with an emphasis on Third Fort. Finally, Pitcaithley and Jerome Greene finalized the material for Third Fort and published it in 1982 as *Historic Structure Report: Historical Data Section, The Third Fort Union, 1863-1891, Fort Union National Monument, New Mexico*. The lack of a Base Map derived from an archeological survey left many of the First Fort buildings unlocated or unidentifiable, and the absence of detailed documentation about the construction of Second Fort made it very difficult to compile a structural history of this fortification. These crippling gaps in the accessible information made it impossible for Sellars, Pitcaithley and Greene to finalize the reports for First Fort and Second Fort.

The present Historical Base Map is the most recent in a series of attempts to map the First Fort, Second (or Star) Fort, and Third Fort of Fort Union. In addition, Sutler's Row is given a first, rough evaluation here, based on available sources. Third Fort, sheets 4, 5, 8 and 9, has preserved the plan of its buildings clearly enough that the correspondence between historical maps and the existing structures was fairly clear. Only the less substantial outlying buildings and structures overlaid by more recent buildings remained somewhat elusive. This Historical Base Map has attempted to plot a clear location and outline for these structures, and the Historic Building number series has been extended to include the new additions.

In some cases, original Third Fort numbers have had additional information included about the history of the buildings they cover. This usually consists of further detail about the changes in plan over the life of Third Fort and the relationship of earlier buildings to later ones, and are further clarifications or addenda to Pitcaithley and Greene, rather than intended to stand alone.

In the First Fort, Second Fort, and Arsenal sections, considerable reference is made to Leo Oliva's study, *Fort Union and the Frontier Army in the Southwest*. Unfortunately, Oliva's work was available only in draft form at the time the Historic Structure Report and Historical Base Map had to go to press; all references to Oliva are to the page number of the draft, the short

title of which will be "Frontier Army," not to the final published version.<sup>1</sup> Where specific details of Laura Soullieré Harrison's discussion in Part I are referred to in Part II, the location of the details is given by a reference such as "Part I, p. 10."

The First Fort and Arsenal, sheets 2 and 3, have proven to be a difficult problem for those who wished to draw an accurate plan of the buildings. For one thing, the multiple additions, changes, and overlaying of structures makes an overall plan exceptionally complex, as can be seen by looking at the Base Map. Secondly, only one historical map of First Fort is available, and it is a schematic, rather than an accurate plan; it was drawn early in the life of the fort, and does not show the many later changes and additions. Two army plans for the Arsenal during its life have been available, but research has shown that one of these was a proposal plan, not an as-built. Attempts to map the area in the 1960s resulted in faulty or incomplete maps of the First Fort/Arsenal group, because most of the First Fort buildings and a number of Arsenal buildings were not of substantial construction and were difficult to see on the ground.

The earliest National Park Service map of the area was prepared by Wohlbrandt, Marsh and Cotten (first names unknown) in August, 1960, and July, 1961, following an initial archeological relocation of some structures by Rex Wilson in 1959-1961.<sup>2</sup> Although it looks like a good start, this plan is seriously flawed by a series of errors in plotting the structures. The east-west locations of the buildings are far too close together, as though the map had several vertical strips of empty space cut out of it between rows of structures. This is not apparent, however, until the Wohlbrandt plan is compared with a more accurate map, such as the base contour map prepared for the National Park Service by Thomas Mann Aerial Mapping in 1989, using aerial photography flown in November, 1988, for this project.

Many of the First Fort and Arsenal structures plotted on this Base Map were located and identified during 1963-66 by Nicholas Bleser, Administrative Assistant at Fort Union in the 1960s. The Base Map owes a great debt to him for his efforts. A further debt is owed to Wayne Ruwet, who, building on Bleser's field work, in 1969 wrote a report for Fort Union National Monument on the structural history of First Fort and the Arsenal.<sup>3</sup> In 1970 Ruwet prepared an expanded version of this report for his Master's Thesis for the University of

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<sup>1</sup>Leo Oliva, *Fort Union and the Frontier Army in the Southwest*, Southwest Cultural Resources Center, Professional Papers no. 41 (Santa Fe: National Park Service, 1993). Oliva's draft manuscript is on file at the Southwest Regional Office in the files of the Division of History, as well as at Fort Union National Monument.

<sup>2</sup>See "Old Fort Union (Parcel No. 2), Survey by: Wohlbrandt, Marsh, and Cotten, Date: Aug. 1960 and July, 1961, Compilation by: Cotten, Date: Nov. 1961, NM-FTU—2016, Drawer H, Doc. No. 112, Fort Union National Monument Files; "Archeology and Everyday Life at Fort Union," *New Mexico Historical Review*, 1965, 40(1), pp. 55-64.

<sup>3</sup>Wayne Ruwet, "The First Fort Union, Its Destruction and Replacement by the Fort Union Arsenal," December, 1969, accession no. 1393, Fort Union National Monument Files.

California at Los Angeles, and was kind enough to send a copy to the park.<sup>4</sup> Ruwet's work supplied this study with a great deal of useful information about the plan and changes to the buildings of First Fort and the Arsenal, and schematic maps based on intensive examination of the available nineteenth century drawings of the area. When reference is made to Ruwet's work, it is cited as, for example, Ruwet, "Fort Union," p. 10. Had they had the help of an archeologist and the contour maps prepared for this report, Bleser and Ruwet would have done this job in 1969 and left us little further work.

Most plans of the Second Fort, sheet 8, have been drawn by topographic surveyors, using stereographic aerial photographs, with no attempt to interpret the visible outlines in terms of structures or their possible uses. The original plan of the fort made by its designers is mentioned several times in army correspondence, but has disappeared. A portion of the Second Fort appears on a plan dated January, 1867, prepared by John Lambert under the direction of Captain Henry Inman; this plan is fairly accurate and gives a clear location and use of several parts of the eastern third of the Star Fort. An early effort to interpret the Star Fort was begun by Nicholas Bleser. In the set of 5"x 8" information cards in the collection of Fort Union appears a sketch plan of the Star Fort by Bleser, dated October 25, 1965. This contains virtually all the significant information to be seen on the plan of the fort in this Base Map set. Bleser's work made this formal analysis fairly simple; most of the difficulty centered around the effort to reconstruct a true outline of the fort's structures without archeology; excavations would have considerably aided this effort, but will have to wait for future projects with specific research goals requiring such excavation. This Base Map was intended to go as far as possible using only evidence visible on aerial photographs and contour maps, on the surface, or detectable by probe. I hope that the information presented here will help those who conduct future archeological investigations as much as Bleser's investigations helped us.

## Field Methodology

The Base Map is based on one month of field investigation and surveying by a crew under James Ivey, Division of History, Southwest Region, in May, 1989, and a number of later one-day visits by James Ivey and Will Ivey to confirm measurements, to clear up confusion, to check further probable structural locations, or to add details. The crew mapped the buildings of the First Fort and Arsenal, the Second Fort, Sutler's Row, and a number of previously unmapped buildings of the Third Fort. They worked entirely from surface indications, artifact scatters, visible foundations and chimney bases, and foundations detected by probe; no excavations were conducted. They were guided to the specific sites by using general locations and outlines gained from aerial photography and nineteenth-century maps and drawings, and the fieldwork of earlier researchers such as Rex Wilson, Nicholas Bleser, and Wayne Ruwet. Once structural traces and building outlines were determined by these methods, the crew measured the precise locations of

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<sup>4</sup>Wayne Ruwet, "Fort Union, Its History and Its Value to Archeology," MA Thesis, Department of Anthropology, University of California at Los Angeles, 1970; accession no. 1392, Fort Union National Monument Files.



the corners and wall segments by the use of field tape measurement, theodolite, and electronic distance measurement. The locations in general are probably accurate to within two feet.

### The Historic Structures Listing

A critical component of the Base Map in this report is a detailed Historical Structures Listing. Structures are discussed in the order of their Historical Structure (HS) numbers; except that the 300-series, assigned to additional structures in the Third Fort area, will be discussed immediately after the other Third Fort buildings, rather than after the Second Fort 200-series. The most prominent Third Fort buildings use the numbers up to 100, and First Fort uses the 100-series numbers. The descriptions of Third Fort structures will in most cases consist only of a page reference to the Historic Structure Report by Green and Pitcaithley, called *Third Fort Union* in these references. Where changes or additions to the description by Pitcaithley and Greene are necessary, or where new structures are being added, the details are included here. The peculiarities of numbering are the result of keeping the original Park Service numbering system and expanding on it. This was done to avoid forcing the Park to renumber all their records dealing with individual structures, but resulted in preserving inconsistencies in the method of assigning numbers to structures. For example, in Third Fort the Park Service had assigned the number 36 to the entire Mechanics' Corral, containing a number of blacksmithing, forging, machine shop, kitchen and messhall activities contained in specific rooms, while at the same time in First Fort assigning the numbers 104, 105 and 106 to individual rooms of one structure because they had separate functions: the oil house, armory, and tinner and blacksmith shop. This can be annoying at times, but will suffice.

One guiding principle used throughout the building descriptions should be pointed out to those using this Base Map. Where possible, the descriptions of individual structures attempt to keep track of the movement of *function*. The U. S. Army had a set of functions that must be carried out at each post. They constructed buildings to house those functions. A Base Map of an army post does its job best when it traces the movement of a given function from one structure to another through time, and this method frequently allows a suggestion to be made for the function of a building when no other evidence is available.

Some of the historical buildings of Fort Union were not included within the boundaries of the two components of the National Monument when the park was established in 1956. These structures are indicated with an asterisk (\*) before their HS number. They are on the private property of Fort Union Ranch, and are *not* available for public visits without specific written permission from the owners. The First Fort component, although part of the National Monument, is not open for public visits except during one day a year. Special visits are sometimes possible, but must be arranged with both the National Monument and Fort Union Ranch, through which the visitor must travel.

Where critical details are included in original documents but not discussed by any of these authors, the original document is cited. Finally, the First Fort and Arsenal have a set of cross-



references to the numbers or letters assigned to the individual buildings by previous researchers, to aid future investigators in understanding exactly which structure in one or another of the early reports is being discussed in this Historic Structures Listing.

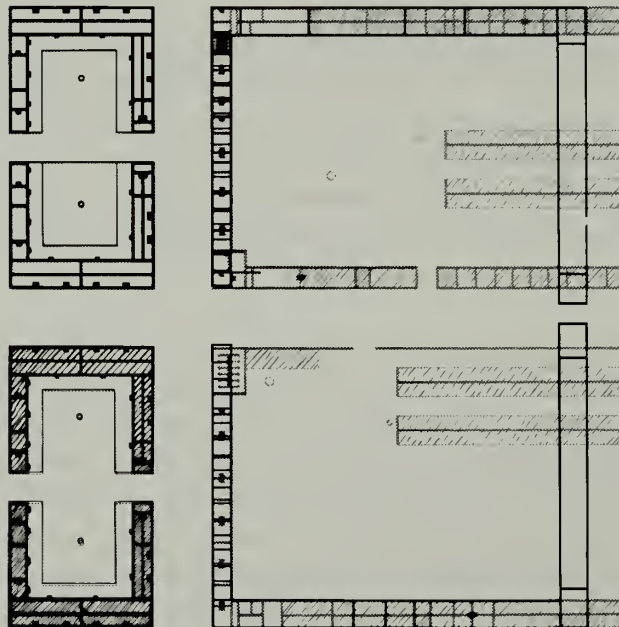
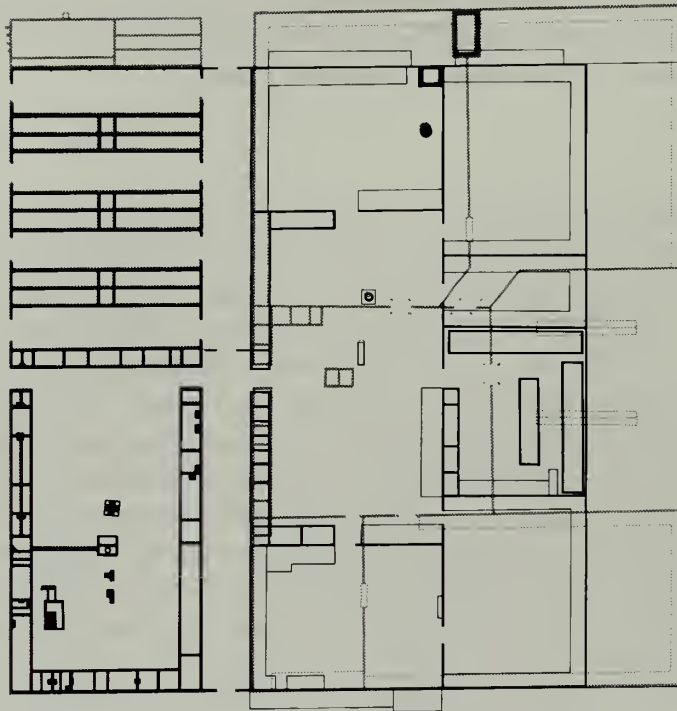


Figure 17. Early and later versions of the Post Corral and Depot Corral.

### THIRD FORT AREA

Third Fort Union was designed by Captain John C. McFerran, Chief Quartermaster of the District of New Mexico, and revised somewhat by Captain Henry J. Farnsworth, Quartermaster of the Depot of Fort Union. The design was worked out in mid-1862, and construction began on a large storehouse and the Quartermaster Corral by September, 1862 (Oliva, "Frontier Army," pp. 547-48), although full approval of the new plans did not happen until November, 1862. The initial construction was completed by late 1867, but several areas were redesigned that year, and rebuilding was not complete until almost 1870. The fort was abandoned in 1891.

HS	Name and Use
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| 1 | Officers' Quarters ( <i>Third Fort Union</i> , p. 25-28). Privies and other structures, such as coal and wood houses, stood in various places along the walls of the back yards. Some of these have been plotted on the maps, and traces of most of them are visible on the ground and in aerial photographs. A very simple archeological probing project would allow the location of virtually all these structures. |
|---|---|

The coal houses were probably added after 1879, when the railroad reached Watrous and Las Vegas, making coal shipments feasible (Oliva, "Frontier Army," p. 605). Many of the fireplaces in the Officers' Quarters show signs of being closed up and stovepipes inserted, indicating that the buildings were converted from open hearth wood fires to coal-burning iron stoves about the same time.

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| 2  | Officers' Quarters ( <i>Third Fort Union</i> , p. 25-28).            |
| 3  | Officers' Quarters ( <i>Third Fort Union</i> , p. 25-28).            |
| 4  | Officers' Quarters ( <i>Third Fort Union</i> , p. 25-28).            |
| 5  | Commanding Officers' Quarters ( <i>Third Fort Union</i> , p. 25-28). |
| 6  | Officers' Quarters ( <i>Third Fort Union</i> , p. 25-28).            |
| 7  | Officers' Quarters ( <i>Third Fort Union</i> , p. 25-28).            |
| 8  | Officers' Quarters ( <i>Third Fort Union</i> , p. 25-28).            |
| 9  | Officers' Quarters ( <i>Third Fort Union</i> , p. 25-28).            |
| 10 | Flagstaff ( <i>Third Fort Union</i> , p. 30).                        |
| 11 | Company Quarters ( <i>Third Fort Union</i> , p. 31-33).              |
| 12 | Company Quarters ( <i>Third Fort Union</i> , p. 31-33).              |

HS	Name and Use
13	Company Quarters ( <i>Third Fort Union</i> , p. 31-33).
14	Company Quarters ( <i>Third Fort Union</i> , p. 31-33).

## POST CORRAL

The first plan of the Fort Union Corrals and Stables was designed by John McFerran in late 1862; it was to be 390 feet deep, east to west, and 643 feet long, north to south, the same length as the set of four Company Quarters (HS-11 to 14) on its west side. Work on the Post Corral began in late 1866. By January, 1867, the western side of the compound was under construction, and at least the foundation trenches for the east side, and therefore probably the north and south sides, too, had been excavated, as shown by their clear presence on aerial photographs and ground inspection; however, the plan, although somewhat revised, was already considered inadequate. In May, 1867, a new plan of the Corrals and Stables was drawn by John Lambert under the direction of Captain Henry Inman, Depot Quartermaster, which added a number of rooms and extended the corral to a total depth of 445 feet. The Lambert and Inman redesign divided the Corrals and Stables into two equal sections; the southern half was the Cavalry Corrals and Stables, while the northern half was the Post Quartermaster Corral and Stables. Much of the new plan was built by the end of 1867 (see figure 17, p. 110). In 1875-76 the decision was made to add two companies to the garrison, and the various workshops, offices and storerooms of the Post Corrals were converted to barracks space for one of the companies.

- 15 Company Quarters (*Third Fort Union*, p. 35-36). In the original plan of McFerran, these rooms were to be Commissary Stores and Quartermaster Stores. In the new plan, these rooms were a large privy and associated lime room, a coal storage room and adjacent blacksmith shop, a granary, a harness shop, and four offices for the Quartermaster Sergeant and Commissary Sergeant. When the row of rooms was converted to company quarters in 1875-76, the privy was converted to a kitchen, and the other rooms became a dining room, a squadroom, office and quarters for a first sergeant, and two storerooms.
- 16 Laundresses' Quarters (*Third Fort Union*, p. 37). In the original plan of the Corrals and Stables, there were sixteen laundress rooms on each side of the west gate of the corral, each about 16 feet long, north to south, and 21 feet wide, east to west. A revised version of this row was under construction but incomplete as of January, 1867; in this version, the laundress rows were broken by small gateways opposite and the same size as the gateways into the company quarters compounds west of them, reducing each row of laundresses quarters by two rooms. The Inman and Lambert plan of May, 1867, had ten rooms in each of two continuous rows (HS-16 and HS-23); this plan was built during the next few years. The laundresses quarters were largely completed by the end of 1867, and probably in use by early 1868. The laundresses were moved to these quarters from



HS

Name and Use

temporary housing in unused barracks in the redans of Second Fort (see HS-203; Oliva, "Frontier Army," pp. 575, 594)

- 17 Prison (*Third Fort Union*, p. 39). Added to the original design of the Corrals and Stables by Lambert in 1867. Construction finished in June, 1868.
- 18 Cavalry Corral and Stables (*Third Fort Union*, p. 41). Stalls for about 180 horses were originally intended to be located along the back, or eastern, edge of the corral complex by McFerran. The construction crews began work on the stables; the lines of the foundation trenches are clearly visible in aerial photographs. By January, 1867, the plan had been changed slightly, so that the guard house and two privies had been removed from the back row, and provision made for twenty extra stalls, making spaces for 200 horses. However, as of that date, the stables were still unfinished. Work was stopped when the new design was worked out, and construction began on the revised plan in late 1867. Inman and Lambert's design placed the stables in five parallel rows extending east to west from the back wall of the new complex, making space for 250 horses; however, a further change was made in the design, so that as built, the northernmost row, with spaces for 50 horses, was left off and the other four were shortened by three stable spaces each, so that their final lengths were 240 feet. The final plan provided spaces for only 188 horses.
- 19 Laundresses' Quarters (*Third Fort Union*, p. 43). This row of rooms was added to the McFerran plan of the Post Corral by Inman and Lambert. Originally intended as quarters for civilian employees, they were converted to laundresses' quarters during the addition of two companies to the post in 1875-76.
- 20 Wheelwright, Blacksmith, and Carpenter Shops (*Third Fort Union*, p. 45). This building was part of the Inman and Lambert redesign. It was completed probably in the summer of 1867, with the wheelwright shop squeezed into the spaces originally intended to hold only the blacksmith and carpenter's shops, because the wheelwright space was converted to the Post Chapel (see HS-21, below). The building was in disrepair and in use as a storeroom in 1885, and was torn down by 1889.
- 21 Chapel (*Third Fort Union*, p. 46). This room was to be the wheelwright's shop, according to the Inman and Lambert plan; it was, however, made the Post Chapel as of its completion in 1867. Its basement was to be used as a schoolroom for enlisted men and the children of those stationed at Fort Union. By 1869 the chapel was also used as the library. After 1872 the post chapel was moved to HS-25 for a period, and this room was thereafter known as the Library, although the chapel usage returned to the space occasionally over the remaining years of the life of Fort Union.

HS

Name and Use

- 22 Guard House (*Third Fort Union*, p. 48). In McFerran's original plan, the guardhouse was two rooms at the back, or east, gate of the Corral; it was still shown at this location in 1866. By January, 1867, however, this location was shown as small storage or tack rooms for the stables. The redesign in May, 1867, relocated the guardhouse at the front, or west, side of the Corrals. The new building was completed in 1868.
- 23 Laundresses' Quarters (*Third Fort Union*, p. 50). See above, HS-16.
- 24 Bakery (*Third Fort Union*, p. 52). Originally the north end of the laundress's row was to be a room for coal and lime storage. The Inman and Lambert redesign placed the Bakery in the second room south, and the north room was to be the "Band Kitchen and messroom." An increasing demand for bread required the redesign of the Bakery in May, 1877 (Oliva, "Frontier Army," p. 672), when the original oven was rebuilt somewhat larger, and facing north into the northernmost room, which was changed from the Band kitchen and mess into the Bakery. The Band was moved to HS-25, below.
- 25 Company Quarters (*Third Fort Union*, p. 54). On the McFerran plan of 1862, this row of rooms was to be a storeroom, Mechanics' Shops, and a granary. The Inman and Lambert plan changed the usage of the area into two privies and a lime storage room, a granary, Commissary Stores with an issuing room, and Commissary and Quartermaster offices. The granary was subsequently divided and the east half became the Post Chapel about 1872, moved from HS-21. At the same time, the Depot quartermaster and commissary began supplying the Post, and the Post quartermaster and commissary operations were discontinued. These rooms of HS-25 became vacant. The Band used part of the building as barracks through 1875, but the entire row was remodelled in that year to provide quarters for a new company assigned to the Post. The Band quarters became the last few rooms on the east end of the row. By 1883 the building was in poor condition, and by 1889 it was used only for ordnance stores.
- 26 Quartermaster Corral and Stables (*Third Fort Union*, p. 56). The original McFerran design for the Stables did not include any mule stables in the plan. Inman and Lambert's design of May, 1867, provided four rows of stalls 160 feet long. Each stall was 20 feet wide and 15 feet deep, giving spaces for 32 mules. Only one of these structures was built in 1867-68, and was apparently changed to be a horse stable, with stalls about 9 feet wide and 15 feet deep, giving a total of 34 stalls in the single building. In 1872 four stalls and a carriage house 15 feet wide and 30 feet across were added to the end of the stable building, giving it a total length of 198 feet. This gave spaces for 38 horses. In 1875-76 a second stable building of the same length was added north of the first, approximately matching the original Inman and Lambert design, and making a total of 76 stalls for horses.

## QUARTERMASTER DEPOT

- 27 Officers' Quarters (*Third Fort Union*, p. 58). The three officers' quarters had several privies, wood houses, and coal houses in the back yards; most of these still need to be located.
- 28 Officers' Quarters (*Third Fort Union*, p. 58). This house had a chicken house in the back yard, measuring 12 feet by 30 feet by 10 feet high.
- 29 Officers' Quarters (*Third Fort Union*, p. 58). This house had a brick walk and a patio of brick laid in a herringbone pattern, as well as several structures. These appear to have include a frame house with a fireplace in the northeast corner, standing just east of the entrance gateway on the north wall. The brick walkway may have extended from a door at the southwest corner of the building. Another structure stood in the northwest corner of the yard, but its dimensions could not be determined by ground inspection. Since a photograph of the building under construction in ca. August, 1865, shows no variation in the wall lines of the southwest corner, the cellar here seems to have been added later, perhaps during the rebuilding in 1876-77 after fire gutted the place in 1871.
- 30 Quartermaster's Office (*Third Fort Union*, p. 61).
- 31 Commissary's Office (*Third Fort Union*, p. 63).
- 32 Clerk's Quarters and Post Office (*Third Fort Union*, p. 64).
- 33 Cistern (*Third Fort Union*, p. 66). Brick, holding 20,000 gallons or more, with a domed brick top. Finished before June, 1868, and probably built at the same time as the northernmost storeroom, HS-43, in the summer of 1867.
- 34 Cistern (*Third Fort Union*, p. 66). Of the same size and construction as HS-33. Under construction in October, 1869.
- 35 Sun Dial (*Third Fort Union*, p. 67). The adjacent Meridian Marker is HS-70, below.
- 36 Mechanics' Shops (*Third Fort Union*, p. 68-69).
- 37 Steam Engine (*Third Fort Union*, pp. 11-12, 71). This engine base and engine house were built for the steam engine moved from the Machine Shop, HS-310 below, after that structure burned in February, 1876. The new home for the engine was 31 feet long and 20 feet wide, with the engine platform itself measuring 6 1/2 feet by 17 1/3 feet. The building was torn down by 1889.
- 38 Pump House and Well (*Third Fort Union*, p. 72-73). There are several structures in the group with this HS number; the actual use of several of them is unclear, and the history of their construction and change is confused. A careful review of the documents and an



HS	Name and Use
	excavation of the area around these structures will be necessary to work out their probable uses, relationship to each other, and dates of construction.
39	Quartermaster Storehouse ( <i>Third Fort Union</i> , p. 74). One of these was apparently begun as early as September, 1862 (Oliva, "Frontier Army," p. 547).
40	Quartermaster Storehouse ( <i>Third Fort Union</i> , p. 76).
41	Quartermaster Storehouse ( <i>Third Fort Union</i> , p. 76).
42	Quartermaster Storehouse ( <i>Third Fort Union</i> , p. 76).
43	Commissary Storehouse ( <i>Third Fort Union</i> , p. 78). This was a change to the original McFerran design. In the summer of 1867, HS-43 was built using the north wall of the stable yard of HS-42 as its south wall.

### DEPOT CORRAL

The original plan for the Depot Corral was by McFerran. Construction on the Quartermaster Depot Corral began in September, 1862, prior to final approval of the new plan in November (Oliva, "Frontier Army," p. 396). Pitcaithley and Greene (*Third Fort Union*, p. 11) state several times that the early corral was larger than the final version, but this is not true. The overlay demonstrates that the early corral, at 648 feet north to south and 350 feet east to west, was significantly smaller than the later. The old plan is still visible in places, and most of it is still in the ground. The addition of an enlarged wagon corral yard on the east side about 1870 brought the outline of the original corral out to 450 feet, forming the eastern edge location used for the later corral. Photographs of the various structures of the early corral appear in ill. 47 (*Third Fort Union*, pp. 218-19), ill. 48 (*Third Fort Union*, pp. 220-21). A new corral was designed by Colonel H. M. Enos and John Lambert in 1867, but it was not built (*Third Fort Union*, p. 157, ill. 16), probably because the Depot felt less need for a revamping of its plan than did the Post. Instead, the original Depot corrals, stables, granaries, and sheds continued in use until they were destroyed by fire on June 27, 1874. The fire was thought to have started in a privy at the south end of the easternmost granary, almost against the east wall of the corral.

Construction on replacement buildings began immediately, and was well under way in the fall of 1874 (Oliva, "Frontier Army," p. 651). Some of the walls, at least, were of adobe. An 1875 plan shows the repaired Depot Corral, with dimensions of 704 feet north to south, and 450 feet east to west. A fairly complete redesign of the Depot corrals was carried out in 1875-76, incorporating the perimeter walls, keeping the new dimensions and the buildings constructed along the west side of the Depot Corral in 1874, but creating a completely new division of space



HS	Name and Use
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in the remainder; it is uncertain who designed this final plan (see figure 17, p. 110). It had been constructed by 1876 and remained relatively unchanged for the rest of the life of Fort Union.

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| 44 | Corral Sheds ( <i>Third Fort Union</i> , p. 80).  |
| 45 | Corral Sheds ( <i>Third Fort Union</i> , p. 81).  |
| 46 | Teamsters' Quarters ( <i>Third Fort Union</i> , p. 83).   |
| 47 | Wagon Master's Office ( <i>Third Fort Union</i> , p. 85).   |
| 48 | Granary ( <i>Third Fort Union</i> , p. 86-87).  |
| 49 | Granary ( <i>Third Fort Union</i> , p. 86-87).  |
| 50 | Civilian Employees' Quarters ( <i>Third Fort Union</i> , p. 89).  |
| 51 | Corral and Sheds ( <i>Third Fort Union</i> , p. 91).  |
| 52 | Well ( <i>Third Fort Union</i> , p. 93).  |
| 53 | Ice House, First Depot Corral. This structure was listed as "Unidentified" in Green and Pitcaithley ( <i>Third Fort Union</i> , p. 94), while the early ice house was described on page 95, where it was assumed to have been at about the same location as the later ice house (HS-55, below). However, a careful plotting of the two plans of the Depot Corrals reveals that HS-53 was the first ice house, offset from the later building by about 30 feet. This ice house was built in 1868 and destroyed in the fire of 1874. It can be seen in early photographs ( <i>Third Fort Union</i> , pp. 218-19, ill. 47), and in the aerial photographs. |
| 54 | Lime (Gesso) Mill, First Depot Corral ( <i>Third Fort Union</i> , p. 94). Built ca. 1867, destroyed in the fire of 1874. The massive circular stone base of the mill remains in place ( <i>Third Fort Union</i> , pp. 218-19, ill. 47).   |
| 55 | Ice House, Second Depot Corral ( <i>Third Fort Union</i> , p. 95). The outline of this structure, although blanketed in mounds of melted adobe, is easily identified in aerial photographs and on the ground at this location.  |
| 56 | Depot Transportation Corral ( <i>Third Fort Union</i> , p. 96).   |

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## HOSPITAL

Construction began on the Hospital complex in 1863. The major construction was completed by early 1864, and the group was enlarged sometime soon after November, 1866. The enlargement apparently consisted of the construction of the Enclosing Wall (HS-65), the Dead House (HS-66), the Hospital "Sink" (HS-67), and the probable second latrine (HS-68).

- 57     Hospital (*Third Fort Union*, p. 97).
- 58     Hospital Steward's Quarters (*Third Fort Union*, p. 99).
- 59     Hospital Latrine (*Third Fort Union*, p. 100).
- 60     Hospital Wood House (*Third Fort Union*, p. 101).
- 61     Hospital Cistern (*Third Fort Union*, p. 102).
- 62     Hospital Cistern (*Third Fort Union*, p. 102).
- 63     Hospital Matron's Quarters and Laundry (*Third Fort Union*, p. 103).
- 64     Hospital Bathhouse (*Third Fort Union*, p. 104).
- 65     Hospital Dead House (*Third Fort Union*, p. 105). This building was begun in November, 1866, and finished in early 1867 (Oliva, "Frontier Army," p. 576). It was adobe on a stone foundation, 52 x 13 feet, with walls ten feet high and six windows.
- 66     Enclosing Wall (*Third Fort Union*, p. 105). This wall around the main Hospital complex (135 feet by 330 feet) was constructed in late 1866, at the same time as the Dead House (HS-66, below) and additional latrines, HS-67, 68, Hospital Latrines, below).
- 67     Hospital Latrine. Probably built late 1866-early 1867, 35 feet by 10 feet. Described as "sink" on 1883 map.
- 68     Hospital Latrine. This is an assumed use, based on the appearance of the structure on the maps; 44 feet by 14 feet. Probably built late 1866-early 1867.
- 69     Hospital Compound. This enclosed compound is shown on the 1866 and 1868 maps, but does not appear on the 1877 plan of the Third Fort, and is certainly gone by 1882. The compound consisted of two principal buildings facing into an enclosed corral. These were probably the "pens of cattle (cows) hogs, chickens, etc.," and "a stable with private horses, one of them the [Hospital] Steward's," mentioned in the inspection of June, 1868

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(Oliva, "Frontier Army," p. 612). Although the 1866 map shows the two buildings as about 60 feet by 20 feet, the survey found only a 20 foot by 20 foot building on the west. However, the appearance in the 1984 aerial photographs suggests that the building extended 40 feet further east than is visible on the ground; archeological investigation would be necessary to confirm this. The building on the south was 60 feet north to south by 20 feet east to west, with a stone chimney base centered on the south end. A portion of the stone foundation of an enclosing wall is visible at ground surface on the south side of the compound between the two buildings. The 1866 map shows the corral dimensions as 150 feet east to west, and 60 feet north to south. The aerial photographs support these general dimensions, and suggest a main gate in the southeast corner. The building foundations are of fieldstone and about one foot thick; the area around them is littered with ash, coal, broken ceramics, and broken glass. The lack of adobe mounding suggests that the structures were of wood.

#### ADDITIONAL FORT STRUCTURES, VARIOUS LOCATIONS

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|----|---|
| 70 | Meridian Marker, 1871 ( <i>Third Fort Union</i> , p. 119).  |
| 71 | USGS Marker, 1867 ( <i>Third Fort Union</i> , p. 119).  |
| 72 | Depot Hay Corral, North. Visible in photograph, ill. 47, in <i>Third Fort Union</i> , p. 218-19. The huge stack of hay in this yard is visible in the ca. September, 1865, photographs of Second Fort (National Archives, 111-SC-88001 and 88004, Neg. FOUN 905, 906) taken from the top of HS-219, where it is usually mistaken for a mountain on the horizon. The original corral measured 300 feet east to west by 100 feet north to south, and was built in 1863-66. The Hay Corrals were described in 1868 as being "of stockade with gates, having some lumber and slabs containing the hay ricks." This corral continued in use through 1868 but was gone by 1873. |
| 73 | Depot Hay Corral, South. Visible in photograph, ill. 48 ( <i>Third Fort Union</i> , p. 220-21). The original corral measured 300 feet east to west by 100 feet north to south, and was built in 1863-66. The Hay Corrals were described in 1868 as being "of stockade with gates, having some lumber and slabs containing the hay ricks." The hay in the southern corrals was "old, good and well stacked," and was estimated to be about 675 tons.   |

By 1873 this corral was expanded to a larger Hay Corral measuring 480 feet north to south and 200 feet east to west, and by 1883 to an even larger Hay and Wood Yard, 460 or 480 feet north to south by 350 feet east to west. The enlarged version as it appeared about 1880 is visible in Robert Utley, *Fort Union National Monument*, p. 40, center photograph.



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- 74 Unidentified. Structure shown on 1866 map between original Depot Corral and South Hay Corral; gone by 1868. A mark just east of the Park Service road at this point is visible in the 1984 aerial photograph, but is not recognizable as a structure on the ground.
- 75 Depot Hay Scales. Probably shown on 1866 map between original Depot Corral and North Hay Corral; shown in detail on 1873 plan of the Depot Corral and enlarged version of Hay Corrals. A mark on the ground just east of the Park Service road at this point is visible in the 1984 aerial photograph, but is not recognizable as a structure on the ground.
- 77 Good Templars Meeting Hall (*Third Fort Union*, p. 108). This is the location of the structure; for photographs of it as excavated in 1956-57, see Levine, *A History of Archeological Investigations at Fort Union National Monument*, pp. 106-07. Constructed of vertical logs set into a trench; begun in November, 1866, continued in use through 1875, and gone by 1877, when it does not appear on the 1877 plan of the fort.
- 79 "Old Post Corral," south. The location and general layout are shown on the 1866 and 1868 maps. The plan is taken from the 1984 aerial photographs; the evidence of the aerial photos indicates that sections of the corral had been abandoned by 1866. It is difficult to work out the plan on the ground, although the corral location can easily be recognized. Apparently built in 1861-62 to replace the corrals collapsing at First Fort. The plan was about 155 feet north to south and 200 feet east to west, with stables or sheds along the north and west sides and larger structures on the east and south sides; an extension to the south added a corral yard 155 feet long, north to south, and 170 feet wide east to west, with another row of sheds or stables along the south side. From the appearance of the ground, both this and the northern corral were probably made predominantly from vertical posts. The principal gate was located in the center of the north side of the corral.

The "Old Post Corral" is mentioned in the June, 1868, inspection. It probably went out of use upon completion of the new Post corrals (HS-18, 26) in 1868. Beginning in December, 1868, the abandoned corral was dismantled for firewood (Oliva, "Frontier Army," p. 615). The 1882 map of the fort does not show this corral or HS-80, just to the north.

- 80 "Old Post Corral," north. Probably the Ordnance Corral from ca. 1861 to ca. 1868. If so, it was abandoned upon completion of the new Ordnance Stables (HS-111) in early 1869. The location and general layout are shown on the 1866 and 1868 maps. The plan is taken from the 1868 map and the aerial photograph; it is difficult to see the corral or work out the plan on the ground, although there is no doubt that it is there. The corral appears to be about 80 feet wide, east to west, by 150 long. A building 20 wide and 60



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feet long was located in the southeast corner, and a yard 20 feet wide and 90 feet long extended north from it along the east side of the corral.

- 81 Temporary Civilian Quarters (*Third Fort Union*, p. 116). May be visible at left edge, background, above tents, ill. 52 (*Third Fort Union*, p. 228-29). Apparently stood from ca. 1863 to ca. 1868. Shown on 1866 and 1868 maps. The report of 1868 said "Northwest of the Depot are some six sets of old jackal and plank quarters occupied by employees, which are conspicuous and not very ornamental." The general location of this row of buildings is easily recognizable, with several possible chimney bases and a quantity of scattered trash, but individual structures cannot be distinguished by surface examination; the buildings seem to have been disturbed by the cuttings of the Adobe Fields. The structure outlines on the Base Map are taken from the 1866 Lambert and Enos map. Each building is shown as 70 feet by 30 feet; the locations and sizes are only approximate. Eventually the employees housed here were moved into quarters added in the west half of the Depot Corral, probably soon after the 1868 inspection.
- 82 Adobe Storage Shed and Brickyard. Visible in photograph, ill. 52 (*Third Fort Union*, p. 228-29); on the 1866 and 1868 maps. The 1868 Inspection Report says that the Adobe Storage Shed was made of adobe as well as being used to store about 88,000 adobe bricks. It was approximately 135 feet by 25 feet, with a gabled board roof. The adjoining brickyard had about 200,000 "burnt" bricks, six plank-covered brick sheds (empty), and three brick-making machines. The "burnt" bricks were probably fired at the nearby northern Lime Kiln (HS-83, below). The buildings and yard was apparently abandoned soon afterwards. No specific traces of these structures have been seen on the ground, although areas of pulverized fired brick have been found in the general location of the site; the size and location of the Adobe Storage Shed are approximate, plotted from the 1866 Lambert and Enos map and the photograph. The site of the building appears to have been damaged by later adobe-making, but the site should be regarded as being a potential archeological resource.
- \*83 Lime Kiln, North (see also HS-89, Lime Kilns, South). Probably one of the lime and brick kiln for the First Fort. This was called "an old square brick or lime burning tower" in the Inspection Report of 1868, and labelled as a lime kiln on the 1866, 1868, and 1874 maps, but was gone by 1882. The earliest reference to a limekiln at Fort Union was in September, 1851 (Part I, p. 21), but this was probably the smaller kiln closer to First Fort, HS-184/185/186, rather than this kiln. HS-83 may have been originally constructed for baking bricks, probably beginning about September, 1860 (Part I, p. 71). A clear structural outline of the kiln can be seen as a masonry foundation 15 feet square at the top of the terrace above the creek, just outside the National Monument boundary. A large number of broken, overfired, and fused bricks are found scattered over the entire area of the creek bank. Similar masses of brick are found in the stream bed of Coyote or Wolf Creek just south of the highway bridge; this may be

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a second brick-making area, or the brick may have been washed here from HS-83 by floods.

- \*84 New Beef Corral. Built beginning in September, 1866, to replaced HS-188 because the old corral had "the accumulated blood of the winter, as well as the bones of years" (Part I, p. 39). The construction required considerable effort, since it appears to have been built of large posts set into postholes cut with a great deal of labor into the lava of the hilltop. The corral measured 300 feet square, with a main division extending northward from the south wall at the centerline, and a small structure at the southwest corner, 20 feet square. This was undoubtedly the "good butcher house" referred to in the correspondence about construction of this corral (Oliva, "Frontier Army," p. 571). In July, 1867, a board of health found that this location for the Beef Corral was unacceptable because it would contaminate the drinking water, presumably in the reservoir behind the dam at the bottom of the hill, HS-99. The board recommended that the corral be moved to a better location further from the fort (Oliva, "Frontier Army," p. 593-94). Whether this happened is unknown.
- \*88 Quarry. The areas where stone has been cut from the canyon walls are easily recognized today. The location is shown on the maps from 1866 to 1882, and apparently continued in use through the constructions of the 1870s. The earliest quarrying here was probably in 1851, for stone to build the chimneys of the First Fort buildings (Oliva, "Frontier Army," p. 111).
- \*89 Lime Kilns, South. Two brick and stone kilns, fire-reddened. Some sections still standing to 10 feet or more, built into the side of an arroyo west of the highway. Shown on all maps of the fort from 1866 to 1882; probably built about 1863 to supply the needed lime for the construction of the Third Fort, supplementing and eventually replacing the older lime kiln, HS-83, in use from perhaps 1860 to sometime in the 1870s.
- \*90 Race Track (*Third Fort Union*, p. 110). Pitcaithley and Greene describe the racetrack as five miles long, but the actual length on the ground is one mile. The track was laid out in 1878; the closed, flattened oval course is 2,155 feet across its long axis, 1,000 feet across the short axis, and has a straightaway of a quarter-mile, 1320 feet.
- \*91 Target Pits. These appear to have been a rifle range. There are two distinct sets of target pits. One set begins with a rectangular firing area about 70 feet by 30 feet, with the target areas on a straight line towards the southeast at 100 yards, 300 yards, and 500 yards. Each target area is a rectangular pit about 50 feet by 20 feet. The second set begins with a rectangular firing area about 40 feet by 20 feet, and seems to be oriented both southeast and northwest. Towards the northwest is a circular target area about 20 feet in diameter and 150 feet away. Towards the southeast, the target areas are at 100 feet, 200 feet, 300 feet, and 400 feet. The 100 foot and 300 foot target areas are circular

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and about 15 feet in diameter, while the 200 foot and 400 foot areas are circular and about 20 feet in diameter. These target areas are all on a straight line parallel to the longer-range set of targets, but offset to the north about 25 feet. The easternmost of these pits are outside the Park boundary.

- 92 East Hay Corral. The original corral was built in 1863-66, about the same time as HS-72 and HS-73, above, and like them was made of pickets, but was somewhat shorter, east to west, measuring 230 feet by 100 feet. The corral continued in use through at least 1868 in this form, but was eventually changed to a larger plan, about 300 feet by 200 feet. Road traces suggest a major gate in the center of the west side of the corrals, and a similar gate in the center of the east side. There is some suggestion in the aerials of a rectangular structure or yard about 25 feet square in the southwest corner of the enlarged version of this corral. The sizes and relationship between the first and second forms of this corral as shown on the base map are somewhat conjectural, since a number of possible wall-lines appear to be visible overlaying each other. Archeological investigation would easily sort out these structural events into a sequence of changes.
- 93 Depot Mule-Herd Corral. This corral is not shown on the 1866 or 1868 maps of Fort Union, but is described at length in the Depot Inspection Report of June, 1868. It is therefore arguable that the Mule-Herd Corral was built between March, 1868, when Lambert conducted the survey for the 1868 map, and June, 1868, when the Corral was first described; however, the description refers to the corral as "old," and the corral was probably built about the same time as the East Hay Corral, HS-92, above, and simply overlooked on the maps. It is clearly visible in the 1984 aerial photograph and easily traced on the ground, although any given area seems to have several lines of wall traces, perhaps from multiple episodes of repair or rebuilding. The plan as shown on the base map is again somewhat conjectural, because of the many choices of wall line, but seems to be the most clearly present. The main corral is a rectangle about 450 feet long east to west and 460 feet wide, north to south. An extension of about 230 by 75 feet is along the north side. The main body of the rectangle is divided into quarters, with apparent stables and sheds along the east sides of the northwest, northeast, and southeast quadrants, and along the south sides of the southeast and southwest quadrants. The southwest quadrant is further divided by an east-west fence line, with the northern section 150 feet wide and the south 75 feet wide. Road traces imply gateways at the southwest corner and just north of the center of the west side of the Mule-herd Corral, a third gateway just south of the center of the east face, and possibly a fourth in the southwest corner of the west face of the northern extension. All of the wall lines show thicker vegetation growth today, and great quantities of decayed wood are visible on the ground along the alignments. From the appearance of the surface marks, it is likely that thick vertical posts or logs formed a major part of the walls of the corrals. Archeological work would clearly define the plan, use, and changes of the structures.



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The description of 1868 says that this was "an old corral of stockade, with sheds inside, water tanks and troughs, the ground covered with manure, where was kept the Mule herd, and where were counted 448 mules, usually divided into two herds, for grazing." The report added that "still east of this corral is a row of rough, plank houses occupied by herders." Whether these were in the row of sheds or stables on the east side of the corrals on the base map cannot be said; no house sites have been identified further east, but a much more careful inspection of the area should be made.

- 98 Adobe Fields. These areas appear to have been cut with a large scraping device, probably horse- or mule-drawn. The general appearance suggests that the sod cover was cut off first, uncovering the underlying clay, which was then excavated as needed. The fields have several distinct components, each with its own width, frequency, and angle of cut. The area in the northwest corner of the fenced enclosure of Fort Union National Park appears to have cut through the sites of the Temporary Employee's Housing (HS-81) and the Adobe Shed (HS-82). Since these structures all appear to go out of use by about the end of 1868, the adobe fields that appear to cross the sites can be considered to have been cut after that year.
- \*99 Dam. Built across Coyote Creek at the southwest corner of the New Beef Corral, HS-84. About 240 feet long, perhaps 10 feet thick. Date unknown, but may have been built during the fall of 1851 to supply ice to the ice-houses constructed at the post that winter (Oliva, "Frontier Army," p. 121), or water for various needs of First Fort, such as the lime-slaking pits of HS-187. Possible irrigation ditch line extends down the valley from the dam, but quickly becomes indistinguishable from cow paths.



## SUTLER'S COMPLEX

At the beginning of the preparation of this base map, Sutler's Row at Fort Union was a virtually unknown entity. The structures of the Row were visible in the background of several photographs, and two photos of "the Post Sutler's Store" were available, of two distinctly different buildings, taken at times nearly twenty years apart. Only one effort to sort out the structural history of these buildings, or to relate them to the confused mass of references to post traders, is on record; this is a plat of the ruins of the Row in the Document Files of Fort Union National Monument, apparently drawn by an unknown member (possibly Nick Bleser) of the Park staff sometime in the early days of the Monument. Because an accurate plan of the buildings was not available, and because the extremely complex sequence of changes to the regulations governing post traders was not understood, this plat was far too simple.

The present base map, with the photographs and the two military maps that show structures on the Row, has given clear enough an idea of the physical changes. Leo Oliva's research, along with the work of Robert Reiter, David Delo and Darlis Miller, when combined with available correspondence in the Fort Union National Monument collections assembled largely through the efforts of Nick Bleser in the 1960s, allowed a surprising level of detail about who built which building, what it was used for, who it was sold to, and when. As a result, somewhat more space has been given to the Sutlers buildings than was originally anticipated to accommodate this information.<sup>5</sup>

### *Early Sutlers and the First Sutler's Store at Fort Union*

From the establishment of Fort Union in 1851 through the difficult years of the Civil War, only one sutler was allowed on post. The permit was usually issued in the name of an individual, but frequently that individual was part of a sutler's company, because the managing of a large sutler operation was complex and could not be handled by one person alone.

Someone had to operate the store from day to day, keep track of daily sales, keep up with stocking and inventorying, and see to the maintenance of the building; one leaky roof could mean financial disaster. Meanwhile, someone trustworthy had to take cash or credit to Saint Louis, Missouri, where they would purchase many thousands of dollars of goods, arrange for their shipment by wagon to the sutler store, and sometimes accompany the goods on the trip to insure that they were treated properly. It was common, in the face of these difficulties, to have at least two partners, one to manage the store and the other to be the travelling purchaser. The

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<sup>5</sup>Robert Louis Reiter, "The History of Fort Union, New Mexico," Thesis, University of Colorado, 1950. David M. Delo, *Peddlers and Post Traders: the Army Sutler on the Frontier* (Salt Lake City: University of Utah Press, 1992), p. 149. Darlis A. Miller, *Soldiers and Settlers: Military Supply in the Southwest* (Albuquerque: University of New Mexico Press, 1989). Darlis A. Miller, "The Perils of a Post Sutler: William H. Moore at Fort Union, New Mexico, 1859-1870," *Journal of the West* 32 (April, 1993): 7-18.

company would usually have a hired staff of several employees, and the store had residential rooms for some of this staff and their families.

The appointment as sutler could be an uncertain thing. Army regulations of 1857 required that sutlers be nominated by a "council of administration," composed of the second through the fourth-ranking officers at a post; the Secretary of War made the final decision on whether a given nominee received the appointment.<sup>6</sup> The officers at a post sometimes played their favorites rather than going with the best qualified person; and sometimes a sutler appears to have had his appointment cut short. Sutlers usually received an appointed for three years, "unless sooner revoked by competent authority."<sup>7</sup>

Jared W. Folger was appointed as the first sutler to the new Fort Union on September 27, 1851. The first sutler's store (HS-145) was undoubtedly begun soon after his appointment; a completion date of early 1852 is reasonable. The available drawings and plan show a building in the shape of a backwards "C", the open side on the west. Assuming that the size shown on the one available plan is representative, the building had a main wing about 85 feet long and 21 feet wide running north to south, with two somewhat lower wings extending west, each about 40 feet long and 21 feet wide. Pitched roofs covered all three wings, and there were at least two chimneys, one on the roof ridge in the center of the north wing, and the other on the southeast corner at the end of the roof ridge of the main wing. The building had a store, storeroom, post office, a residence for the sutler and his family, residences for some employees, and rooms for rent.<sup>8</sup>

Folger ended his tenure as sutler on September 26, 1854. In October, Ceran St. Vrain received an appointment ending rather abruptly in August, 1856. This was a month short of two years, rather than the usual three-year appointment. At the end of St. Vrain's appointment, there appears to have been a 4-month gap during which no sutler was at Fort Union. On December 31, 1856, George M. Alexander began his appointment as sutler. Alexander hired Nathan Webb, just arrived in the territory, to be his storekeeper. Webb, later to become a partner with William H. Moore, was recently arrived from Lafayette, Indiana. He had left his wife and fled to the frontier because of "a difficulty with another man's wife."<sup>9</sup> By 1859, Webb had become Alexander's bookkeeper as well as the store clerk.

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<sup>6</sup>Miller, "Perils," p. 8.

<sup>7</sup>Delo, *Peddlers*, p. 171.

<sup>8</sup>Barton H. Barbour, ed., *Reluctant Frontiersman: James Ross Larkin on the Santa Fe Trail, 1856-57* (Albuquerque: University of New Mexico Press, 1990), pp. 112-114; Oliva, "Frontier Army," p. 402.

<sup>9</sup>Post Sutler's Store, FOUN Document File, p. 6. Webb's wife, Marcella Smith Webb, later received a divorce from Nathan on the grounds of abandonment and adultery.

Alexander may have built a new sutler's store, HS-162, at the southeast corner of First Fort Union. This building was first shown in 1859, and later became a hotel, apparently operated by the post sutler. It was a frame building perhaps thirty by fifty feet, with a porch on the front, facing north, and a pitched roof. A large depression visible within the ruins today, measures about 45 x 20 feet and appears to have been a cellar. The building had an enclosed yard about 100 feet long at the rear on the south, containing one or two outbuildings. The structure was built sometime between August, 1853, when only the sutler store, HS-145, is shown on the map, and the next available drawing made in May, 1859, when HS-162 was already standing.

In 1859 Alexander lost the sutlership to William H. Moore. On March 26, Moore was appointed as sutler, to take effect on January 1, 1860.<sup>10</sup> As the date of his receiving the sutler store from Alexander approached, Moore carried out the preparations necessary to begin business. Among other things, on December 16, 1859, he hired Nathan Webb, Alexander's clerk and bookkeeper, to be clerk at Moore's store. On the first day of 1860, Moore opened his sutler's store at Fort Union.

#### *William H. Moore at Fort Union*<sup>11</sup>

William Moore had arrived in New Mexico at the end of the Mexican War. In 1848 or 1849, Moore opened a trading post at Tecolote, about 12 miles west of Las Vegas and 48 miles west of Fort Union on the Santa Fe Trail. In 1851 he began selling supplies to the new Fort Union, established in July. Beginning in 1852, Moore entered into partnership with Burton Reese, forming Moore, Reese and Company, dealing principally in corn contracts, but also involved in forage sales and cattle herding for Fort Union. With Moore's appointment as sutler at Fort Union, and Reese's subsequent licensing as sutler at Fort Stanton in March, 1860, the business had become so complex that the company had to expand. The two formed a new company with William Mitchell to operate and supply the two sutler's stores and the Tecolote store; when Reese left for California soon afterwards, the partnership became Moore, Mitchell and Company.

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<sup>10</sup>Actually, it is a little more complicated than that: Colonel W. W. Loring and the council of administration chose W. H. Moore on January 30, 1859, and wrote on February 10, 1859, to Colonel S. Cooper, Adjutant General, U. S. Army Headquarters, Washington, D. C., notifying him of their selection. Colonel Cooper then wrote *back* to New Mexico to W. H. Moore on March 26, notifying *him* of his selection, to take effect upon the expiration of Alexander's appointment on December 31. Moore probably did not receive this letter until perhaps the end of April, 1859. This was the typical approval process. In subsequent notes, the date of the available letter of authorization or the equivalent will be used.

<sup>11</sup>The following discussion is based on Miller, "Perils," and William H. Moore, William C. Mitchell, et al. vs. Gertrude E. Huntington, administratrix of Nathan Webb, deceased, Supreme Court of the United States no. 433, filed December 1870, copy in the Document Files of Fort Union National Monument.



From its opening on January 1, 1860, to February 18, 1861, Webb was the clerk and manager at the Sutler's Store at Fort Union, running the store for Moore, Mitchell and Company. Moore operated the main store at Tecolote, while Mitchell was principally the buyer, making the company purchases in person in St. Louis.

The census of 1860 gives a snapshot of the sutler's community at Fort Union. When the census-taker arrived on August 14, he listed Nathan Webb as the "merchant" at Fort Union. In his household was his clerk E. F. Mecick, and two servants. Also living at the sutler's store was the clerk R. Letetrin and a household of six other persons.

On February 18, 1861, Nathan Webb resigned as Moore's storekeeper at the Fort Union sutler's store and returned to "the States." This may have been some sort of ploy to pressure Moore into changing the relationship between the two men, because three months later, on May 15, Webb returned to New Mexico and entered into a partnership with Moore and Mitchell for the operation of the sutler's store at Fort Union, a partnership that lasted until Moore established Webb in a subsidiary company, Nathan Webb and Company, in February, 1863. This company operated the sutler's store at Fort Bliss, Texas. During the period from 1861 to 1863 when Webb ran the Fort Union store, he received a salary of \$1,500 a year and one-eighth share of the annual profits from the store.

As the Civil War showed signs of sweeping into New Mexico, Moore, Mitchell and Webb found that they faced more difficulties than fire, rain, or Indian raids. On March, 1862, before they marched to the Battle of Glorieta, soldiers of Fort Union broke into "the Sutler's cellar and gobbled a lot of whiskey, wine, canned fruit, oysters, etc." It is likely that this was HS-162 by this date—the building called "the Hotel" in 1865 and afterwards. The large depression within its foundations may well be the remains of the cellar the troops broke into.

### *Moore Builds the Sutler Store at Third Fort*

After the threat of invasion of New Mexico by the Confederacy had faded, the Army began the process of making Fort Union more inhabitable and useable than First or Second Fort would allow. Third Fort Union was designed by Captain John C. McFerran, Chief Quartermaster of the District of New Mexico, in mid-1862, and revised somewhat by Captain Henry J. Farnsworth, Quartermaster of the Depot of Fort Union. The Army laid out the plan of the new fort and began construction on a large storehouse and the Quartermaster Corral in September, 1862, although full approval of the new plans did not happen until November, 1862.<sup>12</sup>

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<sup>12</sup>Oliva, "Frontier Army," pp. 547-48.



About the same time in 1862, Moore built a massive new sutler store, HS-302.<sup>13</sup> The building was probably begun about September, after the Third Fort was laid out, because it is square with the plan of the fort and was placed so that "the front of the store was near the big gate,"<sup>14</sup> facing the main west entrance to the fort compound, between the Depot and the Post.<sup>15</sup> Moore later stated that "the buildings were erected with the permission of the commander of said post of Fort Union [probably Captain Peter Plympton, who took command on September 25 from Major Henry Wallen], for the use of William H. Moore and Company as a sutler's store, and cost the said William H. Moore and Company the sum of \$4,644.40."<sup>16</sup> Nathan Webb, Moore's storekeeper at Fort Union at this time, probably oversaw the construction of the new building, and transferred the goods from the old store to the new one.<sup>17</sup>

The main store building was a U-shaped structure of adobe, 63 feet across the front, one story high, with a large doorway in the center of its east face, flanked by a window symmetrically on each side, and the pitched roof was shingled. Rooms included the store, storerooms, several offices, a billiard room, several residential rooms, and a safe room.

Walls extending west from the north and south wings enclosed a large yard behind the main building; along these walls were several additional buildings, probably barns, stables, and storerooms. Visible traces give a compound 150 feet long and 63 feet wide. The entire complex was the structure that William Ryus later described as "built like a fort," with walls of adobe brick reaching to a height of nearly 20 feet, enclosing an interior patio or corral. A large

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<sup>13</sup>Mora County Clerk's Office, Deed Records [MCDR], A:357-58, January 1, 1872. Other than the plan derived from field work in 1989, the 1866 map of Fort Union shows the plan of Moore's store. It was surveyed by Brevet Colonel H. M. Enos and John Lambert in August through December, and the final map undoubtedly drawn in January, 1867.

<sup>14</sup>William H. Ryus, *The Second William Penn: A true account of incidents that happened along the old Santa Fe Trail in the Sixties* (Kansas City, Missouri: Frank T. Riley Publishing Co., 1913), p. 128.

<sup>15</sup>Moore's store was first insured on Feb. 1, 1863 (FOUN Document Files, William H. Moore file). It was the first building to be constructed of the Sutler's Row at Third Fort Union, and is the one shown in the ca. 1865 photograph, *Third Fort Union*, ill. 53, pp. 230-31; in the background of *Third Fort Union*, ill. 22, pp. 168-69, taken about the same time; and shown in plan on the 1866 map, August-December, 1866; in fact, it is the *only* sutler's building in the row until Barrow begins his store, HS-305, in December, 1867. Because of the uncertainties about the 1866 map, the specific structure that was Moore's store cannot be proven using it alone. However, about August, the photograph in *Third Fort Union*, ill. 22, p. 169, clearly shows the building in *Third Fort Union*, ill. 53, p. 231, taken probably the same day, in the background behind HS-29. Lines of sight prove that this is indeed HS-303.

<sup>16</sup>Moore, Mitchell, et al. vs. Huntington. In 1866, Moore claimed that the buildings had cost him more than \$25,000, while in 1870 Mitchell stated that they had cost \$10,000; Miller, "Perils," p. 13. Even allowing for reasonable additions and improvements, these claims are obviously inflated.

<sup>17</sup>It is possible that Moore had a sutler's store at the Second Fort for a time in 1861 and early 1862; one of the long, strange buildings east of the fort, HS-218 or HS-219, could have begun as a sutler's building.

gateway, 15 feet wide, opened through the center of the south wall of the compound.<sup>18</sup> "Here," said Ryus, "the wagons drove in to unload and reload."<sup>19</sup>

In early 1863, Nathan Webb left the Fort Union store to become sutler at Fort Bliss, Texas in partnership with Moore. About the same time, Moore moved his residence to his Fort Union store. Ryus described him playing billiards with Kit Carson about 1865, and he and his family were living there as of the census of 1870.<sup>20</sup> In addition to his store, Moore apparently operated a hotel (HS-162) near First Fort. This building, probably constructed as an additional sutler store at First Fort by his predecessor, George Alexander, went up after August, 1853, and before May, 1859, and continued in use as a hotel through 1868.<sup>21</sup>

### *Sutler to Trader: the Army Regulation Changes of 1866-1867*

Partly in reaction to the excesses carried out by sutlers during the Civil War, on July 28, 1866, Congress passed Statute 14, an act that, among other things, abolished sutlers. The provisions of the statute were to go into effect July 1, 1867.<sup>22</sup> In compliance with Statute 14, on January 26, 1867, the War Department issued General Order 6, announcing the termination of the warrants of all sutlers on July 1, 1867.<sup>23</sup>

However, protests from western forts prompted Senate Joint Resolution #25 on March 30, 1867, authorizing the Commanding General of the Army to permit "a trading establishment to be maintained" after July 1.<sup>24</sup> This was interpreted to mean that the Commanding General could authorize a single trader at each post.

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<sup>18</sup>One of the ca. 1885 photographs shows this gate, and it is visible today as a gap in the ruins of the wall.

<sup>19</sup>Ryus, *Second William Penn*, p. 128. William Ryus was a "counter jumper," a sales clerk, one of four who worked for William H. Moore at the sutler store about 1865.

<sup>20</sup>Ryus, *Second William Penn*, p. 128. Carson was commander of Fort Union from December, 1865, to April, 1866.

<sup>21</sup>Arrott Collection, card # 00162, Francisco Abreu to Major Benjamin C. Cutler, July 5, 1865, FOUN Fact Files.

<sup>22</sup>United States Statutes 14, 39th Congress, 1st Session. Miller, "Perils," p. 8.

<sup>23</sup>The series of orders issued in 1867 are very complex, and constantly refer back to earlier orders. If a military post missed receiving some of the orders, the others would appear to be meaningless and contradictory. Since mail was lost and destroyed frequently during this period, undoubtedly some posts were put in a very confusing position.

<sup>24</sup>Delo, *Peddlers*, p. 148.

In response to this resolution, on April 20, 1867, Headquarters, Division of the Missouri, issued a circular requiring the Commanding Officer of each established military post in the military division of Missouri west of the 100th meridian, not at or in the vicinity of any town, to nominate, at once, through the regular military channels, a suitable person to maintain and carry on, after July 1, 1867, a trading establishment under the provisions of the Joint Resolution of Congress of March 30. As an interim provision, on May 24, 1867, the Adjutant General issued General Order 58 (authorized May 30), permitting sutlers to trade at posts between the 100th meridian and the eastern border of California until further orders.<sup>25</sup>

### *Moore Becomes a Trader*

In the first week of May, 1867, Lieutenant Colonel W. B. Lane, the commander of Fort Union, received the order of April 20, requiring each post to nominate a person to become post trader when the regulations permitting a post sutler expired. On May 10, 1867, he notified Headquarters of the Army, Washington, D. C., of the possible choices for post trader at Fort Union. Two people had applied for this position before official notification to Fort Union. They were Charles Shoemaker (the son of Captain William Shoemaker, commander of the Fort Union Arsenal) and W. H. Moore. Lane left the final choice to the Headquarters of the Army. Headquarters of the Army chose W. H. Moore to become the new Post Trader when the regulations went into effect on July 1, 1867.<sup>26</sup> On July 1, when the position of Post Sutler was officially abolished, William Moore became the first post trader at Fort Union.

Up to this point, even through the flurry of almost-conflicting orders, business continued as usual for the post sutler, now trader; but the strongest impacts of the new regulations were still to come. On August 22, 1867, Adjutant General Order 68, by order of General Grant, modified General Order 58: it stated that any number of traders could practice at posts, subject only to regulations imposed by the commanding officer.<sup>27</sup>

With the passage of this regulation, Moore lost his monopoly on the trade at Fort Union, and soon had competition for the Fort Union and Santa Fe Trail markets. Sometime this year, probably soon after the regulation change, General Ulysses Grant attempted to get his brother-in-

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<sup>25</sup>*Ibid.*

<sup>26</sup>Lieutenant Colonel W. B. Lane to Headquarters of the Army, Washington, D. C., May 10, 1867. The Army appears to have added Shoemaker to the approved list later, before October 4, when his authorization is revoked. Presumably Shoemaker received approval sometime after August 22, when multiple traders are authorized. Shoemaker had been in trouble about his sutling activities before, when on August 2, 1866, he was ordered to close his illegal sutler's store. Later correspondence indicates that this was at the Arsenal.

<sup>27</sup>Delo, *Peddlers*, p. 148. The commanding officer could restrict traders to one, if he thought appropriate.



law John C. Dent a post tradership at Fort Union.<sup>28</sup> Grant's effort on Dent's behalf came to nothing, but about the same time Charles Shoemaker reapplied for a post trader position, and apparently had more success. Probably sometime in September, Shoemaker was issued authorization to build a house and conduct trade at Fort Union,<sup>29</sup> but on October 4, his license was revoked by Headquarters, District of New Mexico, in Special Order 97.<sup>30</sup> No reason for this action was given. Since Shoemaker must not have received permission to trade much before mid-September, it is unlikely that he got very far in building a store.

Dent and Shoemaker attempted to compete with Moore, but neither managed an effective assault on his position. The successful invasion of Moore's territory came from a third person: the Santa Fe Trail trader, John E. Barrow.

### *The Trader John E. Barrow at Fort Union*

John Barrow had been operating out of Missouri since about 1860. He had traded in New Mexico beginning about 1861; as he said later, "I had been out there frequently before [1867]; I had traded out there in 1861, and sold out my goods to different parties." His major purchasing was apparently through Robert Campbell and Company of St. Louis, but he also had dealings there with Julius Smith and Company. In perhaps August or September of 1867, Barrow hauled \$37,000 worth of goods to New Mexico; "after getting out there with them I found that I had no opportunity to sell them, trade being dull and no business going on."<sup>31</sup> Learning of the new regulations of August 22 allowing multiple traders at Army posts, he decided to give up on speculative trade and make the attempt to get a tradership at Fort Union. At this time, Fort Union was considered "the most valuable post, with the exception probably of Fort Sill and one or two others, in the country . . . . It had a large trade outside of the post."<sup>32</sup>

Leaving his goods in storage in Las Vegas, Barrow returned to St. Louis. He knew it would be difficult: "Mr. Moore, who was then trader out there, had been there for twenty years. He

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<sup>28</sup>Miller, "Perils," p. 15. Grant was married to Dent's sister, Julia.

<sup>29</sup>He was authorized in Special Order 102, issued by Headquarters, Fort Union, but no date is given for the order in the reference to it.

<sup>30</sup>Brevet Major General Getty, Headquarters, District of New Mexico, Special Orders 97, October 4, 1867.

<sup>31</sup>John E. Barrow, 44th Congress, 1st *House Report*, Volume 8, Number 799, Serial 1715, Hearings on "Sale of Post Traderships," (hereafter called "Hearings,"), p. 137.

<sup>32</sup>B. Gordon Daniels, 44th Congress, 1st *House Report*, Volume 8, Number 799, Serial 1715, Hearings on "Sale of Post Traderships," p. 127.



had a great deal of influence with the military, and I knew that there were a great many persons who had tried to get the appointment and who had not succeeded."<sup>33</sup>

"I used some influence," said Barrow, "went and saw Mr. [Robert] Campbell, of Saint Louis, and also Mr. Thomas, who was then quartermaster in Saint Louis, to use their influence in getting the appointment, but found out I could not succeed in that way, and so was induced to apply to Mr. [William D. W.] Bernard, knowing he was a brother-in-law of John C. Dent and an intimate friend of General Grant . . . I was advised by different parties to apply to Bernard as having more influence with General Grant than any other man in Saint Louis."<sup>34</sup>

About mid-October, Barrow was introduced to Bernard. Barrow said that Bernard "advised me to give him my own application in writing for that post, which I did, and he wrote a letter . . . to General Grant . . . I was to give him one-third of the profits yearly for his influence with General Grant in getting me the place at Fort Union."<sup>35</sup>

Barrow had never met Bernard before; he said, "I knew nothing of Mr. Bernard only what I had heard—that he had been intimate with [General Grant], been drunk with him, given him a horse, and all that kind of thing . . . ." Bernard, a clerk with Julius Smith & Co., had lived in St. Louis for a time. He was married to the sister of John C. Dent's wife; Dent already had an interest in the tradership at Fort Union, and was the brother of Julia Dent Grant, married to General Ulysses S. Grant. Bernard was a friend of Julia's, and had known Grant for some time. Barrow had heard that "General Grant had been with Mr. Bernard. He lived with him when [Grant] was a poor man in St. Louis, for a number of years."<sup>36</sup>

After making his application through Bernard, Barrow was confident that he would receive the position at Fort Union. He said, "I left for New Mexico . . . I did not wait [in St. Louis] for the appointment."<sup>37</sup> Barrow was apparently back at Fort Union by December 5, when the authorization was issued, to go into effect January 1, 1868.<sup>38</sup> Barrow probably received this notification at Fort Union sometime in early or mid-December.

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<sup>33</sup>Hearings, pp. 137, 138, 142, 144.

<sup>34</sup>*Ibid.*, pp. 137, 144.

<sup>35</sup>*Ibid.*, p. 137.

<sup>36</sup>*Ibid.*, pp. 137, 138, 142, 143, 140. Sometime this year, W. H. Moore and Company owed money to the company of Bryant and Bernard; it is possible that William D. W. Bernard was associated with this company.

<sup>37</sup>Hearings, p. 141.

<sup>38</sup>FOUN, Fact Files, December 5, 1867; Hearings, p. 141.

In mid-December, Lt. Col. John R. Brooke, commanding officer of Fort Union, gave John Barrow permission to build a store, and, said Barrow, "staked off my ground for the buildings." Barrow's building, HS-305, was built between about December 15, 1867, and February 3, 1868, and cost \$7000. He brought the \$37,000 worth of goods from storage in Las Vegas to sell in it. Once built and supplied, Barrow felt that his store was a good one: "I had probably the best sutler's store in America, and the best stock of goods at the time."<sup>39</sup>

Barrow was worried about W. H. Moore's competition. "We did not [sell at a big profit] at that time; we had competition. Moore . . . had a large trade, and the only way I could do anything was to sell at a much less profit than he did."<sup>40</sup> Barrow felt, however, that he had the financial base and business acumen to make his gamble as a Fort Union trader pay off. As it happened, he was wrong; but it was not William Moore who brought him down.

### *The Barrow Store*

On February 3, 1868, John Barrow opened his store at Fort Union.<sup>41</sup> Barrow built the new store north of Moore's building, facing the same direction, and with its front aligned with Moore's; the two buildings established the line of what was to become Trader's Row, soon to acquire further additions. Barrow's building had an enclosure extending to the west an estimated 150 feet, the same size as the Moore store. It was an adobe building with a frame false front facing east. It had a substantial stone foundation and was about 70 feet across the front and 94 feet deep to the west. The building was divided into three sections by east-west frame partition walls. These three parallel sections had pitched roofs with the ridgebeams extending west from the simple false fronts. In part of the store, Barrow ran a bar called the "Billiard Saloon."<sup>42</sup>

Eventually part of Barrow's complex was HS-304, just south of Barrow's store. This building was either built by Barrow as additional space, or perhaps built by Charles Shoemaker in September, 1867, and never used by him, but purchased by Barrow. On the 1868 map it is shown as a simple U-shape with no rear enclosure; soon after 1868 the entire structure and its enclosed yard were incorporated into the compound of HS-305. This appears to be the building

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<sup>39</sup>On December 14, 1867, Barrow bought \$1,389.60 from A. Gracilachowski, presumably in San Miguel County, New Mexico (Legal Notice, *Weekly New Mexican*, October 26, 1869, col. 1, p. 3). It is possible that this purchase was of construction material and building hardware. Hearings, p. 137-39.

<sup>40</sup>Hearings, p. 144.

<sup>41</sup>Barrow sent identical advertisements to the two Santa Fe newspapers. His first ad appeared in the *Santa Fe Weekly Gazette* on February 15, p. 2, col. 5. The ad in the *New Mexican* appeared on February 18, p. 2 col. 5.

<sup>42</sup>On September 25, 1868, the Post Commander ordered John Barrow to stop selling liquor to enlisted men at the "Billiard Saloon" associated with his store; Oliva, "Frontier Army," p. 729.

in which were located John Gilbert's barbershop and residence, sometime before October, 1868.<sup>43</sup> John Gilbert was an African-American, and was probably living on the row and operating his barbershop by mid-1868. Gilbert may have arrived in the Fort Union area as a member of the 57th Colored Infantry, stationed here in 1866.<sup>44</sup> Next to the barbershop was a stand used for a while in 1868 by a photographer, and then after October by John Taaffe, who sold beer by the bottle out of the stand.<sup>45</sup>

Barrow was expecting his first wagon train from the States on February 15, and his second on March 15. On July 3, Barrow sent a new ad to the Santa Fe newspapers, in which he stated that he was "now receiving over 100 tons of assorted merchandise."<sup>46</sup> Barrow said later, "I had bought \$50,000 or \$60,000 worth of goods from January until October or November . . . ."<sup>47</sup> He replenished his stock "two or three times." However, Barrow was not making a large profit, because he was having to undercut Moore's prices to acquire some of the trade.

#### *Barrow to Bernard*

About May, to Barrow's dismay, his supposedly silent partner William D. W. Bernard moved from St. Louis to Fort Union. Here he "proposed to take his share of the profits and stay in the house, which he did for some time," presumably living in the residence in Barrow's store.<sup>48</sup>

In October, 1868, Barrow left on a purchasing trip to St. Louis, leaving the store in the hands of "Mr. Mickels," his clerk.<sup>49</sup> About the end of October, Barrow's appointment was cancelled. "Without any notification whatever I received a dispatch from my clerk, stating that my permit was revoked, and that Mr. Bernard was appointed in my place."<sup>50</sup> About the same time, Bernard telegraphed John C. Dent to meet with Barrow and arrange to buy Barrow's goods for

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<sup>43</sup>The presence of a barber shop here is taken from the letter by John Taaffe to Commanding Officer, Fort Union, October 23, 1868, FOUN Fact File; that it was operated by John Gilbert is based on the 1870 census.

<sup>44</sup>Oliva, "Frontier Army," p. 1035.

<sup>45</sup>John Taaffe to Commanding Officer, Fort Union, October 23, 1868, FOUN Fact File.

<sup>46</sup>*Santa Fe Weekly Gazette*, July 11, 1868, p. 2, col. 5.

<sup>47</sup>Hearings, p. 141.

<sup>48</sup>*Ibid.*, p. 137, 143.

<sup>49</sup>While Barrow was gone, Bernard bet a load of Barrow's sugar and coffee that Ulysses Grant would win New York by 20,000 votes. He lost.

<sup>50</sup>Hearings, p. 137.



Bernard.<sup>51</sup> Bernard took over the store in his absence: "He was appointed, and being around in the house sometimes, Mr. Mickels, the clerk, did not know what to do . . . He just turned it over to him after he got the appointment."<sup>52</sup> Of course, Bernard *was* in some sense Barrow's partner, and could argue that he had some claim to the store and its goods.

Barrow was uncertain as to how Bernard was able to take over the trader position, but thought it likely that "he got it through General Grant, as a matter of course."<sup>53</sup> Barrow had the impression that Bernard exercised a good deal of power. For example, after Bernard moved to Fort Union, "he seemed to take charge of everything at Fort Union. General Grier was commander after General Brooke left there. [Bernard] seemed to have control over him, and in fact talked about having the post-commander appointed, and talked about the old man [General Grant] as if he [Bernard] was almost Secretary of War himself, and could accomplish everything. That was the way in which he conducted himself around the post and all through the Territory."<sup>54</sup> This was in 1868, before General Grant became president. Grier, a colonel at the time, was appointed post commander on July 12, 1868, and continued so until September 11, 1869.<sup>55</sup>

Barrow left St. Louis soon after being notified of the loss of his appointment; he met with Dent and returned to Fort Union with him: "I took Mr. Dent down with me to the fort, and when I got there Bernard had charge of everything."<sup>56</sup> They arrived at Fort Union in the second week of November, and on November 16, Barrow terminated the partnership with Bernard.<sup>57</sup> On December 9, Barrow sold the store and goods to Dent—he thought. Barrow said that he and Dent entered into a written agreement, but "it was not signed, however. It was a memorandum agreement. We had just got through taking stock as the stage came up." Apparently Barrow and Dent left Fort Union for St. Louis on December 9, after a stay in New Mexico of about three weeks.<sup>58</sup>

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<sup>51</sup>*Ibid.*

<sup>52</sup>Barrow said that "Mr. Mickels" had been in the Army for some time as Quartermaster Clerk. He was the brother-in-law of General Bradley, who was Quartermaster of Fort Union; Hearings, pp. 140-41.

<sup>53</sup>Hearings, p. 139.

<sup>54</sup>*Ibid.*, p. 139.

<sup>55</sup>Oliva, "Frontier Army," p. 1017.

<sup>56</sup>Hearings, p. 137.

<sup>57</sup>*Weekly New Mexican*, January 26, 1869, p. 3, col. 1.

<sup>58</sup>On December 4, the daily *New Mexican* mentioned that Dent was visiting Bernard at Fort Union, and had publicly expressed an interest in returning to New Mexico (*Santa Fe New Mexican*, December 4, 1868). "Notice," *Santa Fe Weekly Gazette*, February 6, 1869, p. 2, col 5; also *Weekly New Mexican*, February 9, 1869, p. 3, col. 1;



A month and a half later, on January 26, 1869, Bernard finally announced in the *New Mexican* that his partnership with Barrow had ended on December 16, but added that he was continuing the business at Fort Union; the phrasing of the announcement implied that Bernard kept the store and goods. In reality, John C. Dent was in the process of buying the store and goods; even though Bernard was an authorized trader, he legally owned neither a store nor stock. Nevertheless, Bernard operated out of the Barrow/Dent store for a considerable time into 1869, and apparently continued to use the name "J. E. Barrow and Company."<sup>59</sup>

Eventually, in the first week of February, Barrow notified the public that as of December 9 he had agreed to sell his store and goods to John Dent. Barrow further said that he authorized Dent "alone in our absence, to collect all notes and accounts due the late firm of J. E. Barrow and Company."<sup>60</sup> However, Dent "never did. Mr. Bernard collected them, and he had nothing to do [with] it."<sup>61</sup>

In January, after returning to St. Louis, Barrow found that Dent had no intention of going through with the purchase of Barrow's store and goods on the terms agreed to at Fort Union. Barrow said, "I consulted with my creditors. They advised me to sell out at his terms and take what he offered me . . . . I had to accept his own terms, which subjected me to a loss on the debts I had out there of \$16,00 or \$18,000, and a loss on my goods of between \$30,000 and \$40,000." Barrow added, "I sold on long credit, and compromised with my creditors at fifty cents on the dollar." After two or three weeks of negotiations, about late February Barrow officially transferred his store and goods to Dent.<sup>62</sup> With this, John Dent became the owner of the Barrow Store and all its goods at Fort Union with a minimum of expense. Barrow was ruined by the takeover, losing something like \$50,000 and his good credit rating. He had to begin again in Utah.<sup>63</sup>

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Hearings, 137, 139, 140.

<sup>59</sup>Hearings, 137, 140.

<sup>60</sup>"Notice," *Santa Fe Weekly Gazette*, February 6, 1869, p. 2, col 5; also *Weekly New Mexican*, February 9, 1869, p. 3, col. 1; Hearings, 137, 140.

<sup>61</sup>Hearings, p. 138.

<sup>62</sup>*Ibid.*, pp. 137, 139

<sup>63</sup>*Ibid.*, p. 144. On October 26, in Santa Fe, Frank Chapman published an official notice of attachment of the goods and possessions of the J. E. Barrow Company, specifically the possessions of John Barrow and William D. W. Bernard, on behalf of A. Gracichowski, who had sold goods to the company on December 14, 1867. The case was to be heard in March, 1870. If one or both defendants did not appear in court, their property would be sold to satisfy the outstanding amount owed (*Weekly New Mexican*, October 26, 1869, p. 3, col. 1). Dent, the actual owner at this time, must have settled this account.

Bernard, as the appointed trader, apparently continued to operate the store until at least June. The ad for the J. E. Barrow and Company store at Fort Union continued to run in both papers, and must have been paid for by Bernard during this period; it seems typical of Bernard that he continued to foster the deceit that Barrow was still part-owner of the store. In the *Weekly New Mexican*, the ad last appeared on June 8, 1869.<sup>64</sup> Barrow indicated that Dent remained in St. Louis through at least the end of February, since it took most of that month to work out Dent's forced agreement. Dent probably returned to Fort Union about March; but since Bernard, not Dent, was the authorized trader, Dent could not operate the store without Bernard's cooperation until Dent was appointed trader in September. It is reasonable to assume that Dent and Bernard set up some sort of partnership for the period from March to late September, 1869, sharing the profits while Bernard acted as trader selling Dent's goods out of Dent's store, under Dent's management.

Finally, Dent's machinations paid off; on September 23, 1869, he was appointed as a post trader at Fort Union, the position he had been working towards since 1867.<sup>65</sup> W. D. W. Bernard left, and about a year later was appointed Bank Examiner in St. Louis, a position he held until at least 1876.<sup>66</sup>

### *The Adolph Greisinger Building*

In the meantime, a fourth building was added to the Row. On September 15, 1868, Adolph Greisinger, an enlisted man stationed at Fort Union, wrote to the commanding officer, requesting permission to build a house "in the vicinity of the two trader stores" (that is, HS-302, W. H. Moore's store, and HS-305 and 304, John Barrow's store) when he was discharged on October 1, 1868. Greisinger stated that he wanted specific permission to operate a restaurant and bowling alley in the house he proposed to build; he expected that he would have the building completed by late November, 1868.<sup>67</sup>

Soon after his establishment on the Row, Adolph Greisinger opened a hotel in his building. The Hotel (HS-162) near the old First Fort, apparently operated by William Moore, was closed down

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<sup>64</sup>In the *Gazette*, it ran through the last issue of the paper in September, 1869, but this may have been through an oversight.

<sup>65</sup>Miller, "Perils," p. 16; Special Orders 177, Headquarters Department of the Missouri, September 23, 1869.

<sup>66</sup>Hearings, p. 138.

<sup>67</sup>No reference to his proposed bowling alley is known after Greisinger's original letter for permission. Unfortunately, no direct evidence indicates whether HS-303 or HS-304 was the Greisinger building; however, considering the number of people apparently resident in Greisinger's Hotel in the 1870 census, it is likely that this establishment was located in the larger HS-303, rather than the smaller HS-304. The discussion assumes that Greisinger constructed the core building of HS-303 as his house and restaurant in October-November, 1868.

sometime in 1869 or early 1870,<sup>68</sup> and Greisinger probably began his hotel operation about the same time; he was operating the hotel by August, 1870.<sup>69</sup>

Greisinger was one of a group of entrepreneurs who operated businesses at the fort, not as a post trader, but as a subcontractor or employee of one or another authorized trader. The barber John Gilbert, the beer-stand operator John Taaffe, the unnamed photographer, and several later persons all apparently fall into this category. Appointed post traders subcontracting their position to someone else who actually carried out the duties was a continuous problem for the Army through the late 1860s, culminating in a circular of 1872 requiring that the trader would carry on the business himself, and habitually reside at the post where he was appointed. He was not permitted to transfer, sublet, sell or assign his business. However, this did not forbid persons operating businesses as employees of the post trader, and such multiple businesses under a single trader/manager continued at Fort Union through the rest of its active life.<sup>70</sup>

Even more informal trade could operate along the Row. For example, in June, 1870, Greisinger complained about a "Mexican Market House" next to his house and restaurant.<sup>71</sup> No structure has been identified for this activity, but since so little space was available on the north side of HS-303, it is likely that the Market was in the space between Moore's store and the Greisinger building.

### *Dent Gets the Monopoly*

From 1867 until 1870, the new regulations allowed multiple post traders; in 1870, this was modified to the provision that post traders *authorized by the Secretary of War* were to be allowed on post. On July 15, 1870, a House Resolution authorized the Secretary of War to permit one or more trading establishments on all posts.<sup>72</sup> With this bill, giving more power to political influence than to skill and talent, Dent was able to begin the last step: to gain the monopoly on

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<sup>68</sup>The hotel appeared as in use on the 1868 map, drawn in May and updated through at least December, 1868, but closed before mid-1870, since it does not appear in the census of that year.

<sup>69</sup>For example, the census refers to him as "hotelkeeper;" Harry C. Myers, ed., *La Junta Precinct No. 11, Mora County, New Mexico, 1860, 1870, 1880, Federal Census Enumeration* (Albuquerque: New Mexico Genealogical Society, 1993), pp. 49-63.

<sup>70</sup>Adjutant General circular, authorized by the Secretary of War, March 25, 1872; Delo, *Peddlers*, pp. 153, 157.

<sup>71</sup>Oliva, "Frontier Army," p. 755.

<sup>72</sup>House Resolution Executive Document #249, July 15, 1870. Delo says that "as passed," the bill allowed only one trader; Delo, *Peddlers*, pp. 149, 152, 154.



the post tradership at Fort Union. Dent exercised all the influence he had, and on October 6, 1870, was ruled the only authorized trader.<sup>73</sup>

On October 25, the notification of Dent's appointment was received at Fort Union. William Moore applied for and received permission to continue business up to January 1, 1871; his request for a further extension to March 1, 1871 was denied.<sup>74</sup> Moore closed his store on January 1, 1871, and the building was apparently unused after that date. Ultimately, the loss of the post sutlership broke W. H. Moore's company; by 1873 it was in severe debt from which it never recovered.<sup>75</sup>

Dent did not simply step into Moore's shoes as the only recognized trader, however. With the closure of his business, Moore did not sell his building to Dent; instead, he continued as owner until January, 1872, when he sold the structure to his bookkeeper, Henry V. Harris.<sup>76</sup> Dent encountered some opposition from the local military establishment, as well. On April 4, 1871, for example, Dent wrote to the commanding officer of Fort Union, Major David Clendenin, saying that he was "ready and have been for some time, to do the duties of Post Trader at this post . . ." It appears that Major Clendenin was dragging his feet on issuing the commander's authorization required before Dent could conduct business.<sup>77</sup>

### *Trader's Row During the Dent Years*

The census of 1870, made at Fort Union between August 16 and September 5, gives a brief look at the Trader's Row community in that year.<sup>78</sup> The census taker started at the north end of Trader's Row and worked south. John C. Dent's store was at the north end, HS-305, with John Dent listed as a retail merchant with no family, Edgar James and Frank Jager clerking for him and Richard Dunn serving as freight agent; all four lived in the Dent compound. Next south was the residence of John Gilbert, the African-American barber, whose barber shop and residence were apparently in HS-304. Next was Adolph Greisinger's hotel, HS-303, also containing his restaurant and beer saloon. In Greisinger's household were two cooks, two domestic servants, an ostler, and a laundress; in the hotel were 11 households comprising 43

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<sup>73</sup>Reiter, "The History of Fort Union," p. 47; Miller, "Perils," p. 16.

<sup>74</sup>Reiter, "The History of Fort Union," pp. 47-48.

<sup>75</sup>Miller, "Perils," p. 16-17.

<sup>76</sup>MCDR, A:357-58.

<sup>77</sup>Dent to Major David Clendenin, Commanding Officer, Fort Union, April 4, 1871, FOUN Fact Files.

<sup>78</sup>Census of 1870, August 16-September 5, Myers, *La Junta Precinct No. 11, Mora County, New Mexico, 1860, 1870, 1880, Federal Census Enumeration*.



persons. Finally, William Moore's store, HS-302, with eight residents, including Moore, his family (one son of whom was a store clerk), and his bookkeeper, Henry V. Harris.

No residents were listed south of Moore's store. However, HS-300 had already been built here by 1870. The census implies that the building was not a residence. No owner or use is suggested by the presently-available information. It was a low, nondescript structure, perhaps no more than a shed. The ground traces suggest that it was about 45 x 30 feet with two small extensions.<sup>79</sup>

The 1870 census listed Thomas Lahey as a soldier at Third Fort. He was apparently discharged soon afterwards, and on November 1, 1872, he and Edward McDonald leased the Greisinger house. They intended to continue the restaurant and saloon, and applied to the commanding officer for permission to operate the hotel; they would purchase the building if they receive approval to do this. They presumably bought the building soon after receiving this permission.

By 1875, John Dent had sold part of HS-305 to Edward Shoemaker. The 1870 census listed Edward Shoemaker as a postmaster, apparently at the Arsenal; in 1875 Shoemaker's Post Office was located in the middle frame-fronted structure of the Barrow Building, with a residence attached. Dent's store continued in the northernmost frame-fronted structure of the building.<sup>80</sup>

The last building added to Trader's Row was built in 1876. Sometime this year, Samuel B. Watrous built a butcher shop with quarters for employees; this very likely was HS-301.<sup>81</sup> This structure was not on the ca. May, 1868, map, but is visible in the ca. 1885 photographs. The field investigations and examination of the photographs allow a general description of the building. It had a front section, apparently of adobe, 53 x 20 feet, covered with a pitched roof, and two wings extending westward. A walled yard was west of the building, apparently extending about 100 feet west, and at least one outbuilding is visible on the ground in the yard. The butcher who operated the shop was apparently Frank Jager, who had been a clerk for John Dent in 1870.

In 1876 the power of choosing a post trader was returned to the council of administration at individual posts.<sup>82</sup> Also in 1876, Fort Union had inquired of John C. Dent as to whether the building known as the "Hotel and Billiard Room" was owned by him or was under his control

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<sup>79</sup>This building appears to have been added to Sutlers Row between 1866 and about 1870; it first appears on the 1868 map, updated through perhaps 1869. The space between HS-302 and the next building to the south seems to be large enough that HS-301 is not yet present, and HS-300 must be the structure shown.

<sup>80</sup>Oliva, "Frontier Army," p. 884.

<sup>81</sup>Reiter, "The History of Fort Union," p. 50.

<sup>82</sup>Miller, "Perils," p. 16.

as part of his trading establishment. This was apparently the Hotel (HS-304), still owned and operated by Lahey with the permission of Dent, the authorized trader.<sup>83</sup>

By 1877, the Barrow building was referred to as the "old Post Sutler's store, Beer saloon, Post Office, etc."<sup>84</sup> Dent operated his store out of HS-306 until 1878, when Crayton Conger took over as trader, and probably bought the store.

In 1877, civilians authorized to live on post were John C. Dent and his family, Harry Mumford (listed as assistant PM [postmaster?] in the 1880 census), James Duncan, Henry V. Harris and family (either living in Dent's buildings and working for him, or living in Moore's old building and working for the Romeros), C. Waldenstein, John McKie, J. F. Jager (presumably the same as Frank G. Jager, the clerk/butcher, probably working and living in the Watrous butcher shop), Samuel Edge, Francisco Cordoba, and Thomas Lahey, probably still operating the hotel and saloon out of the Greisinger building.<sup>85</sup>

### *The Barrow Building After John C. Dent: The Conger Era*

On April 9, 1878, Crayton H. Conger was appointed as post trader. On April 12, John Dent ended his appointment as trader, and probably sold HS-303 to 305 to Conger. Crayton's brother Arthur Conger was apparently Dent's storekeeper in the last year or so, and undoubtedly was involved in Crayton's selection as the new trader. In fact, Arthur appears to have run the store from April 12 until Crayton arrived a month or two later. Crayton brought his family out to Fort Union from Iowa. Reminiscences by his granddaughter, Mary Lou Skinner, about her grandmother's memories of the trader store state that Crayton took over the store being run by his brother, and describe some of the life at the store.<sup>86</sup> However, after only two years as trader, on May 22, 1880, Crayton Conger died of heart disease while in Oneida, Kansas.<sup>87</sup>

The census of 1880, on June 8, listed the family of Arthur W. Conger, Crayton's brother, living in the Trader Store compound, HS-303, 304, and 305, with Arthur listed as Merchant. At this

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<sup>83</sup> Major J. F. Wade, Commanding, to John C. Dent, March 18, 1876, Fort Union Fact File.

<sup>84</sup> Col. Dudley, commanding officer, Fort Union, July 18, 1877.

<sup>85</sup> Headquarters, District of New Mexico, to Commanding Officer, Fort Union, October 26, 1877, FUNM Fact Files.

<sup>86</sup> FOUN, Document Files, Mary Lou Skinner to Bruce T. Ellis, November 14, 1966. Photograph of HS-305, MNM #36599, shown in *Third Fort Union*, ill. 54, p. 233, sent to the Museum of New Mexico by Mary Lou Skinner, Crayton Conger's granddaughter, probably dates from the period of about 1880-1881 that the Crayton Conger family was at Fort Union.

<sup>87</sup> Fact File, FOUN.

time he was the acting trader. One of the residents in Arthur's household was L. A. Conger, a widowed female, 39, who was Louisa Agnes Conger, Crayton's widow and Mary Lou Skinner's grandmother. Also living and working in the compound were four additional households made up of two cooks, two housekeepers, a laborer, and their families; the total of the Congers and the others in the compound was 17 people. Further south in the Row was the butcher Frank Jager and his wife, Safronia, followed by three households of a cook and two laborers and their families, for a total of seven people, all probably living and working in HS-301. Jager had apparently become the Beef Contractor by this time.<sup>88</sup> It appears that W. H. Moore's old store, HS-302, was empty at the time of this census.

Not long afterwards, on July 17, 1880, Arthur W. Conger was officially appointed trader. Conger and several of his employees handed the tradership back and forth for the next ten years. Frank Jager, the butcher and one of Conger's partners, and his salesclerks Werner Fabian and Edward Woodbury, all became traders, alternating their appointments with reappointments of Conger. Conger's first appointment as trader ended on September 28, 1881, when he probably left Fort Union to escort the Crayton Conger family back to Iowa. Conger's partner Frank Jager took over the tradership in his absence.

While Conger was gone, on October 18, 1881, soon after President Rutherford Hayes ordered the cessation of liquor sales on Army posts, Jager was ordered by the post commander to close the saloon connected with his store until he had proper permission to operate it. Other exchanges about the saloon through November resulted in permission for Jager to operate the saloon only as a beer and wine bar.<sup>89</sup> A few months later, on January 18, 1882, Samuel Watrous sold the butcher shop, HS-301, to Jager, consolidating all the businesses in the row in the hands of the trader.<sup>90</sup>

A few days later, on January 21, Frank Jager resigned his position as trader. Arthur Conger applied to be reinstated in the position. A Board of Survey recommended that Conger receive the appointment.<sup>91</sup> On February 8, 1882, Frank Jager's resignation was accepted, and Arthur W. Conger began another term as trader. About the same time, complaints about the saloon in

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<sup>88</sup>Mary Lou Skinner to Bruce T. Ellis, November 14, 1966, in Document Files, FOUN. Safronia Jager was born Safronia Gregg, daughter of the prominent farmer George W. Gregg. June 19, 1880, civilians with permission to live on the post are the "acting Post Trader [Arthur Conger], his family and employees, Beef Contractor [possibly Frank G. Jager] and family;" Lt. Col. Dudley, Commanding Officer, General Order 22, June 19, 1880, Fact File, FOUN.

<sup>89</sup>Oliva, "Frontier Army," p. 730.

<sup>90</sup>Reiter, "The History of Fort Union," p. 50.

<sup>91</sup>Col. Granville Haller, commanding officer, Fort Union, to Secretary of War, January 21, 1882, Fact File, FOUN.



the Row resulted in its being closed.<sup>92</sup> It is likely that the saloon causing these problems is the old "Barrow Billiard Saloon."

A. W. Conger ended his term as trader on January 17, 1884. The same day, Werner Fabian, one of Conger's clerks, became the trader.<sup>93</sup> Edward P. Woodbury, a salesman for Arthur Conger, continued to work in that capacity for Fabian, and Conger probably operated as the manager and owner of the store.<sup>94</sup>

On February 27, 1885, Werner Fabian ended his term as trader, and Arthur Conger became the trader again, but only for seven months; on October 14, Arthur resigned, and the salesman Edward P. Woodbury, became the trader.

### *Trader's Row in 1885*<sup>95</sup>

By the mid 1880s the buildings of the Row were in poor condition, but HS-305 seems to have been kept up a little better than most. In 1885 A. W. Conger was again appointed trader for eight months. Edward P. Woodbury, Conger's salesman, took the position in late 1885, and continued until 1890.

The original 1868 structure built by John Barrow was the frame-fronted building photographed in ca. 1880. The ca. 1880 photograph shows the Post Trader in the northernmost frame-fronted section of HS-305, and the post office in the center. The southern frame-fronted building may have been the residence for the post office. A walkway extended along the fronts of these three buildings, and continued south. An adobe wall about 7 feet high extended south from the frame-fronted buildings along the walk, and probably continued all the way to HS-304, part of the Dent group. At least two buildings surrounded the yard behind the frame-fronted structures; others may have been located between HS-304 and 305, but it is difficult to tell buildings from mounds of collapsed adobe wall in this area; archeological work will be necessary to work out the actual plan. One of the back buildings, an L-shaped adobe structure, still has a portion of its walls standing. The other was a low, long pitched roof building north of the L-shaped building, probably along the rear wall of the yard or against the back of the three-sectioned main building.

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<sup>92</sup>Reiter, "The History of Fort Union," p. 88.

<sup>93</sup>Fact File, FOUN.

<sup>94</sup>Las Vegas *Optic*, June 7, 1884. In 1886, for example, when Edward Woodbury was officially the trader, Conger was referred to in Army correspondence as the trader.

<sup>95</sup>The buildings in their most complete form are visible in two photographs probably taken within a year or two of 1885, MNM #1823, and FOUN #1351. The last photograph is usually cited as having been taken in 1879, for unknown reasons, but evidence in the photograph strongly supports the later date.



By 1885 HS-304 and its enclosed yard were incorporated into the compound of the Dent Store, HS-305, to the north. The building as shown in the ca. 1885 photograph and on the ground was an L-shaped structure with a fireplace located in the angle between the two wings. Pitched roofs covered both wings. A substantial stone foundation extended to the west from the south wall of the building, probably to support an adobe wall around a yard behind the building. A boardwalk extending south from the Dent store continued across the front of this structure.

In 1885, Greisinger's old hotel, HS-303, had been considerably enlarged; the structural remains of this building are more complex and massive than any of the others in the Row. Substantial stone foundations probably supported adobe walls, and a massive cellar, 13 x 18 feet, was under the floor at the rear of the building. The photographs show a central building, apparently about 40 feet square with a pitched roof, and a smaller section on its south side with a separate pitched roof, both with the ridgebeams extending westward. A wing ran north from the central building; its pitched roof had its ridgebeam north to south. Some part of this wing probably stood on the foundations extending northward towards HS-304; or, these foundations might have been built to support a hallway connecting HS-303 to HS-304 on the north. A small flower bed or garden was against the south wall of the building near the west end; it was 6 x 30 feet, and outlined by stone slabs set on edge. Several outbuildings, some with substantial foundations, outlined a yard on the west side of the building. Lahey operated the enterprise for a time after 1872, and is last mentioned in October, 1877; the building was apparently sold to John C. Dent or his successor Crayton Conger about 1878.<sup>96</sup> By 1880 it was in use as part of Arthur Conger's trader enterprise, although still serving as a hotel.

Moore's old store, HS-302, apparently continued in disuse. Harris transferred the ownership of the building to Vicente Romero in May, 1876.<sup>97</sup> By 1882, the building was apparently owned by Raphael Romero, probably an heir of Vicente: on Feb. 3, 1882, the Army sent a letter to Raphael Romero asking him to show proof that he owned the building in Sutler's Row, and to show cause why he should not either tear it down or have military authority take it over as abandoned property. It was still standing in the ca. 1885 photographs, but probably did not long outlast the closing of Fort Union.

A seventh building was begun on the row, but never finished; this was HS-306. This structure was begun as part of Trader's Row, but appears not to have been finished. Its plan suggests that

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<sup>96</sup>Thomas Lahey was still operating out of Fort Union as of June 1, 1876 (Thomas Lahey to C. B. Tison, June 1, 1876, FOUN, Fact File, Sutlers and Post Traders, Q170). He last appeared in the civilian authorization of 1877 (see note 85); he did not appear at Fort Union in the census or authorization of 1880.

<sup>97</sup>MCDR, A:161. On August, 1876, H. V. Harris and W. B. Stapp applied for a joint position as trader (Reiter, p. 47). It is odd that this dates *after* Harris's sale of the Moore building. W. B. Stapp appears several times in testimony collected from William Moore in December, 1870. In one reference, it appears that Stapp owed Moore a debt of \$252 and that this was considered uncollectible; in a second reference, Stapp was one of the two principals of the company of Stapp and Hopkins, also in debt to Moore. William Stapp had been a clerk for Moore in the 1860s, and Hopkins married one of Moore's daughters (Fact File, FOUN).

it was to be a carriage house or some similar usage, with a large room entered through a wide doorway facing east, and a smaller office space on the south side. The location implies that it was started after 1868-1970, because at an earlier date it would have been placed in one of the large gaps on the main part of the Row. It is on the same alignment as the other Row buildings, and may have been begun about the same time that the Barrow compound was being enlarged, tying HS-304 into the group and extending the yard westward. This was probably about 1878-80.

### *The End of the Barrow Store*

In August, 1886, A. W. Conger was in trouble about the bar in his store again,<sup>98</sup> probably the old "Billiard Saloon" in HS-305. Conger is spoken of as the "post trader," even though E. P. Woodbury was the official trader; the inspection report of March, 1887, for example, stated that E. D. Woodbury was post trader.<sup>99</sup>

Finally, in December, 1889, the Barrow Building was destroyed by fire. Colonel Aubrey Lippincott, who lived at Fort Union as a boy, remembered the event: "One night the store, run by a man named Woodbury, caught fire and burned . . . every man in the command with their fire axes and fire buckets . . . had to pass right by our house running to the fire. And this fella, Cary [a trumpeter in one of the troops] came running down the street . . . running and blowing fire call. And it was the most vivid thing I have ever heard because of the exquisite tone this man got out of the [trumpet] . . . The building was totally destroyed, of course."<sup>100</sup>

The fire in December, 1889, left clear evidence; the entire area of the main building of HS-305 is a mass of burned wood, burned broken glass and ceramics, and fallen adobe walls. It is likely that burned floor joists, wall and ceiling sections, hardware, counters, doors and windows, and the charred remains of most of the stock, are all still in place within the ruins, buried under the fallen rubble of the building. Archeology would be able to work out a great deal about this post trader's operation, including the layout of the interior spaces and the use of many of the areas.

Woodbury reopened in perhaps HS-303 or 304, and continued in business through 1890 until the discontinuation of Post Traders at military posts.

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<sup>98</sup>Oliva, "Frontier Army," p. 731.

<sup>99</sup>Woodbury, and perhaps the traders before him, had "one room attached to the store which was set aside as sort of an officer's club. It was one place where they could go to play whist and things of that kind." Colonel Aubrey Lippincott, son of Surgeon Henry Lippincott, reel 29, side 2, Oral History Tapes, 1968, FOUN, p. 2.

<sup>100</sup>Lippincott, p. 3.

The outline of ownership and use given here is all that is presently available; however, some of the lease and purchase agreements were undoubtedly recorded in the Mora County Court-house, and many others are mentioned to have been filed in St. Louis public and private records. It is likely that considerably more can be learned about the Post Sutler/Trader operation at Fort Union through these documents.





## TRADER'S ROW STRUCTURES

HS	Name and Use
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300	Unknown. No owner or use is suggested by the presently-available information. This building appears to have been added to Sutlers Row between 1866 and 1868; on the 1868 map, the space between HS-302 and the next building to the south seems to be large enough that HS-300, rather than HS-301, must be the structure shown. In the ca. 1885 photographs it is a low, nondescript structure, perhaps no more than a group of sheds. The ground traces suggest a structure about 45 x 30 feet with two small extensions. The census of 1870 indicates no occupants south of HS-302 as of August-September, 1870; this suggests that the building was a stable or had some other nonresidential use.
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301	S. B. Watrous Butcher Shop. Not on the 1868 map and no residence here in the 1870 census, but visible in the ca. 1885 photographs. This structure was probably the Butcher Shop with employee's quarters constructed by S. B. Watrous on Sutler's Row in 1876. The building was sold to Frank Jager, apparently the Beef Contractor, in 1882, and it was still standing in ca. 1885.
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The field investigations and examination of the ca. 1885 photographs show that the building had a front section, apparently of adobe, 53 x 20 feet, covered with a pitched roof, and two wings extending westward. A fireplace was located in the west end of the north wing. A walled yard was west of the building, apparently extending about 100 feet west, and at least one outbuilding is visible on the ground in the yard.

Examination of the remains of the building indicates that it has not been seriously disturbed, and most of the archeological record of the foundations, lower walls, rotted floor joists and floorboards, doorsills, building hardware, and occupation trash are probably still in place, awaiting excavation.

302	W. H. Moore Store. This structure was built in 1862, probably in September-December, after the Third Fort was laid out; it was the first to be built of the Sutler's group, and is the building shown in the ca. 1865 photograph, ill. 53, pp. 230-31; in the background of ill. 22, pp. 168-69, taken about the same time; and shown in plan on the 1866 map, August-December, 1866; in fact, it is the <i>only</i> Sutlers building in the row until Barrow began his store, HS-305, about December, 1867.
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With the closure of his business in 1871, Moore did not sell his building to Dent; instead, he continued as owner until January, 1872, when he sold the structure to his bookkeeper, Henry V. Harris. Harris transferred the ownership of the store to Vicente Romero in May, 1876. In 1882, the building was apparently owned by Raphael Romero, probably an heir of Vicente. At this point it seems to have been sufficiently deteriorated for the U. S. Army to threaten condemnation on it. It was still standing in the ca. 1885 photographs, but probably did not long outlast the closing of Fort Union.

HS

## Name and Use

The main store building was a U-shaped structure of adobe, 63 feet across the front, one story high, with a large doorway in the center of its east face, flanked by a window symmetrically on each side. Door and windows are all surrounded by white wooden framing. The roof was pitched, and covered with shingles. Two tall chimneys stood against the inner surface of the south wall of the south wing, one about halfway along the length of the wing and the other near the end, where a smaller extension of the wing with a lower roof begins. A similar extension seems to run west from the north wing. A third chimney was located at the north end of the east wing. Rooms included the store, storerooms, several offices, a billiard room, several residential rooms, and a safe room. Across the front of the building was a stone walkway connecting it with the other stores to the north. This walkway is not visible in the 1866 photograph, but is clear in later pictures taken after 1868 (see, for example, MNM # 37178). It extended south to a point a little north of the north edge of the south window. The walk must have been built sometime after the completion of the Barrow store in early 1868, but before the Moore store was closed at the end of 1870—the likely date is sometime in 1868.

Behind the main building was a large enclosed yard. Visible traces give a compound 150 feet long. The entire complex was presumably the structure that William Ryus described as "built like a fort," with walls of adobe brick reaching to a height of nearly 20 feet, enclosing an interior patio or corral. One of the ca. 1885 photographs shows a large gateway in the center of the south wall of the compound. The large building along the west side of the patio or corral has an odd, four-section appearance caused either by three chimneys along the back wall (for which no visible traces were seen in the surface survey) or by a peculiar roof on the building, perhaps made of canvas.

The field examination indicates that most of the foundations, lower walls, and probably flooring of this building remains in place in the ground. An archeological examination would reveal a great deal about the planning, construction, and operation of a sutler store in the period of 1860-1870.

- 303 Adolph Greisinger Building. Greisinger had been an enlisted man at Fort Union in the mid-1860s. In September, 1868, he requested permission from the post commander to establish a restaurant and bowling alley "in the vicinity of the two traders stores;" that is, in the area of the W. H. Moore Store and the John H. Barrow Store. Construction on his new building probably began in October, and was completed by December, 1868. No reference to the bowling alley is known after Greisinger's original letter for permission.

The census of 1870 makes it clear that by 1870 Adolph Greisinger was operating a hotel in his building (for example, the census refers to him as "hotelkeeper."). In 1872, Thomas Lahey and Edward McDonald leased the restaurant and other associated buildings from Greisinger, and applied for authorization to continue operating the hotel

## HS

## Name and Use

in the Greisinger buildings. They presumably bought the building soon after receiving this permission. Lahey operated the enterprise for a time thereafter, and is last mentioned in October, 1877; the building was apparently sold to John C. Dent or Crayton Conger about 1878. By 1880 it is clearly in use as part of Arthur Conger's trader enterprise, although still serving as a hotel.

After 1868, HS-303 was considerably enlarged; the structural remains of this building are more complex and massive than any of the others in the Row. The plan suggests that Greisinger and later owners added sections to it periodically over the years; the first major addition was probably about 1869, when Greisinger converted it to a hotel. The building has substantial stone foundations that probably supported adobe walls. A massive cellar, 13 x 18 feet, was under the floor at the rear of the building. At least two fireplaces were seen. The photographs show a central building, apparently about 40 feet square with a pitched roof, and a smaller section on its south side with a separate pitched roof, both with the ridgebeams extending westward. A wing ran north from the central building; its pitched roof had its ridgebeam north to south. Some part of this wing probably stood on the foundations extending northward towards HS-304; or, these foundations might have been built to support a hallway connecting HS-303 to HS-304 on the north. A small flower bed or garden was against the south wall of the building near the west end; it was 6 x 30 feet, and outlined by stone slabs set on edge. Several outbuildings, some with substantial foundations, outlined a yard on the west side of the building. As with the other buildings, the archeological record of this structure seems to be largely undisturbed, and would be tremendously rewarding to excavate.

Extending between the fronts of the Greisinger Hotel and the Barrow Building on the north was a walkway of well-laid flagstone. An additional section of cobblestones with a slab edging was laid in front of the northern wing of the Greisinger Hotel, but the rest of the front had a boardwalk instead of a stone walk. Again, south of the Hotel was another section of stone walkway, different from the stone walk in front of the Moore Store, HS-302. A gap about 7 feet wide appears in the stone walkway between the Hotel and the Moore Store, apparently a drainage opening probably crossed with a wooden section.

- 304 John Gilbert Barber Shop? This structure was added to Sutler's Row in 1867 or 1868, and to the 1868 map about the same time. It may have been begun by Charles Shoemaker, who was briefly authorized as a post trader in late 1867, or built in mid-1868 by John Barrow to give additional space to his enterprise. On the 1868 map it was a simple U-shape with no rear enclosure; by ca. 1885 the entire structure and its enclosed yard were incorporated into the compound of the Dent Store, HS-305, to the north.

This appears to be the building in which were located John Gilbert's barbershop and residence, based on the 1870 census. Next to the barbershop was a stand used for a



HS

## Name and Use

while in 1868 by a photographer, and then after October by John Taaffe, who sold beer by the bottle out of the stand.<sup>101</sup>

The building as shown in the ca. 1885 photograph matches the plan of the Base Map. It was an L-shaped structure; the front was about 48 x 25 feet, while a wing 25 x 18 feet extended westward from the south end of the building. It appears that a northern wing to the west, shown on the 1868 map, was removed between 1868 and the mid-1880s; or this wing could still be there, but obscured by other changes and wall collapse. A fireplace was located in the angle between the two wings. Pitched roofs covered both wings. A substantial stone foundation extended to the west from the south wall of the building, probably to support an adobe wall around a yard behind the building. A boardwalk extending south from the Barrow store continued across the front of this structure.

- 305 John H. Barrow Store. Barrow built the core portion of this building in the period from mid-December, 1867 to late January, 1868, and opened for business on February 3. The Barrow Store contained the Billiard Saloon, which was closed on September 25, 1868, by order of the post commander. This was one of the two trader's stores mentioned by Adolph Greisinger in September, 1868. In ca. October, 1868, Barrow's appointment as post trader was cancelled and given to his partner William D. W. Bernard, who took over the store. Barrow elected to sell the store to John C. Dent, Bernard's brother-in-law, rather than to Bernard himself. The sale occurred about February, 1869. Dent was appointed trader in September, 1869, and in October, 1870, was made the *only* trader at Fort Union. He operated his store out of HS-306 until 1878, when Crayton Conger took over as trader, and probably bought the store. Crayton died in 1880, and his brother Arthur W. Conger became the trader. The census of 1880 indicates that A. W. Conger operated out of the entire complex of HS-303, 304, and 305 in 1880-86; it is probable that his bar was originally Barrow's Billiard Saloon. In 1881, Arthur Conger's partner, the butcher Frank Jager, took over as trader for four months. Arthur Conger was again trader in 1882, and continued so until 1884. Werner Fabian became trader in 1884 (he had been a clerk for Conger), and in 1885 A. W. Conger was again appointed trader for eight months. Edward P. Woodbury, Conger's salesman, took the position in late 1885, and continued until 1890. In December, 1889, during Woodbury's term as trader, the frame-fronted section of the building was destroyed by fire, and Woodbury transferred the trader operation to one of the other buildings in the HS-303, 304, 305 group.

In 1868 the building had an enclosure extending to the west an estimated 150 feet, the same size as the Moore store. After 1868 the complex was considerably enlarged,

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<sup>101</sup>John Taaffe to Commanding Officer, Fort Union, October 23, 1868, FOUN Fact File.



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reaching the full extent shown on the plan before 1885. The 1868 structure was the frame-fronted building photographed in ca. 1880; actually, this was an adobe building with a frame false front facing east.<sup>102</sup> The adobe building had a substantial stone foundation and was about 70 feet across the front and 94 feet deep to the west. The building was divided into three sections by east-west frame partition walls within the adobe building. These three parallel sections had pitched roofs, ridgebeams extending west from the simple false fronts. The three sections do not appear to be the same width, but rather about 28, 19½, and 22½ feet across.

A description in 1875 says that the post office and its associated residence were located next to the post trader. By 1875 at least the post office and its residence were owned by Edward Shoemaker, son of William Shoemaker, the commander of Fort Union Arsenal (Oliva, "Frontier Army," p. 884). The ca. 1880 photograph shows the Post Trader in the northernmost frame-fronted section of HS-305, and the post office in the center. The southern frame-fronted building may have been the residence for the post office. The post office had a fireplace on its south wall at the front. The Post Trader had a fireplace somewhere towards the rear of the building visible in the photographs; however, no clear trace of it is visible on the ground, and it is presumably buried in the rubble left by the fire of 1889. A walkway extended along the fronts of these three buildings, and continued south. The traces on the ground and the appearance in the photograph suggests that this was a boardwalk. An adobe wall about 7 feet high extended south from the frame-fronted buildings along the walk, and probably continued all the way to HS-304, part of the Dent group.

At least two buildings surrounded the yard behind the frame-fronted structures; others may have been located between HS-304 and 305, but it is difficult to tell buildings from mounds of collapsed adobe wall in this area; archeological work will be necessary to work out the actual plan. One of the back buildings, an L-shaped adobe structure, still has a portion of its walls standing. The other was a low, long pitched roof building north of the L-shaped building, probably along the rear wall of the yard.

By the late 1880s the buildings of the Row were in poor condition, but HS-305 seems to have been kept up a little better than most. The fire in December, 1889, left clear evidence; the entire area of the main building of HS-305 is a mass of burned wood, burned broken glass and ceramics, and fallen adobe walls, dating from this fire. It is likely that burned floor joists, wall and ceiling sections, hardware, counters, doors and windows, and most of the stock, are all still in place within the ruins, buried under the fallen adobe walls of the building. Archeology would be able to work out a great deal about this post trader's operation, as well as the layout of the interior spaces.

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<sup>102</sup>Pitcaithley and Greene, ill. 54, pp. 232-33. The eaves of the roof and part of the adobe wall leaning out from behind the facade can be seen on the left and right sides of the picture.

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- 306 Carriage House? incomplete. This structure was begun as part of the Sutlers Row, but appears not to have been finished. Its plan suggests that it was to be a carriage house or some similar usage, with a large room entered through a wide doorway facing east, and a smaller office space on the south side. It was probably begun after 1868.

## OTHER BUILDINGS, NORTH SIDE OF THIRD FORT

- 307 Commissary Storehouse (*Third Fort Union*, p. 78). One of two frame sheds built perhaps in September, 1862, as Commissary Storehouses, shown on the 1866 map, described briefly in April, 1867, and June, 1868; the two structures are left off the 1868 map, suggesting that they were torn down at the end of 1868 and their removal recorded during the updating of the map. They were certainly gone by 1873, when they do not appear on a map of the Fort prepared in that year. Note that the Major A. J. Alexander letter of April 15, 1867, first says that there were three such sheds—this seems to have been an error; later in the same letter Alexander refers to "either of these warehouses," suggesting that he mistakenly wrote "three" while thinking "two". By 1868 the two buildings were being used as "grain stables" (Inspection Report, 1868, in Oliva, "Frontier Army," pp. 1048-60): "The two long frame sheds just north of the Commissary Storehouses and formerly used by that Department, have been allowed to stand and to be put to use as Stables for trains and teams just from the road. They are good sheds, in tolerable order serving a useful purpose; and would be considered at many Posts as very fair stables." HS-307 was a wooden frame structure, shown on the base map as 200 feet long and 40 feet wide; however, this size is only an estimate based on the apparent size of the building on the 1866 map and on the apparent traces on the ground, and should not be accepted without question.
- 308 Commissary Storehouse (*Third Fort Union*, p. 78). Built perhaps in September, 1862, as a Commissary Storehouse, but by 1868 it was being used as a "grain stable" (Inspection Report, 1868). Visible on the 1866 map, but torn down by 1868. Frame building, estimated 200 feet long and 40 feet wide. A brick chimney base was found on the south side near the east end.
- 309 Unknown. Visible on the 1866 map, but torn down by 1868. May have been an early version of the Commissary Sergeant's Quarters, later built a little northeast of this location (see HS-312, below). The structure has a stone chimney base at its west end, and was about 30 feet long by 20 feet wide. A section of fieldstone foundation can be seen along the south side of the building's outline.
- 310 Machine Shop (*Third Fort Union*, p. 120). This was a large enclosed yard, 200 feet square, with a machine shop building in the northeast corner. Destroyed by fire, February, 1876. Steam engine here relocated to southwest corner of Depot mechanic's corral (*Third Fort Union*, pp. 11-12). A good photograph of the shop in 1866 is in ill. 52, (*Third Fort Union*, p. 228-29); its general shape and location are shown on the maps of 1866 and 1868 (ill. 2, pp. 128-29). A plan of the shop was made in 1866, and a copy of this is on file at Fort Union National Monument (*Third Fort Union*, p. 120).

The Inspection Report of 1868 goes into some detail on this shop: the yard was "a sort of corral enclosure made by a low stockade," and served as a lumber yard. In the northeast corner of the yard was a large frame building, 36 feet wide east to west and 72 feet long, north to south; this was the machine shop proper. In it were a mortise machine, a jig-saw, and a tenon-machine. The building contained a "cellar," a space 12



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feet wide, 40 feet long and 9 feet deep, labelled on the plan as "a basement story for shafting," and described in the 1868 report as "where the belting communicates with the flywheel." Here were a turning lathe, grindstones, and other equipment. This basement was backfilled and is not easily visible today, although in 1984 it was a clear depression, 12 feet wide and 40 feet long, filled with dark soil. Either the depression was further backfilled by the National Park Service, or sheetwash has placed more silt into and across the basement since 1984.

The machines were powered by the steam engine in a separate house. The base map shows the probable engine house; it was a structure about 26 feet long, east to west, something over 22 feet wide, north to south, and enclosed a rectangular bricked area 3 feet 4 inches wide and 7 feet long; this was probably the engine base itself. Two large flagstones are visible at the northwest and southwest corners of the engine base; their purposes are unknown. A clearly visible stone foundation is present along the north side of the building, which extended about 14 feet outside the lumberyard enclosure. The east end of the bricked area was about 24 feet west of the side of the Machine Shop itself. No evidence is visible on the ground or indicated on the 1866 plan showing how the power from the engine was carried to the basement of the Shop building.

- 311 Unknown. Mass of lime next to Machine shop. The 1866 photograph shows only a heap of lumber in this area.
- 312 Commissary Sergeant's Quarters (*Third Fort Union*, p. 115). Built sometime before 1883; plan on map of 1883 (ill. 5, pp. 134-35) and was in use until after 1886; possibly used until abandonment in 1891. Photograph, ill. 51 (*Third Fort Union*, pp. 226-27). On the ground today, the two chimney bases are easily visible. The west chimney is brick, about 3 feet east to west and 4 feet north to south. The house appears as a rectangular charcoal-stained and disturbed area with scattered artifacts; the 1883 map indicates that it was about 40 feet long and 30 feet wide. The plan of the structure shown on the base map is taken from the 1883 map of the fort. The plan shows an enclosed yard behind the building, 40 feet by 15 feet.
- 313 Smokehouse. Shown on the 1883 map (ill. 5, pp. 134-35). Fieldstone foundation that probably supported a frame or adobe structure. The foundation is one foot wide, and the building measured about 16 feet square.
- 314 Unknown. Appears to be the base of a chimney, but no known structure is indicated in this area.
- 315 Cow Stables. The plan shows a stable building about 55 feet long and 15 feet wide, with a small yard, about 25 feet by 18 feet, on its north side and a larger enclosed yard on its south, 55 feet by 30 feet (ill. 5, pp. 134-35). Today, only organic stains and



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disturbed earth indicate its location; some general idea of its outline can be determined from aerial photographs. Appearance of the ground indicates that most of the structure was made from "stockade," or upright posts set in holes or a continuous trench.



## FIRST FORT AND ARSENAL AREA

Codes used for number designations of First Fort and Arsenal buildings:

- HS = Historic Structure number; the official National Park Service building number.
- R = Ruwet number; the number assigned to the structure by Wayne Ruwet in ca. 1970.
- B = Bleser number; the number assigned to the structure by Nicholas Bleser in 1965.
- W = Wohlbrandt number; the number assigned on the Wohlbrandt map in 1961.
- K = Kelp number; the number assigned by W. Kelp in ca. 1882 (Arsenal buildings only).
- 66 = The number assigned to the Arsenal buildings by the 1866 proposed plan of the Arsenal, erroneously dated "1876."
- M = Mansfield letter; the letter assigned to the First Fort buildings by Col. Joseph Mansfield in 1853.

### Arsenal Structural Information

#### The "Proposal Plan" of 1866

At the time the research for the Base Map was conducted, the available copy of this document was a xerox of a tracing of the original, rather than a photocopy or photostat of the original itself. On the master copy in the Arrott Collection at Highlands University, Las Vegas, New Mexico, the date of 1876 is written in pencil on the back; whether this is on the original or is just the opinion of the collector is not known. It appears to be a planning document for the Arsenal, depicting an early intended arrangement of the enclosing wall and buildings when they were finished.

The Arsenal is shown enclosed by a wall about 1000 feet square, but the plan shows the old Commanding Officer's Quarters, HS-133, and the old Ordnance Barracks, HS-143. Since construction on the main enclosing wall began in October, 1868, *after* the construction of the new Ordnance Barracks, HS-113, between March and October of the same year, it is not possible to have an as-is map that shows the enclosing wall standing without HS-113 also being shown. The diagram was drawn when the wall was planned but the actual location of HS-113 had not been selected; therefore, the date of 1876 is obviously an erroneous guess on the part of a researcher—the plan must have actually been prepared at some earlier date. The evidence indicates that the "1876" plan was a design, a "proposal plan," rather than an "as-built;" it seems to be a scale drawing and portrays the location and dimensions of some buildings with fair accuracy. With a little thought and research, the date of the drawing can be estimated as mid-1866. The reasoning behind this date is as follows: In 1860, Shoemaker believed that a new site was about to be selected for the Arsenal, and spent most of his efforts on trying to keep up the old buildings, rather than the construction of new ones; he did, however, work out a tentative plan for his new Arsenal that is presently unavailable (Part I, pp. 70-72). The

intervention of the Civil War delayed the effort to relocate the Arsenal, and ultimately the decision was made to leave it at the site of First Fort. This decision was apparently reached sometime between December, 1864, when Shoemaker was still talking about other possible locations for the Arsenal, and September, 1865, when he had begun new, permanent buildings on the original site (Part I, pp. 72-74). In December, 1864, Shoemaker stated that he had made no estimate for construction costs for 1865 (presumably on September 1, 1864, when the estimates were usually submitted) because he did not want to spend money on the old buildings at the old site in anticipation of beginning a new Arsenal at a new site. In November, 1865, he referred to the "annual estimate for permanent buildings here" submitted on September 1, 1865; the use of the phrase "permanent buildings here" suggests that as of that date Shoemaker had already been informed of the imminent formal establishment of Fort Union Arsenal at First Fort during FY 1866.<sup>103</sup> Therefore, Shoemaker probably began working on plans for a completely rebuilt Arsenal soon after being notified of the decision, sometime between January and August, 1865, and on September 1, he officially submitted an estimate for the construction of the first permanent buildings. The context of the November, 1865, letter indicates that the new buildings he intended to build in 1865 were the Magazines, HS-109 and 110, and probably the wall enclosing them; as of November he was planning to start work on these buildings immediately and continue construction through the winter.

During the first planning in the first half of 1865 for his new Arsenal on the original site, Shoemaker prepared some sort of plan of how the establishment would be laid out. The available evidence indicates that the initial design was more or less the plan of the Arsenal as it stood a year later, in 1866, with two magazines in a walled enclosure to the south of a group of Arsenal buildings including both a few new buildings and those old ones built of adobe, with all the buildings connected by a series of walls or fences that created a second enclosure. In addition, most of the remaining First Fort buildings not used by the Arsenal were removed between ca. August, 1865, and ca. August, 1866. Because of the placing of the Magazines within their walled compound, Shoemaker must have already planned for additional workshops and storehouses in the north half of the Magazine compound, although these had not been built by late 1866.

A year after the decision was made for the new Arsenal to remain on the old Ordnance Depot site, Fort Union Arsenal was officially created on May 8, 1866. The "1876" plan, apparently a simplified sketch map made from a more exacting, scale plan, must have been prepared about the same time, and was probably intended to show the construction goals for the next several years. Specifically, the plan was prepared after the decision was made to add HS-106, the blacksmith's shop, to the east end of the original building, HS-105, the armorer's shop, the construction for which occurred in May, 1866 (Shoemaker to Dyer, June 1, 1866, RG 156, Letters Received, Office of the Chief of Ordnance). The tone of the letter implies that this addition was rather impromptu, rather than part of a long-planned change. Additionally, the

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<sup>103</sup>NARG 156, Letters Received, Office of the Chief of Ordnance, M.S.K. Shoemaker, Union Arsenal, to General Dyer, Ordnance Department, Washington, November 16, 1865.



sketch map was made before the Carpenter Shop, Saddler Shop, and Laboratory intended to be added to the group within the original Magazine compound were redesigned. The sketch map shows what is undoubtedly the original layout intended for the Magazine compound as planned in early 1865. However, between August of 1866, when Lambert and Enos surveyed the Arsenal area for the 1866 map, and July of 1867, when the Carpenter's Shop was completed in its present form as HS-108,<sup>104</sup> the Laboratory was removed from the plan, the two shops were increased to be the same size as the magazines, and the revised version built. For HS-108 to be completed in July, 1867, the redesign had to have occurred by late 1866 or early 1867.

Therefore, the original design was prepared in 1866, probably between May and the end of the year. To further tighten the date, in October, 1866, Shoemaker referred to "all of the work projected last spring," the spring of 1866 (Shoemaker, Fort Union Arsenal, New Mexico, to General A. B. Dyer, Chief of Ordnance, Washington, D. C., October 2, 1866). This must be a reference to the planning resulting in the "1876" plan. Based on these considerations, the following discussion of the buildings of the Arsenal will assume that the "proposal plan" is a simplified version of Shoemaker's master plan for his new Arsenal, prepared about May, 1866. The plan as designed and as it was later carried out in modified form demonstrated Shoemaker's usual scrupulous avoidance of needless expenditure. Where already-existing buildings met his standards, he modified them to serve in the new Arsenal. Apparently most buildings that had been constructed before 1865 using adobe with well-built stone foundations were adapted to the new plan. This included the Armory (HS-105), the Artillery Storehouse (HS-199), the Storehouse (HS-102), the adobe portion of the Ordnance Clerk's Office and Quarters (HS-115), and HS-192, a well-built structure behind HS-133, Shoemaker's first house—this building, used as a stable in later years, may have been the original adobe magazine, built in 1859.

Shoemaker constantly revised his plan of the final Arsenal. As mentioned above, after the creation of the "1876" plan about May, 1866, he carried out a further redesign in late 1866 or early 1867; a copy of this modified plan is not available, but resulted in the removal of HS-199 and the construction of HS-118, as well as the redesign of the Shops (HS-107 and 108) into their present form. This produced the version of the Arsenal shown on the 1868 map; the revised plan may be considered to have looked like the plan of the Arsenal as plotted on the map of 1868. Then, soon after the preparation of this map about May, 1868, Shoemaker arrived at several new changes to the plan, and in fact continued to revise and modify his plans until the completion of the Arsenal about 1871-72. In other words, the "1876" plan is only one of perhaps six or seven possible proposal plans, each reflecting another stage in the development of Shoemaker's design towards the final Arsenal; it just happens that the "1876" is available while the others are not. We are extremely fortunate that at least one of these plans was found, because the "1876" plan tells a great deal about the intermediate planning that carried the Arsenal from its original Depot configuration to the final plan in 1882.

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<sup>104</sup>Oliva, "Frontier Army," p. 906.

## Other Graphic Information

First, a word of warning: no matter how precise and accurate they look, the maps, plans and drawings discussed below are the result of the composer's interpretation; the presence or absence of a building from a drawing or plan does not *prove* that it is present or gone, but only *indicates* that this may be the case. This report assumes that the drawings depict what was present; some of the plans, however, show intended structures that were never built, or leave off buildings that were standing at the time; where other evidence shows that this has happened, it will be presented. In general, the plans and drawings are assumed to show the "truth," but this is only an assumption. Keep in mind that interpreting fine detail on the plans and drawings falls into the same category as fine detail in photographs: some of the information depends on the mind or knowledge of the beholder, and is not necessarily there to be seen by anyone. Basically, the more you know about a place and time, the more you can get from a drawing, plan, or photo, but at the same time, it becomes easier to see too much by projecting what you think *should* be there into the random markings of fine detail.

## Maps

Two maps of the Fort Union Reservation prepared by Army surveyors contain critical information for this Base Map. These are the "Map of the Military Reservation at Fort Union, N. M.," surveyed in August to December, 1866, by John Lambert under the command of Brevet Colonel H. M. Enos; and the "Map of the Reservation Proper at Fort Union, N. M., originally 8 miles square," stated on the map to have been drawn in 1868, by Lambert under the orders of Brevet Lieutenant Colonel M. I. Ludington. A copy of this map is in Green and Pitcaithley, ill. 2, p. 128-29. The 1866 Enos and Lambert Map is extremely good; it appears that virtually everything standing at the time was surveyed and plotted on the map, and the accuracy of the measurements is quite high, especially considering how small the original was drawn.

The 1868 map by Brevet Lieutenant Colonel M. I. Ludington and Lambert appears to have been traced largely from the 1866 Enos and Lambert map, with some differences to reflect the changes in the intervening two years. The map was drawn principally to show the revised boundaries of the Military Reservation of Fort Union, based on a survey carried out in March, 1868. A note on the edge of the map indicates that it was officially received by the Engineering Office of the Department of the Missouri at Fort Leavenworth on June 13, 1868. The map was therefore probably drawn in April or early May, 1868. However, on the two available versions of the 1868 maps, Ludington and Lambert show five buildings in Sutler's Row. This is awkward, since there were only two trader's stores at Fort Union Third Fort as of May, 1868. These were HS-302, the W. H. Moore Store, built about September-December of 1862, and John E. Barrow's Store, HS-305, built in December, 1867-January, 1868. HS-304 was in existence by mid-1868 when it was used as a barber shop and residence, and could conceivably have been built by May. But HS-303, the Greisinger building, was built in October-November, 1868, and must have been added to the 1868 map at the end of 1868 or in 1869; there can be



no doubt that it was added after the final draft arrived at Fort Leavenworth, by somebody who had no concern for the peace of mind of later researchers. Based on these considerations, the available copies of the 1868 map must be considered to be updated through at least December, 1868.

The W. Kelp map of the Arsenal in approximately its final form is usually considered to be dated July 3, 1882. In actuality, this date is open to question, since it is directly associated with a parenthetical statement written on the original map: (Abandoned as an Arsenal), with the date directly underneath. This could be considered a note added to the map to indicate that the Arsenal was closed on July 3, 1882, rather than the date the map was made. If so, the map would have been made at some date other than July, 1882. Several oddities about it need to be noted. First, the enclosing wall is apparently not marked on the plan, even though other walls are clearly shown, such as those around HS-116 and HS-111. Other walls separating the interior of the compound into sections seem to be shown, especially the east wall of the Magazine compound. These walls seem to end at the points where the enclosing wall would have been, had it been drawn. Projecting the lines, it is found that the Kelp map shows the enclosure as 1005.4 feet east to west along the north side, and 1138.8 feet north to south along the centerline (as built, the interior dimensions were: the west wall, 1166.30 feet long; the south wall, 1000.08 feet long; the east wall, 1190.31 feet; and the north wall 1046.84 feet long). More interesting, the map shows no teardrop entrance drive, but rather the old entrance road along the north side of the Arsenal parade ground, and HS-102 is in two sections, as it was in 1888, rather than one continuous building. It is likely that the map was made about 1885-1890, when the enclosing walls were considerable deteriorated and the loop road had been abandoned for a more direct route straight in along the earlier entrance road to the large storeroom, still occasionally in use by Fort Union (Part I, p. 89).

## Photographs

There are two pictures that serve as the principal photographic sources for the Arsenal:

1. A photograph of the Arsenal area as visible behind Third Fort buildings, National Archives 111-SC-87997, a copy of which is in *Third Fort Union*, ill. 32, pp. 188-89, contains a great deal of critical information about the Arsenal. This photograph had no associated date in the Fort Union files, and has been generally dated to 1866, but an examination of the details of the Third Fort buildings allows a narrower date-range to be suggested. First of all, the lines of sight across the Quartermaster Depot Officers' Quarters and First Fort demonstrate that the picture was taken from the west edge of the roof of the Mechanic's Corral, HS-36, at its southwest corner. The three structures being built in the foreground are the three Officers' Quarters for the Fort Union Depot, HS-27, 28, and 29, from left to right. These buildings were begun in July and August, 1865, and the right-most building, HS-29, was completed by February 1, 1866 (*Third Fort Union*, p. 58). The photograph shows this building to be well along, with the chimneys and ceilings more or less complete but the brick cornices and upper roof still needing to be finished and the doors and windows installed, while HS-28 has its ceilings but no visible

chimneys, and HS-27 is still unroofed, with sunlight shining into the rooms. Since bouts of freezing weather made construction proceed slowly during the winter months, in order for HS-29 to be completed by February, 1866, this picture must have been taken in late 1865. On April 15, 1867, Brevet Colonel H. M. Enos, in a letter to Chief Quartermaster L. C. Easton, mentioned in passing that Captain H. J. Farnsworth had sent photographs of Fort Union to Captain A. B. Carey, who assembled a collection of these from a number of posts and sent them on to the Quartermaster General in September, 1865. This makes it virtually certain that the several photographs of Fort Union taken during the early construction of the Depot were made by Captain H. J. Farnsworth or one of his subordinates sometime during and just before September, 1865. Since we know construction on HS-27, 28, and 29 did not begin until July, and is well along in the photographs, early September seems the best guess. In the following descriptions, the date "ca. September, 1865," will be used.

This may seem like a lot of effort to determine a date of only minor interest, but in this case the evidence of the photograph is of tremendous value. Since the point at which the picture was taken is known, and since all the Officer's Quarters in the picture still stand to some extent, the exact line of sight to the ends of specific buildings can be plotted on the map with an accuracy of a few feet. Taken in combination with the statements of MSK Shoemaker at the Arsenal, the photograph clarifies an amazing number of details; such things as what buildings he was referring to in his correspondence of 1865 and 1866, the dates of destruction of many buildings, including several of the First Fort Officers' Quarters (still standing in the Farnsworth photograph, but gone by the time of the survey for the 1866 map a year later), and the extent to which other buildings had been built. The importance of the date of the photograph will become apparent as the descriptions of buildings are examined below and the frequency of reference to the photograph becomes apparent. Many thanks to Superintendent Harry Myers of Fort Union for recognizing that First Fort was visible in the background of this picture, and insisting that we look a little closer at it. It allowed precision in many cases where otherwise the phrase "sometime in 1865-68" would have had to do.

2. The Arizona Pioneers Historical Society photograph of the Arsenal, taken from high on the hillside to the west of the buildings by an unknown photographer. This photograph is usually dated 1879, again apparently a researcher's guess; however, evidence in the picture suggests a date of ca. 1885. For example, the buildings of Sutler's Row are virtually identical in condition to another picture of Sutlers Row from the west that can be easily dated to 1883-1889; the Commissary Sergeant's quarters apparently not built until about 1880-83, are visible at the north end of Third Fort; the Flagstaff, HS-173, apparently is not standing, and no flag is flying over the Arsenal, a condition that probably indicates it has been closed; the east wall of the arsenal south of the gate is clearly irregular and partly collapsed, suggesting no maintenance for several years; the roofs of the buildings look irregular and in poor repair. Finally, the southernmost room of HS-102 appears to be separate from the rest of the building, as it is in the 1888 photograph (*Third Fort Union*, ill. 56 top, p. 237) and on the ca. 1885 plan of the Arsenal, and the arched opening facing west has a large multipaned window filling it (actually this is a pair of French doors—by 1888 the window panes have been painted white or filled with wood panels



painted white). All this suggests a date after closure in 1882, but before 1888. A median date of ca. 1885 will be used for this photograph, rather than the traditional 1879 date.



## ARSENAL STRUCTURES

HS	R	B	W	K	66	M	Name and Use
100	-	-	-	-	-	-	Enclosure Walls, Arsenal. This number includes the entire complex of inner and outside walls. These walls were built in a series of campaigns lasting from 1859 through 1872.

Shoemaker began the effort to gain permission to construct an adobe magazine inside a walled compound of adobe in early 1853 (Part I, p. 66). However, the building of the first magazine and an enclosure around it, both of substantial adobe construction, was not carried out until June-August, 1859 (Part I, p. 69). This was apparently a rehabilitation of the enclosed yard and structures west of the Ordnance Officer's Quarters, HS-133, visible in the Heger drawings of May, 1859.

Shoemaker planned a new magazine compound in mid-1865, and began construction in late 1865 or early 1866. No trace of the construction can be seen in the ca. September, 1865 photograph, indicating that it began sometime after that date, probably about November, 1865. The enclosure was 345 feet east to west by 720 feet north to south, abutted the original compound west of HS-133, and enclosed the two new magazines, HS-109 and 110. Work on the wall was well along in October, 1866, and lacked only a few hundred feet of length to be finished in November (Part I, pp. 75-76). Presumably this was a few hundred feet of adobe wall remaining to be placed on the already-laid stone foundation. The Enos and Lambert map of August-December, 1866, shows the entire enclosure complete, and further shows that the other Arsenal buildings north of the Magazine compound were connected by walls or fences to create a second enclosure.

The "proposal plan" shows that by ca. May, 1866, Shoemaker had developed plans to enclose the entire Arsenal within a wall. However, construction slowed down considerably after completion of the Magazine enclosure at the end of 1866, and work on the main enclosing wall continued only intermittently over the next several years. In mid-February, 1868, Shoemaker requested permission to stop work on the Arsenal wall for a while and build a new Barracks, HS-113, using the available adobes. This building was not shown on the proposal plan of 1866, and is the result of one of Shoemaker's modifications to his original plan for the

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Arsenal; by mid-1871 this process of modification resulted in the final plan visible today.

In October, 1868, Shoemaker asked for further funds to begin again on the wall to enclose the entire Arsenal (Part I, p. 77). The work continued to followed the 1866 proposal plan, which intended to make the enclosure exactly 1000 feet square on the interior. The south wall was apparently completed according to the original plan, and perhaps the southern 1000 feet of the west wall; the south wall interior length remained unchanged through later revisions, and is 1000.1 feet long (however, the angle between the two sides was  $91^{\circ}48'$ , not the precise  $90^{\circ}$  it should have been). As of November, 1868, Shoemaker stated that he intended to finish the walls sometime in 1869 (Part I, p. 77). The east and north sides of the original plan seem to have actually been begun, but appear to have never gotten beyond foundation trenches; only faint traces of what may be trench lines appear to be visible in the aerial photographs. These trench lines seem to follow the general layout of the 1866 plan.

At this point, during the winter of 1868-69, Shoemaker must have worked out the final design of the plan for the Arsenal. The proposal plan's 1000-foot north-south dimension must have already been recognized as impractical because of what appears to be an error produced by faulty surveying. The proposal plan, and therefore presumably Shoemaker's original design, plots the location of the northern buildings with a cumulative error of about 50 feet in their north-south location, so that the 1000 foot dimension would have placed a wall across the middle of several buildings Shoemaker intended to keep or had just built. In order to achieve the relationship between the buildings and enclosing wall as shown in the plan, Shoemaker realized he had to increase the north-south dimension of the enclosing wall to about 1050 feet (for further discussion of the question of the intended location of the north wall, see the discussion of the later flagstaff locations under HS-173, below). With this necessity in mind, during the redesign of late 1868 Shoemaker moved the proposed location of the enclosing walls and the Ordnance Stables, HS-111, even further north, to produce a north-south dimension of 1166 feet along the interior of the west wall. The Stable Compound may have been begun at this point.



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The inspection report of September, 1869, mentioned only the wall around the magazines (Part I, p. 79). In June, 1870, half the foundations of the enclosing wall had been completed, probably the south and west walls (Part I, pp. 79-80). Work on the new wall was halted in September, 1870, for a time. In April, 1871, Shoemaker decided to relocate the Clerk's Quarters (HS-116) to the northeast corner of the new enclosure (Part I, p. 80), apparently changing the alignments of the as yet unbuilt east and north walls to accommodate it. By June, 1872, the new buildings and enclosing wall were more or less complete; they were finished by the time of the inspection of 1873 (Part I, pp. 79-81).

The 1873 description stated erroneously that the enclosing wall was 1000 feet long on each side. This was the size intended, but as built, after the redesign of 1868, the interior dimensions were: the west wall, 1166.30 feet long; the south wall, 1000.08 feet long; the east wall, 1190.31 feet; and the north wall 1046.84 feet long. These rather random sizes of the enclosing walls seem to be the results of surveying error, rather than intentional changes. The southeast corner angle is very close to a right angle:  $90^{\circ}31'$ . However, the southwest angle was  $1^{\circ}48'$  larger than a right angle; in order for the east side to be parallel to the west, and the north side to be the same length as the south, both the southeast and northwest angles should have been  $1^{\circ}48'$  less than a right angle, or  $88^{\circ}12'$ . The failure to compensate for the original error in layout at the southwest corner of the Magazine compound resulted in an increase of about 47 feet on the north side of the Arsenal. Since both the southeast and northwest corners were set out at almost exactly  $90^{\circ}$ , the cumulative errors produced an east wall 24 feet longer than the west wall, and a northeast corner of  $88^{\circ}07'$ . It appears that the redesign may have been intended to have the four sides parallel, with an interior length of 1164 feet north to south and a width of 1000 feet, east to west, but missed this intention by a little.

The enclosing wall had buttresses of adobe at regular intervals, usually 50 feet, along all four sides. The locations of these buttresses are marked on the ground by short segments of stone foundation at right angles to the main walls. Each of these usually extended towards both the inside and the outside of the wall. One inner or outer segment usually measured 2.6 feet long by 2 feet wide. Occasionally, a buttress seems to be on only one side of the

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wall, but this may be the result of the opposite foundation being buried in collapsed adobe and sheetwash, and therefore not detectable from the present surface. Such buttresses were included even on the earliest enclosure, the Magazine Compound wall around HS-107, 108, 109, and 110. Those found are plotted on the map; few were seen along the north wall and the north part of the east wall of the main enclosure, but are probably still present under a thick layer of slumped adobe. A number of thick wooden posts or tree stumps were seen along the inner side of the south wall; it is uncertain whether these were decorative plantings or additional supports for the wall where it received damage from water runoff from the rest of the enclosure. At least three drains through the stone foundation were seen along the south wall, and one small drain on the east wall near the southeast corner, the low point of the Arsenal enclosure. Each was about 5 feet long (the small drain on the east side was only about 2 feet long), and the adobe wall was supported above it by a long slab of stone forming a lintel. It is possible that one or two similar drains remain to be identified along the southern part of the east wall.

The survey found no clear gateway through the south wall. An odd arrangement of parallel walls at the southeast corner of the magazine compound may have been equipment storage sheds, an abortive wall alignment, or some other, unknown usage. The gateway through the west wall had a decorative arch over it, as seen in the ca. 1885 photograph. A second gateway through the west wall opened into the Stable yard, HS-111; this gateway had a rectangular entrance structure of two vertical side posts and an overhead beam. The main east gate seems to have had several locations; a massive deposit of large cobbles that were noticed during the survey of the enclosure wall may mark the intended gateway during wall construction from ca. 1868 to ca. 1871. When the 1866 proposal plan was found to be a fairly accurate plan rather than a schematic, the gateway through the east wall of the enclosure turned out to be located virtually on this spot. It is assumed that the cobbles were a surfacing material in the high-traffic area of the intended gate itself. The 1882 plan shows the main entrance to be a little south of the Clerk's Quarters, HS-116. However, the formal entrance from about 1872 to 1881, or later, was the curved gateway east of the traces of the old fort buildings of HS-144 and 145; this entrance is not shown on the 1882 plan. Part of what appears to be a stone curbing is visible along the

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north edge of the entrance road at the gateway. Within the gateway, the road split into the teardrop shape visible in aerial photographs and on the ca. 1885 photograph, although not shown on the 1882 map. This teardrop was symmetrical with the front porch of Shoemaker's house, and centered on a flagstaff whose stone base survives as HS-173. The entrance drive passes just in front of the lawn and trees along the front of Shoemaker's house; see further discussion of this under HS-114, below.

101   6a   -   -   1   6   -   Main Storehouse. Construction began on this building in the spring of 1865, prior to the preparation of the 1866 proposal plan (Part I, p. 73). The building apparently superseded HS-102, although that building continued in use as a storehouse. The northernmost section of the Main Storehouse, of adobe on a stone foundation 145 feet long and with a pitched roof, had been completed as of the ca. September, 1865, photograph by Farnsworth (111-SC-87997), where it appears as a long building with a pitched roof and a large central doorway; a pair of windows are also visible, placed symmetrically on either side of the doorway.

The 1866 proposal plan indicated that at least by the spring of 1866 Shoemaker intended to extend the building to a length of about 220 feet, so that it would reach the north wall of the Magazine compound. The Enos and Lambert map of August-December, 1866, shows it still at its 145-foot length. As of the Ludington and Lambert map of March, 1868, no further work had been carried out, but between May, 1868, and the inspection of 1873 the intended addition of about 71 feet to the south end of the storehouse had been completed. In 1873, the building was described as of adobe on a stone foundation, 216 feet in length and 23 feet in width (Part I, p. 81). On the Kelp plan of ca. 1885, the original 145 foot section of the building was shown with two porches or loading docks on the east side; these echo the symmetrical location of doors and windows visible in 1866, and probably existed by that year. No clear traces of these were seen in the survey, so they are not plotted on the plan. The 1873 inspection described the building as having a basement; the physical remains indicate that this was only a half-basement. Between 1873 and 1882, foundations were constructed that would have extended the building another 40 feet south (these are visible in the ca. 1885 photograph), but the Kelp plan shows the



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foundation still unused, and implies that the added construction never took place.

102 19a - - 2 3 -

Storehouse. Ruwet assigns 20a to the south end of this building, shown as a separate structure on the Kelp map of 1882 and visibly separate from the rest of the building in 1888; however, the foundations indicate that as built, the building was a single continuous structure. The building was adobe on a stone foundation, 88½ x 26 feet with a pitched roof.

The northern 65 feet of the building were apparently constructed between May and August of 1859, along with the Magazine, HS-192 (Part I, p. 69). In May, 1859, Shoemaker states that he is constructing a storehouse, presumably this one, at the same time as the magazine, HS-192.<sup>105</sup> The building is shown on the 1866 proposal plan and is visible in the Farnsworth photograph of ca. September, 1865. At a later date, two rooms were added to the south end, extending the building to the south about 24 feet; these changes undoubtedly occurred during Shoemaker's finalization of the Arsenal buildings in 1871-72. An arched opening in the west end of the southernmost room was filled with a French door with large glass panes. Between 1872 and 1882 one room of the building was removed, leaving the southernmost portion of the extension as a separate building; it is shown this way on the Kelp map and the gap can be seen in the ca. 1885 photograph and the photograph in ill. 56 (*Third Fort Union*, pp. 236-237), taken in 1888. In ca. 1885 the glass of the French door was still clear, while in 1888 the panes had been painted over with light-colored paint or covered with boards.

103 27a - - 3 - -

Storehouse. This building was begun in mid-1866, apparently just after the Arsenal area was surveyed by Enos and Lambert in August. It was probably intended as additional storage to supplement HS-101 and 102. On October 2, 1866, the building was described as almost complete, with the outer roof in place (Part I, p. 75). It is apparently shown on the March, 1868 plan by Ludington and Lambert, and is on the 1882 plan. The building was adobe on a stone foundation, 23 x 64 feet on the exterior, with walls two feet thick and a front porch centered on the south, 10 x

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<sup>105</sup>NARG 156, Letters Received, Office of the Chief of Ordnance, M. S. K. Shoemaker, Union Arsenal, to General H. K. Craig, Ordnance Department, Washington, May 13, 1859.



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7½ feet. In the ca. 1885 photograph the building had a steeply-pitched hip roof of sawn boards.

- 104 26a - - 4 - - Oil House. This is the westernmost room of the three-room building, HS-104/105/106. No specific information appeared in the written documentation on this building. It was added to the west end of the original structure, HS-105, after 1868 and before 1882; the construction probably occurred during the last major building episode of the Arsenal in 1871-72. It measures 13 x 33 feet on the interior, was adobe on a stone foundation with a pitched roof of sawn boards, and has no visible fireplace; not surprising, considering the inflammable nature of the materials stored here.
- 105 26a - - 5 4 - Armory. This is the original room of a three-room building, HS-104/105/106. No specific information appeared in the written documentation on this building. It was built before May, 1866, when the Blacksmith Shop, HS-106, was mentioned as being added to it, and may be just visible at the north end of HS-102 in the ca. September, 1865, Farnsworth photograph; the building was probably one of Shoemaker's first permanent structures built in 1865. The building appears on the 1866 proposal plan of the Arsenal, with the blacksmith extension, HS-106, and is shown on the 1866 Enos and Lambert map, the 1868 map, the 1882 Kelp plan, and the ca. 1885 photograph. The original Armorer's building, HS-105, was 15½ x 38 feet; it was adobe on a stone foundation, with a pitched roof of sawn boards. What appears to be an odd-shaped chimney or forge base can be seen inside its northwest corner on the ground.
- 106 26a - - 6 4 - Tinner and Blacksmith Shop. This is the easternmost room of a three-room building, HS-104/105/106. The Blacksmith Shop was added to the east end of HS-105 in March-June, 1866, and continued in use through the life of the Arsenal. It is 15½ x 35 feet on the interior, of adobe on a stone foundation, with a pitched roof of sawn boards. A chimney base is centered on its east end. The addition produced the Armorer and Blacksmith Shops building, no. 4, shown on the proposal plan of 1866. The proposal plan shows the building as about 26 feet wide and 84 feet long; actual dimensions of HS-105/106 are 20 x 80 feet.
- 107 3a - - 7 14 - Saddler Shop. This building was built in 1867-68. The 1866 proposal plan showed that the saddler's shop was originally

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intended to be a small building on the location of HS-107, about half the size of the version as built. The map of August-December, 1866, showed nothing had yet been constructed on this location, although the First Fort Officer's Quarters, HS-134 and 135, had been removed, probably about November, 1865, when construction began on the Magazines, HS-109 and 110. In the interim before construction began, the layout was redesigned and the saddler's shop and carpenter's shops (no. 15 on the 1866 proposal plan) were both enlarged; construction on the revised version of the building was completed sometime before May, 1868, probably not long after July, 1867, when HS-108 was finished; the foundation of HS-107 was probably one of those finished in July (Oliva, "Frontier Army," p. 906). The building was still in use as a Saddler Shop at the time of the 1880 inspection (Oliva, "Frontier Army," p. 1062), but when the 1882 map was drawn up it indicated that the Carpenter shop had been moved out of HS-108 and combined with the saddlery in this building.

The Saddler Shop was adobe on a stone foundation, and measured 27 x 70½ feet. It and HS-108 were apparently intended to be the same size and on the same alignment as HS-109 and 110; however, the alignment of these two structures is offset to the east about 1½ feet from the alignment of the two earlier buildings, and they are 2 feet narrower and 5 feet shorter. The building had a gable roof of sawn boards, with a chimney or stovepipe about ¼ of the roof ridge length down from the north end of the building on the west slope of the roof. The building had three window openings on the west side and three on the east; the three openings on the west elevation had board moldings surrounding them, and the three on the east probably had the same. The 1882 map shows a loading dock or walk along the entire east side of the building, although no traces of this structure were found on the ground. However, investigation on the ground located porches or loading docks of stone edging with packed earth fill, 20 x 14 feet, on both the north and south ends of the building. The building had wood double doors centered on the north gable end, and probably a similar set on the south, both opening onto platforms at the ends of the building.

108   4a   -   -   8   15   -   Carpenter Shop. This building was built in 1867-1868. The 1866 proposal plan intended that the carpenter's shop be located on this spot, but it was to be about half the final size of HS-108. The

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building was redesigned in late 1866 or early 1867, and construction on it was completed in July, 1867 (Oliva, "Frontier Army," p. 906). The structure continued as a carpenter shop through the inspection of 1880 (Oliva, "Frontier Army," p. 1062), but by 1882 the carpenter's operation had been moved to HS-107, and HS-108 had become a storehouse.

As constructed, the carpenter shop was adobe with a stone foundation, 26½ x 70½ feet. The gable roof was covered with sawn boards and had a chimney centered on the roof ridge. There were three window openings on the west side of the building, and three more on the east; the three window openings on the west elevation had board moldings surrounding them. The building had wood double doors centered on the north gable end, and apparently the same arrangement on the south end, opening onto a porch about 20 x 14 feet. The 1882 plan of the Arsenal shows a loading dock or walk along the east side, although there were no large doors here.

109    1a   -   -    9   10   -   Powder Magazine. Shoemaker apparently planned this building, the adjacent Ammunition Magazine, and their enclosing wall in mid-1865, and began construction on both magazines about mid-November, 1865.<sup>106</sup> The walls were completed by early June, 1866, and work on the roofs began soon afterward. The building was completed by October, 1866 (Part I, p. 75). It was adobe on a stone foundation, 29 x 75½ feet. The porch or loading platform on the south end of the building, about 20 x 14 feet, and the stairs to it (apparently of wood, since no trace of them is visible on the ground) were still being finished in October, 1866. When finished, the building had a doorway at the north end, another on the south opening onto the southern platform, a single door or window in the west wall, and two symmetrically placed doors or windows on the east side.

110    2a   -   -    10   9   -   Ammunition Magazine. Planned about mid-1865, begun about November, 1865, and completed by October, 1866, about the same time as HS-109, above. The building was adobe on a stone foundation, 29 x 75½ feet. A porch about 20 x 14 feet was on the

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<sup>106</sup>NARG 156, Letters Received, Office of the Chief of Ordnance, M. S. K. Shoemaker, Union Arsenal, to General A. B. Dyer, Chief of Ordnance, Washington, November 16, 1865.



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south end of the building. Doors and windows were placed as in HS-109.

111 29a - - 11 - -

Ordinance Stables. Ruwet applied the number 29a to the standing adobe stable building, 70 x 27 feet, and 30a to the second building shown on the Kelp map, apparently a wooden structure, 45 x 10 feet. Both buildings had pitched roofs of sawn boards. Traces of a third structure, perhaps just a corral enclosure, 45 x 15 feet, are visible just east of the main corral wall.

On the 1866 proposal plan, a somewhat different version of the stables compound was intended to be built a little south of this location. No stables are shown on the 1866 or 1868 maps, indicating that some other structure was serving as the Ordinance Stables during those years, probably HS-80, north of the "Old Post Corral" just west of Second Fort.

HS-111 was built on this site soon after March, 1868; the most likely time is in early 1869, just after the redesign of the compound wall plan in the winter of 1868-69, but before the construction of the new walls began; in fact, the placing of the stables further north than in the 1866 proposal plan suggests that their construction was one of the earliest steps in the redesign. The stable compound, 102 x 97 feet, was incorporated into the main wall around the arsenal, but clearly was built before the north section of the enclosing wall (HS-100); the Arsenal wall extending between the Stables and the Clerks Quarters, HS-116, moved out to a location on the northeast corner of the new wall plan about April, 1871, did not precisely follow the angle of the north side of the Ordinance Stables enclosing wall. There is a slight but unmistakable change in angle where the north wall reaches the northeast corner of the stable wall, but no equivalent angle at the southwest corner of the stable yard, suggesting that the stable compound was built along with the northern portion of the main west wall. SH-111 was the Ordinance Stables structure mentioned in Shoemaker's 1873 summary for the Surgeon General (Part I, p. 81).

112 - - - 12 - -

Tool House. This building was not mentioned specifically in the written documentation, but it appears on the 1882 plan. Its location and size are approximate on the Base Map; no traces of it are visible on the ground.



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113	22a	-	-	13	-	-	Arsenal Barracks. This structure was built between March and October, 1868 (Part I, p. 136), of adobe on a stone foundation, replacing the old Ordnance Barracks, HS-143. The dimensions of the Arsenal Barracks were 100 x 26 feet; it was divided lengthwise into four sections or bays, with chimneys at the centers of the two end bays. The base of the western chimney is still in place, while the eastern chimney fell into the basement at this end; it is, however, visible in the ca. 1885 photograph. It had porches front and rear, 9 feet deep by 100 feet long, supported on a series of stone piers and wooden posts set on stone blocks. A basement was under the easternmost bay, reached by a narrow stairway from ground level through the east wall of the building. At the southwest corner of the building, a brick walk led from the Ordnance Parade Ground to the barracks through a fence or wall along the south side of the building up to the porch.
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114	14a	21	-	14	-	-	The Shoemaker House: Commanding Officer's Quarters, Arsenal (see further notes on this building under HS-133, below). The Army correspondence on this building indicates that construction began on it in April, 1870, but work slowed on the building that fall because Shoemaker was ordered to lay off his civilian employees. The building was nearly completed by the following spring. At this point, Shoemaker began planning for the enclosing compound walls, the outhouses, and the cistern (Part I, p. 141). HS-114 was probably finished in mid-1871.
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An 1873 inspection report described the building as measuring 54 x 75 feet. The building was adobe on a stone foundation, with chimneys incorporated into the gable end walls. The roof was v-channel metal (probably zinc). The rear wing to the west had a lower ridge line than the main portion of the building. The building had multi-light windows of at least three lights across—a variation from the plan. The plan of the Ordnance Commanding Officer's Quarters is available (*Third Fort Union*, ill. 55, pp. 234-35). This plan is virtually identical to the layout of the foundations of HS-114, except that the central hall was widened when it was constructed. This hall was shown as about 9 feet wide on the plans, while the actual hall appears to be about 13 feet wide. The building plan and elevation match the structure visible in *Third Fort Union*, ill. 56, pp. 236-37 (1888) and the ca. 1885 photo.

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The yard west and south of the building contained a number of structures. The available records are too limited to allow a detailed structural history of the changes to the compound from 1851 to 1882 or later; only archeological investigation will allow this to be worked out. Some of the buildings of First Fort that were built in conjunction with the Ordnance activities of Shoemaker continued in use southwest of Shoemaker's residence; many of the visible buildings, however, date from after the mid-1860s. In addition to the buildings, the yard had a number of carefully tended trees, some of which have left substantial stumps, and a stone-lined irrigation ditch network, only a small part of which is visible and plotted on the map. This irrigation system may have been fed from the large water tank shown on the house plans as being on the south side of the house where one branch of the ditch approaches the foundations (Part I, p. 142, fig. 12); this could be the "small cistern" referred to as "connected with the commanding officer's quarters" (Part I, p. 141). However, this tank was apparently intended to serve primarily as the water supply for the bathtub in the room next to the tank; grey water from the bathtub was undoubtedly drained into the irrigation system.

Shoemaker formalized various parts of his Quarters area. At the front of the building was what appears to have been a grass-covered yard, probably enclosed in a fence. Along the west side of this yard were planted several trees in a symmetrical pattern. Four of them were set in pairs at equal distances on either side of his front porch, and two more at equal distances away, one near the north and one near the south extremes of the yard. An entrance walk apparently led from his porch, between the paired trees, across the lawn to the teardrop drive, itself symmetrical to the centerline of the house. The flagstaff and main entrance gate were also set up on this centerline; therefore, all these structures were built after HS-114 was at least marked out on the ground, therefore after about April, 1870.

A path was left along the front of the compound wall enclosing Shoemaker's side and back yards, his house, and the Clerk's Office. On the south side of the compound around his house was another area outlined in larger stones, probably either a grassed area or planted with shrubs and flowers. The entrance road to the magazine compound ran along this planted area. Several other trees stood here and there south of this road; their stumps were not

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plotted on the map. North of his compound yard, Shoemaker had another area probably covered with grass, and separated from the road to the Storehouse, HS-101, by a white picket fence. The stones set in the ground as part of the support for this fence are visible in several places. The fence and yard behind it, as well as portions of the back of the house, Ordnance Clerk's Office, and outbuildings, may be seen in the photographs taken in 1887 and 1888, in *Third Fort Union*, ill. 56, pp. 236-37.

115   15a   -   -   15   2   -   Ordnance Clerk's Office and Water Tower. Ruwet assigned the numbers 16a-18a to the various additions to this building. The 1867 proposal plan gives the Office the number 2; this was the earlier version of the office and clerk's quarters that stood here, the northern two-thirds of which apparently became the later version, HS-115. The 1866 proposal plan shows the first clerk's office and quarters to have been about 70 feet long and located so that it overlapped HS-115 and the space between it and HS-114.

The earlier office and clerk's quarters were built partly of logs and partly of adobe (Part I, p. 141); the log portion was constructed as one of the First Fort ordnance buildings, probably about 1852, and is visible just north of the Ordnance Officer's Quarters in the Heger drawings of 1859. The adobe section was apparently built on the north end of the log building about 1859; if this section became part of the final building, it had a stone foundation with adobe walls. Ruwet erroneously considered the earlier office the same as that depicted on the Kelp map, and also assigned it the number 15a.

It appears that the southern third of the building was the original log section shown in the Heger drawings; archeological investigations would clarify this. The log portion was torn down sometime after April, 1871. The removal of the log section from the building had the effect of removing the clerk's quarters from it, leaving the adobe section as the present office (HS-115); the new clerk's quarters (HS-116) were built in 1872 (Part I, p. 141).

The Office has a stone foundation measuring 17 x 49 feet. The main portion of the structure was covered with a metal hip roof with a low slope. A chimney base is centered at the south end of the building, and a second at the north end, matching the locations of the chimneys visible in various photographs of this office. On



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the east side of the building was an entrance porch or step, 8 feet wide and perhaps 3 feet across. Its center was at 35 feet south of the north end of the stone foundation, suggesting that it had been built at the center of the original building, including the log section that made it 70 feet long. This building probably contained the large safe weighing 3,500 pounds built into one of the Arsenal buildings.

By 1882 several additions had been made to the northern end and west side of the building. One of these additions was a two-story tower with four louvered openings on its west and north sides; the east and south sides probably were similar in design. This tower was probably built between 1872 and 1877, and held a water tank that would have been, among other things, the water supply for the fountain in the Duck Pond, HS-124. Water pipes probably ran from this tower to the tank on the south side of Shoemaker's house as well as to the Duck Pond, and from the Well, HS-122, to the Water Tower. Some sort of pump must have been in place at the well to force water up the tower. The water tower appears to have been of wood frame construction, and had a steeply pitched pyramidal roof. One or two shed-like additions may be seen on the west side of HS-115 and the water tower. The approximate plan of one of these was visible on the ground, and is shown on the map. A detailed plan of these additions would probably be retrievable by archeology.

116   21a   -   -   16   -   -   Ordnance Clerk's Quarters. Shoemaker proposed construction of this building in 1871, and it was undoubtedly built just prior to or at the same time as the construction of the northeast corner of the enclosing wall, HS-100, in late 1871 and early 1872. The structure was completed by 1873. The building was adobe on a stone foundation, and had a small front porch, several rooms across the front, and perhaps one room making an ell at the east end of the back; this is also the layout shown on the 1882 map. The ca. 1885 photograph shows apparent chimneys at the east and west ends of the front row of rooms, and a third chimney at the northeast corner of the ell, suggesting that this room was the kitchen. The entire west half of the back section of the house is shown on the Kelp map of 1882 as a patio, with a small porch facing west onto it from the northeast room. On the ground, a section of the east wall of the house was constructed or repaired with fired brick, possibly associated with the fireplaces apparently



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located in this area. The house had a small yard in front and a large compound in back with several storage buildings; one of these may have been a stable. It is likely that the Clerk's Quarters compound with its enclosing wall was built first, in the second half of 1871, and then the Arsenal enclosing wall (HS-100) was built incorporating it into the Arsenal compound in the spring of 1872, as was done for the Stables compound, HS-111, above. A wall or fence once ran westward from the southwest corner of the front yard of these quarters, to the north end of the Storehouse, HS-102. This fence formed the north side of the Ordnance Parade Ground.

- 117   32a   -   -   17   -   -   Cistern. The Kelp map assigned the number 17 to all the cisterns, and the National Park Service followed suit by giving them all the number 117. Ruwet assigned the number 32a to the several cisterns west of the Commanding Officer's Quarters, but gave the cisterns north of HS-102 the numbers 24a (east cistern) and 25a (west cistern). This report allots a different number to each cistern; see below, HS-121 through 123.

Cistern HS-117 seems to be one of the two proposed by Shoemaker in January, 1867 and completed by July (Part I, p. 134; Oliva, "Frontier Army," p. 906); the other was probably the eastern cistern in HS-120. As described, these were both 12 feet in diameter and 18 feet deep; they were intended to hold about 15,000 gallons of water. Stone channels carried rainwater collected from the roofs of HS-101 to this cistern; a second channel apparently carried overflow from HS-117 to HS-122.

- 118   5a   -   -   18   -   -   Gun/Artillery Shed and Storehouse. Built about 1867-68 to replace HS-199. The Ludington and Lambert map of May, 1868, shows HS-118 standing and HS-199 gone. HS-118 is apparently one of the "three smaller storehouses" described in 1873 (Part I, p. 81); it is on the 1882 plan and in the ca. 1885 photograph. It was an adobe building on a stone foundation, 100 x 25½ feet, with a gable roof of sawn boards. The foundation is easily recognized today.

- 119   28a   -   -   19   -   -   Coal House. No mention is made of this structure in the written documentation, but it was built between 1868 and 1882, and probably stored coal for the blacksmith forge. The building may have been built after 1879, when coal became more available by rail. It appears to have been an adobe structure on a stone foundation. The roof was a low-sloped hip roof of sawn boards.

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The wall outline cannot be recognized on the ground, but a large mass of coal marks the site. The dimensions of the outline on the plan are approximate.

- 120 23a - - 20 - - Bakery. What appears to be the cinder fill of an oven is easily found on the site, but stone foundations are easily identified east of the oven mound, and the ca. 1885 photograph makes it seem that the bakery was on these foundations. This makes it uncertain that the cinder mound is the remains of the oven for HS-120. Several peculiarities of the surface, both in aerial photographs and on the ground, suggests that a second barracks like HS-113, or some structure of similar plan, may have been begun in this area, predating the bakery. The most likely candidate is a set of married officer's quarters, planned for in late 1868 (Part I, p. 77). However, no such building is indicated on the 1866 proposal plan (made before HS-113 was constructed), or shown on the Kelp map of 1882, or visible in the ca. 1885 photograph. There was easily enough time for quarters to be begun about 1869, and then given up and a bakery built on the site by the time the 1882 map was drawn. Archeological investigation would be necessary to define what happened here.

Two cisterns were located in or near the outline of this possible structure or group of structures, one at the south edge and a second at the west end. The cistern at the west end, directly north of HS-102 and directly east of HS-104/105/106, appears to predate the others of the Arsenal. It is shown on the 1866 proposal plan and the 1866 and 1868 Lambert maps and is still present in 1882. It is not visible on the ground, although it can be made out in the 1935 aerial photo of the Arsenal. The other cistern, one of the two numbered 17 on the Kelp map, is about 12 feet in diameter. This was undoubtedly the second of the two cisterns planned by Shoemaker in January, 1867 and finished by July (Oliva p. 924). Both cisterns at HS-120 were apparently backfilled by the Fort Union Ranch before the National Monument was established.

- 121 32a - - - - Cistern. Originally one of the group numbered HS-117. This cistern, about 30 feet in diameter, appears to predate HS-117, the cistern on its south edge, which was probably built in 1867. The date of its construction is unknown. It is difficult to recognize on the ground because it was apparently backfilled by the Fort Union Ranch, but is easily seen on the 1935 aerial photograph.

HS	R	B	W	K	66	M	Name and Use
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|-----|-----|---|---|---|---|---|--|
| 122 | 32a | - | - | - | - | - | Well. Originally one of the cistern group numbered HS-117. The visible part of this structure appears to be a well, with a central shaft about 5 feet in diameter. However, the stone channel from HS-117 to this point does not penetrate the wall of the well, and examination of the area shows that the well was apparently built within a stone structure of about 12 feet diameter. It received runoff from HS-117 and probably had a further channel to HS-123 and HS-124. The date of the reconstruction of this cistern into a well, breaking this system of channels, is unknown. The Arsenal may have had a pump at this location, feeding water to the Water Tower at the north end of HS-115. To add to the uncertainty about the use of this structure, in 1882 it is marked as a cistern, not a well. |
| 123 | 32a | - | - | - | - | - | Cistern. Originally one of the group numbered HS-117. The size of this cistern makes it similar to HS-121. It is centered on the alignment through the centers of 117, 122, and 124, so it is part of that system as developed after the construction of 1867, and is probably one of the cisterns under construction in 1869 (Part I, p. 79).   |
| 124 | 32a | - | - | - | - | - | Duck Pond with Fountain? Ruwet and the National Park Service have considered this to be a cistern, but the visible evidence suggests a decorative structure. This structure, centered on the line through the centers of 117, 122, and 123, probably was the small duck pond complete with a fountain mentioned a description of the arsenal in 1877 (Part I, p. 81); it was probably added after the completion of the more necessary structures around Shoemaker's house (Part I, p. 80), and therefore was built between late 1871 and about 1877. The fountain was undoubtedly fed by water from the Water Tower on the north end of HS-115.   |
| 125 | -   | - | - | - | - | - | Oven. No written information appeared on this structure, nor is it noted on any map or visible in the photographs; but it is easily seen on the ground. It is a mounded rectangular mass of cinders and looks like the oven bases of the First Fort Bakery (HS-159a, b, discussed below). It may have been the baking oven for the Commanding Officer's House, HS-114, and could be one of the unidentified rectangles shown behind HS-114 on the Enos and Lambert map of 1866.  |





## FIRST FORT

First Fort Union was established by Major Edmund B. Alexander on July 26, 1851 (Part I, p. 19-34). No plan is available of its original layout, but a schematic made two years later shows it just after the completion of many of its principle buildings. Although there were a few changes and alterations in subsequent years, the plan saw no significant changes until the onset of the Civil War in 1861.

In September, 1852, Captain E. S. Sibley, Assistant Quartermaster, wrote a description of the condition of the Fort. He gave the size of most of the buildings actually built or under construction at the time, but no suggestion as to their locations. Colonel J. F. K. Mansfield made a sketch-map during his visit a year later, August 1 to August 6, 1853. This map, not drawn to scale, can only be used to determine the relative location of the buildings shown, and perhaps very general dimensions.

Fortunately, there are several drawings of First Fort that supply a great amount of additional information. The earliest was made just before Mansfield visited the fort. This was Joseph Rice's drawing of June, 1853, in Josiah M. Rice, *A Cannoneer in Navajo Country: Journal of Josiah M. Rice, 1851*, ed. Richard H. Dillon (Denver: Old West Publishing Company, 1970). Rice's drawing is primitive, to be polite, but clearly shows a number of structural details of importance. For example, he shows HS-126, the Commanding Officers' Quarters, as still having a flat roof; he depicts a great deal of detail about HS-182, the Quartermaster Depot; and may be the only artist to show HS-137, the Dragoon Stables—the structure seems to be just visible north of HS-136, and was torn down before the end of 1853.

The next in time is an engraving of Fort Union in William Watts Hart Davis, *El Gringo; Or New Mexico and Her People* (New York: Harper and Brothers, 1857). This engraving was made from a drawing executed before the construction of the east wing of the Post Quartermaster Storeroom, HS-136, by August of 1853, when it appears on the Mansfield map; and before the construction of the New Dragoon Stable, HS-161, after the orders for its construction on November 4, 1853, by Lt. Col. Philip St. George Cooke. It appears, in fact, that the Ordnance Depot is still under construction, the Ordnance Officer's Quarters, HS-133, still has a flat roof, although the other eight seem to have board roofs (four officer's quarters still had flat earthen roofs in September, 1852), and HS-146, begun between September, 1852, and August, 1853, may not be present at all, or under construction; therefore, the drawing was probably made about the end of 1852. Undoubtedly details visible on the original were obscured or misconstrued by the engraver. Davis himself visited Fort Union for a period of four hours in December, 1853, but apparently got this drawing from one F. A. Percy of El Paso, mentioned as one of the sources of the drawings in the book. The Dragoon Stable, HS-137, appears not to be present on the drawing, leading Wayne Ruwet, in his reconstruction of the events associated with the destruction of HS-137 and the construction of HS-161, to argue that the drawing was made by Davis's other source, a Brevet Lieutenant Colonel Eaton, who appears to have been Joseph Horace Eaton of the Third Infantry, at Fort Union in 1855. However, the other details visible on the engraving, and the documents associated with the building of HS-161,

make it clear that Eaton was at Fort Union several years too late to have made the original drawing. It seems that the drawing was made before the Dragoon Stable was built, or while it was still under construction; again, a date of sometime in 1852 is implied. This will be called the Davis drawing, and a date of late 1852 will be used.

The best depictions of the First Fort are those by Joseph Heger. Heger was a private in Company K of the Regiment of Mounted Rifles, and was stationed at Fort Union from January, 1858, to his discharge about September, 1860. He was an accomplished artist, and a lithographer by profession. A number of Heger drawings and prints are in various collections; it is likely that other views of Fort Union in 1858-1860 await discovery among these. See *Campaigns in the West, 1856-1861: The Journal and Letters of Colonel John Van Deusen Du Bois, with Pencil Sketches by Joseph Heger*, ed. George P. Hammond (Tucson: Arizona Pioneers Historical Society, 1949), p. v-vi, for a discussion of the locations of the collected works of Heger. The first of the two presently available drawings is a pencil sketch made on May 20, 1859 (Part I, p. 30, fig. 3). The undated and unattributed etching of Fort Union in the Kansas State Historical Society Photograph Collection, reproduced on the cover of this report, is virtually identical to Joseph Heger's May, 1859, drawing in most details of the plan, layout, perspective, depiction of building proportions and materials, the lines of roads both in the middle ground and especially the far distance, and the shapes of the Turkey Mountains. It is highly probable that the KSHS etching was taken from a Heger drawing made about the same time as the 1859 sketch, but from a point about 480 feet further north along the side of the hill, somewhat lower down beside HS-126. It is possible that Heger, himself a professional lithographer, made the engraving of the picture.

### The Reconstruction of First Fort, 1859-1861

The structural evidence demonstrates that Fort Union began a major construction effort in 1859-1861 that was ended by the advent of the Civil War. This is in direct conflict with Leo Oliva's study, and all other histories written before it, which unanimously agree that Fort Union's repeated attempts to gain approval to rebuild many of the First Fort were rejected.

A number of new buildings were being built in 1859-1861; specifically, HS-157 was rebuilt as a large frame building with a stone foundation in 1859, and HS-156 reached the stage of almost complete foundations next to it. HS-165, 166, and possibly 167, all with substantial stone foundations, may have been built in this period, while HS-170 and 171 on the south side of the fort also reached the stage of virtually completed stone foundations. It appears that these two were laid out with the intent to construct a new group of structures arranged around a second parade ground just south of the original post. This would have produced a fort plan rather like that seen in many other places on the western frontier where the 1850s fort plan survives beside a later, enlarged and rebuilt fort (see, for example, Fort Davis and Fort McKintosh in Texas).

Since HS-157 is apparently being completed in mid-1859 (see the discussion below under this historic structure number), and no trace of HS-156 can be seen in the drawing, suggesting that it had not been begun, it seems reasonable to assume that HS-156, and the other, similar buildings, HS-170 and 171, were all begun after mid-1859. Then something stopped the rebuilding effort abruptly, leaving a number of buildings as incomplete foundation outlines. The most likely candidate for this halt is the start of the Civil War in 1861 and the abrupt shift of effort to the Second Fort earthworks. Once the suspicion arises that work did begin on some buildings, a few remarks in the documents take on a different meaning. For example, on August 17, 1861, work on constructing new storehouses "laid out as joining the old ones was suspended" (Major Chapman of Fort Union Quartermaster as quoted in Part I, p. 37). Similarly, in mid August, 1859, Captain Robert M. Morris, Commander at First Fort, requested permission to hire "citizen mechanics" to build more company quarters. In late August, 1859, he was told to suspend all improvements until instructions came from Washington (Part I, p. 36). Since some structures were begun, including what appears to be new company quarters (HS-171), he must have received such instructions soon afterwards.

These structures illustrate an interesting aspect of historical vs. archeological research. The histories of First Fort based entirely on the available documents agree that the reconstruction of First Fort never was allowed to begin; the physical evidence makes it clear that work did begin on rebuilding First Fort, and perhaps even on a Second Fort on its south side. This is a strong demonstration of the need for using *both* sources of information when writing the history of a place. This previously unsuspected episode in the history of the development of the Fort needs further definition through research and archeological investigations.

### Notes on Building Construction

—by Laura Soullieré Harrison

The army's use of available materials around Fort Union was an obvious choice. Several other factors also influenced construction. In First Fort construction, for instance, the army's arrival during the summer forced the troops to construct buildings quickly—before the onset of winter—so the cutting of trees for the log structures was carried out in haste. To save time, the logs were not peeled or cured or even placed on foundations; these factors resulted in early deterioration problems in the buildings.

Considering that the army had only occupied New Mexico for five years before Fort Union was established, adobe was a building material with which few army builders were familiar. As the army spent more time in New Mexico and settled certain areas, including Fort Union, the employment of local laborers and the adoption of local building traditions greatly increased the use of adobe in army construction. When the army stayed in one place long enough and things were quiet enough on the frontier, there was time to have the troops or locally hired men make the adobes and allow them to cure. The adoption of, or improvement upon, local buildings



techniques increased the quality of the structures and the length of the serviceable use of the buildings at Fort Union.

Information presented in the army correspondence of the period was often confusing or conflicting, in part because of changing functions of structures. Sometimes a building would be built for one purpose, and then after a few years of use its function would change. Also, few pieces of military correspondence, when considered as a whole, dealt specifically with building construction. Luckily, a considerable amount of information did exist in the correspondence on the arsenal for two reasons. William Rawle Shoemaker had to request separate appropriations for his arsenal buildings, and he was a thoughtful man who wanted his structures to be built in the best possible way with the best possible materials available to him. He commented, for instance, on the suitability of certain materials to the climate of New Mexico, and he criticized the quartermaster corps for using cement in the roof structures of the buildings it constructed. In general, though, the information on the building construction and on specific buildings is relatively spotty and very open to interpretation. The discussion below of the probable construction histories of individual buildings presents one such interpretation.



## FIRST FORT BUILDINGS

HS	R	B	W	K	67	M	Name and Use
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*126	1	19	-	-	-	a	<p>The Sumner House: Commanding Officers' Quarters, First Fort (the adjacent office north of the Quarters is HS-197, Office of the Commanding Officer and Courtmartial Room). The building is referred as "the Sumner House" in 1863. The quarters served as a hospital during the Civil War, based on a remark in the same letter of 1863.<sup>107</sup></p>
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This building was begun in early August, 1851 (Part I, pp. 20-22), and enlarged to approximately its present plan by June, 1853; but by that date it still had a flat roof and apparently only three chimneys. It was first occupied by Lieutenant Colonel (brevet Colonel) Edwin V. Sumner, Commander of the Ninth Military Department (effectively all of New Mexico) until he transferred his headquarters to Albuquerque in February, 1852 (Oliva, "Frontier Army," p. 109). All commanding officers of Fort Union after February, 1852, probably lived in the Sumner House. After Sumner left, the house undoubtedly stood empty for ten months until the arrival of the new commander, Major Gouverneur Morris, and his wife Anna Maria, in December, 1852. Morris left the post in June, 1853, and the building again stood empty until the arrival of Captain Nathaniel C. Macrae in August, 1853. Two other officers commanded for short periods during 1852 and 1853, but they were already at the post and probably did not move from their quarters into the Commanding Officer's Quarters.

The house was constructed of unpeeled logs. In the Rice drawing of June, 1853, the building still has a flat roof and a rectangular plan with chimneys on the north and south ends, and two smaller chimneys on the rear additions. It is reasonable to assume that the building received its board roof during 1853. In the Heger drawing, showing the building in 1859, the building has a pitched board roof, and the gable-end chimneys appear forward of the roof ridge. During 1861 and 1862, this building was apparently used as the hospital (Oliva, "Frontier Army," p. 508, 515).

In February, 1863, the order came through to tear down this building and reuse the lumber, doors, and windows for a new set of officer's quarters "at the redoubt," the Second Fort. It was torn

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<sup>107</sup>Arrott Collection, card 110, Brigadier General James H. Carleton, Headquarters, Department of New Mexico, Santa Fe, to Captain William Craig, Depot Quartermaster, Fort Union, New Mexico, February 22, 1863.

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down in March, 1863. The quarters constructed using the material salvaged from HS-126 was probably HS-78, apparently the residence of the commanding officer of the fort (see AC cards 110, 112).

- 127 3 2 2 - - a Officers' Quarters, First Fort. Constructed beginning August, 1851, this building was a structure of unpeeled logs like the Commanding Officer's Quarters, again with three rooms and a kitchen. Note: until February, 1852, this building was probably referred to as the "Commanding Officer's Quarters," and HS-126 was called the "Department Commander's Quarters." This structure was probably torn down with most of the other Officer's Quarters in March and April, 1866 (Oliva,p. 569).

It had a flat, earthen roof at first, and had a board roof by 1853. The written evidence indicates that the earthen roofs remained in place even after the board gable roofs were put in place.

It is likely that this building was first occupied by Captain (brevet Lieutenant Colonel) Edmund B. Alexander, first commander of Fort Union, and his wife, name unknown. Alexander left the post in April, 1852.

- 128 4 3 3 - - a Officers' Quarters. Begun in August, 1851, and probably first occupied by Captain (brevet Major) James H. Carleton, second commanding officer of Fort Union, and his wife Sophia. Captain Carleton served as post commander from April 1852 until August, 1852, when Captain (brevet Major) William T. H. Brooks took over until Major Gouverneur Morris arrived at the post. Major Carleton and Sophia were transferred to Albuquerque in October, 1853.

- 129 7 4 4 - - a Officers' Quarters. Built after the higher-ranking officers' quarters, therefore probably in September-October, 1851. In 1859 this building still had only one gavelled rear wing and chimney; its simpler form indicates that it and HS-132 were probably for junior officers such as lieutenants and low-seniority captains. The front north and south chimneys contain brick in addition to field stone, indicating large-scale remodelling late in the life of the building, after brick-making began in the area about September, 1860 (Part I, p. 71). These quarters were gone by August-December, 1866.

HS	R	B	W	K	66	M	Name and Use
130	8	5	5	-	-	a	Officers' Quarters. Begun September-October, 1851. Probably a captains' quarters, like HS-131, below. No brick is visible in the chimney bases. This building continued in use through at least August, 1866, when it was shown on the Enos and Lambert map as enclosed by a wall or fence. It was gone by May, 1868.
131	9	6	6	-	-	a	Officers' Quarters. Begun September-October, 1851. Probably a captains' quarters, like HS-130, above. Three of the chimney bases contain brick, so the structure was part of Shoemaker's brick experiment in September, 1860. The building was still standing as of ca. September, 1865, when it can be seen in the Farnsworth photograph, but was torn down by the time the Enos and Lambert map was made in August-December, 1866.
132	10	7	7	-	-	a	Officers' Quarters. Begun September-October, 1851. Because of its simpler plan, probably a lieutenants' or junior captains' quarters. Visible in the Farnsworth photograph in ca. September, 1865, but gone by August-December, 1866.
133	11	-	-	-	1	a	Ordnance Officers' Quarters. It was begun in August 1851, and first occupied by Military Storekeeper William R. Shoemaker, in charge of the Ordnance Depot established at Fort Union, and his wife Julia. It continued in use longer than any of the other Officers' Quarters of the First Fort. This may be the "Commanding Officer's Quarters" (presumably referring to Captain Shoemaker) that were to be torn down in March, 1866, but instead may have been given to Shoemaker (Oliva, "Frontier Army," p. 569). It was described as still acceptable as a dwelling in October, 1868 (Part I, p. 77), and standing but needing to be replaced in 1869 (Part I, p. 79; <i>Third Fort Union</i> , p. 121). It was torn down about 1872, after completion of the new Arsenal Commanding Officer's Quarters the same year. The 1866 proposal plan gave the old Arsenal Commanding Officer's Quarters the number 1. Ruwet considered this building to have stood about the same distance north of the central group of quarters as HS-129 was to the south, placing it just south of the compound wall around the later Commanding Officer's Quarters, HS-114, with its north wall would have been against the south wall of the compound. He assigned the numbers 7a through 13a to the various outbuildings behind (west of) the main house. Bleser concluded that the Ordnance Officers' Quarters of the First Fort was on the same site as the Commanding Officer's Quarters of the Arsenal, and assigned



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his number 21 to the site. Neither of these locations appear to be correct; the First Fort Ordinance Officers' Quarters was located just south of the south wall of the new Commanding Officer's Quarters. Its southern chimney, containing a large percentage of brick (probably added during repairs as part of Shoemaker's brick experiment of 1860), stood at the location of the south compound wall, which is built across it, and its north chimney was on the wall line of Shoemaker's new quarters.

Mansfield's map, although only a schematic, showed the northernmost Officers' Quarters to be a little further north than symmetry would have required. The southernmost Officers' Quarters, HS-129, has a distance of exactly 250 feet between the outer face of its northern chimney and the southern face of the chimney of HS-130, the next Officers' Quarters north. If the Ordinance Officer's Quarters were exactly the same separation to the north, then the center of its northernmost chimney should fall about 6 feet north of the southern compound wall around HS-114. The chimney base located in this area fell, instead, on the location of the compound wall. Since the available evidence indicates that it was a little north of its symmetrical location, the chimney under the compound wall must be the southern chimney of the Ordinance Officer's Quarters. The distance from the northern chimney of HS-132, the next Quarters south, to the south chimney of HS-133, is therefore 295 feet, or 45 feet further north than symmetry would place it. This is also the location of HS-133 shown on the proposal plan of 1866. The northern chimney would then be partly under the location of the southernmost chimney of HS-114; again, this is supported by documents: in September of 1870, Shoemaker wrote that the chimneys along one side of his house, HS-133, had to be removed and the windows closed in order to continue construction on his new Quarters, HS-114. This indicates that the north wall of HS-133 was against the south wall of HS-114.

After the construction of the Ordinance Officer's Quarters in 1851, Shoemaker began the development of his Ordinance establishment. This took the form of a series of buildings constructed west, north, and east of HS-133. Several of the buildings were built in an extension of the yard behind HS-133. The first of these was probably the log gunshed constructed in mid-1853 (Part I, pp. 66-67). This is the compound visible in the Heger depictions of the Shoemaker complex. In June-August, 1859, Shoemaker built a



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magazine and probably part or all of a protective enclosing wall of adobe (Part I, p. 69); Heger's pencil drawing is in fact dated May 22, 1859, just before Shoemaker began the construction. Also clearly visible north of and on line with Shoemaker's quarters is a small building that was undoubtedly the Ordnance Clerk's office, apparently a log building. This appears to have become the southern third of the log and adobe building shown on the 1866 plan, the precursor of the present HS-115. The plan of the back buildings as shown by Heger strongly resembles some parts of the back buildings as they appear on the present plan. Shoemaker put up a flagstaff just north and perhaps a little east of the north end of HS-133 by 1859, when Heger shows it on both his drawings. This flagstaff may have been placed as early as the beginning of the development of the Ordnance complex in 1853.

By August-December, 1866, Shoemaker's house and yard, the buildings out back, the Clerk's Office with the Clerk's Quarters added in adobe to its north end, the Storeroom (HS-102), the Armorer and Blacksmith shops (HS-105/06), the Artillery Storehouse (HS-199), and the Main Storehouse (HS-101), were all enclosed by a series of walls and fences connecting the ends of the various buildings; this enclosure was joined to a large rectangular wall enclosing the two large Magazines (HS-109 and 110). The structures that had been the Magazine and Gunshed were apparently converted to stables and outbuildings for Shoemaker's house.

134   13   20   -   -   -   a   Officers' Quarters. Ruwet gives this building and the adjacent quarters the same number. The survey was unable to locate the second rear chimney, even though one was undoubtedly present. Begun in September, 1851, this seems to be the house wherein Captain Isaac Bowen and his wife Katie were the first occupants, living in these quarters from the time of their construction until October, 1853. Captain Bowen was in charge of the Subsistence Commissary stores for the Department. Katie reported that they moved in to this building about the end of October, and that the third room was finished by the end of November (Oliva, "Frontier Army," p. 327). The third room was used as the bedroom, and Isaac kept the funds for the Department Quartermaster here, as well as the Commissary funds.

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In Katie Bowen's letters, she describes a number of the structures she and her husband built in the back yard of the house, as well as details of the interior. The Bowens kept several cows, three pigs, one or more horses, as many as 80 chickens, and a team of mules in their yard. Isaac built a "cow house," a barn, and several chicken coops; they may also have dug several small cellars for keeping milk, and had a small garden plot (Part I, pp. 24-25, Oliva, "Frontier Army," p. 327). Undoubtedly the other officers' quarters had similar buildings and usages in their yards.

The house appears to be still standing as of ca. September, 1865, when it is just visible behind HS-132; it was probably torn down about November, 1865, during the construction of the magazines and enclosing compound.

135 12 20 - - - a Officers' Quarters. The survey was unable to locate the second rear chimney of this house, even though one is clearly visible in both Heger drawings.

These quarters, closer to the Commanding Officer's Quarters, HS-126, were begun in August, 1851 and probably first occupied by Captain (brevet Major) Ebenezer Sprote Sibley and his wife Charlotte. Sibley was Assistant Quartermaster in charge of the Department Quartermaster Depot (Oliva, "Frontier Army," p. 153) as well as being the Post Quartermaster. Sibley's quarters were built first because his brevet rank was higher than that of Captain Bowen, and it is usual for higher ranked officers to be housed closer to the commanding officer. The Sibleys lived here until August, 1853.

The building appears to have stood until about November, 1865, when it was probably removed as part of the construction of the magazine compound, the west wall of which passes across the west wall of this house.

136 14 9 9 - - h Post Quartermaster's Storehouse. Note that this is different from the Department Quartermaster's Depot, located in HS-182. HS-136 was apparently built originally as the Post Hospital. As of August 20, 1851, the walls of the hospital were completed, but it had no roof (Oliva, "Frontier Army," p. 112). In December, 1851, Major E. S. Sibley said that "the building designed for the hospital does not exactly answer the purposes for which it was

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intended;" another building was to be built (HS-140) and the hospital would be converted to a storehouse to get the stores out of the tents where they had been since the post was founded. The new hospital was built and the old hospital converted to Post Quartermaster Storehouse in the first half of 1852. It was shared by the commissary and quartermaster departments (Oliva, "Frontier Army," p. 120).

In his report on the condition of the post in September, 1852, Sibley stated that the storehouse had only one wing; his description said that the building was 100 x 22 feet with one wing of 45 x 22 feet, with a sawn board gable roof (Part I, p. 23). The Davis drawing of late 1852, shows the west wing, and clearly shows no east wing (see the exceptionally clear print of the engraving in MNM #82350). The Rice drawing of June, 1853, shows the west wing, but unfortunately the area of the east wing is obscured. Mansfield shows two wings standing by August, 1853; therefore, the east wing was added sometime in the first half of 1853. In September, 1853, this storehouse was reported to be in "deteriorated condition," and it was proposed to build a new structure. It must have been repaired instead, and is probably the Quartermaster storehouse where a ball was held in September, 1858. According to the rather detailed description by Major John S. Simonson, the building had a Quartermaster's office with a small room on either side, all probably in one of the wings. The Quartermaster Storehouse proper, with a packed earthen floor, was probably located in the main east-west wing (Oliva, "Frontier Army," p. 356-57). The building continued in use through 1859, but was gone by 1866.

The traces of the building consist of four clearly-defined firehearths of stone, and the visible outline of the building in the form of rubble mounds and vegetation lines. A massive rectangular area of stone, 19.5 x 8.5 feet, was located just west of the east wing of the storehouse, and was probably a loading dock. If its eastern edge was against the west wall of the east wing, as is likely, then the east wing was 19 feet wide rather than 22 feet. A large mound of rubble and midden-like debris is just east of the east wing, and may have been cleared from the area of HS-137 by the Fort Union Ranch prior to the creation of the National Monument.



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137 38 - - - - g Dragoon Stables (see also HS-161, HS-148, HS-149. This building is not visible in the Davis drawing of late 1852, but may be one of the two corrals, each 100 feet square, described by Sibley in the inspection of September, 1852. It seems not to be on the Rice drawing of June, 1853; but is shown on the Mansfield map in early August, 1853. The building is gone by 1859, and the date of its disappearance is as uncertain as the date of its construction. However, planning for a new stable began in July, 1854 (Part I, p. 34), and Colonel Thomas T. Fauntleroy stated in July, 1855, that "the stables for one Company have to be rebuilt entire." Ruwet suggests that it was the Dragoon Stables needing replacement (Ruwet, "Fort Union," pp. 40, 42; Oliva, "Frontier Army," p. 184); this seems a reasonable suggestion, and indicates that HS-137 was in bad shape by mid-1854, but was probably used through mid-1855. Ruwet further suggests that the stables were rebuilt on a new site, which he considered to be the complex he called number 24 (see HS-148, 149 below). Ruwet is very likely correct in thinking that the new stable built after Fauntleroy's evaluation was probably HS-148 and 149 (Ruwet's no. 24), since this group of corrals and stables were built sometime between 1853 and 1859. However, it was probably HS-161, built in 1853 as an additional Dragoon stable, that replaced HS-137 (see HS-161, below).

The building has a fairly clear presence on aerial photographs, and there is a great mass of burned debris and trash deposits on the site. The appearance of the area of HS-137 is consistent with destruction by fire and subsequent use as a trash-dumping area, or abandonment and later trash-dumping including ashes and charcoal from fireplaces.

138 18 8 8 - - b

Soldiers' or Dragoons' Quarters. One of the two company quarters with walls finished as of August 20, 1851. The roof of this or HS-139 was being built as of that date. The structure continued in use through at least the end of 1866, when it appears on the 1866 Enos and Lambert map; it was gone by March, 1868. The 1852 description of this building listed it as being 100 x 18 feet with two wings of 50 x 16 feet with board roofs. A walkway, 2½ feet by 10½ feet and made of flagstone, led to a doorway in the center of the south side of the main wing; an extra fireplace stood at the north end of the west wing.



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139	26	22	-	-	-	b	Soldiers' Quarters. Built in 1851, it stood through May, 1859, and may have been torn down in August, 1859 (Part I, p. 37). It was certainly gone by the time of the photograph of ca. September, 1865. The building was 100 x 18 feet with two wings of 50 x 16 feet, with board roofs. The four stone fireplace bases are clearly visible today, and the general outline of the building can be seen by differences in vegetation.
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140	27	-	-	-	-	f	Hospital. Built 1852, stood through 1868, gone by 1882. This is the second building built for the Post Hospital; the first hospital constructed was not satisfactory. As a result, in December, 1851, the Fort Union staff proposed to turn the first hospital into the Post Quartermaster's Storehouse (HS-136) and build a second hospital in 1852. In September, 1852, the new Hospital was described as 48 x 18 feet, with a wing 46 x 16 feet (Part I, p. 23). Assistant Surgeon Jonathan Letterman, in his 1856 inspection, described this building as being so wet that the hospital staff moved the sick outside into tents and covered over the hospital equipment with canvas (Part I, p. 35). In the 1859 Heger depictions of the building, what appears to be a yard or corral can be seen at the east end of the south wing; several rectangular areas and clear vegetation lines can be seen in the aerials, suggesting that several palisade lines and perhaps one building were built just east of the main portion of the hospital. The hospital was deemed unfit for occupancy in an 1861 inspection. The building was transferred to the ordnance depot in June, 1862 and subsequently used for storage (Part I, p. 72; Oliva, "Frontier Army," p. 904). It was probably torn down by Shoemaker as part of the finalization of the plan of the Arsenal about 1872.
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The visible traces of this building consist of two chimney bases and some traces of the footprint of the structure itself. The best fit of the stated measurements to the site put the 48 x 18 foot Hospital extending east to west, and the 46 x 16 foot wing running north to south from its west end. However, archeological examination should be conducted before this is accepted as fact. The description of 1862 says that the Hospital had seven rooms: three wards, a surgery, a storeroom, a steward's room, and a kitchen.

141	28	-	-	-	-	e	Ordnance Depot. Although Shoemaker's depot was not described in Sibley's report of 1852, Shoemaker's correspondence shows that in June, 1852, the depot building was under construction. It was
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to cover four sides of a square of 100 feet, and would be about 20 feet in height (Part I, p. 26). In 1853, Mansfield reported that the ordnance depot included storehouses, quarters, and a gun shed. The Depot building itself apparently housed the barracks and messroom for depot personnel. The barracks rooms and mess hall had fireplaces, marked by H-shaped foundations. These formed two-sided hearths built at room-dividing walls so that a fireplace would face into each of two adjoining rooms. The spacing of the fireplace bases indicates that there were three barracks rooms, each 20½ feet long and 15¾ feet wide. The mess room was probably on the east end, and was perhaps 36¼ feet long and 15¾ feet wide. The presence, location and plan of the fireplaces allows most of the primary dimensions of the building to be deduced. The east-west exterior length was almost exactly 101 feet, and each wing was 15¾ feet wide. The walls were about 1 foot thick, and were probably of horizontal or vertical logs. North to south, the building was again 101 feet long, and the porches on the north and south sides were each about 7½ feet deep and extended the full width of the building. In September, 1855, the four rooms forming the northern wing were converted to storerooms; the chimneys were torn down, leaving their bases under the floors, and a new barracks, mess hall, and kitchen, HS-142, 143, and 194, below, were built just to the north (Part I, p. 67).

The Depot stood as it was originally constructed through 1859. In the 1859 drawings, and on the ground, the roofs are pitched, a chimney is visible centered on the east end of the south wing, probably for the Depot office, and lightning rods can be seen in the center of the roof of the north and south wings. A section of about one-third of the north end of the west wing is distinctly different from the remainder of this wing in both Heger drawings, suggesting that it was constructed in a different, but undefinable, manner.

By 1866 much of the Depot had been torn down; the Enos-Lambert map shows the western three-quarters of the north wing standing, along with a short section of the west wing making an ell; apparently this was the section appearing to be different in the Heger drawing. In addition, the eastern third of the south wing, probably housing the Depot office, remained standing.

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The section of the north wing remaining appears to have consisted of the four storerooms that had been barracks rooms and a mess hall. Ruwet suggests these were the shops for the Ordnance Depot. He suggests that the two north-south wings were the stables, and were removed sometime between 1859 and 1866 because the stables in HS-149 were used in their place. However, this is unlikely, since HS-148 was the group of stables in this area, and were also torn down in 1859-1866, while HS-149 appears to have been offices and a yard. The stabling area for the Ordnance Depot between about 1862 and about 1869 was probably located at HS-80, near the Second Fort. After ca. 1869, the Ordnance Stables were at HS-111.

The north and south wings of the Depot continued in use through 1868, but were torn down probably during the final episodes of construction in 1871-72.

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Ordnance Messroom? Undoubtedly part of the Ordnance Depot group, along with HS-143, the Ordnance Barracks, and HS-194, the possible Ordnance Kitchen. This may be the new messroom mentioned as soon to be built in Shoemaker’s correspondence of September 1, 1855 (Part I, p. 67). This structure was visible in 1859 and stood through 1868, when it appears on the Ludington-Lambert map, but was probably torn down in 1871-72 construction; its last vestiges were removed at the time of the construction of the tear-drop entrance drive. It was completely gone by the time the ca. 1885 photograph was taken.

The Heger drawings show some details of the structure. A chimney appears on the ridge line of the pitched roof near the center of the building, but has not been found on the ground, and a door is visible on the south wall near the same end. The site of this building, crossed by the tear-drop drive, received so much later impact that the plan cannot be seen on the ground. The building plan taken from the aerials is plotted on the Base Map; it is a structure 75 feet long and 15 feet wide.

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Ordnance Barracks. Not visible in the 1852 Davis and 1853 Rice drawings; built probably in 1855 to replace the barracks rooms in the original depot building, converted to storerooms the same year (Part I, p. 67). Clearly visible in the Heger drawings of 1859. Shown on the proposal plan of 1866, where it is identified as



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"Barracks." Continued in use as the ordnance barracks through 1868, when Shoemaker's request for permission to build a new ordnance barracks was approved. It was replaced by HS-113 between March and October, 1868, and probably torn down by the end of the year.

In the 1859 Heger drawings the building has a pitched roof with a chimney on the ridge line about 1/3 of the length of the building from the south end, perhaps a smaller chimney at the peak of the north end, and a porch along its west side. The Heger engraving shows what Ruwet interpreted as a fence extending from the south end of HS-143 to the west end of HS-142; however, this could as easily be a clothesline with wet clothing hanging from it. The outline of the building is clear on the ground; it is odd that the fireplace base was not found in the area. It is likely that the traces of the fireplace were obscured by later usage of the area, and simply have not been recognized under a covering of loose dirt. The building appears to be about 85 feet long, north to south, and about 30 feet wide, of which some part seems to be a porch on the west side. It is likely that the building was about 22 feet wide, and the porch about 8 feet deep.

144 30 - - - - m Laundresses Quarters. Built ca. 1851, described by Sibley in 1852 as 114 feet long, 18 feet wide and containing six rooms and an earthen (flat) roof. The building was present in September, 1853, when it was depicted on Mansfield's plan of the fort, but may have been removed by 1859, when it cannot be identified behind the Ordnance Depot, HS-141. If the quarters were removed in 1854-59, their new location is unknown.

Traces of a stone foundation have been located in this area, and are shown on the map. The outline of a rectangular building is visible here on the aerial photograph, but is about 25 feet wide and 65 feet long, rather than the dimensions of the Quarters recorded by Sibley; this outline is just to the west of the stone foundations. It is possible that the building outline visible on the aerial is the southern 65 feet of the Laundresses' Quarters, and that it had a porch 7 feet wide on the west side, but without archeological investigation this is conjecture. No clear trace of any structure can be seen in the southern part of the area on the ground or in the aerials; the south end was crossed by the most deeply worn sections of the Arsenal entrance drive and all structural information



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may have been destroyed. Archeological testing of the probable location of the building would clear up many of these uncertainties.

It is possible that an adobe building was constructed on the stone foundations at the north end of the site in the early 1860s—a small structure is indicated in this area in 1866, and may still be present in 1868.

145   29   -   -   -   -   p   Sutler's Store. Jared W. Folger was appointed as the first sutler to the new Fort Union on September 27, 1851. The sutler's store was undoubtedly begun soon after his appointment, and a completion date of early 1852 is reasonable. The available drawings and plan show a building in the shape of a backwards "C", the open side on the west. The Davis drawing shows what seems to be the sutler's store from the northwest in 1853, and the south end of the east wing can be seen on the Heger drawings in 1859. Assuming that the size shown on the Mansfield map of 1853 is representative, the building had a main wing about 85 feet long and 21 feet wide running north to south, with two somewhat lower wings extending west, each about 40 feet long and 21 feet wide. Pitched roofs covered all three wings, and there were at least two chimneys, one on the roof ridge in the center of the north wing, and the other on the southeast corner at the end of the roof ridge of the main wing.

As of 1857, the sutler's operation had a store, storeroom, post office, a residence for the sutler and his family, residences for some employees, and rooms for rent (Oliva, "Frontier Army," p. 367, 402). It appears likely that sometime before 1859, and perhaps as early as 1857, HS-162 was built by the post sutler to augment or replace HS-145; therefore, some of these activities may have been housed in HS-162.

Only the approximate location and outline of HS-145 is shown, taken from the Mansfield map; this area was later crossed by the Arsenal entrance road and enclosing wall, obscuring the structural traces so that the Sutler's Store is not yet clearly located on the ground. Archeology would easily relocate the plan of this building.

146   25   17   17   -   -   b   Soldiers' Quarters. Sibley mentions only two barracks in September, 1852, the Dragoons' Quarters, HS-138, and the

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Soldiers' Quarters, HS-139. Ruwet suggests that these barracks were not part of the original plan of 1851. This proposal is supported by the asymmetrical location of the building; and the estimated front of the structure seems to be about 1½ feet north of the alignment of the front of the first barracks, HS-139. It is visible in the Rice drawing of June, 1853; therefore, it was built between September, 1852, and June, 1853. It is shown on the Mansfield plan of August, 1853, and the Heger drawings of 1859. These barracks may have continued in use through the early 1860s, but was gone by the time of the ca. September, 1865 photograph.

The physical remains of the building are somewhat more complicated than its neighbor and twin, Soldier's Quarters HS-139, to the west, although the plan appears to be identical in size and shape. The two fireplace bases on either end of the main east-west wing are much larger than those in the other barracks, as is the one on the north end of the east wing. Two additional apparent chimney bases or masonry structures of some other use are found within the building outline near the southwest corner. One of these appears to be a chimney base at the south end of the west wing.

147 23 16 16 - - o Post Quartermaster's Office?. This building is shown as 38 feet long and 18 feet wide, with a stone chimney centered on the east side; however, the disturbed area around the chimney could accommodate a building up to about 40 feet by 40 feet. Mansfield shows a row of three offices, HS-147, 151, and probably under the west end of 157. Sibley describes several offices; one of these was for himself (Sibley was the Assistant Quartermaster in charge of both the Quartermaster Depot for the Department, and the Post Quartermaster); the others were for the Subsistence Commissary. The Office of the Department Subsistence Commissary was under Captain Isaac Bowen, while the Post Commissary probably had a separate office. It is likely that the Assistant Quartermaster Office, where Major Sibley was located, was in HS-147; see HS-151, 152, and 157, below for the reasoning behind this.

148 24 23 - - - - Dragoon Stables and Corrals (presumed use). These buildings are not on Mansfield's original plan, but clearly visible in the 1859 Heger drawings. The drawings show that these stables were built between 1853 and 1859. Assuming that the various references in this period were all to the same group of stables, their construction was planned for as of July, 1854 as additional stables needing to

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be constructed for a new cavalry company being brought to Fort Union; possibly the same as the replacement for stables needing to be removed (the deteriorated stables may have been HS-137) as mentioned by Col. Fauntleroy in July, 1855; and very likely the Dragoon stables under construction in May, 1856 (Part I, p. 34; Ruwet, "Fort Union," p. 40; Oliva, "Frontier Army," p. 914). Continued in existence through 1859, although little of the plan can be seen on the Heger drawing. The corrals were gone by the time of the photograph of ca. September, 1865.

The physical remains are complex on both the aerials and on the ground. The plan shown on the map is the best compromise based on these sources. These corrals formed an enclosed compound, 274 x 117 feet, with the east and west wings 25 feet wide and the north and south wings 20 feet wide with porch-like additions on the inner faces, 10 feet wide. The corrals and the Ordnance shops or Offices, HS-149, were built parallel to each other but at a slight angle to the grid of the rest of the fort. The northern component, HS-148c, is visible in the aerial photos but not particularly on the ground. One office with a stone chimney base was found on the south side near the east corner.

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Shops or Offices. Not on Mansfield's original plan. Built between 1853 and 1859. The building and yard are visible in the 1859 Heger drawings and the ca. September, 1865, photograph from Third Fort, as well as on the 1866, 1868, and 1874 maps of the valley. Continued in use through 1874, abandoned by 1882.

Four stone chimney bases were found within the outline of a building about 92 x 24½ feet; what appears to be a stone step at an entrance may be seen a little south of the center of the west side. Bricks found in association with the southernmost chimney show that this building, too, took part in Shoemaker's fired brick experiment of 1860. A structure 47 feet long and 24½ feet wide on the north end of the building appears to have been made of vertical posts, and may have been a stable. A corral or yard along the east side of the building, also of vertical posts, is 139 by 60 feet.

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Unknown. No building is shown at this location on the Mansfield map, nor is anything visible here in the 1859 drawings. This structure was a deep rectangular pit, perhaps used for ice storage,



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							about 25 by 30 feet, and about 1 foot deep at the center. It was possibly constructed between 1859 and 1866.
151	22	14	14	-	-	o	Post Subsistence Commissary Office?. Built ca. 1851, visible in all drawings through 1859, but gone by 1866. See HS-157, for further discussion. Shown as 38 x 18 feet, with a stone chimney base near the center of the east side, but the disturbed area around the chimney is about 38 by 30 feet.
152	21	15	15	-	-	i	Post Commissary Stores. Not described in Sibley, 1852, but shown on the Mansfield plan of 1853 and identified as for Commissary Stores. Visible through 1859, but gone by 1866. See HS-157 for further discussion. Shown as 38 x 18 feet, with a stone chimney base at about the center of the building, but the disturbed area around the chimney is about 49 by 29 feet. The Commissary Stores for the Department were probably kept in HS-163.
153	42	24	-	-	-	-	Unknown. It is likely that the west wing was the small structure visible behind HS-152 in the 1859 drawings; if so, it received a considerable addition after 1859, but was gone before 1866. The building was T-shaped, with the west wing about 35 x 30 feet, and the crossbar of the T about 37 x 68 feet. The stone base of a chimney is near the southeastern corner of the west wing.
154	43	-	-	-	-	-	Unknown. Not visible on any map or drawing. May be concealed behind HS-153 in the 1859 drawings. Gone by 1866. Rectangular pit approximately 20 by 30 feet and presently perhaps 2 feet deep. This is probably the icehouse that went into use in 1851-52 (Oliva, "Frontier Army," p. 121), described by Sibley in September, 1852, as 20 x 30 feet with a flat earthen roof covered by a board roof (see also HS-150, 160). The icehouse does not appear on the Mansfield map of August, 1853, even though it was certainly in use; nor does it appear on any other drawings, probably because it was a low, unobtrusive structure.
155	44	-	-	-	-	-	Unknown. Not visible on any map or drawing. May be concealed behind the possible HS-153 in the 1859 drawings. Gone by 1866. Traces of a stone footing about 1 foot thick, outlining a structure 21 x 13 feet.



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156	20	13	13	-	-	-	Storehouse, incomplete. Not visible on any map or drawing. Cut stone foundation, 1½ feet thick, of same size and shape as HS-157, below. 150 x 30 feet. Foundations do not seem to be complete; portions of the east half of the north and south walls, and all of the east wall, do not have stone detectable from the present surface. However, a footing trench seems to be present for the full circumference. This and the lack of artifacts or debris on the site strongly indicates that the structure was not finished. The area where this foundation is located is clearly visible in the Heger drawings, and shows no trace of construction work; this strongly implies that the building was started after 1859. It was probably one of the storehouses begun ca. 1861; work on these storehouses stopped in August, 1861, in order to speed up work on the Second Fort (Part I, pp. 37-38). The storehouses were never finished. See also HS-170 and HS-171 for further discussion of the 1859-1861 surge in building.
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157	19	12	12	-	-	o	Department Subsistence Commissary Office?/Storehouse. This building began as a small office of unknown use in 1851-53; it was shown on the Mansfield plan of 1853 and the 1853 drawings. However, by 1859 it had been rebuilt as a much larger building, but retaining offices at the front on the west end.
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It is likely that the original office was that for the Department Subsistence Commissary. In October, 1853, the Department Commissary moved to Albuquerque, so the large Commissary Storehouse, HS-163, may have been abandoned then; however, Fort Union continued as a sub-depot for commissary stores, and HS-157 as offices and HS-152 as a small commissary storehouse may have continued in use. In July, 1858, a report stated that the Quartermaster and Commissary storehouses (probably for the Post) were "insufficient in capacity" (Oliva, "Frontier Army," p. 196). In April, 1859, orders may have come to begin construction on new Fort buildings, especially barracks and storehouses (Oliva, "Frontier Army," p. 171-74; see also Part I, pp. 36-38). Certainly it appears that HS-157 was completely renewed about this time. The original small office of horizontal logs was torn down, and a new structure built in its place, with two offices in front and a large storeroom in the back. Presumably, the Commissary Offices continued in the front, and the Commissary stores were kept in back. It stood in this form by May 20, 1859, when it is shown on Heger's pencil drawing. It may have been under construction at

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the time, since the drawing shows what appears to be two braces or supports angling up against the south side of the building. The drawing on which the Heger engraving is based may have been made a month or two later; it seems to show a porch along the north side of the building, while it is clear that no porch was present in the pencil drawing.

In its final plan, the Office/Storehouse was a frame structure with a gable roof, on cut stone foundations 150 feet long and 30 feet wide on the exterior, and averaging about 1½ feet thick. The interior was divided into two offices at the front and a large storehouse in the back. The office on the north measured 9 x 19 feet on the interior; on the south, 17 x 20 feet; the east walls of the two rooms are not the same distance from the front of the building. The south room had a stone step to an entrance just south of the partition wall; Heger shows that the north room also had a door, near the north corner with a window just south of it. The triangular chimney base supported two corner fireplaces, one in each room. Behind the office, the storehouse was 125 x 28 feet on the interior. The storehouse section had a wooden floor supported by joists resting on the two long side walls, supported at their centers by a third line of stone. The building had disappeared by 1866.

158 - - - - - Unknown. Small office-like building with two chimneys, one in the center and one on the north wall, with a small enclosed yard or storeroom extension to the rear. The front section is 30 feet across the front and 24 feet deep, while the yard or rear section is 30 feet wide and 76 feet long, for a total length of 100 feet. Not visible on any map or drawing. Perhaps dates from 1859-1862 period. May have been one of the storehouses under construction in 1861, stopped in August, 1861 (Part I, pp. 37-38).

159 16 10 10 - - 1 Bakehouse. Ruwet incorrectly identified the large stable building along the west side of HS-161 as having replaced the Bakehouse on this location by 1859 (Ruwet, "Fort Union," p. 39). Bleser and Wohlbrandt give the north oven base the number 10 and the southern base the number 11. In September, 1852, Sibley describes the building as 31 feet long and 17 feet wide, while Davis, later in 1852, shows a small building with two chimneys, one on the north and one on the south. It is possible that this indicates that the building was enlarged by the addition of a second

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oven in September-December, 1852. Mansfield shows a rectangular building labelled "Bakery" at this location in August, 1853. The 1859 drawings show what appear to be two mounds of rubble here. Two fieldstone oven bases are visible today. The pictorial, documentary, and structural evidence suggests that the structure began in ca. 1851 as a building 31 feet long and 17 feet wide, but was doubled in size in late 1852 with the addition of a second oven, with final dimensions of 60 x 17 feet. The ovens were abandoned and in ruins by 1859. The later location of the bakery after the abandonment of HS-159 is unknown.

160	-	-	-	-	-	-	Unknown. Possibly an ice house. Not on any map or drawing. Rectangular pit, 15 x 10 feet. A second icehouse in addition to HS-154 was built in late 1852 and filled with ice by March, 1853 (Oliva, "Frontier Army," p. 344); this pit could be that icehouse.
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161	16	18	18	-	-	-	New Dragoons' Stable and workshops. Ruwet misidentified the large western building of this structure as standing on the site of the Bakehouse, and gave the two offices or workshops east of it the numbers 39 and 40. Wohlbrandt gave the number 18 to a portion of the southern side, outlined most of the east and north sides, but saw nothing along the west edge. Bleser added the number 25 for the other structures Wohlbrandt outlined on the east and north sides.
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This large compound is not on the Mansfield map. It was begun in November, 1853, when Lt. Col. Philip St. George Cooke ordered a new stable of pickets built for Co. H, 2nd Dragoons (Oliva, "Frontier Army," p. 358). It was finished by July, 1854, and the main stable measured 190 x 30 feet. It was built stockade-style with "upright logs set in the ground" with a gavelled "sharp board roof" (Part I, p. 34). As seen on the ground, this complex appears to be a large stable, barns, and at least six workshops and offices set up in a rectangle around a central corral, 105 x 137 feet, with at least 6 chimneys distributed among the workshops and offices; the implication of this complexity is that the HS-161 compound was considerably enlarged after 1859.

This corral complex is gone by December, 1866, when it does not appear on the Enos and Lambert map. However, artifacts scattered thickly on the site indicate that at least the eastern portion of the structure was in use through the late 1860s, suggesting that



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this portion of HS-161 was perhaps used as a trash dump for the Hotel, HS-162, present from before 1859 to ca. 1870.

- 162 17 - - - - - Hotel/Sutler's Store. Visible here in 1859 is a structure consisting of a frame building facing north, perhaps thirty by fifty feet, with a porch on the front, a pitched roof, and an enclosed yard about 100 feet long at the rear on the south, containing at least two outbuildings. Ruwet suggests that this is the Guardhouse described by Sibley in 1852, but it is more likely that the Guardhouse was in one of the buildings along the Parade Ground. The present structure was probably built as a new sutler store and Hotel by the post sutler sometime between August, 1853, when the sutler store was only HS-145, and May, 1859, when HS-162 was drawn by Heger. A large depression, about 45 x 20 feet, within the northwest corner of the present building under the front room of the ruins, appears to have been a cellar. This could be the cellar of the sutler's store broken into by Fort Union troops in March, 1862, just before they departed to the Battle of Glorieta.

The building was considerably altered enlarged during the years after 1859, and was rebuilt in adobe. The earliest documentary reference to the Hotel was in late 1865. The Hotel shown on the 1866 and 1868 maps (Ruwet's number 34a) was an adobe building with stone foundations, 100 x 40 feet, with an ell, 30 x 90 feet, extending along the west side of the enclosed rear yard. South of the main compound was a stable building and yard about 100 x 70 feet. West of the main building is an isolated chimney base, and traces of other possible structures are visible east of the main building near the National Park Service chain-link enclosing fence.

In ca. 1885 the Hotel is visible in the photograph of that year as a ruin in the distance with no roof and partly collapsed adobe walls. Artifacts scattered thickly across the site indicate a use from the early 1850s to ca. 1870.

- 163 15 26 - - - i Commissary Stores. Probably the storehouse for the Department Subsistence Commissary. In September, 1852, Sibley refers to a "Smokehouse," 100 x 22 feet with a gable roof of boards (Part I, p. 23); HS-163 is the only structure that fits that description, and therefore presumably began as the Smokehouse. On September 8, 1853, Captain L. C. Easton was told by Brigadier General John Garland that "the building erected for a smokehouse can be fitted



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up for temporary use" as a storehouse (Oliva, "Frontier Army," p. 154). However, the building was shown a month earlier, on the Mansfield plan of August 1-6, 1853, as the Commissary Storehouse, indicating that the smokehouse had been pressed into use as a storehouse before General Garland ordered its refitting as one. It is visible in Davis, late 1852, and Rice, June, 1853, but is gone by 1859.

The Department Commissary moved from Fort Union to Albuquerque in October, 1853 (Oliva, "Frontier Army," p. 182). This building was probably abandoned at that time. It seems reasonable that part of the new storehouse, HS-157, took over the job of commissary storehouse and HS-163 was then removed. The fort remained a sub-depot for the area, so that something more than only a local storehouse was needed.

The site is clearly marked by a row of large basalt boulders along the east half of the north wall and most of the east wall of the building. The remainder of the outline is easily visible in the aerials, and sometimes on the ground when the vegetation is right.

164    -    27    -    -    -    -    Greenhouse and Gardener's House. Funds for the construction of the Greenhouse were requested by Captain Gouverneur Morris on January 31, 1853 (Oliva, "Frontier Army," p. 135 n. 167). It was built apparently in February, and was completed and in use by March 3, when it was described by Katie Bowen. It was mentioned again in April, 1853, (Part I, p. 26). Bowen described this building as being 50 x 20 feet with a glass front facing south. The gardener's house was attached. The hothouse was not very successful, and the building was apparently dismantled in May or June, 1853; it is not shown by Rice on June 20, 1853, or on the Mansfield plan of August, 1853. It stood only about four months; this would explain why virtually no broken glass is visible on the location of the building.

The building is at a slight angle to the general grid of First Fort, with the east end slightly north of where it should be. The west half of the structure is the Gardener's house, 37 x 25 feet, with an apparent porch about 8 feet deep across the entire north side, a small chimney base at the southwest corner of the building, and a possible chimney base in the center of the west wall; the east half was the Greenhouse itself, 50 x 20 feet, with a possible chimney

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base near the northeast corner. The mounded shapes of the planting beds are still visible.

- \*165 48 1 1 - - - Unknown. Ruwet, Bleser and Wohlbrandt all grouped this structure and HS-166 together as a single building. This was a large house or office, 40 x 59 feet, divided into two sections. The front section was 40 x 22 feet with a chimney centered on the front wall and a second one slightly south of center on the east wall, while the back section was 40 x 37 feet, with a chimney on the south wall near the east corner. The building had a front porch about 10 feet deep, and a large enclosed back yard, 93 feet by 40 feet. The yard was enclosed by vertical posts, and a number of large boulders are scattered near the outside of the enclosing walls. It was probably a frame structure, standing on a fieldstone foundation much like those for HS-156 and 157. It is too far south and west to be visible in any of the drawings, and is not on any map. Artifacts are generally 1850s; the structure cannot be dated any closer than within that period, although the similarity in foundations makes it likely to have been built about the same time as HS-156 and 157, or ca. 1859-1861. It was gone by 1866. The yard and south half of the building are outside the National Monument fence on the private property of Fort Union Ranch.
- 166 48 1 1 - - - Unknown. Rectangular building, 33 feet x 17 feet with massive fieldstone foundations. Probably built about the same time as HS-165.
- 167 - - - - - Unknown. This appears to be a two-room structure with a single chimney and stone foundations. The west room seems to be 27 feet square, while the east room is 27 x 33 feet. Date unknown, but the sparse artifact scatter suggests mid-to-late nineteenth century.
- 168 5 - - - - - Unknown. Built after 1853, and clearly visible in the Heger drawing of 1859 as a small frame house with a gable roof and a single chimney, standing at an angle to the grid followed by the rest of First Fort. At least two rooms, the north 29 x 14 feet, the south 16 x 19 feet. The chimney base was found to be at the southwest end of the building, rather than in the center as Heger shows it; this could imply that there is more building in the ground southwest of the chimney, but not visible at the surface. The structure was gone by 1866.

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169	6	-	-	-	-	-	Smokehouse? Square stone floor, 10 x 11 feet. The building that stood on it appears to be a frame structure, and is visible in Heger, 1859. The size and shape suggest that it was a smokehouse, like the somewhat larger HS-313 on the north side of Third Fort. It was gone by 1866.
*170	-	-	-	-	-	-	Storehouse?, incomplete. First mapped by Bleser in 1965. This is a well-built fieldstone foundation, 30 x 138 feet on the exterior, with a central foundation line intended for joist support. The outside walls have a foundation thickness of 2 feet, while the interior walls are 1½ feet thick. The building apparently was to have an office of 27 x 20 feet in the front, or west, end of the building, leaving a storage space of 27 x 113 feet, interior measurements. Very few artifacts and no visible mound of structural debris indicates that this structure was never finished. This is probably one of the storehouses begun in 1861 and discontinued August, 1861 (Part I, pp. 37-38; see HS-156, 158 above).
*171	-	-	-	-	-	-	Company Quarters?, incomplete. First mapped by Bleser in 1965. This is a well-built fieldstone foundation marking out a large, E-shaped building, 194 feet long and 28 feet wide, with three wings extending south; the central wing 37 x 47 feet, the end wings 19 x 47 feet, exterior measurements. The foundation is 2 feet thick on all walls except the front, or north wall, and the central north-south dividing wall, which are 2½ feet thick; it appears to be incomplete on the southwest corner. The lack of debris and artifacts suggests that, like HS-170 and 156, this structure was begun in 1861 and never finished.

The plan and scale are similar to the adobe company quarters built at Fort Davis beginning in 1867. In 1869 each of these barracks had a main section of 186 x 27 feet and a single rear extension, 86 x 27 feet. The main section contained two squad rooms, 24 x 82½ feet, separated by a passageway between them to the rear extension. At the end of each squadroom was a 10 x 10 foot sergeant's quarters, and a 10 x 10 foot barracks office. The rear extension contained a messroom of 50 x 24 feet, a kitchen, 20 x 24 feet, and a storeroom, 10 x 24 feet.

Assigning the same functions within similar spaces in HS-171 would give two squad rooms end to end, each 25 x 94 feet, with



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no passage between them; a sergeant's quarters 28 x 14 and a barracks office 16 x 14 at each end; and a messroom of 20 x 33, kitchen 12 x 33, and storeroom 12 x 33 in the central wing. This makes for a rather small messroom and kitchen, but obviously the similarity is strong enough to make it virtually certain that HS-171 is a set of new company quarters.

The presence of these buildings adds considerable significance to the statements made in 1858 and 1859 about "rebuilding Fort Union." In July, 1858, Post Commander Captain Andrew J. Lindsay submitted what had become a standard request to rebuild the post, perhaps in adobes. This time, however, the request was introduced into Congress, with the result that in April, 1859, funds were appropriated to rebuild Fort Union (Oliva, "Frontier Army," p. 197). In August, 1859, Post Commander Captain Robert M. Morris requested permission to hire civilians to help build more company quarters (Part I, p. 37). He received permission for such construction soon afterward, and on August 30, 1859, requested the Quartermaster at Fort Union to build the barracks quickly (Part I, p. 37; Oliva, "Frontier Army," p. 174).

The placement of this apparent company quarters facing north, and the probable storehouse, HS-170, with its front facing west, suggest that these two buildings were planned to face onto a new parade ground. If the new company quarters was centered on the south side, then the parade ground would have been 400 feet wide, and had enough room between its front and the south side of the officers' quarters HS-129 to make a north-south length of 800 feet.

The two new buildings, HS-170 and HS-171, were located about 1300 feet (¼ mile) south of the center of the original parade ground (about 1900 feet, or a little more than a third of a mile, south of Shoemaker's Ordnance Depot), and somewhat closer to the springs at the Post Garden (HS-198). This adds weight to such statements as Shoemaker's statement in January, 1859, that Fort Union was "about to be rebuilt on a new site about half a mile distant," and that "operations toward the removal of Fort Union" had begun. On May 13, 1859, Shoemaker noted the arrival of "General Order Number 7, dated War Department, Washington, April 11, 1859." This is the same date as Special Order Number 55, the appropriation by Congress to rebuild Fort Union, and was apparently on the same topic. Shoemaker construed a portion of



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the General Order to pertain to his Ordnance Depot, and apparently stopped construction on his various projects until he knew whether he would be moving; as it happened, the decision on the relocation of the Arsenal was delayed, and ultimately the plan was abandoned upon the outbreak of the Civil War. The available documents, therefore, strongly suggest that construction began on a new Fort Union about September, 1859, and that HS-170 and 171 were the structures begun.

The relationship between these buildings and the incomplete storeroom HS-156, started sometime after May, 1859, and stopped soon after it was begun, is uncertain, but various references in 1861 suggest the hypothesis that HS-170 and 171 were begun in September, 1859, and given up soon after; then in 1861 a second attempt was made to carry out the approved rebuilding, apparently starting the storehouse HS-156—this time to be halted by the outbreak of the Civil War. From this viewpoint, Third Fort, begun in late 1862 as several warehouses northeast of the Second Fort, is specifically the continuation of the effort to build a new fort begun in August, 1859.

172    33a   28   -   -   -   -    Flagstaff, First Fort. See also HS-173, 191. The flagstaff is located almost precisely at the center of the original parade ground of Fort Union. The parade ground itself is 470 feet north to south and 488 feet east to west, from building front to building front on each side. The flagstaff is 238 feet south of the front of HS-139, and 245 feet east of the front of HS-131, or 3 feet south and 1 foot east of exactly dead center. It is likely that the parade ground was laid out as a square 150 yards, or 450 feet, on a side. This would leave a space 10 feet wide along the barrack fronts on the north and south, large enough for a small stoop and walkway, and a space 19 feet wide for a porch and walk along the fronts of the offices and Officer's Quarters along the east and west sides.

HS-172 undoubtedly went out of use as the post flagstaff with the construction and activation of Second Fort in 1861-1862; the Ordnance Depot flagstaff, HS-191, apparently continued in use for the Arsenal. After 1862, the location of HS-172 remained the center point of the Arsenal Reservation, and is marked "Center Stake" on the 1866, 1868, and 1874 maps of the valley. Nick Bleser, Administrative Assistant at Fort Union, relocated the Flagstaff site in 1964, and found the massive stump of the staff and

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the remains of the large bracing timbers still in place, buried in the ground (Ruwet, "Fort Union," p. 43; Bleser to Superintendent, Fort Union, October 8, 1964).

173 - - - - - Flagstaff, Arsenal, mid-1871 to closure of the Arsenal in 1882. The Arsenal flagstaff was probably moved to this location about the time of the completion of Shoemaker's quarters, HS-114, about April, 1871. The tear-drop entrance road and probably Shoemaker's front lawn were undoubtedly laid out at the same time. The flagstaff is on the centerline of Shoemaker's house, and is precisely 225 feet east of the front of his house and 225 feet south of the fence or wall along the south side of the Arsenal Barracks, HS-113, that marks the north side of the Ordnance Parade Ground. The east side of the compound was apparently intended to be 225 feet east of this flagstaff, and another wall not marked on the proposal plan seems to have extended from the magazine enclosure eastward to the east wall at 225 feet to the south, forming the south side of the Parade Ground. These locations reflect a revision of the 1866 proposal plan to give a square parade ground with the flagpole in the center, and Shoemaker's house centered on the west side; this redesign appears to have occurred about the end of 1868 or in early 1869. The south wall of the Parade Ground may have been completed and continued in use until closure, since it seems to be shown on the Kelp map of ca. 1885-1890, and is apparently visible in some aerial photographs, but various errors placed the east wall line 240 feet east of the Flagstaff, rather than 225. See below, HS-191, for the Arsenal Flagstaff location between 1862 and 1871.

174 - - - - 8 - Civilian Quarters. Four of the buildings HS-174 through 178 were built ca. 1854, and a fifth set was built about May, 1858, for civilian armorer George Berg and his family (Part I, pp. 68-69, 77; Oliva, "Frontier Army," p. 895). It is uncertain which one of the five was the last built. These five structures can be seen on the Heger drawings of 1859, the proposal plan of 1866, and the 1866 and 1868 maps, and are visible in the 1865 Farnsworth photograph of the First Fort area from Third Fort. Even though they are small and at a considerable distance, a great deal of detail can be determined about the buildings from these sources. Surprisingly, all six representations agree on how the buildings were laid out and where they were located.

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HS-174 is the eastern half of a double building forming the eastern end of the row of Civilian Quarters. Heger shows it as a house with a pitched roof, the ridgepole extending east-west, with a door in the center of the south side and two windows, one symmetrically on either side of the door. There appears to be a chimney at either end of HS-174, the western chimney being in the center of the double building, HS-174, 175. On the east end of HS-174 is a small structure with a single door and window.

175	37	-	-	-	8	-	Civilian Quarters. This forms the west half of the double building, HS-174, 175. It also had a pitched roof and a door centered on its south side, with a window on each side of the door. A chimney is visible on its west end, and the chimney at the juncture between the two halves may have been double.
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176	36	-	-	-	8	-	Civilian Quarters. Like HS-174 and 175, this house had a pitched roof with the ridgeline running east and west, a single door centered on the south side, and two windows, one on each side of the door. A chimney stood at the center of the west end of the building.
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177	35	-	-	-	8	-	Civilian Quarters. Structure very similar to the previous three buildings.
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178	34	-	-	-	8	-	Civilian Quarters. A view of this building appears only on the Heger pencil sketch. It appears like the others above, except that the south side of the building has no door, but only two windows. A chimney stood at the west end.
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179	33	-	-	-	8	-	Civilian Quarters. The proposal plan of 1866 has six civilian structures, one more than all the other sources; however, none of them fits the measurements and layout of the 1868 building plan. It appears that the 1866 proposal plan shows the original five Civilian Quarters plus one additional house, and demonstrates that Shoemaker intended to add a new building on the west end of the row. By 1868, Shoemaker had decided to build three new sets of quarters, and submitted a design to headquarters for them. Each house was to have two rooms 16 feet square at the front, a kitchen at the back 16 feet square, and a front porch 6 x 32 feet (Part I, p. 77 and fig. 11).
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Shoemaker began construction on the new Civilian Quarters in November, 1868, starting with HS-179 at the west end of the row. The work went slowly during the period from 1868 to 1870, with other construction having a higher priority; the older quarters continued in use during this period. Work on the new civilian quarters probably stopped when Shoemaker was forced to discharge all hired labor in September, 1870; the projected buildings were apparently given up at this point, with only HS-179 completed.

All civilian quarters were gone by the time of the closure of the Arsenal in 1882, and are not visible on the map or photographs taken after that year. When during the period from ca. 1870 to ca. 1885 the structures were removed is unknown. The layout of the six buildings on the Base Map are taken directly from the 1866 proposed plan of the Arsenal; it is uncertain how closely the 1866 plan corresponds to the actual location of the earlier civilian quarters or the foundations of whatever new quarters were begun. The actual number and location of the civilian quarters (HS-174 to 179) and the water tower, HS-180, should be regarded as tentative at best; archeological investigations are needed in order to arrive at actual locations and plans.

180 - - - - - Water Tower, Civilian Quarters. This is an L-shaped wall fragment north of HS-17 that appears to be at the location of a water tower visible in the 1865 photograph as standing just north of the east end of the Civilian Quarters row, and as a small square structure north of the row on the 1866 map.

\*181 - - - - - Cemetery. Oliva (*Third Fort Union*, p. 885-86) estimates that the cemetery was laid out in 1851. It is visible in the Davis drawing of late 1852, surrounded by a palisade fence. The palisade apparently rotted away by the mid 1860s. In 1866 the cemetery was shown on the Enos and Lambert map as 500 feet north to south and about 200 feet east to west, but in 1867, when it was refenced, its dimensions were stated to be 700 by 150 feet. The rows of grave pits and the stumps of some fence posts are still visible today.

\*182 - - - - - k Quartermaster's Corral and Shops. Ruwet gives no number for this compound, although he discusses it in detail (*Third Fort Union*, pp. 43-47) and provides a sketch of the structures, based on



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the 1859 drawings. His readily fits the surveyed plan of the buildings on the base map. The core structures of the Corral were those outlined on the Mansfield plan in August, 1853, and shown in good detail by the Rice drawing of June, 1853. Rice shows a long building along the west side of the compound, and two smaller buildings, each with a chimney at each end, near the northeast and southeast corners. By June, 1853, the northeast and southeast buildings had gabled roofs, but the western building still had a flat roof. The southeastern building had two evenly-spaced windows on its south side, and a chimney at each end. The northeastern building had a large central door on the south side, with two windows symmetrically placed, one on either side of the door; a large chimney stood at each end. Sibley stated that the blacksmith's and wheelwright's shop was a single structure 30 feet long and 18 feet wide. This shop, certainly housed in the Quartermaster compound, probably was in the northeastern building; the two chimney bases of the building were located during the survey, 9 feet south of the north wall of the compound and 30 feet apart. It is likely that the foundations traces of the southeast building also exist in the northwest quadrant of the final plan of HS-182.

The western building had four large doors and three windows evenly spaced on the west side, one window on the south end, and four chimneys evenly spaced down the centerline of the building. The bases of these chimneys were located during this survey. Rice seems to show the northernmost chimney as at the end of the building, but it was probably about 10 feet south of the north end. A large gateway was located on the east side near the northeastern corner, and a second, smaller gate on the south side near the west end. This core compound corresponds to the northwest quadrant of the later plan; it would have measured perhaps 120 feet square.

Mansfield says that Sibley built the compound (in its early form) about 1851, and that by 1853 it had storerooms, corrals, and stables. Twenty-eight civilians and thirty-nine soldiers worked here in 1853, including carpenters, smiths, wheelwrights, a wagon and forage master, a saddler, and a number of teamsters (Oliva, "Frontier Army," p. 352).

The rest of the compound was added between 1853 and 1859, and can be seen fairly clearly on the Heger drawings. The changes

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involved a considerable enlargement of the Quartermaster compound toward the east and the addition of several buildings in the new eastern half. The western building was extended by about 32 feet on its south end, and a low gabled roof was built on it. Heger shows a row of nine windows placed evenly along its west side, and the four chimneys still in place along its new roof. The old northeastern and southeastern buildings may have been removed at this time, and a new group of four buildings added east of them. These consisted of a building along the north wall, 25 feet by 136 feet, with five chimney bases along it, three larger ones to the west, and two smaller toward the east end. A large shed or barn was built along the east side of the new compound, 159 feet by 19 feet with a high gabled roof. It was divided into sections 45, 38, and 75½ feet long by cross walls. Several massive post bases still survive along the wall lines of this building. West of this barn was a U-shaped building with a gavelled roof on at least the northern section; the end of it can just be seen above the building on the west side of the compound in the Heger drawing. Judging from the obvious mounds marking each building, the U-shaped structure was made of adobe, and possibly the northern and western buildings, too, were built or rebuilt in adobe.

A large corral went up on the south side of this enlarged complex, for a final outline of 370 x 340 feet. The enclosing walls and corral were of palisade. Heger shows a large gateway centered in the palisade wall south of the western building; this gateway appears to be marked by a rectangular paved area, 8 x 2 feet, visible today just west of the palisade line at this location.

Although most of the Quartermaster Corral is gone by the time of the Farnsworth photograph taken in ca. September, 1865, three of the fireplaces of the northern building are still standing. Various markings around these chimneys suggest that other structural ruins are still present, but no complete buildings stand.

- \*183 - - - - - Unknown. First mapped by Bleser in 1966. This building, approximately 100 x 27 feet, contains two massive mounds that look suspiciously like ovens, and may have been the bakehouse after the abandonment of HS-159 sometime between 1853 and 1859. However, HS-183 is not visible in the 1859 Heger drawings, indicating that it was built after 1859 but went out of use

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at least before the Farnsworth photograph of 1865; it was probably gone by 1862. Three joist beams are visible on the ground outside the northeast corner of the building; the northernmost is about 12 feet north of the north end of the building. They are 14 feet long, set at 4 foot centers, and extend eastward from the approximate east wall line of the building, apparently for the support of a large porch or frame structure along its east side. Traces of two others are visible south of these three in the aerials, and Bleser thought that he could see indications of this porch or building extending along the entire length of the east side of HS-183.

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|------|---|---|---|---|---|---|--|
| *184 | - | - | - | - | - | - | Limeslaking Pit? First mapped by Bleser in 1966. 34 feet in diameter, built of stone. This pit is associated with the chimney base to the west, HS-185.  |
| *185 | - | - | - | - | - | - | Lime Kiln? First mapped by Bleser in 1966. Chimney-like structure associated with the large stonelined pit to the east. This could be the first lime kiln at Fort Union, referred to in September, 1851 (Part I, p. 21; see also North Lime Kiln, HS-83, South Lime Kilns, HS-89, and Lime Kiln and Slaking Pits, HS-187).   |
| *186 | - | - | - | - | - | - | Unknown. First mapped by Bleser in 1966. Square outline of stone, 20 x 20 feet, enclosing a flat, slightly depressed area. Possibly an earlier, square slaking pit. Several other suspicious-looking surface marks may be found in this area on the ground and in the aerials; it appears that several small buildings or utility structures may have left traces here.  |
| *187 | - | - | - | - | - | - | Lime Kiln and Slaking Pits. This group of kiln and slaking pits is larger and more sophisticated than the HS-184/185/186 group, and was probably the next one built. This kiln and slaking and storage pits probably date from the period of increased construction in the later 1850s. There is a possible water-supply ditch from the dam (HS-99, 2400 feet to the north) to this area, which would have brought the great amount of water used for slaking the lime. Next in the series of kilns would have been the large lime kiln, HS-83, built somewhat further east across the creek about 1860, followed by HS-89 at the south end of the valley. |
| *188 | - | - | - | - | - | - | Beef Corral. First mapped by Bleser in 1966. Ruwet erroneously assumes that this is the Hay Corral, HS-189, below, and that the  |



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Beef Corral was further to the north. Visible in 1859 drawing, in the ca. September, 1865 photograph, and on the 1866 map, but gone by 1868. Dimensions 160 x 175 feet—the corral is not exactly square; the south end is 160 feet across, while the north end is only 155 feet across. The corral is subdivided into various smaller enclosures, of which the most visible are plotted on the map. The 1859 Heger pencil drawing shows at least two gable-roofed buildings in the north half of this corral, and the photograph also shows at least two buildings, one of them on the northeast corner and the other on the north side or northwest corner. The 1868 map shows a building on the northwest corner, a second just south of the northeast corner, and a smaller pen within the southeast corner. Examination of the aerial photograph and the ground surface supports such a layout. One of these structures was undoubtedly the "excellent slaughter house" mentioned by Colonel Mansfield in the inspection report of August, 1853 (Oliva, "Frontier Army," p. 179).

The Beef Corral may have begun as one of the two corrals mentioned by Sibley in 1852, 100 feet square (the other apparently being the Dragoon Corral, HS-137; Oliva, "Frontier Army," p. 121). It was part of the subsistence commissary for the Department through 1853, and the corral for the Post commissary after that date (Oliva, "Frontier Army," p. 179). Abandoned in the summer of 1866 because of "the accumulated blood of the winter, as well as the bones of years," and torn down in late 1866 or early 1867 after the completion of the New Beef Corral, HS-84 (Part I, p. 39; Oliva, "Frontier Army," p. 571).

\*189    -    -    -    -    -    Hay Corral. Ruwet erroneously assumes that HS-189 is on the site of the Beef Corral, HS-188 (Ruwet, "Fort Union," p. 48). This corral was built probably in early 1854; it was mentioned as just completed in July, 1854 (Part I, p. 34; NARG 92, Consolidated Correspondence File, Box 1167, Lt. Col. St. George Cooke to Major General Jesup, Annual Inspection, July 15, 1854). 175 x 185 feet. The 1859 drawings show that this large corral is full of hay in long stacks, much like HS-72 and HS-73 of Third Fort in the 1860s. The Hay Corral is still standing, although empty, in the Farnsworth photograph of 1865, but is not shown on the December, 1866 Lambert and Enos map; therefore, it was torn down probably in early 1866.



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190	31a	-	-	-	-	-	Privy. Visible in the ca. 1885 photograph, but not shown on any maps.
191	-	-	-	12	-	-	Flagstaff. Arsenal, 1865-1871. See also HS-172, 173. The flagstaff is visible on the photograph of ca. September, 1865; it is shown on the proposal plan of 1866, and on one of the versions of the 1866 map (MNM # 148191). Shoemaker presumably erected this flagstaff about the time he began construction on the magazine and other new Ordnance buildings in 1865. The point he selected was apparently the center of the first version of the Arsenal Parade Ground; it is at the mid-point of the 250-foot space between the Commanding Officer's Quarters (HS-133) and the Clerk's Office and Quarters (HS-115) on the west, and the front of the Ordnance Messroom (HS-142) and the possible Ordnance Kitchen (HS-194) on the east. The north to south measurement was apparently intended to be 300 feet, from a line extending east from the north side of the Commanding Officer's Quarters, north to the fronts of the Civilian quarters, with the Flagstaff again on the center point. With the changes in the enclosing wall plan, the relocation of the Commanding Officer's Quarters to HS-114, and various other details, this plan became obsolete about 1871, when the entrance loop road was built.  This is not the first flagstaff set up by Shoemaker at First Fort. The 1859 Heger drawings both show a flagstaff just east of the north end of Shoemaker's quarters, HS-133, although it is not visible in the 1852 and 1853 drawings. This was probably the Ordnance Depot flagstaff from about 1853 to 1865.
192	-	-	-	16	-	-	Magazine/Stable. This building, 53½ x 18½ feet, of adobe on a stone foundation, was apparently built as the first magazine for the Ordnance Depot, with construction beginning sometime after May 13, 1859 and completed about August (Part I, p. 69). Shoemaker had planned on an adobe magazine for the Ordnance Depot since 1852, but was unable to construct the permanent building until 1859. The structure apparently continued in use as the only magazine at the Ordnance Depot until the completion of HS-109 and 110 in October, 1866. At this time the building was apparently converted to a stable for Shoemaker's personal use, as it is shown on the 1866 proposal plan. It probably continued as Shoemaker's stable through the life of the Arsenal.

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*193	-	-	-	-	-	-	Pump. Marked only on the Museum of New Mexico version of the 1866 map (MNM # 148191).
194	-	-	-	-	-	-	Ordnance Kitchen? Part of the Ordnance Depot group; see HS-141, 142. Probably built about the same time as HS-142 about September, 1855, after the messroom, kitchen, and barracks were removed from HS-141. This building is clearly visible standing between HS-142 and HS-141 in the two Heger drawings of 1859. Heger's pencil drawing shows it with a pitched roof and a chimney at the west end, and possibly a small, shed-like extension on the south side near the center. His etching depicts it with a flat roof, and again with some sort of southern extension at about its mid-length. It is on the ca. September, 1865, photograph, the Enos and Lambert map of 1866 (where it is connected to the Ordnance Messhall by a fence or wall, also visible on the aerial), and the Ludington and Lambert map of 1868, but was undoubtedly removed, along with the remaining sections of 140, 141, 142, 143, 144, and 195, about 1870-71, when HS-113 was built and the formal entrance drive laid out across this area. No physical traces of the building have been seen on the ground; the outline is taken from the 1984 aerial photos. The building appears to be 50 feet long and perhaps 12 feet wide.
195	-	-	-	-	-	-	Unknown. Arsenal, ca. 1865-ca. 1870. Building east of HS-143 visible on the 1866 map and the ca. September, 1865 photograph.
*196	2	-	-	-	-	-	Office of the Commanding Officer and Courtmartial Room? Ruwet gives the number 2 to this small building just north of the Commanding Officer's Quarters, HS-126, and suggests that this was the structure that E. S. Sibley named as the Commanding Officer's Office and Courtmartial Room, 48 feet by 18 feet, even though it was left off the Mansfield map. It would have seemed more reasonable to assume that one of the office buildings facing onto the parade ground would be this structure, but none of these are the right size; all are too short (see HS-147, 151, 152, 157 below).

The building is visible in both Heger drawings of 1859. The width of the building on the ground is fairly clear, 18 feet, but the total length is about 57 feet. However, the plan on the ground is in two sections. The northern section is 39 feet long, with a chimney centered in it; added to the south end of this structure is an

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extension of 18 feet. The Heger drawing shows a similar structure. Its northern section has a doorway on the west side and two windows symmetrically placed on either side of it, with a chimney on the ridgeline of the building even with the doorway. However, the south end of the building extends noticeably further past the south window than does the north end. The ground traces and Heger's drawing suggests that the structure began as a building 18 feet by 38 feet, and was enlarged to a length of 57 feet. Unfortunately, neither of these lengths matches the length of the Commanding Officer's Office and Courtmartial Room. The identification of the building should therefore be considered as uncertain, and archeological investigation of this and the offices along the east side of the Parade Ground may be necessary to clear this up.

\*197   -   -   -   -   -   -    Ordnance Garden. Shoemaker established the Ordnance Garden in the spring of 1852 (Part I, pp. 27, 32). It was 1½ miles north of the First Fort, and was a fenced area about 300 feet by 550 feet. It was partitioned into several sections, and had at least four barns and houses in 1866. It used water from a spring next to the garden. The garden failed in 1856 because of a drought and grasshopper infestation (Oliva, "Frontier Army," p. 135). In 1872 Shoemaker dug a well here, 20 feet deep (Oliva, "Frontier Army," p. 911).

\*198   -   -   -   -   -   -    Post Garden. This fenced garden, 200 feet north to south by 250 feet east to west, was located in the field just southwest of the present foreman's house of Fort Union Ranch, north of the highway (Part I, pp. 25, 27, 38). It was established in the spring of 1852 (Oliva, "Frontier Army," p. 134). The Army built a bucket chain to bring water from one of the spring sources on the west side of Coyote Creek, or a spring just north of the garden shown on the 1866 map. This spring seems to have been the same as the capped well still present very near the correct location, and about 125 feet northwest of the northwest corner of the Garden enclosure. The garden was not marked on the 1868 map and was probably gone by that year.

199   -   -   -   -   5   -    Artillery Storehouse/Gun Shed. This building is probably the "Gun Shed" that Shoemaker was planning to build as of July 2, 1862; the date of construction is assumed to be 1862. It replaced an earlier log gunshed built in 1852-53, presumably just west of

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HS-133 (Part I, pp. 66-67). Visible on proposal plan of 1866, and in photograph by Farnsworth, ca. September, 1865; shown on Enos and Lambert map of 1866, but is apparently gone by the time of the preparation of the Ludington and Lambert map of 1868. It was probably demolished about August or September, 1866, when HS-103 was begun; its function was apparently taken over by HS-118, begun about the same time.

The Artillery Storehouse was ca. 23 feet wide and ca. 100 feet long, and apparently of adobe on a stone foundation. Its east wall was on or against the west wall of HS-103; its south wall was even with or a few feet south of the north wall of HS-101, and its southwest corner was ca. 30 feet east of the east wall of HS-101. Its north wall was apparently about 8 to 15 feet south of the original line for the north enclosing wall of the Arsenal compound.



## SECOND FORT AREA

The Earthwork, or Second Fort, was designed by Captain Cuvier Grover, 10th Infantry, in mid-1861. Constructed under the direction of Captain Grover and First Lieutenant William J. L. Nicodemas, 11th Infantry, under the command of Major (Brevet Lieutenant Colonel) William Chapman, 2nd Infantry (Arrott, card 63). The site was selected about August 4, and construction began August 4 or 5 (Oliva, "Frontier Army," p. 332). The detailed inspection of the field work itself and the available maps and photographs by Nicholas Bleser in the 1960s, and his suggestions about the plan of the Second Fort, its probable interior arrangement, and the locations and functions of its outworks, all formed the basis upon which the present plan and detailed inventory was founded. Without his research, fieldwork and insights, the present Base Map of the Second Fort could not have been carried out.

As built, the fortification was apparently intended to measure 490 feet along each front (the line from the point of the top of the parapet of one salient to the next), although the actual measurements range from 483 to 503 feet as a result of various errors. The principal errors in the layout seems to have been a 1 degree error in setting out the central angle (east-west angle is 91 degrees), and a mistake in measurement that added 20 feet to the southwest corner. Each corner should have been 346.5 feet out a diagonal, but the southwest vertex was set at 366.5 feet instead.

Setting the point for the face angles of the bastion worked fine, except that the midpoints were measured along the fronts only from the northwest and southeast angles, offsetting them somewhat because of the earlier errors. The distance of  $\frac{1}{8}$  of the front (61.25 feet) was then measured perpendicular to these assumed midpoints of the front, and lines marked on the ground along the lines from the salients to these points. The construction crew would then have measured a distance of  $\frac{1}{3}$  of the front, or 163.33 feet, along these lines from each salient. The point arrived at by this measurement was the location of the outer corner of each flank, and the section of line between the salient and the corner of the flank was called the face. The line from this point at right angles to the face line from the next salient formed the flank itself. At some point early in the construction of the earthwork, but too far along to start over, it was realized that a severe error had been made in the layout, so that when the flanks were marked in their correct positions on the ground, the distance between each two facing flanks was about 160 feet. As a result, the midpoints were about 80 feet from the flanks, rather than the absolute minimum of 90 feet. This meant that the cannon could not be depressed far enough to bear on the area at the center of each front.

The actual minimum size of such an earthwork is 600 feet along each face. The earthwork actually began with an outline of 630 feet on a side, a comfortable size, but this was then used as the outer edge of the ditch, rather than as the crest of the parapet. Grover's basic mistake, worse than the ones mentioned above concerning the layout of the original square, was a simple error at the very beginning of the drawing of the plan for the earthwork. Essentially, he plotted the basic outline of the fort with faces of 630 feet, but instead of marking the ditch outward from this line, making it the outline of the parapets, he measured the ditch inward, making it the outer edge of the ditch. Grover, as the designer, probably made the decision to attempt to correct this fault by making each of the distances from flank to midpoint 100 feet. He did so by reducing

each face to a length of 50 feet, and making the curtain (the line of parapet between the inner corners of the flanks) 195 feet long. When this correction was carried out on the ground, across the irregularities of the already-existing ditches and embankments, it was marked out very badly, so that most of the angles and distances are off in varying amounts. This produced the plan of the earthwork as it stands today. The fortification was declared capable of maintaining a defense as of August 26, 1861, although it underwent almost continuous further construction work through early 1863.

Apparently everyone involved in the effort to construct the fort kept quiet about the mistake; had it been known outside the very few persons directly involved in the work, it would have been loudly discussed in the same article in the *Santa Fe Republican*, July 5, 1862, that scathingly made public the other errors in its construction: it was too close to the western ridge to be safe from fire directed from its top, and the tunnel intended to supply water to the garrison collapsed soon after construction and was a wasted effort, anyway, since wells begun inside the earthwork immediately found water *after* the completion and collapse of the tunnel.

However, Grover wasn't through with making mistakes. Not only the sloppy revision of the flanks and faces, but also the need to place the enlisted barracks and the storerooms in the redans resulted from the size error. In fact, Major Chapman himself said on August 26 that the earthwork was "not as capacious as it might have been under other circumstances, but considering the time at which it was commenced, the necessity for its rapid completion and the force to be employed upon it, we have accomplished more than I expected . . ." (Arrot Collection, card 63, Major William Chapman, commanding, Fort Union, to Colonel E. R. S. Canby, Headquarters, Department of New Mexico, Santa Fe, August 26, 1861). Had the earthwork been built to the correct size, there would have been enough room within the parapets for the barracks and storerooms. By September 3, Colonel Canby had become insistent that the stores be gotten into secure, protected storage spaces immediately. The reduced interior space of the earthwork meant that some alternative had to be found for these structures. The earthwork was protected by the usual outworks in the form of earthen banks called redans or demi-lunes; about the first week of September, 1861, Captain Grover suggested that they be altered to contain the Company Quarters, storerooms, and presumably the Officer's Quarters. Grover apparently prepared the design about September 5, 1861, and Lt. Col. Chapman forwarded it to Colonel Edward Canby, who approved it on September 19, 1861 (Canby discussed this sequence of events in a letter from Headquarters, Department of New Mexico, Santa Fe, to the Adjutant General of the Army, Washington, D. C., dated July 22, 1862; the letter of approval is Canby, Headquarters, Department of New Mexico, Santa Fe, to Lt. Col. Chapman, commanding, Fort Union, September 19, 1861; Part I, p. 44; Oliva, "Frontier Army," p. 460). Construction on the barracks and storehouses in the redans was virtually complete by October 20, 1861 (Part I, p. 44). By January 7, 1862, virtually all of the Quartermaster property, Ordnance stores, and provisions had been moved from First Fort to Second Fort.

Unfortunately, once again Grover had miscalculated. Lt. Alexander Robb, who inspected the earthworks in June, 1862, noted that the change to the outworks interfered with the lines of fire from the main earthwork, clearly because they stood too high above the ground; the main guns could not be depressed below a certain angle, or they would fire into the back sides of the barracks. The barracks therefore provided cover to potential attackers.

To sum it up, this is without a doubt one of the most poorly planned and constructed earthworks ever built: an error in the original plan made it too small, the attempts to correct the small size resulted in a poor plan of fire and outworks that provided cover for the enemy rather than the defenders, and the site was chosen too close to superior ground for the defense to be effective even if the design had been correct. It is an obvious case of too much haste and too little experience.

Construction on the fort was stopped on June 12, 1862. The work was under the direction of Captain John McFerran at the time; McFerran designed Third Fort later that same year. However, in November, 1862, a second major effort of building began, resulting in the construction of bombproof barracks, officer's quarters, and a magazine within the earthwork, apparently replacing non-bombproof structures of similar use (Part I, p. 54). In March, 1867, an order came through to demolish the remaining buildings of the second fort and salvage the materials, except for those still being used as laundresses housing and stables, awaiting the completion of HS-16, 23, and HS-18, 26, about 1868. Some were still in use for storage during the late fall, 1867.

#### Graphic Representations:

Although no maps of the Second Fort as it was designed or completed are available, one plan drawn by Lambert under the command of Captain Henry Inman in January, 1867, shows a sketchy outline of the eastern third of the ditches and outworks. The 1866 and 1868 maps show a rough plan of the Fort, although these maps depict the buildings on its interior as two rows of three structures, with no resemblance to the layout visible in photographs taken in ca. September, 1865, or to the traces visible today. It is possible that the layout of buildings inside the earthwork as depicted on the 1866 and 1868 maps were taken from the original plans of the fortification, and show the layout of the original, non-bombproof interior structures, before the reconstruction beginning in November, 1862. The photographs, 111-SC-88000, 88001 (FOUN 905), and 88004 (FOUN 906), National Archives, were all taken about the same time in ca. September, 1865, probably by Farnsworth as part of his documentation of the conditions at the time.







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200 Second Fort. This number applies to the entire circumference of the ditches and embankments. By early August, 1861, 200 men were working on each four-hour shift, and it was expected that by mid-August it would be capable of defense (Arrott, card 62). The basic construction was complete by the end of August, 1861 (Arrott, card 63). The original layout of buildings on the interior of the earthwork may have been two rows of three structures, as shown (erroneously) on the 1866 and 1868 maps. These structures were not bombproof, and were replaced in November and December, 1862, with bombproof buildings in a cross-shaped layout, as shown on the present plan.

By February, 1862, it was planned that the cannon would be set in place beginning in May (Rocky Mountain News, March 18, 1862). It is possible that Colonel Paul mined the defenses and warehouses (Oliva, "Frontier Army," p. 487 n. 178). By June, 1862, the problems with drainage began forcing the removal of most of the stores and many of the men from the buildings. Both the North and the South believed that Fort Union was unassailable (Oliva, "Frontier Army," pp. 477, 480) until June, 1862, when Captain P. W. L. Plympton, 7th Infantry, commander of the fort at the time, found that the fort was within range of a 12-pound howitzer fired from the crest of the ridge to the west of First Fort (Oliva, "Frontier Army," p. 477). Plympton referred to the Second Fort as being of "peculiar construction," mentioning the placing of barracks and storerooms in the redans, which Plympton referred to as demi-lunes (Arrott, cards 80, 81). In spite of the problems with the fort, in August, 1862, preparations were being made to place 14 pieces of artillery in the earthwork (Part I, p. 43). By December, 1862, ten 12-pound cannon had been placed in the fort, and "several" guns of larger calibre were being mounted (Mesilla Times, Dec. 12, 1862).

An inspection of the fort during the summer of 1862 noted that the fortification was not completed by that time. The parapet that formed the breastwork was washing away and filling up the ditch around the earthwork. Also, the lack of ventilation and interior moisture were causing serious problems. However, a major new construction effort was begun in November, 1862. For example, additional *abatis* were put in place on the fortification by December, 1862, and bombproof magazines and barracks were constructed in late 1862 and early 1863 (see HS-209, 210, 211, below).

201 Redan or Demilune. Officers' Quarters. Designed about the first week of September, 1861, and completed by October 20, 1861. Of the eight redans intended to house officer's quarters, only HS-201 and 202 appear to have been finished, based on the appearance on the ground and Robb's description on June 30, 1862. Robb stated that both of the completed and occupied quarters had the same measurements. They were made up of a series of eight rooms each 16 feet across but of varying lengths. The eight rooms formed two wings meeting at an angle, says Robb; one side

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of the angle was made up of three rooms, two of them 18 feet long and the third 12 feet long. The other wing is formed by five rooms, 14 feet, 14 feet, 12 feet, 8 feet, and 16 feet. Presumably the 16 x 16 foot room formed the apex of the angle; if so, the two rows of rooms were 64 feet long from apex to end. These quarters had board floors.

The remains of HS-201 on the ground consist of a number of fragments of rubble stone wall with occasional sections of brick. Not enough of the structure is visible above ground to work out the actual plan or to see any correspondence between Robb's description and the physical remains. The appearance of the structural traces, however, suggest that a large proportion of the building remains relatively undisturbed in the ground; archeological investigation would probably quickly reveal the details of the plan and individual room uses.

Either these quarters or those of HS-202 were used as the Commanding Officer's quarters from November 25, 1864, when HS-224 burned, through October, 1866, when Commanding Officer's Quarters HS-5 were completed. Brigadier General Kit Carson was Commanding Officer during most of this period, December 24, 1865 to April 27, 1866 (Oliva, "Frontier Army," p. 565). It is likely that HS-201 was the Commanding Officer's Quarters; its remains are more substantial, suggesting that it may have been maintained better and longer.

- 202      Redan or Demilune. Officers' Quarters (see HS-201).
- 203      Redan or Demilune. Officers' Quarters, incomplete. This redan is shown on the 1866 and 1868 maps, and is visible on the ground, but no traces of structural remains can be found. It may not have gotten beyond the excavation of foundation trenches.
- 204      Redan or Demilune. Company Quarters and storeroom. Designed about the first week of September, 1861. Construction of the buildings themselves largely finished by October 20. By December 15, 1861, the structures were finished and the ditches on their exteriors were being excavated. The dirt was thrown up against the outside and top of the building (Oliva, "Frontier Army," p. 475). Lieutenant Alexander Robb described these quarters as well as the Officer's Quarters on June 30, 1862. He said that the redans housing the Company Quarters were each composed of two wings; each wing was 200 feet long and 26 feet wide. Each was divided into a storehouse 100 feet long, and quarters for a single company made up of six rooms. Allowing for the thickness of the partition walls, each Quarters room would therefore be 15½ feet by 26 feet. They had packed-earth floors, rather than the board floors of the Officer's Quarters.

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Inspecting the earthworks quickly revealed the general plan of these buildings on the ground. The Company Quarters were located on the ends of the redans closest to the fieldwork, and had a fireplace on every other wall; that is, each hearth served the two rooms on either side of it. These fireplaces fell at intervals of 31 feet. The chimneys of these fireplaces can be seen in the photographs of the redans taken in 1865, with small air circulation stacks next to them along the tops of the earth-covered buildings, one to each room. The ditches on the outside of each building are largely silted up, but seem to have been about 17 feet wide. The curved portion of the apex of each redan was apparently solid earth. As with the Officer's Quarters, considerably more detail about the construction of these buildings, as well as the use of the various spaces, could be recovered by a careful archeological investigation.

As new company quarters were completed in Third Fort, men were moved out of the Second Fort barracks. Marian Russell lived in one of the Company Quarters for a time in 1864 (Oliva, "Frontier Army," p. 757). By November, 1866, it was reported that no enlisted men remained in the barracks at the earthworks (Oliva, "Frontier Army," p. 575). After abandonment, the buildings were used as laundresses quarters from about November, 1866 to late 1867 (Oliva, "Frontier Army," p. 594; Part I, p. 57), when the laundresses were moved into their new quarters along the west side of the Post Corral.

- 205 Redan or Demilune. Company Quarters and storeroom. Two of the barracks were converted to temporary stables beginning on November 21, 1866; the Lambert and Inman map of January, 1867, shows that one of these stables was in the eastern half of this redan. The other was probably in the west half. The use of these barracks as stables continued until completion of the Post Corral stables in late 1867.
- 206 Redan or Demilune. Company Quarters and storeroom.
- 207 Redan or Demilune. Company Quarters and storeroom.
- 208 Headquarters Offices? Probably designed and built as part of the major reconstruction of November, 1862. This building has very sharp edges and flat sides, and was apparently built with an exterior casing of wood or stone. The featureless appearance suggests stone as the more likely material. A thick layer of earth forms a cap on the building. A single large ventilator is visible at about the center of the cap in the ca. September, 1865, photographs. The flagstaff, HS-225, for the Second Fort stood just north of this structure, probably in front of the main entrance.
- 209 Company Quarters. Two of these structures are mentioned in an article in the *Denver Rocky Mountain News* of February 24, 1862, and described by Lt. Robb on June 30, 1862; he says that they were constructed inside the works, but were only



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temporary, and would have to be rebuilt to be permanent. Both of these were rebuilt as bombproof barracks during the reconstruction of November-December, 1862; orders requiring this were sent to Fort Union on December 20, 1862 (Part I, p. 54), indicating that the work probably occurred in late 1862; however, a week earlier, on December 12, 1862, the *Mesilla Times* described the Magazine (HS-211), quarters (HS-209, 210, and 212) and "all the garrison buildings" to be bombproofs already.

The ca. September, 1865, photographs shows some details of this structure. Five ventilators or chimneys can be seen, one at each corner of the roof, and one in the center. The main entrance to the structure was a doorway at the south end near the southeast corner; this is rather poorly placed, since it faces the opening of the main gate of Second Fort, making it possible for a shot to pass over the traverse covering the entrance and penetrate this doorway. The north end of the building seems to have been built against the Headquarters building, HS-208.

After the abandonment of Second Fort, HS-209 was dug out and most of its useable material salvaged, leaving a large oval pit.

- 210 Company Quarters. These Quarters were probably also built as a bombproof building in November-December, 1862. The ca. September, 1865, photographs shows some details of the building. It had two doors, one on the south face at the west end, the other on the east end near the northeastern corner. Six small loopholes or tiny windows are spaced evenly along the south side. Five ventilators can be seen on the roof, two at the west end, two at the east, and one in the center; all seem to be offset somewhat towards the south edge of the roof. No chimneys can be made out in the photograph, but various odd marks on the roof could be partly demolished chimneys.

This building appears not to have been dug out for salvage; it is possible that the structure collapsed in place. If so, a great deal of structural information waits to be found by archeological investigation.

- 211 Magazine. Plans for a bombproof magazine within Second Fort were discussed on November 26, 1862. Captain Shoemaker suggested that the building should be about 60 feet long and 25 feet wide, excavated 8 feet into the ground and walled with upright timbers faced with rough boards. The wall timbers were to be 14 feet high, with the roof beams of horizontal timbers resting on the side walls and supported in the center. The beams would slope downwards from the centerline towards the walls, and would be covered with boards and at least 3 feet of earth. A door was to be placed at each end, and a board floor built of planks on joists. This magazine was begun in late November, 1862, and completed in December (Part I, pp. 52-53, 54; Oliva, "Frontier Army," p. 548-49). It was still in use for vegetable storage for the Post Commissary in October, 1867 (Oliva, "Frontier Army," p. 590).



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212	Officers' Quarters. According to 1st Lt. Alex W. Robb, June 30, 1862, one officer's quarters with four rooms stood in Second Fort by the time of his inspection, but was apparently not a bombproof structure. However, it was rebuilt as one in late 1862, probably at the same time as the two barracks and the magazine (HS-209, 210, and 211) were built in November and December, 1862. The ca. September, 1865, photographs shows the building as a bombproof with two chimneys, one on the north and one on the south center of the roof, and a ventilator on the east side.
213	Well. A well was under construction within the earthworks by early January, 1862, apparently begun after the collapse of the water supply tunnel (HS-222) in late 1861. Eventually, three wells appear to have been dug. HS-213 and HS-214 were inside the parapets themselves.
214	Well.
215	Well? Unlike the two wells above, this circular structure is located in one of the redans. It is possible that this is not a well; however, no suggestion of any other structure is available.
216	Traverse? This structure, of packed earth, was designed to prevent incoming fire from passing through the gap in the parapet formed by the main gate.
217	Possible Traverse?
218	Workshops, Offices, and Temporary Storehouses. Probably built in August and September, 1861 (Part I, p. 44). This is actually a series of several buildings in a row, as can be seen in the ca. September, 1865, photographs. At least seven or eight chimneys are visible in these photographs, several of them producing smoke. The first building on the northwest end appears to be made of canvas on a wooden frame. At its southeast end is a large rectangular object standing well above its gabled roof; this looks like a large chimney. Next is a low structure, apparently of wood, with a shed roof of shallow slope. A small chimney appears at its southeast end. At its north end, obscuring the point where it contacts the canvas building, is a small room extending north at right angles to the main line of the series of buildings. This room is made of horizontal logs, and has a flat roof. Southeast of the shed-roofed building is a long building with four or five chimneys and a gable roof. At least one other chimney is producing smoke past the visible end of the long building, but no further details can be seen.
219	Workshops and Offices. No clear traces of this building can be seen on the ground. It is known to exist only from its presence on the 1866 and 1868 maps, and because

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two photographs of Second Fort were taken from the top of some structure in this location in 1865.

- 220      Embrasured Gun Batteries. These guns fired through embrasures, or slots in the parapet, located on the faces, flanks and curtains of the fort. There are 24 of the platforms for these batteries; at least three can be seen in the ca. September, 1865, photographs; the straight line of the wooden platform is easily recognized in the pictures. At least seven embrasures can also be seen cutting the parapets of the fort.
- 221      Gun Batteries *en barbette*. These batteries are somewhat conjectural, pending archeology. Four positions for guns firing over the parapet, rather than through an embrasure, at the salients (the points of the bastions) of the fort. Unfortunately, none of the salients are visible in the 1866 photographs. The western bastion contained a 6-pound gun in June, 1862 (Arrott, card 81); whether this was at the salient is unknown. For purposes of comparison, see the plan of the Confederate star fort built at Arkansas Post, built in 1862; Roger E. Coleman, *The Arkansas Post Story: Arkansas Post National Memorial*, Southwest Cultural Resources Center, Professional Papers no. 12 (Santa Fe: National Park Service, 1987), p. 105, fig. 33. This fort had several guns set up *en barbette*, one of them at the southeast salient; the other eleven gun positions were apparently embrasured, including those in the other three salients. See also the plan of fortifications at the mouth of the Rio Grande, "map of the North End of Brazos Island," prepared in 1865 by Captain D. C. Hain, Army Engineers, in the collection of Palo Alto Battlefield National Historic Site, Texas. This map shows the specifics of an octagonal fortification including a plan of its gun platforms and a cross-section of the platforms and parapets, with construction details. The specifics of the *barbette* and embrasured guns shown on this plan match those reconstructed from the surviving traces of the Fort Union fortification quite closely.
- 222      Tunnel. This was a tunnel for getting water from a cistern near the bank of Coyote, (or Wolf) Creek, rather than an "escape route," as most of the speculation about it seems to assume. A brief description of the tunnel appears in the *Santa Fe Republican*, July 5, 1862, p. 1, "Fort Building in New Mexico." The article indicates that the tunnel had been built in 1861 as a means of insuring a water supply for the fort. Soon after being finished, part of the tunnel collapsed; about the same time, in December, 1861 or early January, 1862, wells dug in the fortifications reached water (Arrott card 72, Oliva, "Frontier Army," pp. 394-95; see also HS-213, 214, 216), giving a better source for the needs of the garrison and making the tunnel unnecessary. The tunnel was lined with boards and was about 3 to 3½ feet in width. It was about 4 feet high, roofed with planks, and had earthen sides shored with boards every few feet (Part I, p. 58). It appears to have begun in the outer slope of the south ditch, under the entrance bridge (HS-223, below). It ran southwest from the Star Fort for about 950 feet, apparently to a covered cistern about 100 feet from

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the present creek bank. The last 250 feet before reaching the cistern shows a wider and deeper depression, along which can be found board fragments, suggesting that this part of the tunnel may have been the area of collapse; or it may have been dug out. The rest of the length probably preserves much of the tunnel structure intact.

223 Bridge. The 1866 map shows some sort of narrow crossing of the south ditch of Second Fort, giving access to the main entrance through the parapet. On the ground, this appears as a short stub of an earthen ramp extending about 30 feet from the south side of the ditch towards the main entrance. The remaining 35 feet had no such ramp; the floor of the ditch continued across this area unbroken. However, several mounds of large cobbles and small boulders seem to have a certain symmetry to their location. When plotted, the evidence indicates that the inner 35 feet of the entrance ramp was of wood, supported on massive posts partially protected by mounds of stone. Provision was probably made to raise or destroy some part of, or all of this bridge, in time of attack.

224 Commanding Officers' Quarters, Second Fort. In February, 1863, an order came through to salvage building materials from the Sumner House at First Fort and constructed a new temporary officer's quarters near the fieldwork of Second Fort. The choice of site was left up to the discretion of the commanding officer. The building was supposed to be a temporary log building plastered on the interior "with blinds for the windows and a gallery running along its front, say ten feet broad." The building was supposed to have a roof of lumber and chimneys of stone. These quarters were occupied by April, 1863 (Part I, pp. 38-39, 54-55). HS-224 appears to be the Commanding Officer's Quarters that burned on November 25, 1864, completely destroying the building and apparently forcing the commander to move to one of the officer's quarters in the redans, probably HS-201 (Oliva, "Frontier Army," p. 540).

The arroyo has cut into the southeast corner of the structural remains, but still a good deal of scattered fieldstone and trash are easily seen. At least two areas that appear to be the remains of chimney bases are identifiable.

225 Flagstaff, Second Fort. Approximate location. The photographs of ca. September, 1865, show the flagstaff standing just north of the Headquarters building, HS-208, on the centerline of the fort and apparently centered between the Headquarters building and the Magazine, HS-211, just to the north; it was probably in front of the main entrance to the Headquarters building. Probably erected in June, 1862, and a request for a garrison flag submitted to Headquarters, Santa Fe, on June 27. Still standing with a flag flying in ca. September, 1865. Archeological excavation would probably confirm the exact location of the flagstaff.

## THE BASE MAPS

The Base Map itself consists of ten sheets at a scale of one inch to one hundred feet. A master index sheet gives the relationship between the ten Base Map sheets. On the Base Maps, the plan of the historic structures are shown in black, while present features and contours are shown in grey. Hatching indicates either that the dimensions or the interior plan of a structure is somewhat conjectural. If the outline of the structure is dashed, the plan is conjectural; if solid, only the interior is conjectural. Fine dotted lines indicate a fence, or a palisade wall of upright posts. Double lines of dash-dot are roads. Small open circles are posts or tree stumps. Small, finely hatched rectangles are chimney bases whose locations were plotted by the survey.



















