

## Appendix H) Commentary on J. N. Bowman's article, "Driving the Last Spike at Promontory, 1869," Fifty Years Later.<sup>1</sup>

RLS-3-24-06

During the development of the Golden Spike National Historic Site at Promontory Summit preparatory to the "driving of the last spike" centennial, National Park Service staff reproduced a number of historic objects. For much of the background information, the staff used an article written by J. N. Bowman, historian in charge of the California State Archives.<sup>2</sup> It detailed the spikes and laurel tie, trappings and site, and sequence of events. Park historian F. A. "Andy" Ketterson wrote that the article "was extremely helpful."<sup>3</sup> Bowman's article was considered by NPS historian Bob Utley "obviously the most authoritative discussion of the matter that is likely ever to be written"<sup>4</sup>

During the course of the present study, the author found Dr. Bowman's research beneficial and, in part, was guided by it. During the past half century, however, additional or new information has come to light suggesting a revision is needed of much of what Dr. Bowman detailed. The following review of his key points is intended to help clarify and revise interpretive programs, where needed, and further refine the discussion on objects and events of May 10. It is hoped that more information will come to light and the discussion continue.<sup>5</sup>

### Sources

Bowman checked twenty-six different newspapers, published primarily near or west of Promontory, with a main reliance on the half dozen with extensive coverage.<sup>6</sup> He used three diaries and six reminiscent accounts. He relied more on contemporary accounts than sources written years later, including the reminiscences.

---

<sup>1</sup> Thanks to Gordon Chappell, Michael Johnson, and Kyle Wyatt for their suggestions and comments.

<sup>2</sup> J. N. Bowman, "Driving the Last Spike at Promontory, 1869," *California Historical Quarterly*, vol. XXVI (1957), pp. 97-106, 263-274, reprinted in *Utah Historical Quarterly* Vol. 37 (Winter 1969), pp. 76-101. Bowman began research in response to a 1954 request for information from the California governor's office.

<sup>3</sup> F. A. Ketterson, "Golden Spike National Historic Site: Development of an Historical Reconstruction," *Utah Historical Quarterly* vol 37 (Winter 1969), pp. 58-68, quote p. 65.

<sup>4</sup> Robert M. Utley, *Special Report on Promontory Summit, Utah (Golden Spike National Historic Site)* (Santa Fe: National Park Service, 1960), p. 64. David Howard Bain, *Empire Express, Building the First Transcontinental Railroad* (New York: Penguin Putnam, 1999), on p. 756 similarly states Bowman is "probably the last word on the ceremony."

<sup>5</sup> Recently, the National Park Service contracted with Michael W. Johnson, Utah State University, to study the ceremony with far more accurate detail which resulted in "The Golden Spike Ceremony Revisited," copy at Golden Spike National Historic Site. A revision was published as "Rendezvous at Promontory: A New Look at the Golden Spike Ceremony," *Utah Historical Quarterly* (Winter 2004), pp. 47-68.

<sup>6</sup> Newspapers cited are: from San Francisco: *Alta, Bulletin, Chronicle, Examiner, Figaro, Herald, Times*; from Sacramento: *State Capitol Reporter, Bee, Record and Union*; Nevada: the *Enterprise, Appeal, News*; from Utah: *Reporter, Deseret News*; from Idaho, the *World*; New York, *Harper's, Leslie's*; Arizona, the *Arizona Miner, Arizonian; Chicago Tribune; Engineer's Journal*, July; Colorado: *Rocky Mountain News; Oregonian*. Most are single day, May 11, citations. The most extensively cited are the California newspapers and the Corinne, *Utah Reporter*.

For the present study, in addition to Bowman's list, I found useful the *Cheyenne Leader*, *Colorado Tribune*, *New York Times*, and *Omaha Herald*, among others, that had reporters on the scene and published lengthy accounts (see Appendix A). Unfortunately, some newspapers with reporters at the scene no longer have issues for that date extant, such as the *Cheyenne Argus*. Other eastern newspapers were randomly checked without additional results. However, newspapers may have had correspondents send letters about the event and published weeks later, such as Wells Spicer's letter in the Tipton, Iowa *Advertiser* and Andrew Russell's article in the Nunda, New York *News*.

The three diaries mentioned by Bowman are: Lt. J. C. Currier, Leonard Eicholtz, and Charles Savage. These are still available. The diary of paymaster O. C. Smith, quoted in Robert Athearn's *Union Pacific Country* is in private hands. The diary of Bishop Loren Farr is quoted in the *Ogden Standard*, "Golden Spike Special Edition," May 11, 1919, but it does not include May 10 entries. The diary may be extant, but in private hands. It was unavailable for this study. Grenville Dodge's papers at the Iowa State Department of Historic and Archives lacks Dodge's 1869 diary. Its whereabouts is presently unknown, though its one time existence adds credibility to his later reminiscence. If Bishop Farr's and Dodge's 1869 diaries are found they will add greatly to our understanding of the events of May 10. Lt. Currier's is the most detailed for the day.

Bowman did not use extensively the reminiscences of Union Pacific officials Grenville Dodge and Sydney Dillon. They are too filled with errors of detail. He relies on the reminiscences of Amos Bowsher, telegrapher, and David Lemmon, Union Pacific engineer, both of which should have received more scrutiny. Bowman adds E. L. Sabin to his list, but Sabin is not cited in his notes, so it is unsure who he refers to. There is an inaccurate report that Edwin L. Sabin, author of *Building the Pacific Railway* (1919) was at Promontory. Unfortunately, he was born in 1870 and could not have been there. This may be a tale Sabin nurtured to help market his books, similar to his other efforts.<sup>7</sup>

Bowman includes the article by Dr. J. D. B. Stillman among the reminiscences. This was published in the July, 1869 issue of the *Overland Monthly* and should be listed more among the on the spot accounts that obviously had editorial coloring added by editor Bret Harte.

Bowman should have looked at additional reminiscences published in the *Union Pacific Magazine* or the *Southern Pacific Bulletin* in the 1910s and 1920s, which add some overlooked details.<sup>8</sup> The reminiscences of Utahans also adds to the understanding of the event. Such reminiscences can be found, for example, in the *Box Elder News*, *Salt Lake Tribune*, and *Ogden Standard* during the golden anniversary. Published reminiscences by Alexander Toponce, Alexander Majors, and others add a few details.

---

<sup>7</sup> On Sabin and his fabrications see Marc Simmons, "Introduction," in reprint of Edwin L. Sabin, *Kit Carson Days*, vol 1 (Lincoln: University of Nebraska Press, 1995 reprint of 1935 edition).

<sup>8</sup> A complete set of the *Union Pacific Magazine* is at the Richardson Library, Colorado Railroad Museum, Golden, and the *Bulletin* can be found at the California State Library, Sacramento.

The 28 photographs described elsewhere in this report also aided with the description of events on May 10. Photographers A. J. Russell, Charles Savage, and A. A. Hart documented the scene. Photographs by William Henry Jackson, and additional photographs by A. J. Russell, both taken in the summer-fall of 1869, add additional details about the physical layout (with care to account for changes made after May 10).

Union Pacific principals' papers were available at Bowman's time, which are useful: for example, Dodge's papers at the Council Bluffs Public Library and the Thomas Durant papers in the Levi Leonard collection, University of Iowa. Other records perhaps not available to Bowman were the Leland Stanford papers and other Southern (Central) Pacific records at Stanford University and the C. P. Huntington papers at Syracuse University, now on microfilm and available at a number of repositories. Many of the records of the Union Pacific Railroad and Central Pacific Railroad, though incomplete, have since been donated to institutions providing public access: the California State Railroad Museum, Sacramento, Union Pacific Museum, Council Bluffs, the Nebraska State Historical Society, Lincoln, and Stanford University, Palo Alto, California.

### **The Golden Spike**

General Comment: Bowman provides a description of the golden spike. David Hewes had the spike made for the event and provided it to Governor Stanford for the May 10 ceremony (planned for May 8). He described the physical dimensions of the golden spike, presently (2005) in the Cantor Arts Center, Stanford University, California. This spike was donated by David Hewes to the university in 1892.

Bowman examined the spike and noted that tradition states that the indents on the head of the spike were made by the silver hammer wielded by Stanford on May 10.

New/Additional Information:

On May 8, 1869, the *Mining & Scientific Press*, San Francisco, page 296, published a paragraph about the spike: "The 'Last Spike' was manufactured at the metal-working establishment of W. T. Garratt, in this city, and consists of \$360, U. S. Coin, San Francisco Mint, melted together. The work was done by Joseph Garratt, father of W. T. Garratt, and the oldest metal worker, probably, on the coast, who very naturally took pride in doing the job."

The W. T. Garratt foundry was a prominent brass and bronze factory in gold rush San Francisco. According to the 1870 census, Joseph Garratt, a resident of San Francisco, was a 63 year old brass founder born in England.

The golden spike was cast from gold coins from the San Francisco mint. In 1869, the mint received gold from districts from throughout the West, with California dominating gold production. The golden spike, like a gold coin, which included silver and base metals in its composition, was sturdier than a bar of refined, pure gold, a malleable metal.

In an e:mail dated November 9, 2005, Kyle K. Wyatt, Curator of History & Technology at the California State Railroad Museum, announced the museum's acquisition of a second golden spike made for David Hewes. He wrote<sup>9</sup>:

First, it appears that David Hewes had two gold spikes cast in 1869. One was hurriedly engraved and sent with Leland Stanford for use at the ceremonies at Promontory, anticipated to be on May 8, but actually held on May 10. This spike was engraved with the anticipated May 8 date. The casting sprue (also referred to as the "slug") from this spike was broken off and melted to cast mementoes (such as rings and watch fobs), a number of which are preserved at Stanford University, and at least one at Golden Spike NHS. After the ceremony, this spike was returned to David Hewes. In 1892 Hewes donated the spike to Stanford University, along with his significant art collection. (I gather the art collection was considered the much more significant donation at the time.)

The second Hewes spike was engraved after the event - it includes the May 10 date for the ceremony. I should note that the circumstantial evidence (including the receipt) seems to indicate that the two spikes were cast at the same time. We have no actual concrete evidence confirming that. Wording on the two spikes is very similar, but there are some slight variations between the two. Most distinctive, the words "The Last Spike" that appears on the head of the Stanford spike is engraved on the side of the spike head on the second spike, and is written as "The last Spike" (note small "l" in "last"). Also significantly, this second Hewes spike has never had the sprue ("slug") removed - it is still attached to the spike. The Hewes family retained this spike over the years, until last week when several of us completed the purchase of the spike and transported it to CSRM.

In 1937 Robin Lampson met a Hewes descendant who had two photos that he believed to be of "The Last Spike," the spike used at the Promontory ceremony in 1869, with sprue attached. Researching further, Lampson located a copy of the privately published Hewes family history printed in 1913, which included five photo views of the various sides of the spike, including the two views Lampson had received from the Hewes descendent. Lampson believed these photos were of the spike that was used at the Promontory celebrations, showing it before the sprue had been removed. Comparing the photos with the spike displayed at Stanford University, he noted a number of differences, leading him to the conclusion that the original spike had been lost. Compounding this, Stanford for many years displayed a brass replica because their security was not considered sufficient to protect the original on display. It is possible that Lampson only saw this brass replica. (Stanford has recently installed a high security display case for the Hewes spike, and the Nevada silver spike, and now displays the originals, except when they are out on temporary loan at other institutions.)

Comparing the five photos of the Hewes spike that Lampson used with the spike recently obtained by CSRM shows them to be the same. Details both of the

---

<sup>9</sup> The text was slightly altered from the original e:mail per request of Kyle Wyatt

writing and of the shape of the sprue confirm this. Lampson did not realize (nor did anyone else) that Hewes had two spikes cast. He assumed that the photos he had were taken in 1869 before the spike went to Promontory.

I theorize that in preparing the 1913 Hewes family history, David Hewes (who died in 1915) wanted to include photos of "The Last Spike". Rather than arrange with Stanford University for photos of the spike he had given to them in 1892, Hewes had new photos taken of the spike he still had for inclusion in the book.<sup>10</sup>

Looking at the photos of the spike with new eyes, and with familiarity of many historic photos, I would say the photographic reproduction and appearance is much more consistent with photos printed with materials available around the turn of the century than of photos printed with materials available in 1869.

My conclusion is that the spike at Stanford University is in all likelihood the original 1869 Hewes spike that went to Promontory. Keep in mind it was a rush job, hurried to get it ready in time for Stanford to take it to Promontory. This may account for Lampson's comment about "crude engraving". (Alternately, Lampson may only have seen the brass replica at Stanford.) The spike that Hewes kept was engraved after the May 10 event, and was not a rush job, so the engraving may appear finer.

The Robin Lampson research mentioned in the above is published in a number of places, including "The Golden Spike Is Missing," *The Pacific Historian*, (Winter 1970), pp. 9-24.<sup>11</sup>

A photograph of the spike with casting sprue (some called it a nugget) attached to its end is reproduced in the *Southern Pacific Bulletin*, May 1940, p. 6; this is the spike now at the California State Railroad Museum as proven by the words "The last Spike" being on the side of the spike instead of the top. A photograph of the Stanford University spike, is in Gerald Best's *Iron Horse to Promontory*, and in his article in the *Utah Historical Quarterly*, Winter 1969 special golden spike edition, and is being held by J. H. Strobridge in the *Southern Pacific Bulletin* June 1, 1916. The *Bulletin* photo also shows its polished wooden box, with miniature portraits on its sides, now also at Stanford University. Park historian Andy Ketterson directed the manufacturing of the replica for the park by the NPS Harpers Ferry Center with the Stanford University artifact as the model.

---

<sup>10</sup> "In the Hewes' 1913 family history, Hewes makes many claims for things which others actually did. For instance he claims to have been responsible for most of the San Francisco sand hauling, and for the first locomotive built in San Francisco. He actually got into the business by first leasing and later buying the equipment used by a pioneer sand hauler named Cunningham. Hewes came a number of years later. In my opinion, any uncorroborated Hewes claim should be taken not with a grain of salt, but with a whole salt shaker," Wyatt to author.

<sup>11</sup> Reproduced on the cpr.org web site at:[http://cpr.org/Museum/Golden\\_Spike\\_Missing.html](http://cpr.org/Museum/Golden_Spike_Missing.html)

As Wyatt notes, there is little doubt that the spike at Stanford University is the golden spike. The California State Railroad Museum now has the second Hewes spike made at the time, but not used in the ceremony.

### **The Other Gold Spike**

Bowman describes this spike as one given by the San Francisco *News Letter and California Advertiser* and incorrectly notes its absence from the literature after that. The *Utah Daily Reporter*, Corinne, May 12, 1869, which he cites, mentions this spike, the “Hewes” golden spike, the Nevada spike, and the Arizona spike as does the San Francisco *Bulletin*. Some authors doubt that it was used at the ceremony, but these sources prove otherwise.

#### Additional information:

Bowman notes that no May 1869 issues of the *News Letter* were extant. Copies have been found and the pertinent issues of May 1, 8, and 15, 1869 are on the cpr.org web page. Edson Strobridge, a descendant of James Harvey Strobridge of the CP, has researched the San Francisco *News Letter* spike and has posted his findings on the cpr.org web page as well. The *News Letter* provided the most detailed description of the spike, including a, engraving done from a photograph, and reporter A. D. Bell detailed its place in the ceremony as one of the four spikes used during the last spike ceremony. The spike was donated by Frank Marriott, editor of the *News Letter*, and, according to the May 8 issue, it was nine and a half ounces in weight, worth \$200. Its shape was that of an ordinary railroad spike. Strobridge quotes from the San Francisco *Bulletin*, which reporter Bell worked for as well, and its recognition of the *News Letter* spike, as he did the Nevada and Arizona spikes.

Recently, a spike was purchased from a dealer in Maine. The spike appears to match the description of the *News Letter* spike, but with a different head. The *News Letter* sketch shows a shoulderless head, used during the period, while the photograph of the found spike is a shouldered headed spike, also a design used at the time. Without further testing the authenticity of the recently found spike remains unconfirmed. See cpr.org for an image of the spike and a letter from Mr. Fenton, its owner.

An article in the Sacramento *Bee* stated that the *News Letter* spike was given to Grenville Dodge after the ceremony. Dodge was an avid collector and kept artifacts important to his past (his surveying equipment, for example, is on display at the Union Pacific Museum). Dodge artifacts are held by the Iowa State Department of History and Archives, the Council Bluffs Public Library, Iowa, the Union Pacific Museum, Council Bluffs, Iowa, and the Grenville M. Dodge House, a historic house museum in Council Bluffs. A check with these entities confirms that if the spike was given to Dodge, he would have kept it and it would be prominently displayed. It is not. Don Snoddy, former curator at the Union Pacific Museum, also looked in the Dodge collections for possible discovery of the spike’s whereabouts without results.

An alternative recipient of the second golden spike, the *News Letter* spike, is Thomas Durant, as vice-president, the ranking Union Pacific Railroad official at the ceremony. Durant was in reduced circumstances after the financial panic of 1873. If he had the spike, it is not among his papers in the Levi Leonard collection at the University of Iowa.

There is a contemporary report that “the last spike” was cut in half and divided between officials. While the report appears to be inaccurate, it is possible that the reporter confused the spike with the sprue that was cut off the Hewes spike before the ceremony, and/or when Stanford cut off part of the sprue before returning the rest to Hewes. Of course, all this is speculation.

### **Silver Spike**

The Nevada newspapers, especially the *Virginia City Territorial Enterprise*, captured the details of Nevada’s silver spike, which Bowman relates well.

Additional information:

It is now presumed railroad commissioner Frederick A. Tritle, not Haines as suggested by Bowman, had the spike made. Tritle was manager of the Yellow Jacket mine on the Comstock and, though he ran for Governor of Nevada in 1869 he decided to drop-out, possibly as a deal among Republican party leaders. Interestingly, he later became Governor of Arizona Territory, a few years after Governor Safford left office.

As related by the newspapers, E. Ruhling & Co., assayers, Virginia City, were responsible for making the spike. According to the 1870 census, Ell Ruhling was born in Hamburg, Germany in 1839. They assayed and confirmed the value of silver bullion produced by the Comstock lode. Its value was much less than the golden spike; valued at \$2.25 15/100 per oz. its 25 ounces of silver was equal to \$56. The editor of the *Enterprise* was given a piece of the silver bar left over from making the spike. He noted that future fake silver spikes could be found false if they did not assay a fineness of 50 parts gold and .942 fine silver, according to Ruhling’s assay.<sup>12</sup>

After the ceremony it was returned to its owner, Tritle, who had it finished and displayed by Nye & Co., Virginia City, Nevada. Apparently it was given to Governor Stanford not long after the Promontory ceremony. Its production had been rushed to get it to the special train on time (barely made it). It apparently came into the possession of Stanford University from Stanford himself, although University records are not clear.

### **Arizona Spike**

Bowman provides a newspaper quote description of the Arizona spike, from the *Arizona Miner*, which quoted the *San Francisco Bulletin*. Newly appointed Governor Anson P. K. Safford presented the spike.

Additional Information:

---

<sup>12</sup> *Territorial Enterprise*, May 7, 8, 1869.

Safford was a Nevada politician with close ties to Senator Stewart, friend of the Central Pacific Railroad. The *Gold Hill News* mentions that the Comstock lode gave gold and silver spikes; which suggests Safford's spike for Arizona was finished using Nevada gold and silver (a more appropriate metal for Arizona would have been copper). The *Carson Daily Appeal* reports movements of Anson P. K. Safford to and from Virginia City. From there he undoubtedly carried the Arizona spike to the ceremony. At the time Stafford had the spike made, he had only recently been appointed as Territorial Governor of Arizona, and had not yet set foot in Arizona. His recorded movements around Nevada strongly suggest his spike was made there. Newspapers in Tucson and Prescott, Arizona make no mention of the spike prior to the ceremony and the editor of the *Arizona Miner* voiced surprise that one was presented by the territory.

After the ceremony the spike ended up in the collection of Sydney Dillon, one of the Union Pacific Railroad directors at the ceremony. His estate donated the spike to the Museum of the City of New York, New York City. In response to my query, Deborah Dependahl Waters, Ph.D., Curator, Decorative Arts and Manuscripts, Museum of the City of New York, wrote:

The Museum of the City of New York owns a Promontory Point [sic.] celebration steel, silver, and gold spike inscribed "Arizona presents her offering to the enterprise that has banded a continent and dictated a pathway to commerce--ribbed with iron, clad in silver, and crowned with gold--presented by Gov. Safford." Its length is 5.75 inches, and its accession number is 43.33.4. It was the gift of Mrs. Arthur Whitney. The spike is presently on loan to the Union Pacific Railroad Museum in Council Bluffs, Iowa.

### **Other Ceremonial Spikes**

Bowman mentions the *Leslie's* article as source for the comment that Idaho, Montana, Nevada, and California gave spikes. The article is reputed to have been written by photographer Andrew J. Russell, who was present. Bowman confirms four spikes were given, but not the accuracy of *Leslie's* report on the presenters. This may be information added by editors in New York, who played with his words substantially in the June 5, 1869 article. It is doubtful that Montana and Idaho offered spikes. Neither the *Montana Post* of Helena or the *Idaho Statesman* of Boise mention spikes from their respective territories, before or after the event.

### **Lemon Iron Spike**

No comment except that there were probably a large number of "last spikes" as the iron ones and the ties they were in continued to be taken by collectors. Bowman quotes documents verifying Lemon's spike's authenticity. Reporters noted that workers with cold chisels were even trying to take bits of the last rail. By May 11, 1869, the railroads posted a guard at the site.<sup>13</sup> One traveler wrote his wife: "I write you sitting on the last

---

<sup>13</sup> W. L. Humason, *From the Atlantic Surf to the Golden Gate, or, First Trip on the Great Pacific Railroad* (Hartford: Press of Wm. C. Hutchings, 1869), p. 42, mentions the guard.



rail. The spike of gold is not here.” Did he send her one of iron?<sup>14</sup> There are many reports of additional remaining iron spikes used May 10th (see note of Edson Strobridge in cpr.org).

Lemon’s reminiscence has several flaws. He states his locomotive was the first over the last spike after the ceremony. Obviously, he is mistaken since the No. 119 shows as first in the line-up of UP locomotives on May 10, not the UP No. 117. The No. 117 was used by Casement’s work train, and may have been first over the last spike when Casements work crews built the siding there early, pre-dawn on May 11.<sup>15</sup>

### **Silver Sledge**

No comment except Bowman’s “Pacific Express Company” should read “Pacific Union Express Company,” a short-lived competitor to Wells, Fargo & Company. The “silver sledge” spike maul preserved at Stanford University appears to be a shipwright’s spike maul, not a railroad spike maul. The Hart photo of Stanford holding the spike maul at the ceremony appear to show that the Stanford University spike maul was indeed the one used at the ceremony. Note that in the Hart photo #356 both Stanford and Durant are holding spike mauls. It would appear there were two mauls used in the ceremony, one for each official. We may never know 1. if Durant used a special maul, or just an ordinary one, and 2. what became of that maul. From period accounts, Durant and Stanford tapped the last spike, but, after much negotiation, Stanford was given first swing and that with the silver sledge. The San Francisco *Newsletter*, May 15, 1869 states that after Stanford’s tap with the silver sledge sent the electrical message of “done,” then “Durant and Stanford driving two spikes on each side, the same moment...” ended the event.

### **Laurel Tie**

No comment except a photograph of the tie has been found and shows a more ornate silver plate than first assumed. The *Chronicle*, cited by Bowman, notes that the silver for the plate came from White Pine, the latest Nevada mining boom town. The photograph can be found at: [unknowns@CPRR.org](mailto:unknowns@CPRR.org)

### **Iron Tie**

No Comment except the Union Pacific officials did bring an iron last tie, as noted in a letter by Dodge, but it was not used, obviously, since the golden spike could not fit in it. This may have been the cause for the reports that the Union Pacific threatened to have its own separate ceremony. The tie’s fate is unknown.

---

<sup>14</sup> “Coast to Coast by Railroad: the Journey of Niles Searls – May, 1869,” *New York History*, (July 1969), p. 311.

<sup>15</sup> Michael Johnson has reviewed the UP payroll records for early May 1869 and finds no engineer Lemon on the 117 or any of the other four locomotives at the front. Johnson to author.

Later, to deter souvenir collectors, Grenville Dodge ordered a stone tie to be placed at the last spike site. In a note to engineer Morris, July 15, 1869, then cutting stone abutments for new bridges, he wrote: “the stone for junction had better be marked ‘Junction of the Union Pacific and Central Pacific Railroads, May 10, 1869.’” The stone was probably meant to replace the tie at the last spike site. If placed at the site, its present existence is unknown.<sup>16</sup>

### **Wiring for the Broadcasts**

Bowman relates that F. L. Vandenberg “of the Union Pacific” [sic.—actually Central Pacific] wired the last spike, but then discounts this story based on the reminiscence of Amos Bowsher published fifty-seven years after the event. In the article, Bowsher claimed that a regular iron spike was wired to the telegraph system. Bowman is uncertain of the wiring linkages. Based on the Bowsher published reminiscence, Bowman concludes that the golden spike was not used to send the telegraph message announcing that the transcontinental railroad work was done. Instead, again citing Bowsher, he claims a plain iron spike was wired for the ceremonial telegraphic click “done.”

#### **New/Additional Information.**

In the May 1926 issue of the *Southern Pacific Bulletin* appeared “Eye Witness Tells of ‘Last Spike’ Driving,” by Erle Heath, associate editor. In it, Heath tells Amos Bowsher’s story, that of his being at Promontory on May 10 and that “it was the tapping of an ordinary hammer in the hands of Governor Leland Stanford on an ordinary iron spike that formed the electric contact which flashed the telegraphic message over the country, May 10, 1869, that the last link had been made in the rail lines of the first transcontinental railroad.”

Bowsher, as foreman for telegraph construction for the CP, stated he was busy directing his crew “perfecting the telegraph circuits,” and that he stood on the ladder leaning on the last CP telegraph pole at the last spike site. Bowsher states that the CP’s Louie Jacobs was the telegraph operator at the end of track who sent out the final messages.

In 1923, Levi Leonard collected the reminiscence of Watson N. Shilling, a Western Union telegrapher, “the Record of W. N. Shilling, Telegraph Operator at Spike Driving,” now in the Leonard collection, University of Iowa. Shilling recounted that “Walter Frederick was sent as chief W. U. operator to Promontory Point [sic.] for the celebration and these two men, Walter Frederick and Watson N. Shilling, were the two operators at Promontory Point May 10, 1869, who gave to the world the information that the Union and Central Pacific had joined hands.” In a reminiscence published in the *Ogden Standard* May 7, 1919, Shilling mentions the golden spike, the laurel tie, and the silver hammer and states that he “assisted in connecting the spike to the telegraph wire from the west and the wire from the east to the silver hammer.”<sup>17</sup>

---

<sup>16</sup> Grenville Dodge to Morris, July 15, 1869, Grenville Dodge, “Autobiography,” Council Bluffs Public Library.

<sup>17</sup> Thanks to Michael W. Johnson for bringing this article to my attention.

Unfortunately, none of the contemporary newspapers or other contemporary sources checked to date mention either Bowsher or Shilling in a prominent let alone any role at the ceremony on May 10, 1869. Period accounts provide details about the wiring of the spike that refute their recollections given fifty years after the event.

The *Utah Daily Reporter*, Corinne, May 9, 1869 states: “Arrangements are made for the [telegraph] instruments to ‘click’ at every stroke of the maul on the last spike, and at the exact instant it is driven cannon are to be fired by telegraph in San Francisco, Sacramento, Chicago, New York, and other cities. At the same time bells will be rung. This arrangement was made by Mr. F. S. Vandenberg [sic.], superintendent of the Central Pacific telegraph, assisted by Mr. James Gamble [of Western Union] and others. We are indebted to Messrs. J. N. Stewart, R. F. Pixley and John Curran, telegraph operators at Elko and westward, who reached our city yesterday, and propose to stay and witness the closing ceremonies.” California papers mention agent H. Sigler leaving Sacramento to assist Vandenberg. Vandenberg, as superintendent of the Central Pacific Railroad’s telegraph business, should be credited with arranging the details for sending of the news of driving the last spike to the nation. He was present at Promontory, May 10. The *Reporter* of May 12 states clearly that he held the wire during the ceremony. He probably had much assistance in the arrangement of details, but Vandenberg would have been front and center during the ceremonial sending of the telegraph message “done.”

Amos Bowsher probably helped as well, per his reminiscence. Bowsher standing on a ladder leaning against the last CP telegraph pole makes sense because a wire can be seen extending from the lower end of the pole into the crowd toward the last spike site. Bowsher or someone would have been needed to make sure that wire was not yanked loose during the ceremony (numerous photographs of the pole show him there throughout the ceremony). It is doubtful he was needed to step down off the ladder, walk through the crowd to the track, and then to wire the maul and spike with so many other CP hands available. One has to question the accuracy of his stating that he wired the last spike and maul, be they of iron or precious metals. There were many individuals there to do the wiring and it was a relatively simple task. Vandenberg probably did it, with help, to ensure its success (we lack a reminiscence by Vandenberg; one has yet to be found).

Finally, the news that an iron spike not a gold one was used sounds too much like a journalist’s fabricated “scoop” long after the event – “stop the presses, it wasn’t really a gold spike but one of iron.” The multitude of contemporary accounts mention the gold spike (none mention iron) and the ease of making the last connection as described in the *Journal of the Telegraph* (see below) brings up the question about the veracity of an iron spike being used. Until contemporary information confirms Bowsher’s published tale, it should not be relied on.

Telegrapher Frederick’s name but not Shilling’s is mentioned in the *Chicago Tribune*, May 11 issue, as the Western Union telegraph operator, with F. Kearney. The newspaper states that W. B. Hibbard, superintendent of the W. U. Eastern Division was there as was Gamble of the California Division. The reporter noted that Vandenberg wired the

arrangement and that “when the hammer hit [the] head of the golden ingot [spike] the stroke was carried with the speed of electricity.”

Western Union did not have a telegraph line at Promontory, but had just opened a branch off its transcontinental line from Ogden to Corinne, under the direction of Ed Conway. Reporters mention giving their dispatches to the staff of Western Union telegraphers, who were busy sending telegraphic news from mid-morning until 3:00 p.m., but note that they worked only one line east or west, suggesting they used the Central Pacific and Union Pacific wires.<sup>18</sup> The Western Union transcontinental line was south of Salt Lake; the line north of the lake through Promontory was not completed until the summer of 1869.<sup>19</sup>

In telegraph operations of the day, telegraph systems needed a battery and grounding at the end of the line. This wire undoubtedly went to the CP set-up of battery and ground at the junction, probably in the tent nearest the last CP pole, where the telegraphers congregated. There may have been a back up battery in the “outfit car” on the CP siding nearby, where telegrapher Louie Jacobs sat. The CP crews working with the Western Union crew would have ensured that all systems worked that morning, and Vandenberg is noted by a reporter to have been up by 7 a.m., when he had placed an American flag atop the last telegraph pole. The power from the source battery would have ensured an electrical connection when the maul and spike connected. Having the key and repeater on a table adjacent the tracks, probably moved from the tent nearby, gave the operator (Western Union’s Frederick and Kearny, but probably not Shilling) a good view of the proceedings.<sup>20</sup>

Bowman suggests that the reporters were wrong in that, taking the timing of events into consideration, the time allowed to connect the telegraph wires to the maul and spike was too long and, therefore, could not have happened. However, since Casement had already stopped the ceremony to let the photographers take photographs (and a wet plate negative took fifteen minutes at its quickest, according to photographer W. H. Jackson), it is most likely that Vandenberg and crew had plenty of time to wire the maul and spike – CP and UP officials would have ensured they had time, just as they had for the photographers.<sup>21</sup> This contradicts Bowman.

Reporters state that Stanford and Durant gave the symbolic driving of the last spike. Logic suggests they were ceremonial taps on the golden spike head to ensure electrical connection – as telegraphed, “dot, dot, done.” One source states Stanford hit the wired spike that announced the completion, then he and Durant finished driving the four spikes, two on each of the last the rails. My general suspicion (subject to countering evidence) is that Stanford had two spikes (probably the Hewes and Nevada spikes) and that Durant

---

<sup>18</sup> *San Francisco News Letter*, May 15, 1869.

<sup>19</sup> L. O. Leonard, “Golden Spike Anniversary,” *Union Pacific Magazine* (May 1923), p. 9.; *Reporter*, April 9, 1869

<sup>20</sup> Thomas D. Lockwood, *Electricity, Magnetism, and Electric Telegraph* (New York: D. Van Nostrand, 1883), general on telegraphy; *Territorial Enterprise*, May 11, 1869.

<sup>21</sup> *Chicago Tribune*, May 11, 1869.

had two (probably the SF News Letter and the Arizona spikes). Each would have his own gold spike to “drive”, quite possibly at the same time. Stanford’s was the only wired one in this scenario. Bowman makes the point that the driving of the spike occurred on the south side of the rail, therefore not near the UP, but near the CP telegraph line. This is incorrect in that the UP telegraph line was further south along its track, just beyond the CP telegraph line. No matter where the principals stood at the last spike site they would be nearest the CP telegraph line. They could have stood at either rail and would have been nearest the CP telegraph poles.

The *Journal of the Telegraph*, the Western Union publication, May 15, 1869, suggests that “the task was easily done. The wire had only to be laid, severed on the top of the spike, each severed end resting on a piece of paper separating it from the iron, and the hammer swung so as to touch both wires at the same time. Some equivalent arrangement was no doubt made.” Though the editor admitted this was not a description of what occurred because he was not there, it does suggest transmitting the electrical message would have been an easy task, one Vandenberg could have done. Silver and gold conduct electricity better than iron, and wiring the silver maul and gold spike would have improved conductivity not hindered it.

Did Stanford hit the golden spike with the silver maul and cause the electric contact that announced the finish of the transcontinental railroad? Bowman says no, based on the flawless spike at Stanford University and Bowsher’s reminiscences. Reporters on the scene state, repeatedly Governor Stanford delivered the last stroke which announced, telegraphically, that the work was done; that the spike used was gold, with the telegraph wire attached to it; that Vandenberg and the CP crew wired the gold spike and silver maul so news would be sent out over the telegraph east and west; and Western Union and CP crews played critical roles in the event. The indents on top of the golden spike at Stanford University may be exactly as tradition says, where the silver maul tapped the electrified spike, where a telegraphic spark left additional scars. If the wire was laid across the last spike and held in place, with a piece of paper between wires and spike the spike maul could have tapped the wire and not the actual head of the spike to complete the circuit, but a spark could still have burnt through the paper and scarred the spike’s head. Looking at the head of the spike, especially the top view from Stanford University’s web site, I believe the marks might have been made by sparks. At San Francisco on the May 10 signal of “done,” the telegrapher at the Battery caused a rolling spark to go down the wire from the telegraph relay to a line of powder which ignited the fuses to the cannons.

Additional note: According to invoices at the California State Railroad Museum, the Central Pacific Railroad ordered its telegraph instruments and batteries from Lundberg & Marwedel, 810, Montgomery Street, San Francisco. Insulators were of Brooks patent.<sup>22</sup>

---

<sup>22</sup> The Brooks patents are: #45,221, Nov. 29, 1864, reissued #2,717, Aug. 6, 1867; #63, 206, Mar. 26, 1867; #69,622, Oct. 8, 1867. There were other “rams horn” insulators as well (although not used by CPRR), including Waite, #70,052, Oct. 22, 1867; Van Choate, #47,141, Apr. 4, 1865.

Wire was probably no. 8 or 9 gauge.<sup>23</sup> The park collections at Golden Spike National Historic Site include originals of wire and insulators.

### **Date**

No comment except the date change from May 8 to May 10 may have been more a result from the undermining and near collapse of the Devil's Gate bridge of the UP than the well publicized capture and holding-for-ransom of vice-president Durant. The bridge was barely repaired in time for the ceremony.<sup>24</sup> And not fully repaired at that, just shored up. According to accounts it sounds like the cars were pushed across the bridge individually (without locomotive), with the locomotive #119 picking them up on the West side. Individuals walked across, instead of riding the cars across.

### **Hour of Driving the Spike**

Bowman and other writers state that the driving of the spike occurred at Promontory at 12:47 P.M. This is based on the report at Washington, D. C. that telegraphic news of the driving of the last spike was received at 2:47 P. M., Washington time. Using the modern time zone system, with Utah two hours earlier than Washington, then Promontory time would be, indeed, 2:47. However, time zones did not come into accepted national use until the 1880s. Using the system of 1869, which based local time on the position of the sun, Promontory time would have been approximately 12:27 since its location 35 degrees west of Washington would have meant a time difference of 140 minutes. To confuse matters further, the Union Pacific time for the Cheyenne to Promontory run was based on Cheyenne, Wyoming. The Central Pacific Railroad set the time along its entire line based upon the company clock at Sacramento, California. Thus, according to the railroads, Promontory time, May 10, 1869, would have been either based on clocks in Cheyenne or Sacramento.

### **Numbers in Attendance**

Bowman estimates, based on photographs, that 500 or 600 attended the event. This is too low. The reporters noted the increase in numbers as trains continued to arrive, the last one arrived seventeen minutes after the ceremony began. The *Cheyenne Leader* reporter stated that the UP train he was on arrived with most of the loose population of Corinne given a free ride, a couple hundred people. A study of the military unit's participation by Paul Hedren reported that there were 264 soldiers present. The reporters for the *Deseret News* of Salt Lake City, the *Corinne Reporter* and others generally agree to a little over 1,000. Most of the railroad work crews, several thousand in April, had been sent home, or remained at work camps miles east and west of Promontory Summit. There is some suggestion that officials feared that mob warfare might break out, especially between the Union Pacific's Irish crews and the Central Pacific's Chinese. Thus, they were kept at a

---

<sup>23</sup> CP Invoices, California State Railroad Museum Library, May 1, 1869. Drawings of Brooks insulators are in Lockwood, *Electricity*, p. 164; wire gauge is described in Lockwood, while the spike set-up is not described, the wire and set-up used at the battery in San Francisco is in *Chronicle* May 11, 1869.

<sup>24</sup> See Eicholtz diary, University of Wyoming for details of the bridge engineer's movements and worry.

distance from each other, and, therefore, the numbers at Promontory were far smaller than they could have been.

Bowman states there were few women present, and states only two or three were seen in the photographs. One image by Russell, taken next to Durant's special car, shows six women. There are other women in the photographs, not officials's wives or family. One wonders who the woman on horse back is in the Russell image number 537, looking from the locomotive "Jupiter" to the "No. 119." Presumably a number of women were part of the contingent of "locals" (from Corrine and near by) that were present at the ceremony. However, the number of individuals in attendance from surrounding communities was probably small because of the long, rough wagon road to the site.

In the famous Russell photograph of the two locomotives pilot to pilot, the "champagne photograph," there appears to be a Native American (with long hair in ponytails on each side of his head) standing in the throng just in front of the pilot of the UP #119. His face is in shadow under his hat, but lightening a digital photo brings him out.

Bowman's information on the stage run is also incorrect. That is detailed elsewhere in this study. As the *Corinne Reporter* stated May 12: "The Last – the last run by Wells, Fargo & Co.'s stages, between the terminal of the two roads, was made May 9, 1869. The distance, eight miles, was accomplished in forty minutes. The drivers were John Mantle, Samuel Getts, and David Dickey, assisted by Mr. J. B. Keeny, agent at the terminus." Keeny was in a stage office tent at the last spike site on May 10.

### **Decorations**

Bowman states that no decorations or flags are visible, except the flag hoisted by Vandenberg. He is incorrect. Closer scrutiny of photographs show small American flags along the boiler of the Central Pacific's "Jupiter" and elsewhere. An invoice for the purchase of a dozen flags by Stanford from Dale & Co., Sacramento, is in the collections of the California State Railroad Museum. Reporters mention the flags and decorations as do the reminiscences of the children seen at the event. *Leslie's*, based on Russell's photographs and notes could report, on June 5, 1869, that Central Pacific's "Jupiter" "was gaily decorated with little flags and ribbons, the red, white, and blue."<sup>25</sup>

### **Point When Construction Ended and Maintenance Began**

No comment except UP issued its timetable Number 16, May 10, 1869 with scheduled trains to Promontory on May 10. Passengers were already using the line, with the first traffic connection at Promontory, May 11. For purposes of receiving Federal bonds for completing the track, the UP and CP did not receive their bonds until expected

---

<sup>25</sup> May 6, 1869 invoice, CSRM; *Chronicle* May 11, 1869; Bernetta Atkinson reminiscence in *Box Elder News* May 7, 1919.

improvements were accepted in November. By then, trains had been running for over six months.<sup>26</sup>

### **The Site**

Minor comments: the last spike site tracks run northeast to southwest not north-south; there were fourteen tents along the tracks at the last spike site with three more in the distance, not “twenty tents and shacks.” There were many more than four engines there on May 10. And the junction point was at or near Promontory Summit’s highest point on the CP, not UP, which was a half mile or so further east.

### **Stage Setting**

No comment except the south side of the CP track, or in reality, the land within the right of ways of the UP and CP overlapping rights of way were more easily controlled than the open area north of the CP track, where just beyond the right of way were the row of saloons and restaurants. A row of wagons served as grand stand here until after the ceremony, when the soldiers were marched up forming a perimeter while the photographers had their half hour or so in which to take photographs.

### **Driving the Last Spike**

Many other writers have described this scene better. For our purposes, a review is not necessary except to note that this description should not be used as an accurate portrayal of events because of its many omissions of details and commissions of errors.<sup>27</sup>

---

*Courtesy Bob Spude, National Park Service.*

---

Central Pacific Railroad Photographic History Museum  
© 2006 CPRR.org [Last updated 3/24/2006]

---

<sup>26</sup> Humason, *op. cit.*, was one of the first through passengers May 11; Maury Klein details the impact of not getting the government bonds in *Union Pacific, the Birth of a Railroad* (New York: Doubleday, 1987)

<sup>27</sup> See Johnson, “Rendezvous at Promontory,” *op. cit.*