

Nevada

Historical Society Quarterly



WINTER 1999

NEVADA HISTORICAL SOCIETY QUARTERLY

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Historical Society Quarterly

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SAMUEL E. TILLMAN AND THE WHEELER SURVEY Westward and Northwestward from Reno 1876 and 1878

Dwight L. Smith

The United States Geographical Surveys West of the One Hundredth Meridian, commanded by First Lieutenant George M. Wheeler, was charged with making a systematic topographic examination and mapping of the western half of the country. The several field expeditions dispatched in the 1870s to fulfill this mission also routinely engaged in collecting data and making scientific observations of the geology, natural history, weather and climate, and ethnology of the region.¹

Samuel E. Tillman (1847-1942), one of the principals in this endeavor, was born in middle Tennessee on a plantation near Shelbyville, the seat of Bedford County. His family was locally prominent by lineage and in its own right. His father, a Seminole War veteran, held various county offices, edited a local newspaper, and served in Congress. Tillman, along with his slave and white children playmates, participated in the gamut of agricultural and social activities of plantation life. They were all responsible for their share of the chores, including helping in the construction of a new plantation home.

The Civil War interrupted Tillman's semi-classical education at an uncle's academy in a nearby community. The people of middle Tennessee, including his own family, were of two minds about secession and the war. Armies of both sides crisscrossed the area and momentarily occupied the region several times. The location of the Tillman plantation and the succession of events fueled imaginations as well as rumors and uncertainties. Young Tillman was even "impressed" on one occasion to drive a wagon for a Confederate force, but he escaped a few hours later and returned home.²

After the war, acting upon the recommendation of Andrew Johnson, a family friend and the occupied state's military governor, President Abraham Lincoln appointed Samuel Tillman as a cadet to the United States Military Acad-

Completing the academic year 1875-1876 as an assistant professor at the United States Military Academy, Samuel E. Tillman was assigned another tour of duty with the Wheeler Survey in the West. This would be followed by two more tours in succeeding years.

emy at West Point. Four years later he stood near the head of the graduating class of 1869.³ He was posted to duty on the Kansas frontier at Fort Riley, but within months he was recalled to the Academy as an instructor in geology, mineralogy, and chemistry.⁴ Although his tenure at West Point was apparently secure, after three years he asked for and was granted transfer to field duty with the Corps of Engineers.

In the 1870s Tillman had four tours of duty in the West, a special assignment with the United States Naval Observatory to Tasmania, and another stint at the Military Academy.⁵ Finally in 1879 he returned to West Point where he was promoted to professor and head of the Department of Chemistry, Mineralogy, and Geology. His mandatory retirement in 1911 was only temporary. He was recalled to active service during World War I as superintendent of the Academy.⁶

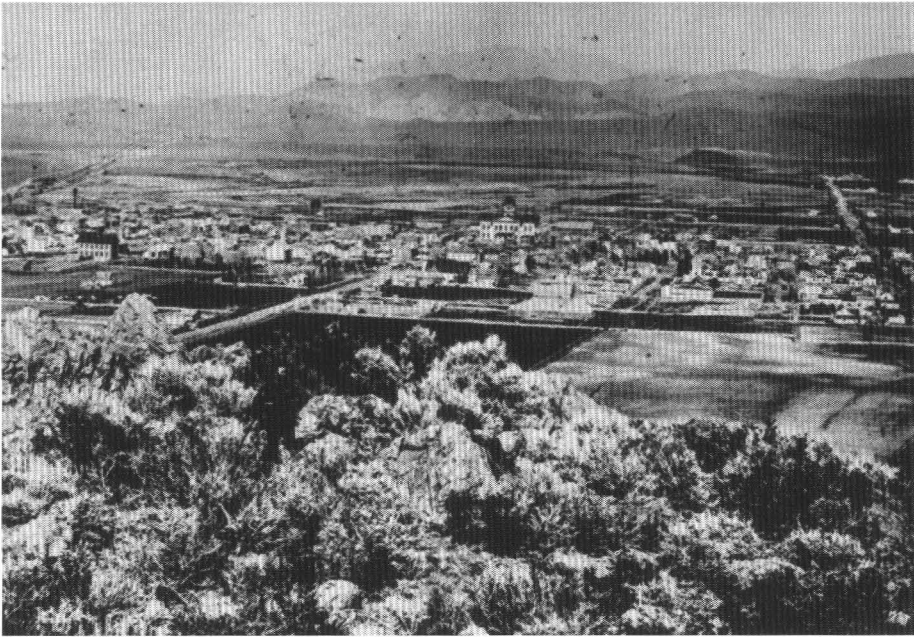
Tillman's tours of duty in 1876 and 1878 in the region from central western Nevada into California are of present interest.⁷ The 1876 area was "situated immediately north of the portion of the Central Pacific Railroad between the stations of Reno on the east and Cisco on the west. The country to be traversed lay principally in the uplifted region which constitutes the Sierra Nevada Mountains." The shortness of the season and the limited resources of personnel and equipment precluded a systematic and detailed survey of this entire region. With Carson City as his base of operations, his work was primarily in the southeastern part of the area to the westward of Reno.⁸

For 1878, "The country to be mapped lay principally in the Sierra Nevada Mountains, but at the southwestern corner extended a few miles into the Sacramento valley," continuing westward and a bit northward from that of 1876. Approximately, the area was to the south of Eagle Lake and north of Oroville, and to the west of Susanville and east of the Sacramento River. With Chico as his party's base, Tillman concentrated in the area's northern part in what is now the Lassen Volcanic National Park region.⁹

The personnel of Tillman's field parties included a topographer and assistant, a meteorologist, an odometer recorder, an astronomer, packers, and a cook. They were equipped with an array of instruments such as sextant, triangulation instrument, topographer's transits, barometers, psychrometers, thermometers, and riding and pack mules. And they carried rations and assorted supplies and equipment to sustain the functioning of the field operations.

For each year the field parties traveled hundreds of miles in rugged terrain and amassed topographic, hypsometric, geodetic, and meteorologic data sufficient to keep Tillman and an office staff in Washington occupied for winter months, organizing it into usable form.

In addition to Tillman's official published reports to Wheeler, a second source devotes supplemental attention to these tours of duty. It is his 233-page manuscript autobiography in the Library of the United States Military Academy at West Point, New York. For this, he utilized his diaries, notes he made for public



Samuel E. Tillman used Carson City as his base of operations in the 1870s. (*Nevada Historical Society*).

lectures, occasional fugitive notes, official documents he prepared, and other miscellany.

The two present accounts, for 1876 and 1878, are derived principally from this autobiographical manuscript. They are anecdotal, at once of keen observation and human interest, fleshing out and supplementing his official reports. He tells how a "judge" wearing a tall silk hat became the cook for the 1876 season and how later this cook was washed out of his bed one night. Keeping it from his men, Tillman relates how he became lost in the dark of night and how he found his way back to camp. A probably inebriated singing Knight Templar visited their campfire one night. How Tillman and his topographer met the challenge of establishing a triangulation station on a craggy snow covered peak illustrates how ingenious and daring they had to be on occasion. And Carson City waitresses believed the survey members could give them good tips for investment in mining stocks.

Similarly, Tillman's account of the 1878 season includes anecdotal items beyond the official report. He explains the consignment of asparagus and stoves shipped to his supply base. He credits his mule's sense of direction in getting them back to camp after a snow storm had obliterated their points of reference. He marvels at the vistas from the vantage point of the peak of Mount Lassen. He is intrigued with hot springs and volcanic cones. And he tells of the incident of the young lady school teacher and the mule formula.¹⁰



O'Sullivan's photo wagon. (*Nevada Historical Society*).

[1876]

With hard work and such pleasant and able associates the academic year [1875-1876] . . . passed very quickly and at the end of the year I was ordered again to duty on the survey work west of the 100th meridian. The work of that survey was then being conducted further north than in '73, in Nevada and California. I reported in Washington for duty on Aug. 10th.

Arrangements were then being made for several parties to do field work before the weather became too cold. I was placed in charge of a party which was to be fitted out for the work at *Carson City*, Nevada. I arrived at this town on August 31st and after about a week occupied in separating and distributing the animals and material sent there for three other parties, I and my party left Carson City on Sept. 6th. The animals employed at that time on this survey work were *mules only*, they being more sure-footed than horses and capable of harder service on less food than horses. As was always the case when some of the animals had to be broken to their packs and saddles there was both considerable hard work and some amusement involved.

In connection with the preparation for our departure, I was called one morning from our camp to assist in adjusting some slight trouble which one of my enlisted men had gotten into. I went to the village where the trouble was being investigated, and was introduced to the gentleman who was hearing the case

as "Judge Ross." He and I had *no* trouble in adjusting the case of my soldier, I becoming responsible for his good conduct until we should leave the town. The judge was evidently familiar with the duties of a justice of the peace, a very friendly disposed man; and after a short conversation with him, I found that he was quite familiar with the section of the country in which I was to work during the next three months. He asked a number of questions about the purpose of our survey, the *number* of members of my party and something of the duties of each member and how much paid. We parted with the usual expressions of pleasure at having met each other.

I was surprised that afternoon by the arrival of the judge at my camp, wearing a tall silk hat. He said, that after learning all that I had told him about our work, that he had come to ask if he could have the position of "cook" for the party, which I had said was not yet filled. After a statement of several of the more responsible and important duties of the cook and hearing his remarks thereon, I gladly accepted his services. He reported next morning at my camp just after early breakfast. Before ten o'clock he had been twice thrown by his selected mule but he prepared lunch on time.¹¹ From that date September 5 until the party was disbanded on November 22 Ross proved an excellent cook, able to vary to an astonishing degree our rather monotonous menu, was always pleasant in manner, on good terms with and liked by every member of the party, which was not always the relation existing between such a party's members. He was an intelligent and interesting man and had considerable experience in the life of the then West.

One little incident that befell him while with us created great amusement to other members of the party and equally so to himself. That happened in this way—one night in late November we made camp close alongside one of the V-shaped channels built to float timber and other material from higher to lower levels, known as *flumes*. When we came to make down our beds for the night the flume was perfectly dry and Ross thought it had been long out of use. He also suggested that the flume was a better bedstead than the ground about and confirmed his belief by spreading his blankets in the flume. Before Ross was awake the next morning, the water from somewhere above was turned into the flume and as the down *slope* was considerable it came down on Ross with both force and volume much to the amusement of himself and of all the other members of the party who were aroused by his yells and his efforts to hold on to his blankets.

A singular experience came to me while in camp in Clover Valley, Sierra County. This valley was two or three miles long and less than a mile wide. We were in camp some half mile from a ranch, the only one in the valley. One evening after supper I went down to the ranch and while in the cabin a dense mist settled over the valley. When I started back to my camp it was intensely dark, but it never occurred to me that I might be unable to find my camp. The blackness was almost impenetrable, but as the valley was entirely open there

was no difficulty in getting ahead. Soon I became aware that I had missed the camp. I did not like to call out, 1st because there was a considerable herd of cattle in the valley ready to answer any call in a body, in a very very spirited manner, 2nd I did not care to admit to my men that I was unable to find the camp. So I used my best judgment and pushed ahead. After a time I came suddenly upon a light which I assumed was from the camp, but it proved to be the cabin that I had left. I had made a large circuit to the left and came to the cabin from the direction opposite that I had left it. Squaring myself by the single point of reference I made for the camp again. Of course, I now had to mind my previous direction and attempted to correct for it by bearing more to the right than I would have involuntarily done. In this way I found the camp but when I first saw the light I was again beyond and to the left of it. It was the most complete turn around that I ever had. It showed me I was what has since been designated as right-legged. I have frequently verified that fact by trying to go to a selected point with my eyes shut. I invariably swerve to the left. I have tried it several times on the plain out here. It is said that nearly everybody is similarly organized.

One night in the latter part of October that year we were in camp at the north end of Sierra Valley. Shortly after supper while sitting around the camp fire, we heard the voice of a man half singing and half yelling. As it came nearer we could distinguish occasional words and soon there came with perfect distinctness, "I am a Good Templar, that is what I am, and I prefer to stay so too". He kept repeating this and when he came nearer we asked him to get down and tell us more about it. We learned then that the branch of his order had met a[t] Loyalton and that a number of them had been arraigned for drunkenness on the last 4th of July and an attempt made to expel them. The sinners finding themselves more numerous than the saints had expelled the latter, hence the great delight of our visitor.¹²

[After camping the night of November 1 in eighteen inches of snow at Summit Station, the highest point of the Central Pacific Railroad, where it crosses the Sierras, we] started for Castle Peak at 7:00AM under the direction of Guide. The snow about 18 inches deep. After accompanying us about two miles and bringing us to within sight of the Peak, he then gave us directions as to how we were to go and left us. We saw at once that the point he meant was not the one we had taken in our observations and that his directions could not be followed. So we took the course most favorably appearing to us and set out for the Castle. We were enabled to ride our mules to within about 600 feet of the top, but had many plunges and tumbles into the deep snow. At last we had to abandon them and start on foot. We left a man to shovel a place in the snow for the mules and we set forward with the instruments. All went well until within about 200 feet of the top we came to a sudden declivity of about 70 feet. By judicious "boosting" and use of rope we ascended this in about 1 1/2 hours. But it provided us with cold hands and feet, which were very inconvenient a

little later.

We soon discovered that our climb was for nothing for we ran square up against a precipice which barred further progress. We descended and we went further along the main spur until the way looked practicable to the top, then up again. Soon we came to a vertical ledge which threatened to end our labors. But the Topographer, Mr. [Gilbert] Thompson, fastened a rope around his waist and gave the other end to us and started up. He could have fallen several hundred feet without the rope but with it not more than 40. But he made the top and crawled like a cat along the sharp spur whose summit he had not reached. He fastened the upper end of the rope and called out for the next candidate to [manuscript illegible] himself and that he would draw in the slack. I went next, but did not dare to look down. I made the top, but either side I might descend several hundred feet by letting go. We now hauled up the instruments and as no others wished to come up we started for the last rock constituting the Castle. We easily made the base but from here it rose abruptly 60 feet. It was Volcanic conglomerate or we could never have gotten up. But the projecting stones gave foot hold and we drew the instruments up, with ropes.

When on top there was scarcely standing room and myself and Mr. T. gave notice when either wished to move. It was a dizzy height to look down from but the view was such as is seldom seen and we consoled ourselves by the reflection that it would perhaps never be seen again under like circumstances. Downelike lay like a silver leaf among the pinaced pines. And the snow sheds of the C.P.R.R. continuous here for 40 miles, reminded one of an immense serpent coiled along the mountain side. But we had little time to admire the scenery. The sun, rapidly descending, sent its slanting rays above the frozen hollows and we recalled that night must not find us far from our mules. So the descent began. We thoroughly chilled. By careful clinging to the pudding stones we reached the first step. Our packer had in the meanwhile found an easier descent from this level. Guiding us carefully among the rocks we reached to where the snow lay. Trying it with our boot heels we found it sufficiently soft to enable us to walk upon it. We made a few steps down and it occurred simultaneously to us to sit down, and so doing we had easy descent to bottom.¹³

The parties working in that region that year besides my own, were that of Lt. [Rogers] Birnie, [Jr.,] Lt. [Montgomery M.] Macomb and Lt. [Thomas W.] Symons.¹⁴ All of these were fitted out at Carson City and started fieldwork from there in early Sept., and had stopped work for the season and returned there for disbandment between the 23 of November. The disbandment was completed by December 5. Before closing reference to this work in the Lake Tahoe region, there are one or two other incidents perhaps worthy of mention.

When the field operations were practically closed, I left the party and returned to Carson City by the C.P. Railway to make some investigations regarding some of the important silver mines there. *My departure* by train left my mule without a rider and as she had been an excellent saddle animal for me

during the past three months there was competition between several members of the party as to which should have the use of the animal for the remaining few days of the field service. The mule had always behaved excellently with me, but she became very obstreperous when her new riders mounted her, so much so that after one member of the party had been thrown by her, and another had become entirely discouraged in his efforts to induce good behavior on her part, she was allowed to proceed during the closing days of the season without any burden.

This characteristic of horses and mules to make a *distinction* in their treatment of their human riders has been frequently observed and commented upon. It is more *often* and more *positively shown* by mules than by horses. It, too, is largely instrumental in having given mules the credit for greater intelligence than horses, a reputation, which from a wide acquaintance with both classes of animals, I think is undoubtedly well deserved!

My attempt, above referred to, to secure more than common information about the important silver mines near Carson City was a failure and gave me nothing worthy of mention.¹⁵ During the days occupied in disbanding our working parties, we officers in charge took our meals at a hotel in which all the table waiters were young girls and it was a new and interesting experience to find how eager they all were to talk of mining stocks and how persistently they took every opportunity to do so. Sometimes all the waitresses in the room would be attracted to our table to hear the opinions of us newcomers as to stock values, while guests at other tables waited to give their *meal orders* and wondered what was the attraction at our table. Two of our members were posing for experts on stock values and the waitresses were anxious for such opinion.

On December 6, we four chiefs of parties were leaving for Washington, or other points in the East. We had directed a bus to call for us and our baggage at the hotel, to take us to the R.R. station in time for the departing train. When the bus arrived, we found it almost fully occupied by rather gaudily dressed young women. We then learned for the first time that the *departing* train (that we were to take) was the *incoming* train, as soon as it *unloaded* its Carson City passengers, so the bus at this hour carried passengers to the departing train and brought them to the city from the incoming train. We also learned that the bus at the hour *habitually* called at the domiciles of certain young women to take them to the depot that they might have prompt information of the arrival of new visitors to the city, such being an important item of daily news; and the young women whom we found in the bus were not leaving the city, but only taking a short drive to and from the R.R. station.

After a few days' stop in Salt Lake City to establish there a branch office of the survey, I reached Washington a few days before Xmas day 1876. Upon reaching Washington my especial duty in the office of the survey was supervising and assisting in the computation of the various astronomical and triangulation observations of the different survey field parties.

The survey office was then still at 1813 F. St. . . . All the officers and other survey employees were now fully occupied in transcribing to paper the results obtainable from their field data. The office hours were from 9:00 to 5:00PM daily with a half hour out for lunch. However, the change from work in the field, with its accompaniments to that of an office in Washington made many delightful social relaxations available which were greatly enjoyed by the survey members for the next four months, to May 1, 1877, at which time preparation for the field work began again.

[1878]

On July 17, I left Washington for Ogden, Utah, under instructions to carry-on the survey work of '78 in the same region as that of '77;¹⁶ but upon arriving at Ogden July 24, the prospect of Indian troubles in that area, caused a change [of] plan and my area of work was transferred to northern California. I left Ogden, July 28 to make arrangements for establishing a base from which to carry on the season's work. The point which had been designated for that purpose from Washington, and telegraphed to me at Ogden, was "Soto"

This change of base, of course, made necessary a reshipment of the survey supplies from Ogden to "Soto." These supplies consisted of the four month's food supplies for the party of 8 men, the riding and pack saddles and blankets, bedding of the men, certain ordnance and medical stores, all of which had been shipped to Ogden by the Q.M. and Commissary departments of the army. A reshipment made necessary new shipping bills for the whole, which was again attended to by the agents of the Q.M. and Commissary departments in connection with the R.R. officials. I waited at Ogden until these officials notified me that the shipment had started on its way.¹⁷

At the same time I was informed that it would not reach its destination inside of four days. I took advantage of these four days to make my first visit to San Francisco, and after a delightful experience there went on to receive my supplies at "Soto". On the way from San Francisco I learned that "Soto" was not a regular station of the road that there was only a tool house and short switch there. There was no provision there to receive freight and . . . the nearest freight depot to Soto was at Chico.¹⁸ I accordingly left the train at Chico.

In the station there I met a large fine looking man and asked him where the freight office was. He told me and then asked me my name. Upon learning this he said, "They are wondering in the freight office what you are going to with 500 lbs. of *asparagus* and several stoves in this climate." It was then the 2nd of August. I went to the freight and transferring office and found that in reshipping the freight and transferring to another road the name of our pack saddles (apperejos) had gotten changed on the bill of lading to "asparagus" and the ordnance stores to stoves. The huge packages of apperejos certainly did appear

a large amount of asparagus and the stoves very unnecessary in the Sacramento Valley on that date.

At the freight office I learned the gentleman who had spoken to me was Gen. [Henry B.] Davidson. When he learned that my base of operations for my survey work from that time (Aug. 2) to the end of December was to be at Chico, both he and his wife were most cordial in their efforts to have me as a guest as often as my labors would permit, and on several occasions during that season I greatly enjoyed their hospitality. Gen. D. had received an appointment as cadet to West Point for gallant services as sergeant of a Tennessee regiment at the Battle of Monterrey in Sept. 1846. He graduated in 1853 in the same class with Gen. [Philip H.] Sheridan and a few years later served at the same post with him.

He recalled having camped his brigade of cavalry on my father's place in October 1863, but he never knew, until I informed him, that five of his men had left their worn out horses there and taken remounts from our stables.¹⁹ As in all my meetings with graduates of both old and young I found Gen. D. was fond of recalling and talking of his experiences as a cadet and retained only pleasant memories of his associates then.

That same year in California, in late December I had some duty calling me to Sacramento. Upon arriving at the station there I was met by another graduate of the class of 1852. He too had joined the Confederacy and had become a Gen. Off. Gen. G. B. Cosby.²⁰ He said that he had heard of my coming and upon meeting me announced that I was to be his guest while in the city. Besides his four years as a cadet he had served there two years as assistant instructor. He told me that he had been farming nearly ever since the close of the Civil War. He said that, when he heard that I was to be in Sacramento he thought it would be a good opportunity to learn something of West Point and of men who had been his friends and associates then.

On August 7th the animals, their equipment, the rations and all the necessary supplies for beginning the work, together with the members of the party [had] arrived, at Chico. On August 9th we left our base with 35 days rations to begin the field work of the season 1878

In many respects it was an interesting area and in its higher portions were several mountain valleys, as the American, Indian, Genesee and Big Meadows. The higher portion also included Lassen Peak and a part of that volcanic area. The slope from the higher to the lower level of the Sacramento river carried a great many streams of clear water, *so many* that only 8 or 10 at that time had been given names. However, owing to the fact that the region was one of abundant rainfall, most of the *higher points* as well as the ridge were covered by a thick vegetation which made much of the work we were doing unusually difficult

Among the more interesting experiences, incidents and observations of this season's work there are a few which I deem worthy of note. The first among



Quincy and American Valley. (*Nevada Historical Society*).

these are connected with the area in the immediate vicinity of *Lassen Peak*, then called a butte by the population of the region. On the night of September 25, my party was encamped at Prattville, Plumas County, California, approximately 27 miles, in an air line, from the peak. The morning of the 26th opened bright and clear and in the forenoon in the quiet air over the valleys were seen floating gauze-like wisps of what appeared to be spider webbing. These were sure indications, according to local belief, of a coming spell of fair weather. Hope that we might be thus favored we started that morning for Lassen Peak which it was desired to ascend in good weather, for it was to be one of our principal triangulation stations.

The promise of fair weather held until the late afternoon of the 26th there was a fall of half an inch of snow that night. A haze in the early morning of the 27th indicated an unpromising day and by 2:00PM there was descending snow in large flakes and great numbers, which limited distinct vision beyond 100 yards. It was still snowing in the morning of the 28th, with less numerous but smaller flakes. We continued our march toward the peak taking a couple of compass bearings to maintain our direction. I had been riding in front all day, and at about 5:00 P.M. as our direction was descending a gentle slope two deer, apparently much bewildered, appeared not over 50 or 70 yards ahead of me. I dismounted and with a shot from my carbine dropped one of them where he stood. Going forward a few yards, I saw the other one stop just across a small stream flowing down the opposite slope. By a second shot it was also killed.

Thinking that we must have approached quite near to the peak, embarrassed by the still incoming storm, and having our larder suddenly increased by two deer, we went into camp for the night. The storm increased in violence and the wind blew with terrific force through the swaying pines.²¹ We were much afraid that some of the trees would be blown over upon ourselves or the animals. No supper could be cooked. There was only a small feed for the mules and they would unquestionably have left us if turned loose, so we tied them all up, stretching the picket line in a small circle. To add to the general discomfort and dreariness two wolves, or perhaps mountain lions, circled around the camp mingling their hideous howls with the screeching whistling winds.

In the morning of the 29th there was a strong gale carrying fine wet snow; by noon the snow was 6" deep and the gale increasing. The animals in the morning had been given a ration of feed at the picket line and by noon they stood and looked like frosted statues. Our first thought was to return to a lower level after our midday repast; however, it was very desirable to discover how *near* we were to the peak, and to obtain such information of it as a hasty inspection might afford for use in our next visit to it; and as packing up and moving in such a storm was, more uncomfortable than remaining as we were, we concluded to remain.

We had one more grain feed for the mules, and the human members of the party had displayed great energy and skill in: *first*, providing a refuge in which the cook could operate and produce food for the other members; *second*, in providing protection for themselves in anticipation of the discomforts that the night was expected to bring. The next morning, . . . opened inspiringly clear and unusually still and when we walked out from the timber in which we were encamped we found ourselves within four miles of the peak, whose summit, 4000 feet above us, glistened in the early sunlight. We were thus favored by a spectacle of impressive and indescribable grandeur.

The snow that morning at the level of our camp was 18" deep. Descent to a lower level thus became our next immediate objective. Orders were given to feed the animals their last ration of grain, the cook to give the human members their breakfast promptly. The two topographers and myself after . . . some coffee mounted our mules and rode out for a closer inspection of the peak in anticipation of our future visit. From our experience in mountain climbing we quickly decided that there would be little difficulty in ascending the peak. However as we were *returning* to camp, my chief topographer who, after a considerable climb, always wished to indulge in a cup of tea before beginning the *observation* work, called out, "Lieutenant, from our inspection of that peak, I fear I shall have to carry up wood to prepare tea." At our later visit he did carry up the fuel for his tea.

Getting back to camp and finding everything in readiness we set out upon the descent to a lower level. The fallen snow, of course, had obliterated every trace made by our passage through the heavy timber in going toward the peak

two days earlier. Yet we were desirous of *descending* practically along the *same* line which had been carefully selected, and which would bring us out of the timber at the place desired. As in the ascent I was now leading the party in the descent, and responsible for holding the correct line.

This morning we had not gone far into the timber until I noticed about 20 yards to my *right* a *large fallen* tree which had attracted my attention on the way up to the peak. I now instantly saw that I was slightly off our line of ascent, for that fallen tree was on my right also in the ascent, and now should be on my left if I were on the line of travel. Thus seeing that our line of ascent was some 35 or 40 yds. to my right, I concluded to test the knowledge of my mule to see whether she retained recollection of where our line of ascent was. Accordingly [I] rode straight along that side of the fallen tree until I was approaching its upturned roots. Then I dropped my bridle reins and left my mule perfectly free to move in any direction. As soon as she felt herself *uncontrolled*, while keeping the *general* direction, she began to bear to the right and when we had passed the upturned roots she bore still more to the right until suddenly she turned, almost a right angle, to her left. At this turn to her left, I looked back to the upturned roots of the tree and realized, beyond question, that Nellie (my mule) at that left turn was exactly on the *travel line* of our work to the peak.

For the remaining 6 miles through that heavy timber and trackless snow I let her be the guide. *Twice more* before we passed from the timber I saw objects that I recalled having seen on our way to the peak two days before, and we came *out* of the timber into the clearing *at the precise* point at which we had entered it on our way to the peak. This result pleased my chief topographer, who had been my companion for four years on our survey work, and he rode up to me and said, "Lieutenant, you did a fine job in bringing us through that timber and coming out at the right place." I replied that, "The credit was due to my mule," which was a fact, for I had given her practically no guidance on the return trip.

The power of an animal [a mule] to *follow exactly* a *completely hidden* line of previous travel is different from the sense of direction possessed by many other animals. I have often observed it in other members of the equine group but have never seen it especially referred to!

On the morning of Oct. 4 I put my party again on the move to Lassen Peak. On the night of the 5th we camped close to the base of the peak. The morning [of] the 6th was a magnificent gift from nature. My chief topographer and myself were on the top of the peak at 8:45 A.M. We there stood 10,440 feet above sea level and at that altitude the atmosphere was remarkably clear and the blue dome of the sky perfectly cloudless.

We could see the waters of the Sacramento River at only 200 feet above sea level as we looked downward 10,200 feet from our lofty pinnacle. Mt. Shasta which was 70 miles away in air line seemed less than half that distance away. The variegated area of timbered ridges and open spaces that lay between, made

interesting as well as beautiful. The temperature all along the banks of the stream was 100° F. or more. Just below the springs, at a point where the stream of water was 3 feet wide, with average depth of 7.5 inches it flowed with a velocity of 5 feet per second. The temperature of the water there was 85° F. Just above the upper spring it was 51° F. The members of the party took advantage of the warm water to indulge in bathing that morning.

Besides the effects of subterranean heat shown by the erupting hot springs just mentioned there were other very impressive evidences of such heat shown by comparatively recent eruptive action in the vicinity of the peak.

The most interesting of these was a very perfect specimen of a cone of cinders which was the shape of a vertical frustum of a cone with apex high above. The cinders, of evident volcanic origin and varying in size from that of a grain of wheat to half an inch in diameter, had taken the natural shape for such sizes. The ascent of the cone was quite difficult due to the mobility of the pebbles, its height about 450 feet. The diameter at the top of the frustum is about 400 feet.²²

From the *upper* rim of the cone the *interior* presents a very remarkable appearance. The upper *interior* surface of the cone to a vertical depth of about 30 feet is also the frustum of a vertical cone, the apex of which is far below. At that vertical depth of 30 feet from the base of the *inside* frustum there projects a circular shoulder which appears to be the base of a smaller cone with apex *much* farther down. The *interior* of this smaller cone, if it is a cone, is visible from above until descent shuts off the light, and as far down as it could be seen it did not seem to diminish perceptibly in cross section and thus indicated that its apex was far down.

This beautifully symmetrical cone rises about 300 feet above the lava that was there erupted. It is evident that the outpour of lava did not take place *through* the cone, for the northeastern portion of the base of the cone rests *on* the lava and part of the base of the cone the lava is again seen underlying. Also, at this *southeast* point there is a crevice or channel visible for some distance in both directions in the black lava which *underlies* the cone. This *crevice* is very certainly the exit of the lava from below to the surface, and its direction, and the appearance of the exuded lava, clearly shows the *direction* of lava flow before and after the eruption. This direction was first southward but gradually bending eastward.

An area of lava of about 3/4 of a mile in width and one and a half miles in length and perhaps 150 feet in depth is all that came from *this* lava eruption. This black lava field is of *great* roughness. The upper surface is plowed by many ravines or uplifted by bubble-like protuberances, many of which are now broken in, so that it is very impressive and almost grand even in its barren desolation, which is now in remarkable contrast to the neighboring areas of vegetation.

At the time of the outflow of the black lava there appears to have existed a shallow lake extending two or three miles from a point directly east of the cone to *northeast* thereof. The erupted lava cut this lake in *two* and the lake existing

there now covers part of the same area though a considerable portion of the old lake area is now lava covered. From the high lands to the east and southward of the cone there descends a gulch or ravine which evidently carries considerable water during the seasons of rainfall and melting snows. This water at the time of my visit entirely disappeared under the lava. A certain and true explanation of the origin of the cinder cone is made difficult by existence of the interior cone with its apex apparently *far* below²³

One more amusing incident of this season I will give. We were working in between the eastern and western summits of the Sierras. The climate there is always delightfully cool in the shade even in the hottest weather and always cold enough for fires at night. The result is that the people from the Sacramento Valley and other low altitudes came up to spend a portion of their rainless summers and autumns. They come and camp out, living in tents and having the most free and delightful existence. One of our permanent camps was made in the vicinity of one of these summer parties and it was a pleasure to them as well as to us for them to visit our camp when we returned in the afternoon.²⁴

Among the visitors was a young lady school teacher, who was fond of visiting us at our camp and who was always welcome. She was bright and entertaining and took or pretended to take an interest in every part of our work from the packing of the mules to the triangulation computation, and moreover, she understood a deal about it all. She was so well up that there gradually developed a desire to in some way impose upon her. Several mild attempts were made without success. I was not an active participant in this game, which finally developed as follows.

The chief topographer and myself occupied one tent and the assistant topographer and meteorologist another very near by. It was arranged one day that when [we] got back in the afternoon, if the young lady and her friends came over as was expected a well laid plan was to be operated. She and two younger half grown girls were sitting in front of my tent. The packer came up to [assistant topographer] Mr. Polhemus's tent and asked some questions. Mr. P. called out in very distinct tone to Mr. Thompson, who was at my tent and said, "Mr. T. the herder wants to get the 'mule formula'." Mr. T. replied, "Send him over here and I will give it to him." The man came over and Mr. T. took out a slip of paper and read as follows " $W = [(D + T) = L \div (B + R)]$ " and said "Now remember that B with us is always one and that T must be expressed in minutes. Tell the herder not to get things mixed up or we will have trouble again finding those mules in the morning."

The young lady inquired "What is that he is after?" Mr. P. who was a most ministerial looking man had now come over and he answered: "It is the formula we use for finding the mules in the morning." He then explained that we had to let them out to graze at night and that it was often difficult to find them in the morning; and he said that partly from general principles and partly by experiment we had developed a formula which enabled us to find them pretty

well. He then explained that the letters meant, as follows: D etc.²⁵

Mr. Thompson and I during this time became very much absorbed in examining his odometer readings for the day. In a minute, Miss Sanders, the young lady, addressed us to know if it were true that we used a formula to find the mules. We admitted that it was true. Well, she said, "You may use a formula but I don't believe that it enables you to find them" and that was the nearest we came to a good joke on our alert friend, but I have always considered the effort as very original and really witty.

My party's field work for the season of 1878 closed on December 5 and the party was disbanded at Chico on that date.²⁶ Except [for] the personnel, the entire equipment of the party including the animals was sent to Sacramento. I was detained at Sacramento until December 18 when I left for Ogden, reaching there on the 20th. Was occupied at Ogden for 8 days in starting a field office there. Left there on December 28 and arrived in Washington January 2, 1879.

Upon arriving in Washington I was directed to superintend and take part in the reduction of the astronomical, geodetic, topographical and hypsometric observations made by the different field parties in their work of [the] preceding year. This duty fully occupied all my office hours for the next four months, and during that time the *social* relations of Washington caused my hours of relaxation from official work to pass very agreeably.

NOTES

¹U.S. Geographical Surveys West of the 100th Meridian, *Annual Report upon the Geographical Surveys West of the 100th Meridian [1873-1884]* by George M. Wheeler, 12 vols. (Washington: Government Printing Office, 1873-1884); Laurence Frederick Schmeckebier, *Catalogue and Index of the Publications of the Hayden, King, Powell, and Wheeler Surveys* (Washington: Government Printing Office, 1904).

The Wheeler Survey manuscript records are widely scattered. C. E. Dewing, "The Wheeler Survey Records: A Study in Archival Anomaly," *American Archivist* 27 (April 1964): 219-27.

²Excerpts from Tillman's autobiographical account of his early years have been published as Dwight L. Smith, "An Antebellum Boyhood: The School Days of Samuel E. Tillman," *Tennessee Historical Quarterly* 46 (Fall 1987): 148-56; Dwight L. Smith, "An Antebellum Boyhood: Samuel Escue Tillman on a Middle Tennessee Plantation," *Tennessee Historical Quarterly* 47 (Spring 1988): 3-9; Dwight L. Smith, "An Antebellum Boyhood: Samuel Escue Tillman's Fascination with Corn, Bulls, and Deer," *Tennessee Historical Quarterly* 47 (Fall 1988): 142-52; Dwight L. Smith, "Secession, Armies, and a Federal Spy: Samuel E. Tillman's Account of Seesaw Tennessee," *Tennessee Historical Quarterly* 49 (Summer 1990): 103-11; Dwight L. Smith, "Impressment, Occupation, War's End, and Emancipation: Samuel E. Tillman's Account of Seesaw Tennessee," *Tennessee Historical Quarterly* 49 (Fall 1990): 177-87; Dwight L. Smith, "Leaving Home, Former Slaves, and an ex-President: Samuel E. Tillman's Transition Years, 1865-1869," *Tennessee Historical Quarterly* 51 (Winter 1992): 213-22.

³For Tillman's description of his years as a cadet at the United States Military Academy, see Dwight L. Smith, "Cadet Life in the 1860's," *Assembly* (June 1975): 10-1, 35-7.

⁴Dwight L. Smith, "The Kansas Frontier, 1869-1870: Lt. Samuel Tillman's First Tour of Duty," *Kansas History* 12 (Winter 1989-1990): 202-9.

⁵Dwight L. Smith, "The Wheeler Survey in New Mexico and Arizona: Samuel E. Tillman's Tour of Duty in 1873," *New Mexico Historical Review* (July 1991): 303-25; Dwight L. Smith and Tim Jetson, "Samuel Tillman and the Transit of Venus, Campbell Town, Tasmania, 1874," *Tasmanian Historical Research Association Papers and Proceedings* 41 (September 1994): 141-53; Dwight L. Smith, "The Wheeler Survey in Utah, Idaho, and Montana: Samuel E. Tillman's Tour of Duty in 1877," *Utah Historical Quarterly* 59 (Spring 1991): 146-63.

⁶For a useful biographical sketch, see John Dickson, ed., *National Cyclopaedia of American Biography* (New York: J. T. White & Co., 1924), 8: 273.

⁷The summer of 1877 Tillman was with the Wheeler Survey in Utah, Idaho, and Montana. Smith, "Wheeler Survey in Utah, Idaho, and Montana."

⁸Precisely, the 1876 area was defined as bounded on the north and south by latitudes 40° 16' and 39° 18' and on the east and west longitudinally by 119° 38' and 120° 38'. This and detailed information about the work and findings of Tillman's party for this season are in "Executive and Descriptive Report of Lieutenant Saml. E. Tillman, Corps of Engineers, on the Operations of Party No. 1, California Section, Field Season of 1876," U.S. Congress, House, *Index to the Executive Documents, Report of the Chief of Engineers No. 1, part 2, volume 2, part 2, 45th Cong., 2d sess., 1877-78, Serial 1796, 1253-6*.

⁹For 1878, the specified boundaries were latitudes 40° 40' and 39° 50' on the north and south, and longitudes 120° 37' 30" and 122° on the east and west. The official detailed account of this season is "Report of Lieutenant S. E. Tillman, Corps of Engineers, in Charge of Party No. 1 Utah Section, Field Season of 1878," U.S. Congress, House, *Index to the Executive Documents, Engineers, No. 1, part 2, volume 2, part 3, 46th Cong., 2d sess., 1879-80, Serial 1906, 2187-92*.

¹⁰Conventional and silent editorial devices have been introduced in this literal transcription to make it more readable: paragraphing, capitalization, rendering flourishes into appropriate punctuation, deletion of repeated words, and elliptical omission of extraneous details.

¹¹This and the previous sentence are inserted here from "Fragmentary pages from informal talks given at West Point & elsewhere," Samuel E. Tillman Papers, Library, United States Military Academy.

¹²This and the previous paragraph are inserted here from *ibid*.

¹³The ascent of Castle Peak described in this and the previous two, paragraphs is the only substantive entry in Tillman's 1876 diary. Manuscript in Tillman Papers.

¹⁴For their official reports, see U.S. Congress, House, *Index to the Executive Documents, Report*

of the Chief of Engineers, No. 1, part 2, volume 2, Cong., 2d Sess., 1877-78, Serial 1796, 1262-72, 1278-84, 1257-62.

¹⁵Wheeler's personal interest in the mining potential of the American West exceeded the instructions under which the surveys were conducted. Moving beyond the annual and final reports of the several field expeditions, Doris Ostrander Dawdy "exposes a hidden agenda not previously considered by historians." See her *George Montague Wheeler: The Man and the Myth* (Athens: Swallow Press/Ohio University Press, 1993).

¹⁶George M. Wheeler, Special Orders No. 27, July 6, 1878, U.S., Engineers Office, Geographical Surveys West [of the] 100th Mer[idia]n, Record Group 77, National Archives, Washington, D.C.; Smith, "Wheeler Survey in Utah, Idaho, and Montana."

¹⁷This and the succeeding five paragraphs are relocated here from Tillman's earlier account of his Civil War experiences. For the context in which they were set originally, see Smith, "Secession, Armies, and a Federal Spy."

¹⁸Soto was situated some fourteen miles northwest of Chico, at the southwest corner of the rectangular area to be surveyed.

¹⁹Henry B. Davidson and Tillman's mother were cousins. Smith, "Secession, Armies, and a Federal Spy"; #1611, *Register of Graduates and Former Cadets of the United States Military Academy* (West Point, New York: West Point Alumni Foundation, 1970); "Fragmentary pages from informal talks given at West Point & elsewhere", Tillman papers.

²⁰George B. Cosby. #1552, *Register of Graduates and Former Cadets*.

²¹This sentence and the balance of the paragraph are inserted here from, "Fragmentary pages from informal talks given at West Point & elsewhere", Tillman papers.

²²See sketch of this cone made by Gilbert Thompson, the topographer. The legend of this sketch contains a typographical error. The latitude reading recorded there as 41° 32' 40" should read 40° 32' 40".

²³Later in his autobiography, Tillman wrote that "the explanation of the origin of the *cinder cone* appears to me evident, all doubt with reference thereto being removed by the conclusion, that my observation at the time was erroneous in thinking that there existed an interior cone with apex very *far* below as indicated by the slight decrease in cross section of the cone with descent. My conclusion *now* is that the apparent decrease in cross section was due to perspective and what I *then* assumed to be a *cone* was really a *cylinder*."

"It now appears evident to me that at or near the cessation of the outflow of the *black sheet* of basaltic lava which was outflowing in an almost horizontal direction through the crevice like opening . . . [that it] was pierced by the upshoot of a cylindrical column of nearly perfect liquid matter from depths entirely below the basaltic sheet of outflow. This more liquid material spread over and built up the lower 300 feet of the cone and at that point an exserting discharge of material took place which spread over the top of the cone at that level and produced the apparent shoulder in the interior of the cone and built it up vertically about 30 feet.

"The mineralogical material of the cone is about the same as that of the basaltic sheet of lava, but was more perfectly fused. At the southwestern base of cinder cone are a number of globular, concretionary masses, a sort of volcanic bullets, of a dark licorice color containing quartz-like crystals, probably analcime or leucite. These bullets evidently were thrown up from the cone itself, but it is perfectly evident that the sheet of basaltic lava . . . never came up through the cinder cone. It was the material of the cone that came up through the lava and formed the cone."

²⁴This and the succeeding four paragraphs are inserted here from "Fragmentary pages from informal talks given at West Point & elsewhere," Tillman papers.

²⁵"D = direction

T = time last seen

L = animal leaving

B = bell man

R = rate they [were] moving at."

This explanation of the symbols in the formula is found on the reverse side of one of the pages of *ibid*.

²⁶Geo. M. Wheeler, Special Orders No. 30, November 15, 1878, U.S. Engineers Office, Geographical Surveys West of the 100th Meridian, Record Group 77, National Archives.

ROAD TRANSPORT IN NEVADA: Wagon Freights and Stagecoaches 1860 - 1895

John F. Due

As mining developed in Nevada and adjacent portions of other states, most of the areas were far removed from rail transport, even after the Central Pacific line along the Humboldt River was completed in 1869. The first great mining boom, in Virginia City, was the exception, being relatively close to the Central Pacific. Thus mining as well as agriculture and most towns depended upon wagon freighter and stagecoach service.

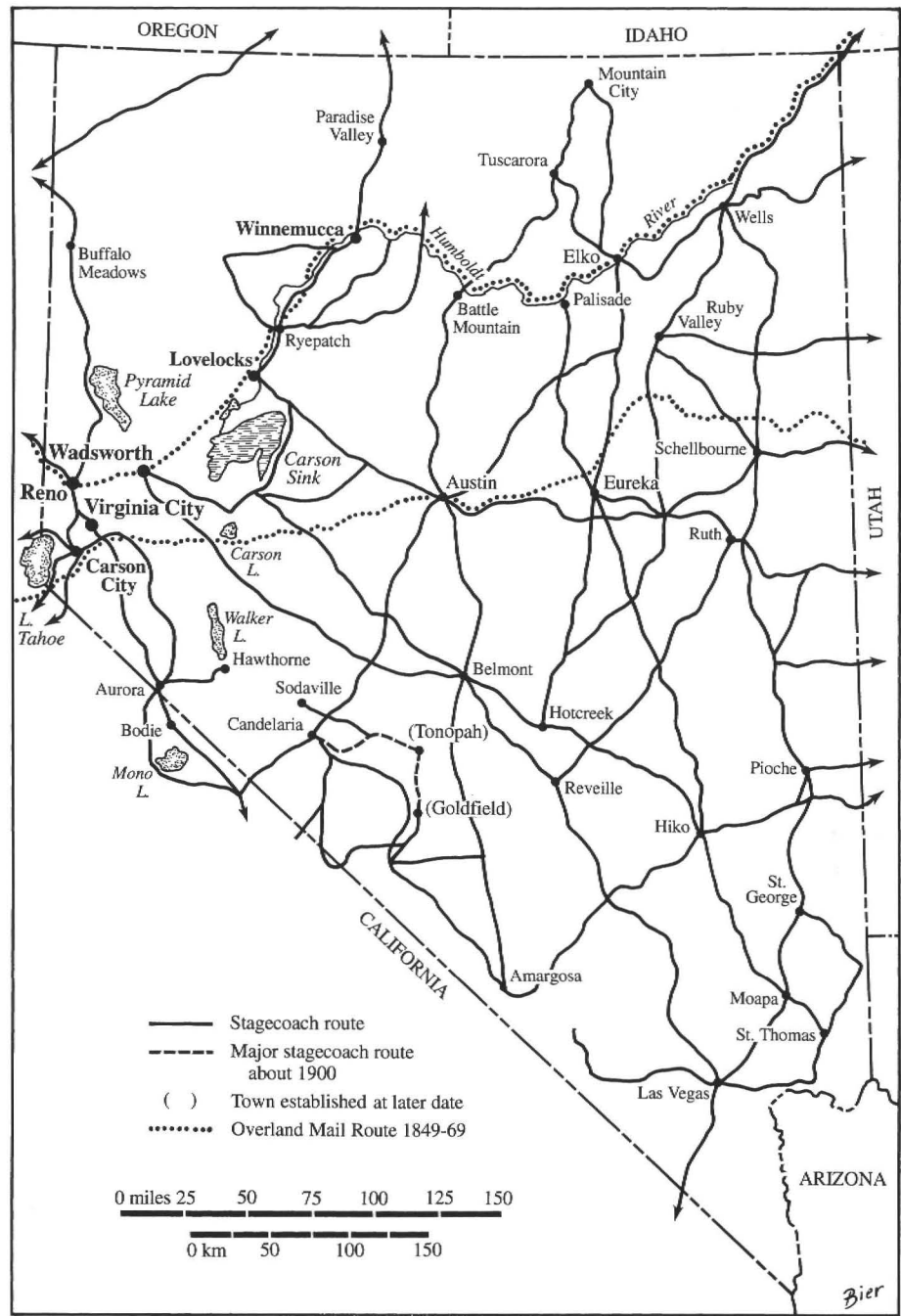
FREIGHT SERVICE

Early Freight Service

Freight service in Nevada and adjacent areas of California in early years was provided by business firms, traders, wholesale distributors, by farmers, as well as by commercial transport firms, small and large. One of the first forms of commercial transport consisted of camel trains, used primarily to haul salt relatively long distances from the salt marshes of Nye and Esmeralda counties to Virginia City and Belmont, up to 200 miles. Salt was needed in the processes used at the time for extracting silver from the ore. One of the major problems with camel trains was that horses and mules were severely frightened by the camels. Ultimately the camels were turned loose and roamed the countryside.

As borax production shifted from the marshes to mining of the Colemanite form from the Death Valley area, transport shifted to the twenty-mule team wagon transport 165 miles from Death Valley to Mojave, averaging fifteen miles per day. This involved a tremendous complex of way stations for supplies. This mode of transport itself was eliminated by progress, as railroads were

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This map is based primarily on the various mail contracts listed in Appendix 1 and information from other sources listed in the article. Preparing a map of stagecoach routes is more difficult than preparing one of rail lines, as routes shifted frequently, sometimes season to season and from day to day. Thus the map is by no means complete. It gives a general picture of the pattern from the coming of the railroads to the turn of the century.

built in the Death Valley area, but it remained an advertising symbol of Pacific Coast Borax, later centered in Trona.

The significant transport was not camel, but freight wagon pulled by ten to twenty horses or mules. For one example, at the peak of borax shipments from Rhodes marsh by the mid-1870s, fourteen freighting firms were involved, with a total of forty-nine wagons and 206 horses and mules. The borax was hauled in the late 1870s and early 1880s to the railroad at Wadsworth, 130 miles, at an average of fifteen miles a day, and thus eight days for the trip. A round trip usually took close to a month. In 1876, a rate of 1.5 cents per pound, or \$30 a ton on the borax to Wadsworth was typical. Some silver ore was also carried, bound via rail from Wadsworth to the smelter at Selby, California. On the return, supplies, at times, whiskey was a major item, and mine and milling equipment were carried. The local papers reported difficulty encountered by the freighters in handling the machinery for the Northern Belle mill in Belleville.¹

Freighters often used different routes from the stagecoaches. From the Candelaria mining area, for example, stages operated via Sweetwater, Wellington and Gardnerville to Genoa and Carson City. The freighters followed a route farther east, via Luning, the subsequent location of Rawhide, and Hazen, partly because it was shorter and had less severe grades, but of course was much less populated, a detriment for stage companies.

The earliest roads were little more than trails through the desert. By the mid-



One of the first forms of commercial transport consisted of camel trains, used primarily to haul salt relatively long distances from the salt marshes of Nye and Esmeralda counties to Virginia City and Belmont, up to 200 miles. (*Nevada Historical Society*)

seventies however, transport firms had improved most sections, and many stretches had become toll roads, as local persons improved the roads and bridges and began charging tolls. No toll road extended over a long distance. On the route from Genoa to Bodie and Aurora, with the fork to Columbus and Belleville, there were seven separate toll road enterprises. Nevada was not plagued by the Oregon problem of grants of land to private firms for long distance toll roads across the state, leading to endless complaints and litigation.

Other Freight Transport

The development of mines and towns in an area that was capable of producing only ore led to substantial transport of miscellaneous cargo by wagon, typically large wagons with sixteen-horse teams. In the Belleville-Candelaria area, for example, hay and grain were hauled to Belleville by wagon from Fish Lake Valley and hay from Bishop in the upper Owens Valley. Smaller wagons brought hay, fruit, and vegetables from the Bishop, Fish Lake, and Benton areas. As time passed and fruit and vegetable growing increased in the upper Owens Valley, many farmers hauled their produce to the mining communities in their own smaller wagons, a practice that ended when the railroad was extended into the Owens Valley.

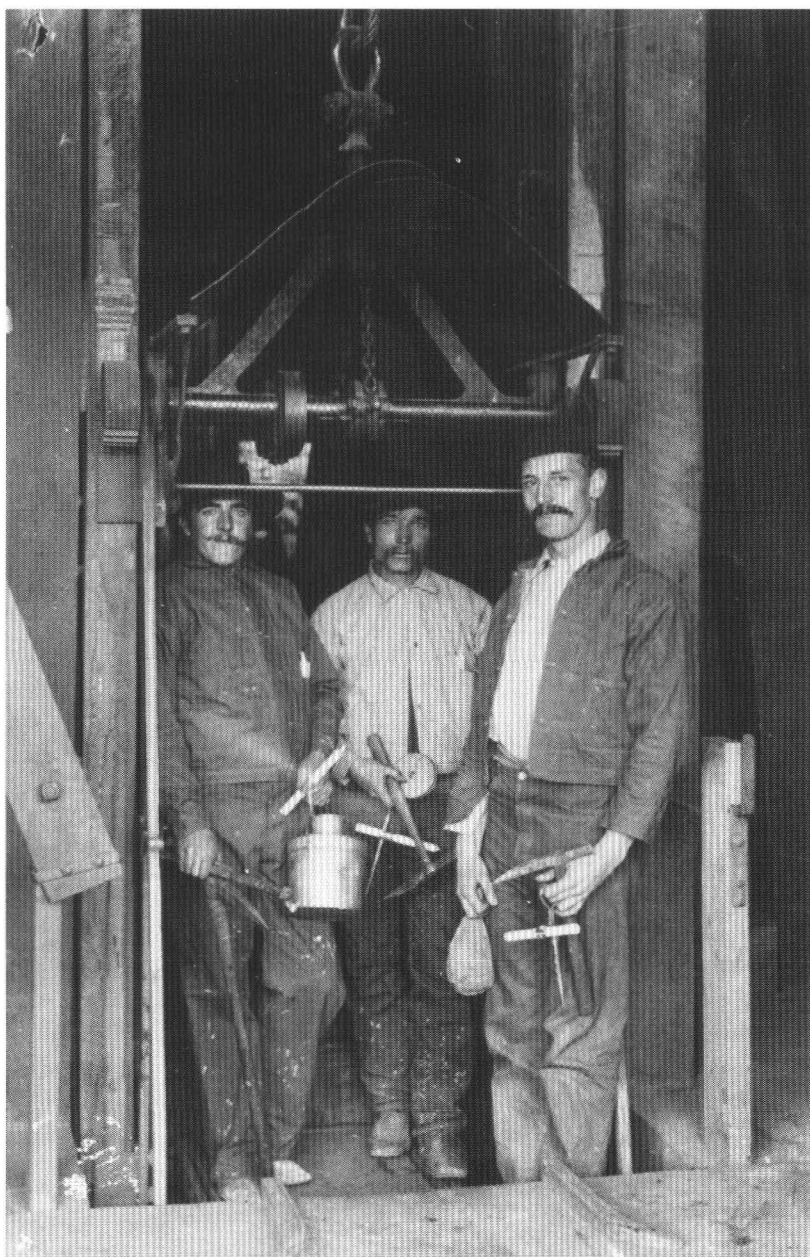
Freighting was common on the Salt Lake-San Bernardino route beginning in 1853, primarily by Salt Lake merchants. In 1859 as many as sixty wagons per month used the route, with fifteen-mule teams. The route was from Salt Lake City via Payson, Bevier, Mountain Meadows and along the Santa Clara, Virgin and Muddy rivers, past various springs to Las Vegas and San Bernardino.²

There has been no systematic collection of data of freight rates. In 1848 a rate of \$235 per ton was proposed for freight from the Missouri river to California; in 1850, \$250 a ton from Fort Leavenworth to San Francisco. By 1850, 135 wagons and 1,600 oxen were used in freighting, primarily for the army. In 1865, a single wagon train set out from Leavenworth to Salt Lake City with 600,000 tons of merchandise consigned to merchants. Much of this traffic was handled by Russell, Majors and Waddell, but independent freighters also became involved.

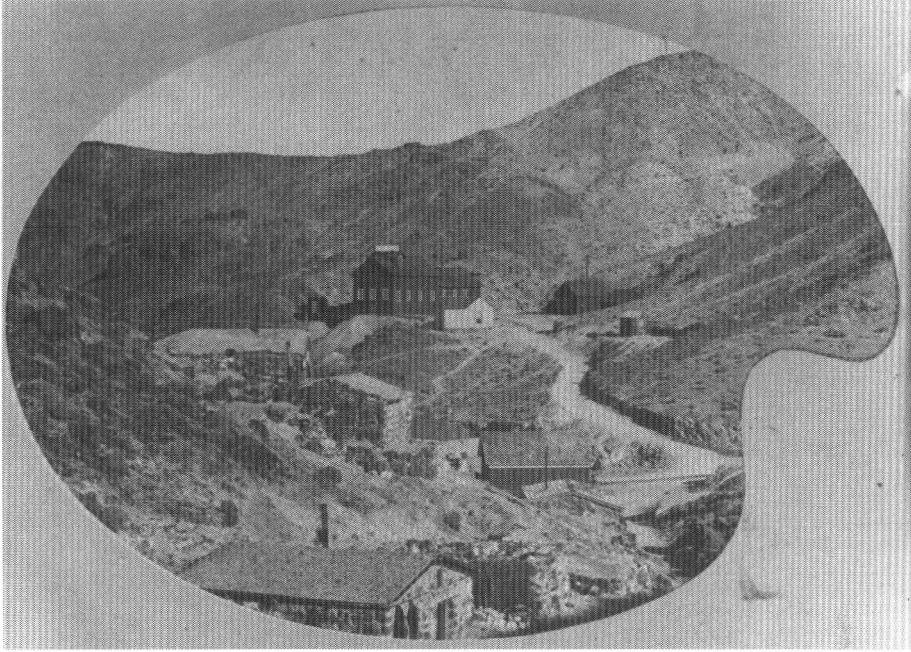
The last great expansion in wagon freighting occurred with the development and boom in Tonopah and Goldfield after 1900. Until the railroad was extended to these cities, a tremendous amount of wagon transport occurred from the rail stations of Sodaville and Candelaria.

STAGECOACH SERVICE

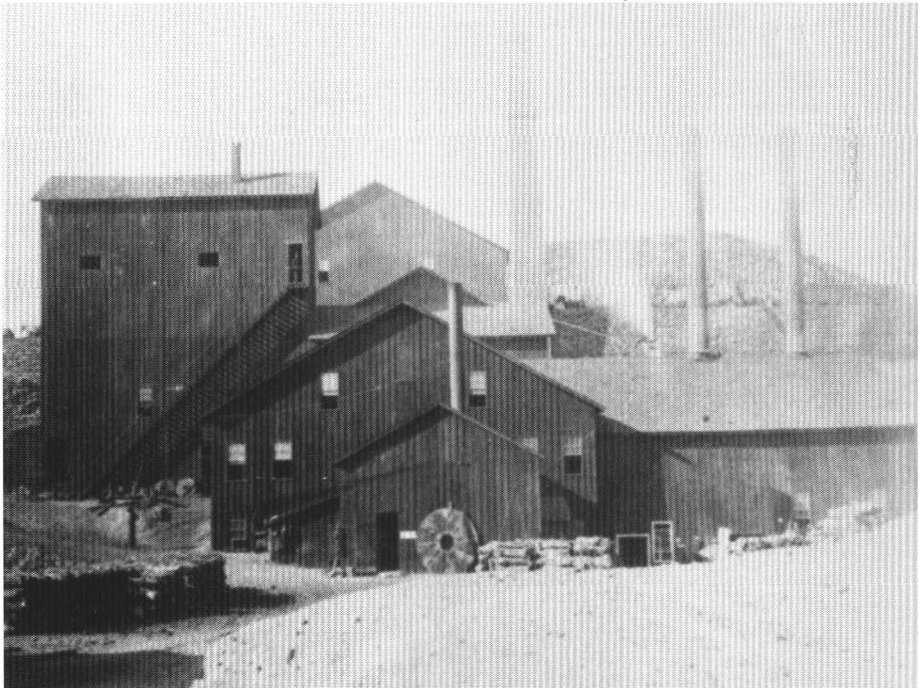
Passenger service was provided by stagecoaches, which usually carried mail and express as well, in addition to the wagon trains of emigrants and other personal transport. The stagecoach enterprises, except for the cross Nevada



Holius Mine Shaft in Candelaria, 1890. (*Nevada Historical Society*)



Princess Mine in Candelaria, 1890. (*Nevada Historical Society*)



Mill at Bellville, Nevada. (*Nevada Historical Society*)



Esmeralda Hotel and Stage Line in Goldfield, Nevada. (*Nevada Historical Society*)



Main Street in Goldfield, Nevada, September 15, 1905. (*Nevada Historical Society*)

route developed before the Central Pacific and discontinued when the latter was completed in 1869, were in part local ventures. Some involved activity from neighboring states, and others were developed by entrepreneurs operating in a number of areas.

In the United States, the stagecoach was the dominant means of travel from 1860 to 1900 in the region west of the Missouri-Mississippi rivers. Prior to that time, although stagecoaches were common east of the rivers, many distances were short between settlements, water transport was often available, and after 1830 the railroad network spread rapidly, so that the stage soon declined in importance. With migration west of the two rivers, with long distances, limited water transport, and scattered population, the stagecoach rapidly became dominant.

The stagecoach itself was of course not new.³ The principle of stagecoach construction dates back to an estimated 1800 BC, when the wagon wheel was developed with a hub, spokes, and a rim. There are records of stagecoaches in Great Britain as early as the 1620s, although they were apparently very uncomfortable. In 1785, the first long distance operation began in Great Britain, 400 miles from London to Edinburgh, averaging about 2 miles per hour. The coaches were drawn by six dray horses, the trip requiring ten to twelve days. The government provided financial assistance, through mail contracts. In the late eighteenth century, major improvements were made in the coaches.

In the United States, apparently the first intercity line began in 1785 between New York City and Albany, the first from the east coast to St. Louis in 1826, using canal boats part of the way. In the 1840s railroads began to replace the eastern stagecoaches. But the boom in westward migration and gold discovery led to increases in western stagecoach operation. Service in California developed quickly, but other areas of the West were slower with the need for better roads and subsidies.

A major development was significant improvement in the coaches themselves, beginning in Concord, New Hampshire in 1813. These typically had three seats, each seating three passengers plus the possibility of three riding on top of the coach. But as well explained in Mark Twain's *Roughing It*, the discomfort level was high. There were also smaller, even less comfortable vehicles, called mud wagons, mainly used on lighter traffic lines. The typical coach had front wheels 3 feet, 10 inches in diameter, the rear 5 feet 1 inch. Horses were used on most routes, mules on some, with four or six per coach.

Early Service in California

With the discovery of gold in California in 1848 and rapid population growth, plus relatively good weather, the use of stagecoaches in California grew rapidly. As early as 1849 service was established between Stockton and the Stanislaus River mines, the forty-five-mile run requiring twelve hours. In 1852, service was started between San Francisco and San Jose, and two years later a

Table 1
Sketch of Stagecoach Lines - Missouri River to California 1850-1866

SYSTEMS	Estimated Miles	Route	Years of Operation	Promoters	Subsequent Owners	Subsidy \$s per Year	Frequency of Service	Time of Trips (days)	Other Information
SOUTHERN:									
Butterfield Overland Mail (Oxbow)	2795	Memphis-Tipton (MO), El Paso, Yuma, San Francisco (SF)	58-61	John Butterfield	Holladay	600,000	Semi W; W	19-25	
San Antonio-San Diego	1400	via El Paso, Yuma	57-60	James Birch		79,800	W; 2x mo	22-26	To Santa Fe 1949; few trips completed to California
Kansas City-Santa Fe, Stockton CA	2000	via El Paso, Yuma	58-59	Jacob Hall		79,999	mo	60	
CENTRAL:									
Missouri R. to Salt Lake City (SLC)	1260	via Fort Laramie (WY)	54-56	Magraw		14,000-36,000	mo		
Missouri-SLC	1260	via Fort Laramie	56-58	Kimball		23,000-32,000	mo		
Independence-SLC	1260	via Fort Laramie	50-54	Woodson		19,500	mo		
Missouri River-SLC	1260	via Fort Laramie	58-60	Miles		32,000	mo	30	Winter via San Diego
SLC-No. California	750	via Humboldt River route	51-58	Woodward-Chorpenning	RM&W (2)	14000; 32,000	3x wk	22	Partly express and mail via San Diego & water
Leavenworth & Pikes Peak Express	900	Leavenworth-Denver via Kansas	56-60	Hockaday & Liggett	RM&W, Holliday, Wells Fargo	14,000-130,000	W	22-18	Became Overland Mail 1860; to Wells Fargo 66
COC & PP Express (1)	1900	Independence, SLC, Placerville, SF	61-69	Russell, Majors & Waddell	RM&W, Holladay		W; 2x mo; 3x w	16	1861 -COC&PP east of Salt Lake Butterfield west of SLC
Overland Dispatch	640	Independence-Denver via Sauna	64-66	D. A. Butterfield			mo		

(1) Central Overland California and Pikes Peak Express Co.
(2) RMW: Russell, Majors and Waddell
SLC: Salt Lake City
Source: Based primarily on information in LeRoy Hafen, *The Overland Mail, 1849-1869* (Cleveland: Arthur H. Clark, 1926).

mail contract was provided on this route for \$6,000 a year. By 1850 there was an extensive network of stage lines out of Sacramento, with mail contracts on the lines. In 1852, California-Portland stagecoach service was started.

Transcontinental Service⁴

Service between the Midwest and California—often called transcontinental service—is difficult to summarize because of the various companies and enterprises involved, and constant shifting of mail contracts, as well as differences between the provision of service east and west of Salt Lake City. Table I provides a summary of the major enterprises, but is by no means complete.

Early Central Route Service: In the 1850s, a series of mail contracts was awarded successively to several persons. On the eastern portion these went to Samuel Woodson, W.M.F. Magraw, Hiram Kimball and S.D. Miles, none of whom was very successful, largely because of snow. Typically service was monthly. The western portion was contracted to Absalom Woodward and George Chorpenning, initially using mule back. This was better than the eastern service, but the problems of crossing the Sierra in winter were so severe that mail for a time was sent via Los Angeles.

In 1858 increased attention was given to the through service, with contracts to Chorpenning in the West on a route via the Placerville Road (Johnson's Pass), the Humboldt River, north of Great Salt Lake to Salt Lake City, and Hockaday and Liggett east of Salt Lake City. Service from Placerville to St. Joseph took thirty-two to thirty-four days, with weekly service and an annual subsidy of \$320,000, but there were many cancellations and delays. Later the schedule time was cut to twenty days, but this was rarely attained. The greatest obstacles to service on the central route, the direct route, were the winter snow plus the steep grades in the mountains.

The Southern Route: In the 1850s, the crucial decision on the transcontinental mail and passenger service was the relative priority given to the central and southern routes, in part because of problems with the early central route. Both political and service considerations played a part. The key decision-maker was the postmaster general, a southerner. He chose the southern route and this received primary emphasis and funds. This was often called the oxbow route, extending from Memphis and Tipton, Missouri, the terminus of the Missouri Pacific railroad line, with these two portions merging in Fort Smith. The route extended across Texas to El Paso and thence via Tucson and Yuma to Los Angeles and San Francisco, 2,795 miles with an average speed of four and a half miles per hour. The annual subsidy was \$600,000 with semi-weekly operation. The operator of the line was the Overland Butterfield Mail, which had ties with Wells Fargo, one of the two major express companies. Way stations were opened at the end of each day's run, about 120 miles. Stages operated with a driver and

a conductor.

In this same period, contracts were awarded to James Birch of the California Stage Company for service between San Antonio and San Diego. Service also began to Santa Fe from the Missouri River in 1849 over the Santa Fe Trail. These two routes had limited traffic and did not become long standing elements in the overall stagecoach picture.

The Butterfield line was well maintained and managed, but the roundabout route was a serious disadvantage and there was strong pressure for a more direct route, especially from California interests, and the approach of the Civil War.

Shift to the Central Route: Renewed stress on the central route was a result of these problems with the southern route and increased emphasis on through service. Action was influenced by the interest in stagecoach operation from a major freighter enterprise, Russell, Majors and Waddell (RMW). In 1859 the local stage companies which provided the initial service were suffering severely from reductions in the payments for their mail contracts. The Russell firm saw the potential and formed the stagecoach firm of Leavenworth and Pikes Peak, which took over the portion of the Hockaday mail contract east of Denver and extended weekly service to Salt Lake City. On the 627-mile St. Joseph to Denver portion there were twenty-five relay stations.

Drastic changes were soon under way. Under the pressure noted for improved service to California and the effects of the beginning of the Civil War, political and practical considerations forced the shift of emphasis from the southern to the central route. Thus the Butterfield Overland Mail operations were in a sense transferred to the central route, but the portion east of Salt Lake City was operated under contract by the Russell firm of Central Overland and Pikes Peak Express. The route from St. Joseph to Sacramento was 1,255 miles; a subsidy of \$900,000 annually was provided, with service initially three times a week, later daily, in twenty-five days or less. Mules were used at first, then horses. The Russell firm also operated the Pony Express for one year.

In 1862, however, Russell, Majors and Waddell, owners of the COC and PP, encountered financial difficulties, and Ben Holladay, who became a dominant figure in western transportation, gained control, changed the name to Overland Stages, and also extended operations to The Dalles in Oregon and Montana points. As of 1864, service from the Missouri River to Sacramento required twenty days, the Salt Lake-Sacramento portion five days—but the fare was relatively very high—\$600 from the Missouri River to Placerville.

In 1866 the final major change occurred. Wells Fargo, the pioneer express firm affiliated with the Butterfield Company, bought the COC and PP for \$1,500,000 in cash and \$300,000 in stock. The transcontinental railroad was nearing completion, and Wells Fargo sought the express contract on it. Meanwhile, stage fares were drastically reduced; for example, \$265 from California to Chi-

cago. Then Wells Fargo obtained the contract for express on the railroad, for a payment of \$5 million.

Early Stage Coach Operation Within Nevada

The Nevada portions of the through lines to the west coast have been noted in an earlier section. The details of these lines do not differ greatly from the remainder of the lines, except for the greater problems of finding water for the stations and the lack of easily available supplies of food for the passengers and the animals. Many of the stations were ten miles apart, but those providing food and other amenities were usually farther. Many of the stagecoaches operated day and night, and overnight accommodations were very crude. Meals were far from adequate in quality. Spending a night was most uncomfortable on a bouncing and jolting stage. Seats were hard and baggage and mail sacks shifted around. The situation was bad enough for men, far worse for women and children. In the summer the heat and dust were almost unbearable, in the winter the coaches were cold.

The route of the overland line from Salt Lake City to California in the earliest days went north of Great Salt Lake and then followed the Humboldt river. Subsequently it used the Simpson route, following roughly the path that later became U.S. Highway 50, taking the Hastings cutoff around the south end of Great Salt Lake, and thence through what became Ely, Eureka, Austin and Fallon to Virginia City and Genoa. The stations are shown in Table 2.

TABLE 2

The stations on the Overland Mail Central Route in Nevada, 1861, East to West.

Antelope Springs	Reese River
Spring Valley	Cold Springs
Schell Creek	Middle Gate
Egan Canyon	Sand Springs
Bate's	Sand Hill
Mountain Springs	Carson Sink
Ruby Valley	Desert Station
Jacob's Wells	Fort Churchill
Diamond Springs	Clugage's
Sulphur Springs	Virginia City
Robert's Creek	Carson City
Camp Station	Genoa
Dry Creek	Friday's



Twenty-mule team Borax Wagon, 1900. (*Nevada Historical Society*)



Depot and Post Office in Wadsworth, Nevada, 1890s. (*Nevada Historical Society*)

The California-Virginia City Service: With discovery of the Comstock lode in 1859-60, the demand for transportation from California to western Nevada rose sharply. In short order three stagecoach companies developed, plus numerous wagon freighters. The most important of the stagecoach companies was the Pioneer Stage Line, operating from Placerville to Virginia City via the Placerville road, Genoa and Carson City. The firm was started by J.B. Crandall in 1857, operating three times a week from Placerville to Genoa with stations in California at Sportmans Hall, Brockliss Bridge, Silver Creek and Cary's Mill. It carried mail, and connected at Genoa with the Chorpenning stage line to Salt Lake City. Ownership soon passed to Lewis Brady and then to Wells Fargo interests, running twice a week and, later more frequently, to Sacramento. In 1858 it became a link in the Overland Mail, Missouri River to Sacramento.

The second line was the California Stage Co., operating via Henness Pass over the Sierra, from Placerville to Virginia City. This was the primary stage company in California. The third line was the short-lived Pacific Stage Co., started in 1859 by Thompson and Child, operating three times a week. In 1857 an improved toll road was built from Gold Hill to Dayton, seventeen miles.

Crossborder Routes: Other routes extended across territorial borders. In the northwest several routes developed. These were set off by the Humboldt mining boom of the early 1860s and those in Idaho a few years later. By 1865, for example, there were lines serving Unionville and Silver City, but these did not last.⁵ It was the work of William Beachey that brought continuing service, in conjunction with the Central Pacific Railroad. In 1866 Beachey-controlled stage lines received a mail contract for service between Virginia City and Boise City. Initially the stages operated from Unionville to Winnemucca to Paradise Valley, following a route similar to that of U.S. Highway 95 in later years.

Two other lines operated more directly northward from Reno. One extended northwest, crossed the California border, and reached Susanville, a total of 106 miles. The second and longer line extended northward 184 miles to Fort Bidwell in far northeastern California, via Eagleville, Cedarville, Lake City, and west to Willow Ranch.

Two lines extended into Utah and Arizona, one from Pioche to Mineral Park, 229 miles via St. George, Bunkerville, and St. Thomas, connecting with a line to Yuma, with weekly service, and Pioche eastward to a connection with the Utah Southern Railroad. A third line extended from Osceola to Frisco and a connection with the Utah Southern Railroad. There were several lines from Nevada into California in addition to those mentioned: Aurora-Bodie twelve miles, daily service and Aurora through the Owens Valley to the Southern Pacific at Caliente. Later, by 1882, lines extended from Aurora to Bodie, Bridgeport, Benton and Big Pine.

The Route via Las Vegas: In the period from 1854 to 1858 the mail was carried from Salt Lake City to California via the old Mormon trail to San Diego and

then by water to San Francisco. The mail was carried monthly, in twenty-eight days, via horse or mule back, with a contract of \$12,500 a year. This figure was increased to \$43,000 per year in 1855. Only a short section was in Nevada, crossing from Utah south of Mountain Meadows into Arizona and into Nevada, to Las Vegas and then to Resting and Bitter Springs and on into San Bernardino, California following the Virgin River.⁶

MAIL CONTRACTS

The survival of a stagecoach line was heavily dependent upon obtaining a mail contract. Awards for these contracts were made by the office of the U.S. Postmaster General, on the general rule that the contract went to the lowest bidder. The names and amounts of the bids were published in the U.S. *Serial Records* series.

Contracts usually were granted for three year periods. Roughly five to fifteen firms bid on each contract, with a wide range of bids. The top bids were often two to three times the lowest bid. Many firms bid on a number of contracts. Some of these firms were stagecoach companies while others were interested only in subletting the contracts to the stage coach lines or to local operators. Some of the latter were local persons, who sought to carry the mail, sometimes only this, but usually in conjunction with passengers and express. In Nevada many of these routes had very limited traffic potential of any kind.

Appendix I lists the Nevada mail contracts for which bids were called in the period 1879-1892.

The Contractors

Of the 218 contracts in Nevada between 1879 and 1892 for which information on this aspect is available, 144 were awarded to the major nationwide bidders, some of whom were awarded six or more contracts in Nevada and others in other states. These were:

H.A. Lawton, originally of Atchison, Kansas, later of Carson City, Nevada, 31 contracts, or over 10 percent of the total in Nevada.

E. J. Travis, Chicago, Illinois, President, Utah Nevada and California Stage Company, 18.

V. H. Pease, Salt Lake City, Utah, 17.

O.J. Salisbury, President, Idaho Stage Co., Salt Lake City, Utah, 15.

C.A. Harmon, San Francisco, 11.

H.E. Wadsworth, San Francisco, 13.

Fred Parker, North Yakima (now Yakima), Washington, 7.

C.C. McCoy, Walla Walla, Washington, 12.

H.N. Warren, Janesville, Wisconsin, 7.

Sixty seven percent of the contracts went to these firms. Three of these, Travis, Salisbury and Wadsworth, were, at least in earlier years, affiliated with S.C. Ramage of Washington, D.C. In contrast to these firms, at least twenty-five of the contracts were awarded to local persons, who either operated the service themselves or contracted with others to do so. The remainder were outsiders, who often bid in other areas as well.

Frequency of Service

Information on frequency of service required under the contracts is shown on the following page.

FREQUENCY REQUIRED BY THE MAIL CONTRACTS

Days per Week	Numbers of Contracts
1	51
2	68
3	65
4	33
5	10
6	1
7	1
Total	229

Thus service twice, thrice, and once a week were the most common, with a very few receiving daily service. Obviously the frequency was adapted in terms of potential traffic, the once-a-week service typical on the long runs with relatively little traffic. Many of the frequent service routes were relatively short distance ones. As time passed, more and more routes, even in Nevada, involved service from a railroad station to a nearby town, and frequency was adapted to the timing of trains. As railroad lines were extended, more routes shifted from stage to rail, which was much faster and usually cheaper. One odd provision was found in the contracts on service between Palisade and Eureka, which prohibited the use of the railroad in the provision of mail service.

Speed of the Service

The contracts specified the required time of the run and the departure times. Eighty-five percent of the contracts indicated speed between three and five miles an hour. The ones with higher speeds were short runs over good roads. Nine was the maximum; the slower ones, typically long runs, involved day and night travel.

Miles per Hour	Number of Contracts
9	1
7	3
6	10
5	38
4	73
3	80
2	20
1	1
Total	226

The actual times, of course, departed substantially from the required time, especially in bad weather.

The Amounts of the Contracts

The only satisfactory basis for establishing averages of the financial magnitude of the contracts is on the number of dollars per mile per required trips. On this basis the median was \$12 per mile per trip. Eighty-five percent were in the range from \$8 to \$16.

Contract Figures Per Mile Per Trip Dollars	Number of Contracts
Over 28	4
22-28	4
17-21	11
12-16	75
8-11	96
7-3	18
Total	208

Stagecoach Fares

No general survey of stagecoach fares is available. The following table indicates some fares in the West that appear to be typical. The mileage figures are estimated.

**Typical Stage Coach Fares
1849-1865**

Year	Total Dollars	Cents Per Mile
1849 St. Louis-California (proposed)	200	7
1852 San Francisco-San Jose	32	64 (cut to .32)
1850 Sacramento-Mining areas	16	32
1855 Sacramento-Shasta	150 cut to 20	18 (cut to 3)
1858 Independence-Santa Fe	150 (WB), 125 (SB)	19, 16
1851 San Antonio-San Diego	200	14
1853 Atchison-Placerville	600	30
1854 Atchison-Salt Lake City	175	14
1865 Atchison-Salt Lake City	350	27
	later 500	later 39
1854 Atchison-Denver	175, cut to 75	19
1858 Virginia City-Salt Lake City	400	37
	later	150, cut to 25
1858 St. Louis-Memphis-San Francisco	200 WB, 100 EB	8, 4
1860s Tucson-Yuma	50	20

(WB - westbound; EB - eastbound)

In summary, there was a wide range of fares from four to thirty-nine cents per mile. For the longer distances, ranges from fifteen to twenty cents a mile appear to have been typical, with higher figures per mile for short distances. Some adjustments were obviously made for demand factors; on the Butterfield oxbow line, the rate for the westbound trip was \$200, eastbound, \$100, since the demand was obviously more inelastic on the westbound trips. Rates were also subject to competitive relations. There were several examples in which larger firms reduced fares drastically to drive newcomers out of business—and with considerable success. Policies of management also varied. When Ben Holladay gained control of the central overland route, he raised rates sharply to \$500 from \$175; when control later passed to Wells Fargo, fares were cut drastically. These fares make it very clear another reason the stagecoaches could not compete with the railroads whose fares per mile typically were two to three cents per mile.

Stagecoach Robberies

The aspect of stagecoach operation most popularized in movies and television was that of holdups. The actual extent, in Nevada and elsewhere, is not known. But the general consensus appears to be that they were the exception rather than the rule in Nevada. One of the few studies, that of Roger McGrath, concludes that they were not numerous; many routes operated for years with-

out a holdup.⁷ In the boom days of Aurora, 1864-1865, there were seven holdups; on the Bodie route, there were six holdups in a four-month period in 1881, but then no more until the last one in 1889. None of these involved stages carrying bullion; in general any stage carrying a guard "riding shotgun" was not bothered. Rarely, but occasionally, were the passengers robbed. The most famous holdup was the robbery of the Schurz-Rawhide stage in 1908, in the open desert between the two towns.⁸ The two bandits were caught; one had been a deputy sheriff in Goldfield.

O.O. Winther paints a much darker picture for Idaho and Montana, where holdups were more common.⁹ In California, the Los Angeles-San Francisco route was subject to numerous holdups.

The Contributions of the Stagecoach

The stagecoach was not, by any means, strictly a United States phenomenon, but used in many parts of the world. But it was the western United States in which stagecoaches reached their optimal importance. The dominance was short lived; they could not compete with the railroad, in terms of cost, speed, and comfort, but survived much longer where there was no railroad competition.

The stagecoach developed as an improvement over other forms of land transport. It was safer and less tiring than various forms of personal transport and facilitated transport of several persons or groups. It did not destroy family-provided transport but largely displaced it where the volume of traffic was sufficient—and this volume was much less than that for economic operation of a railroad. In the end it could not compete with or survive rail transport and thus gave way to it whenever there was sufficient volume of traffic to support a railroad. It was ideal—despite its limitations—to fill a gap in the transportation evolution.

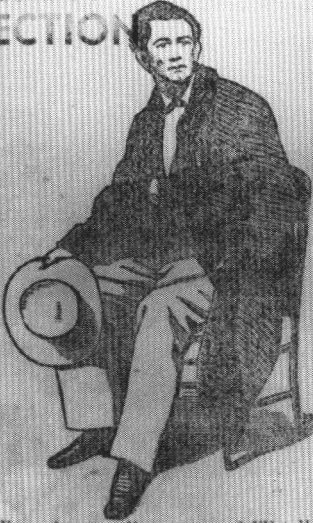
The stagecoach also was a forerunner of various practices in the transportation field, such as adjustment of fares in light of elasticity of demand for a firm on a particular route. It was also one of the first transportation industries to receive financial aid, in this instance through favorable postal contracts with probably a degree of corruption in the awarding of contracts. And it created a new class of entrepreneurs, firms that won contracts in widespread areas and often subcontracted the actual work.

THE
**Pioneer
Stage
Driver.**

Composed and sung by
CHARLEY RHOADES.

Entered according to Act of Congress, by T. C. Boyd, in the year 1864, in the Clerk's office of the United States District Court for the Northern District of California.

Published by T. C. BOYD,
Cor. Montgomery & Pine sts.



I'm going to tell a story, and I'll tell it in my song,
I hope that it will please you, and I won't detain you long;
It's about one of the old boys, so gallant and so fine,
He used to carry mails, on the Pioneer line.
He was such a favorite wherever he was seen,
He was known about Virginia by the name of Bally Green;
Oh! he swung a whip so graceful, for he was bound to shine,
As a high-toned driver on the Pioneer line.

As he was driving up one night, as lively as a coon,
He saw four men jump in the road, by the pale light of the moon;
One sprang for his leaders, while another his gun he cocks,
Saying, Bally I hate to trouble you, but pass me out that box.
When Bally heard him say these words, he opened wide his eyes,
He didn't know what the devil to do, it took him by surprise;
But he reached down in the boot, saying take it sir with pleasure,
And out into the middle of the road, went Wells & Fargo's treasure.

Now when they'd got the treasure-box, they seem'd quite satisfied,—
The man that held the horses, politely stepped aside,
Saying, Bally, we've got what we want, just drive along your team.
And he made the quickest time to Silver City ever seen.
If you say greenbacks to Bally now, it makes him feel so sore,
It's the first time he was ever stopped, and he's drove that road before;
But they play'd four hands against his one, and shot guns was their game,
And if I had been in Bally's place, I'd have passed it out the same.

San Francisco. 10,000 Songs for sale.
Boyd's NOVEL EXCHANGE—Terms, 10 Tickets for 50 cents, making the cost of reading 5 cts. a Novel.
T. C. Boyd, Designer and Engraver on Wood.
2,000 Plays for Sale.

*The Pioneer Stage Driver, composed and sung by Charley Rhoades.
(Special Collections Department, University of Nevada, Reno)*

APPENDIX I
UNITED STATES MAIL CONTRACTS, NEVADA, 1862, 1879/82-1890/94

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
<hr/>							
Early (1862)-example							
Carson Valley-Monoville	110	63	2	1	4600	42	Miller,Weekes
1879-1882							
Wellington-Dayton	80	16	5	3	2340	10	Not awarded
Wadsworth-Belmont	220	45	5	3	9900	15	Gilmer
Battle Mt.-Lewis	12	3	4	6	760	10	Parker
Tybo-Tempiute	93	2	4	1	1460	16	Gilmer
Paradise Valley-Spring City	10	2	5	6	570	10	Parker
Elko-Tuscarora	58	11	5	6	2840	8	White
Cornucopia-Columbia	20	5	4	3	720	12	Parker
Tuscarora-Falcon	14	4	4	2	420	15	Parker
Morey-Ward	102	26	4	1	1430	14	Parker
Jct. House-Crescent Mills	75	26	3	3	2730	12	Parker
Huntington-Eureka	60	14	4	1	540	9	White
Eureka-Austin	78	16	5	3	2630	11	Parker
Big Pine (CA)-Columbus	90	30	3	1	1332	15	Boering

na - not available
nw - not awarded

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
1881-1882							
Mason Valley-Aurora	60	21	3	3	1330	7	Lawton
Austin-Candelaria	135	24	6	3	3820	9	Lawton
1882-1886							
Belmont-Tybo	35	10	4	6	3720	18	Lawton
Tybo-Morey	36	11	3	2	2200	31	Lawton
Austin-Belmont	86	20	4	6	7400	14	Salisbury
Wabuska-Mason Valley	14	4	4	3	500	12	Gallager
Mason Valley-Aurora	60	na	nw	3			Not awarded
Aurora-Bridgeport (CA)	32	8	4	7	1944	9	Salisbury
Aurora-Columbus	74	nw		7			Not awarded
Aurora-Hawthorne	28	7	4	7	1066	5	Salisbury
Aurora-Benton-Big Pine (CA)	127	27	5	7	10600	12	Salisbury
Aurora-Walker River	72	18	4	3	3000	14	Eastman
Columbus-Lida-Gold Mt.	71	32	2	2	2131	15	Porter
Lida-Montezuma	39	11	4	2	1274	16	Warren
Genoa-Walker River	45	15	3	5	1490	7	Raycraft
Grantsville-Candelaria	70	21	3	3	1660	8	Salisbury
Grantsville-Belmont	80	24	3	3	3744	16	Warren
Cedarville-Reno	172	72	2	1	1888	11	Local

na - not available

nw - not awarded

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
Silver Mt. (CA)-Genoa	41	4	9	3	999	8	Local
Ft. McDermitt-Alvord- Camp Harney	165	84	2	1	na	na	na
Wells-Hamilton	206	60	3	3	5700	9	naw
Halleck-Fort Halleck	13	4	3	6	836	11	Local
Fort Halleck-Fair Play- Ruby Valley	47	15	3	1	649	14	Judd
Elko-Bolton	30	9	3	3	999	11	Judd
Elko-Huntington	52	15	3	1	673	13	Judd
Elko-Tuscarora	58	12	5	7	3130	8	Lawton
Tuscarora-White Rock-via Cornucopia	43	10	4	7	3930	13	Lawton
White Rock-Mountain City	25	8	3	1	430	17	Lawton
Cornucopia-Columbus	18	8	2	3	746	14	Carter
Eureka-Newark-Cold Creek	36	10	4	1	497	14	Smith (local)
Eureka-Diamond	18	6	3	1	310	17	Lawton
Eureka-Pioche	213	36	6	3	10870	17	
Eureka-Ruby Hill	3	1	3	6	360	20	Carter
Mineral Hill-RR Sta	5	1	5	7	594	17	Warren
Hamilton-Eberhardt	5	1.5	3	3	521	35	Local
Ward-Osceola	38	11	3	3	460	13	Lawton

na - not available
nw - not awarded

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
1882-1886 (cont.)							
Pioche-Hiko	65	36	2	2	1750	13	Local
Bullionville-St. Thomas	120	30	4	3	5320	15	Lawton
St. Thomas-Eldorado Canyon	100	33	3	3	4420	15	Lawton
Belmont-Tybo	35	7	5	6	1720	8	Lawton
Austin-Belmont	84	20	4	6	7400	15	Salisbury
Austin-Grantsville	65	20	3	3	2360	12	Lawton
Ione-Elsworth-Downieville (CA)	22	5	4	3	na		Lawton
1883-1886							
Eureka-Tybo	98	22	5	3	4400	15	Townshend
Columbia-White Rock	14	4	3	3	991	24	Warren
Twin River-Jct.	20	5	4	3	1000	16	Townshend
1886-1890							
Beowawe-Frisbie	26	6	4	2	600	12	Salisbury
Battle Mt.-Lewis	12	3	4	3	370	10	Wadsworth
Belmont-Tybo	36	12	3	1	1010	28	Harmon
Austin-Grantsville	65	20	3	3	1800	9	Sheehan
Luning-Grantsville	63	14	5	2	2230	18	Travis
Galena-Battle Mt.	14	2	7	3	490	12	Travis
na - not available nw - not awarded							

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
1886-1890 (cont.)							
Galena-Battle Mt.	14	2	7	3	490	12	Travis
Winnemucca-Ft. McDermitt	80	17	5	6	5490	12	Travis
Winnemucca-Paradise Valley	45	9	5	6	2190	8	Wadsworth
Paradise Valley-Spring City	10	3	3	2	335	17	Moore
Mill City-Dun Glen	11	2	6	2	225	10	Organ
Mill City-Unionville	20	6	3	3	400	7	Organ
Lovelock-Bernice	65	16	4	2	1000	8	Boyer
Wadsworth-Stillwater	51	15	3	2	470	5	Camber
Virginia City-Dayton	8	2	4	6	600	7	Barton
Dayton-Sutro	3	1	3	6	361	20	Harmon
Carson-Glenbrook	14	4	3	3	412	10	Travis
Carson-Genoa	13	3	4	6	400	5	Raycraft
Hawthorne-Coryville	11	2.5	5	6	1269	19	Harmon
Pahrump-Daggett	135	59	2	1	1961	16	Harmon
Coleville-Topaz-Holbrook	14	5	3	1	190	14	Pease
Silver Creek-Genoa	39	9	4	3	950	8	Pease
Mineral Park (AZ)-St. Thomas	137	48	3	3	5900	14	Travis
St. George (UT)-St. Thomas	100	24	4	3	2990	10	Travis
Bullionville-St. Thomas	121	36	3	3	4250	12	Salisbury
Pioche-Hiko	65	26	3	1	793	12	Wilson

na - not available
nw - not awarded

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
1886-1890 (cont.)							
Eureka-Pioche	225	40	6	3	8080	12	Salisbury
Ely-Ward	18	3.5	5	3	725	13	Salisbury
Taylor-Osceola	30	5	6	3	700	8	Hughes
Aurora-Osceola	50	16	3	2	1490	15	Judd
Cherry Creek-Aurora	36	9	4	2	1150	16	Salisbury
Cherry Creek-Ely	58	20	3	2	1390	12	Travis
Wells-Cherry Creek	95	24	4	3	2540	9	Clugage
Hamilton-Eberhardt	5	1.5	4	2	208	21	Warren
Halleck-Fort Halleck	13	4	3	6	791	10	Warren
Halleck-Ruby Valley	60	21	3	6	1112	3	Chambers
Halleck-Union Gulch	60	29	2	1	700	12	Underwood
Elko-Lamoille	26	7	4	2	394	8	Baumbeck
Elko-Huntington	56	15	4	1	690	12	Pease
Elko-Bullion	30	9	3	1	300	10	Wadsworth
Elko-Tuscarora	50	12	4	6	2525	9	Salisbury
Tuscarora-Good Hope	45	12	4	1	775	17	Salisbury
Reno-Buffalo Meadow	118	25	5	1	na	na	E. B. Young
Columbia-White Rock	14	4	3	2;1	450	16	Fuller
White Rock-Mt. City	20	8	3	1	400	20	Wadsworth
Mt. City-Island Mt.	20	6	4	1	390	19	Underwood

na - not available
nw - not awarded

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
1886-1890 (cont.)							
Palisade-Eureka	87	14	6	3	3349	13	Harmon
Mineral Hill-RR Sta.	5	1	5	3	240	16	Salisbury
Eureka-Cold Creek	40	10	4	1	399	10	Haley
Eureka-Duckwater	70	28	3	1	495	8	Williams
Eureka-Ruby Hill	3	1	3	6	290	16	Trainor
Eureka-Tybo	98	25	4	3	4000	14	Wadsworth
Tybo-Roseville	37	9	4	1	542	15	Harmon
Belmont-San Antonio	33	12	3	3(2)	960	12	Clark
Austin-Belmont	100	20	5	6(3)	5692	13	Harmon
Jct.-Twin River	20	4	5	1	200	10	Clark
Jct.-Northumberland	20	4	5	3	800	13	Clark
Austin-Healy	42	12	4	1	542	13	Harmon
Austin-Grantsville	65	20	3	3	1800	9	Sheehan
Mineral Park (AZ)-St. Thomas	130	48	3	2	2000	8	McCoy
St. George-Bunkerville-St. Thomas	93	24	4	2	1598	9	Lund
Panaca-Overton-St. Thomas	122	37	3	2	2100	9	McCoy
Pioche-Hiko	65	26	3	1	681	11	Pease
Pioche-Milford	116	22	5	3	2890	8	McCoy
Pioche-Taylor	110	36	3	2	2370	11	McCoy
Tybo-Reveille	40	9	4	2	940	12	Wadsworth

na - not available
nw - not awarded

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
1886-1890 (cont.)							
Belmont-Tybo	35	10	4	2	920	13	Travis
Jct. City-Twin River	18	4	4	1	180	10	Wadsworth
Ely-Reveille	160	48	3	1	1790	11	McCoy
Taylor-Frisco	121	30	4	2	2584	11	Lawton
Hamilton-Eberhardt	5	1.5	3	3	300	20	Ghiridelli
Cherry Creek-Ely	55	20	3	2	890	8	Travis
Cherry Creek-Aurora	35	9	4	2	984	14	Lawton
Aurora-Osceola	49	16	3	2	1120	12	Travis
Eureka-Tybo	102	25	4	2	2534	11	Lawton
Eureka-Ruby Hill	3	1	3	6	270	15	Alexander
Eureka-Duckwater	70	28	28	1	485	8	Alexander
Eureka-Cold Creek	40	10	4	1	385	10	Alexander
Clinton-Sweetwater	4	2	2	2	592		na
Ruby Valley-Cave Creek	25	7	4	1	na		na
Wabuska-Mason Valley	14	2.5	6	6	350	4	Brady
Genoa-Wellington	40	8	5	2	1040	13	Travis
Pine Grove-Mason Valley	26	10	3	2	900	18	Harmon
Fletcher-Wellington	67	18	4	2	1460	11	Pease
Aurora-Hawthorne	28	7	4	6	1680	10	Wadsworth
Hawthorne-Garfield	25	5	5	1	330	13	Pease

na - not available
nw - not awarded

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
1886-1890 (cont.)							
Candelaria-Columbus	9	2.5	5	3	390	14	McNaughton
Columbus-Fishlake	30	6	5	1	350	12	Wadsworth
Columbus-Gold Mt.	72	30	2	2	2394	16	Warren
Lida-Montezuma	20	11	2	2	684	17	Harmon
Bridgeport (CA)-Aurora	33	8	4	6	1850	9	Travis
1889-1893							
Panaca-Overton-St. Thomas	122	36	3	2	2633	11	Pease
Cherry Creek-Ely	55	20	3	2	964	9	Young
Ruby Valley-Cave Creek	25	7	4	1	286	11	Pease
Sodaville-Belmont	123	24	5	2	2750	11	Alexander
Pioche-Taylor	116	na					
Reno-Buffalo Meadow	118	24	5	1	1737	15	Young
Ely-Reveille	160	48	3	1	2282	14	Pease
Mill City-Dun Glen	11	2	5	2	240	11	Local
Sodaville-Belmont	123	24	5	2	2750	11	Alexander
1890-1894							
Willow Pt.-Fort McDermitt	58	14	4	3	972	6	Gullic
Winnemucca-Spring City	54	13	4	6	1974	6	Lawton

na - not available
nw - not awarded

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
1890-1894 (cont.)							
Belmont-Coverdale	48	12	4	2	1084	12	Travis
Battle Mt.-Pittsburg	15	5	3	6	714	8	Lawton
Battle Mt.-Lewis	13	4	3	3	384	10	Lawton
Golconda-Fairlawn	50	12	4	1	540	10	Pease
Palisade-Eureka	96	14	7	3	3849	13	Local
Mineral Park (AZ)-St. Thomas	130	48	3	2	2000	8	McCoy
St. George-Bunkerville- St. Thomas	93	24	4	2	1598	9	Lund
Panaca-Overton	122	36	3	2	2100	9	McCoy
Pioche-Hiko	65	26	3	1	681	11	Pease
Pioche-Milford	116	22	5	3	2890	8	McCoy
Pioche-Taylor	110	36	3	2	2370	7	McCoy
Tybo-Reveille	40	9	4	2	940	12	Wadsworth
Belmont-Tybo	35	10	4	2	920	13	Travis
Jct. City-Twin River	18	4	4	1	180	10	Wadsworth
Ely-Reveille	160	48	3	1	1790	11	McCoy
Taylor-Frisco	121	30	4	2	2584	11	Lawton
Hamilton-Eberhardt	5	1.5	3	3	300	20	Ghiridelli
Cherry Creek-Ely	55	20	3	2	890	8	Travis
Cherry Creek-Aurora	35	9	4	2	984	14	Lawton

na - not available
nw - not awarded

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
1890-1894 (cont.)							
Aurora-Osceola	49	16	3	2	1120	12	Travis
Eureka-Tybo	102	25	4	2	2534	12	Lawton
Eureka-Ruby Hill	3	1	3	6	270	15	Alexander
Eureka-Duckwater	60	24	3	1	485	8	Alexander
Eureka-Cold Creek	40	10	4	1	385	10	Alexander
Eureka-Ely-Taylor	120	24	5	7	7800	9	McCoy
Eureka-Palisade	96	14	7	3	3890	14	na
Battle Mt.-Galena	14	3	5	3	3874	9	Lawton
Battle Mt.-Fairlawn	60	14	4	1	720	12	Pease
Battle Mt.-Pittsburg	24	6	4	3	684	10	Lawton
Austin-Bernice	76	36	2	1	875	12	Davis
Austin-Midas	50	17	3	3	1345	9	Schmaling
Tuscarora-Mt. City	50	26	2	2	1525	16	Alexander
Ruby Valley-Cave Creek	25	7	3	1	249	10	Wines
Columbus-Oriental	98	36	3	1	1374	14	McNaughton
Columbus-Silver Oak	35	10	4	1	393	11	Local
Austin-Belmont	80	20	4	2	2450	10	Pease
Fletcher-Wellington	45	18	3	2	950	11	Hogan
Candelaria-Columbus	10	5	2	6	700	11	McNaughton

na - not available
nw - not awarded

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
1890-1894 (cont.)							
Columbus-Silver Creek-							
Lida-Gold Mt.-Oriental	79	30	3	2	1300	8	Idaho Stage Co.
Lida-Oasis (CA)	28	7	4	1	394	14	Lawton
Sodaville-Belmont	123	24	5	2	2300	10	McCoy
Luning-Grantsville	67	15	4	3	1995	10	Schmaling
Wells-Cherry Creek	95	24	4	3	2434	9	Lawton
Halleck-Ft. Halleck	13	4	3	2	224	9	Lawton
Halleck-Fair Play	55	21	3	2	840	8	Wines
Elko-Lamoille	25	7	4	2	442	9	Local
Elko-Bullion	30	9	3	2	632	11	Pease
Elko-Tuscarora	50	12	4	7	2100	6	Wadsworth
Tuscarora-White Rock	45	10	5	3	1350	10	Local
Mill City-Dun Glen	9	2	5	2	215	12	Pease
Lovelock-Bernice	65	40	2	1	465	7	Beck
Mill City-Unionville	20	6	3	3	298	5	Local
Willow Pt.-Spring City	32	7	5	6	1444	8	Lawton
Winnemucca-Ft. McDermitt	80	17	4	6	4900	10	Lawton
Reno-Pyramid-Buffalo Meadows	117	36	3	1	1320	11	Pease
Wadsworth-Stillwater	50	21	2	3	900	6	Marks
Virgina City-Dayton	8	2	4	6	575	12	Alexander

na - not available
nw - not awarded

Terminal Points	Miles	Times in hours	Miles per hour	Frequency per week	Amount of Contract, \$	Amount Per Mile Per Trip, \$	Contractor
<hr/>							
1890-1894 (cont.)							
Carson-Genoa	12	3	4	6	296	4	Raycraft
Carson-Glenbrook	12	4	3	3;6	575	11	Alexander
Mason Valley-Pine Grove	26	6	4	2	495	10	Local
Dayton-Sutro	4	1	4	6	250	10	Travis
Holbrook-Coleville, CA	16	5	3	1	145	9	Local
Genoa-Silver Cr., CA	41	9	5	3	875	7	Pease

na - not available
nw - not awarded

NOTES

¹When the Cerro Gordo mine was developed in the Owens Valley area in the late 1860s and the 1870s, ore was shipped by wagon to Los Angeles at around \$50 a ton. Thirty-two teams were used for the 200 mile run, taking two weeks, wagons of ten-ton capacity, three wagons pulled by fourteen mules, and carrying 170 ingots. In the year 1874, 5290 tons of ingots were hauled to Los Angeles, and then shipped by water to the smelter in Selby, California, and 3400 tons of merchandise, hay, grain, machinery were brought in. Cerro Gordo in that year used 40 percent of the Los Angeles hay output, and 27 percent of the barley output. In the same general period, Darwin and Panamint were both beginning to produce, and two smelters were built in the area. Beginning in 1869 a lake steamer was acquired to carry the ingots across Owens Lake, cutting three days off the road trip.

This is based largely on the material in W. A. Chalfant, *The Story of Inyo* (Bishop, CA: privately printed, rev. ed., 1933), and Remi Nadeau, *City Makers* (Garden City, N.J.: Doubleday, 1948). Nadeau was the great-great-grandson of the major freighter in the Owens Valley in the 1870s.

²William B. Rice, "Early Freight on Salt Lake-San Bernardino Trail", *Pacific Historical Review*, vol. XI (March 1942), 73-80.

³A summary of the development is provided by Ralph Moody, *Stagecoach West* (New York: Crowell, 1967), ch. 1.

⁴Lucius Beebe and Charles Clegg, *The Saga of Wells Fargo* (New York: Dutton 1949); Roscoe P. and Margaret B. Conkling, *The Butterfield Overland Mail 1857-1869*, 3 vol. (Glendale, CA: Arthur H. Clark, 1947); J.W. Frederick, *Ben Holladay: The Stage Coach King* (Glendale, CA, Arthur H. Clark, 1940); L.R. Hafen, *The Overland Mail, 1849-1869* (Glendale, CA, Arthur H. Clark, 1926); Ralph Moody, *Stagecoach* (New York: Thomas Y. Crowell, 1967); Raymond W. and Mary L. Settle, *Empire on Wheels* (Stanford: Stanford University Press, 1949); Oscar O. Winther, *Via Western Express and Stage Coach* (Stanford: Stanford University Press, 1949); W. Turrentine Jackson, *Wagon Road West: A Study of Federal Road Surveys and Construction in the Trans-Mississippi, 1846-1869* (New Haven, Conn.: Yale University Press, 1964); Thomas Frederick Howard, *Sierra Crossing: First Road to California/Thomas Frederick Howard* (Berkeley: University of California Press, 1998).

⁵William C. (Hill) Beachey, "Nevada-California-Idaho Stage Coach King", *Nevada Historical Society Quarterly*, v. X (Spring 1967), 1-42.

⁶Detailed summary of stagecoach and freighting activities in Southern California, some of which carried over into Nevada, is provided by W. Turrentine Jackson, in "Stages, Mail and Railroad Period," *Southern California Quarterly*, 56 (Fall 1974), 233-72 and "Racing from Virginia City to Reno by Wells Fargo and Pacific Union Expresses," *Nevada Historical Society Quarterly*, 20 (Summer 1977), 75-91.

As early as 1854, Wells Fargo had established express service with Gilbert & Co. Adams & Co. was planning stagecoach service in 1855, but the company failed before it implemented this plan. So far as is known, service on this route involved only mail and express; there apparently never was stagecoach service.

As noted above, freighter service was operated on this route.

⁷Roger McGrath, *Gunfighters, Highwaymen and Vigilantes* (Berkeley: University of California Press, 1984), ch. 9.

⁸Frank Adams, "The Rawhide Stagecoach Robbery of 1908," *Nevada Historical Quarterly*, vol. 38 (Summer 1995), 63-74.

⁹*The Old Oregon Country* (Stanford: Stanford University Press, 1950, latest printing 1969), 286-91.

THE ARROWHEAD TRAILS HIGHWAY: Southern Nevada's First Automobile Link to the Outside World

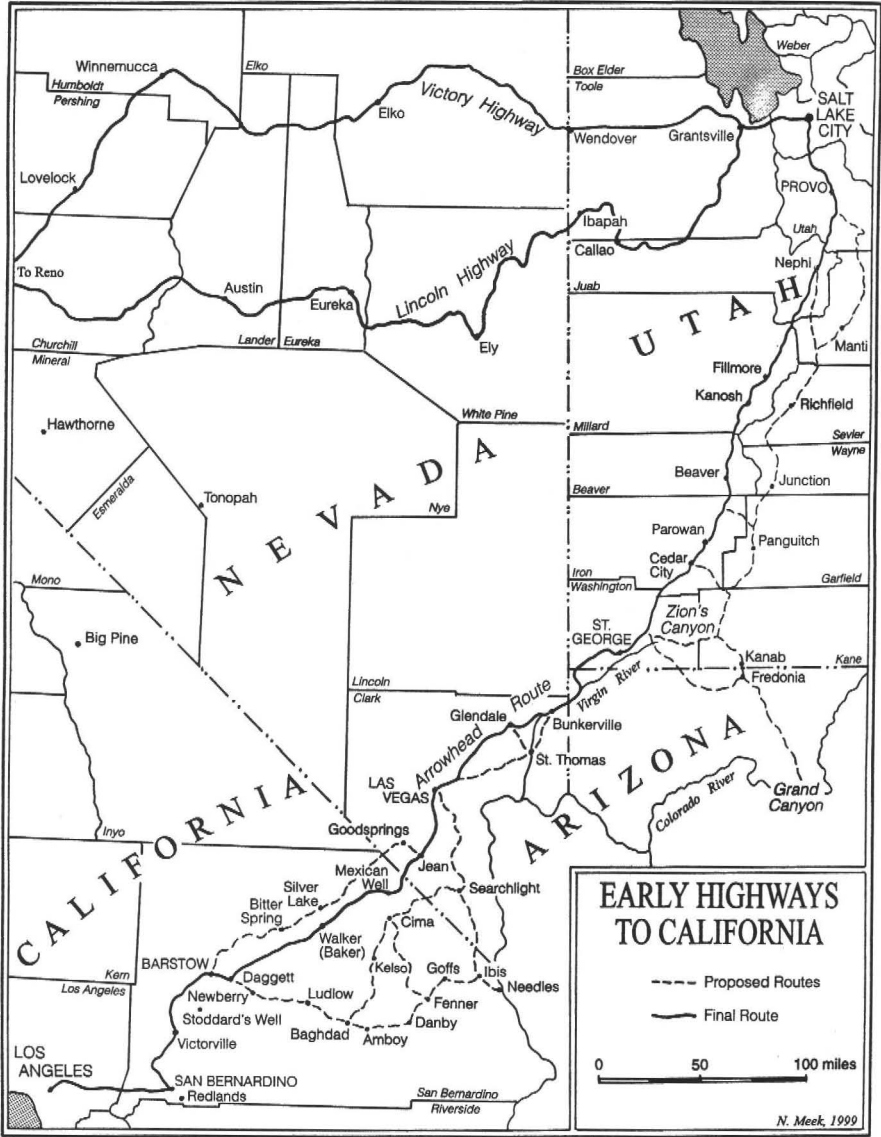
Edward Leo Lyman

The original idea for the Arrowhead Trails Highway from Salt Lake City to Los Angeles, was first advocated in 1916 by Las Vegas promoters.¹ While the first residents and visitors to Las Vegas came primarily by railroad, for a considerable period of time the main method of reaching Las Vegas was the Arrowhead Trails Highway and its successors, Highway 91 and Interstate 15. Today the route is still extremely busy, carrying people to and from the booming southern Nevada city.

When Lincoln Highway promoters first started considering routes from Salt Lake City to San Francisco around 1913, rival Nevada towns also vied for a branch road toward southern California. In this the prospering mining centers of Ely, Tonopah and Goldfield easily prevailed over Las Vegas and got a route adopted that went across central Nevada, through Westgard Pass into Owens Valley, California and southward toward Los Angeles. Besides the political power the successful towns wielded, the *Las Vegas Age* editor explained their success was largely because other municipalities along the more southerly route, including some in Utah and California, were not yet sufficiently cognizant of their advantages to assist the ambitious southern Nevada boosters. Some understood Las Vegas was also still in an early adolescent stage of development compared to the more mature mining center communities.²

The leading citizens of the burgeoning railroad town did not accept the defeat as final. In early 1914, a southern Nevada resident, James Thomas, requested that his former Stanford University classmate, Gordon Gassaway, secretary of the Automobile Club of Southern California, arrange to have his organization investigate what was already being called the "all-the-year" automo-

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For a considerable period of time the main method of reaching Las Vegas was the Arrowhead Trails Highway and its successors, Highway 91 and Interstate 15. Las Vegas, c.1915s (*Nevada Historical Society*)

bile highway from Los Angeles to Salt Lake City. The auto club, which had recently moved to the forefront of locating new routes, mapping, placing signs and promoting new highways, dispatched J. H. Gould, a locator, through the region in question. His route went east on what was becoming the National Old Trails Highway, a decade later known as Route 66, as far as Ibis, California, then turned north to Searchlight, Nevada, a booming mining center itself, then back to the northwest to Las Vegas. A month previously, a group of Clark County boosters had visited Goodsprings to investigate a possible route over Columbia Summit to Silver Lake, California on the Tonopah and Tidewater Railroad, then on to Barstow. For the ensuing decade the former route through Searchlight prevailed as the main highway, even though it was eighty miles farther to Los Angeles than the alternative route.³

In the summer of 1914, Las Vegas highway promoters were further encouraged by a letter from John P. Stockton, Jr. the western field representative for the United States Department of Roads. He not only inquired about local roads but asserted that a highway through the region might shorten the distance from Denver to Los Angeles by some four hundred miles. This was a considerable overestimation, but an encouraging observation nevertheless. Particularly as the north rim of the Grand Canyon and the southern Utah canyon previously known by the Native American name Mukuntuweap became better known as Little Zion Canyon, interest continued to mount for an interstate route through

Las Vegas from Utah to southern California.⁴ Also, some realized that the booming California southland needed a more direct tie to the Midwest similar to what the railroad, through the same area, already offered.

Although Goodsprings citizens, led by local hotel and mine operator George A. Fayle, also a member of the Clark County Commission, attempted to enlist the support of members of the San Bernardino County Board of Supervisors, for the shorter route through Silver Lake, rival businessmen from Searchlight continued dominant with their route. Led by James Cashman, who was engaged in trucking manganese ore over some thirty miles of the road to the railroad dumps, a Searchlight delegation visited Las Vegas in the summer of 1916. They argued to business leaders and newspapermen that their route should be favored because its connection with the National Old Trails Highway in California to the south would not require as much expenditure of road funds; San Bernardino County claimed to be short of funds after major road damage from floods earlier in the year. Cashman was already an automobile dealer in Searchlight, probably the foremost mining district in southern Nevada at the time. It was then common for private interests of businessmen to prevail over more direct, shorter routes during an era in which the various levels of government were hardly involved in investigating optimum routes or laying out actual highways.⁵

Equally relevant to this point was the debate over the roadway selected northeast from Las Vegas. Clark County Commissioner, C. C. Ronnow led the way in advocating a route that wound through the desert hills, past what became known as Valley of Fire to the lower Moapa Valley agricultural area around St. Thomas. In 1915 the county erected a bridge across the Rio Virgin near St. Thomas at a cost of \$13,500. The roadway then climbed over a mountain divide and through a notably narrow canyon before descending the benchlands to Bunkerville. The Virgin remained unbridged between there and Mesquite for the first half-dozen years of use, with a local farmer, Jody Leavitt, engaged by Clark County to assist automobiles through the river for a nominal fee. He had a bell at the fording place to summon him and his draft horses from work in a nearby field. This was considered by the *Las Vegas Age* editor to be the sole disadvantage on the entire Nevada highway from Jean to Littlefield, Arizona, at the end of 1915, but others would soon cite other objections.

One of the most crucial factors in the ultimate success of the Arrowhead Trails Highway and its successors was engaging another road locator, Charles H. Bigelow, who became a fanatical advocate for the route. Eventually proclaimed "father of the Arrowhead Trails Highway," Bigelow became an indefatigable advocate of that route for more than a decade. He was first enlisted in 1915 by Los Angeles people "interested in Clark County," perhaps Gordon Gassaway of the Auto Club of Southern California, who asked Bigelow's opinion about a direct route from Los Angeles to Las Vegas.

There is some indication that Edmund William Griffith, credited by the *Age*

with being "very active in promoting the route," was also involved in enlisting Bigelow. A successful Canadian railroad contractor, Griffith had moved to southern California near the turn of the twentieth century and soon became involved with William A. Clark in constructing the railroad through Las Vegas, a crucial development in stimulating growth. Griffith was builder of the first railroad roundhouse there, along with the town's largest business building which once housed the post office, a pharmacy, offices and apartments. Regarded a founding resident, he remained a prominent citizen the rest of his life. Griffith was the most visible Nevada advocate of the Arrowhead highway in both California, where he attended the initial organizational meeting, and Utah, where he subsequently visited to promote the highway.⁶

Bigelow was introduced to the readers of the *Las Vegas Age* as an automobile enthusiast from Los Angeles. He had enjoyed a notable career as an early west coast race car driver, participating in several of the Los Angeles to Phoenix desert races, even selecting the route to be utilized on at least one occasion. He was winner of a major road race in the San Francisco Bay area in 1911. Soon thereafter, he established a reputation as one of the best desert road locators in the American southwest, claiming some credit for originally locating portions of the National Old Trails Highway, and the rival ocean to ocean routes from Los Angeles to Phoenix, Arizona and beyond and the one from San Diego to Imperial, Yuma and on to Texas.⁷

On one of his trips through the southern Nevada desert in February 1916, Bigelow commented the Silver State roads were generally better than their counterparts in the portion of California he had recently traversed. He soon logged several other journeys into the desert and on one, he conferred with Salt Lake Railroad official, F. C. Wann, who pledged the community's support for the highway project. He commented significantly that throughout the area to be intersected by the highway there was a strong determination to build roads. The road locator was also a most effective publicist, offering informative columns and photos to local newspapers and actually taking reporters and photographers from both the *Los Angeles Times* and the *Los Angeles Examiner* with him on some of the exploration excursions. On other occasions the road locator was accompanied by movie cameramen working for the Hearst news syndicate. On some of the most important trips, Bigelow drove a twin six cylinder Packard, dubbed Cactus Kate II, provided by a prominent Los Angeles businessman.⁸

Early the same year, between desert trips, Bigelow met with interested southern California businessmen at his then hometown of Redlands, to begin to organize the efforts essential to induce similar groups throughout the region to solicit government support for the highway. After the initial meeting, Bigelow again went into the desert to more closely define the proposed route. He and his associates were soon seeking to establish a working relationship with leaders of communities on the west side of the central Utah mountains, in Iron,



This is the only known photo of road locator and promoter Charles Bigelow, with a companion in a scout car in 1916. (Collection of Edward Leo Lyman)

Beaver, Millard and Juab counties to improve the highway through their area toward Salt Lake City.

By the first week of July 1916, the modern trail blazer, Bigelow, was back in Redlands, also home of San Bernardino County's representative on the governing boards of the Automobile Club of Southern California, Mont B. Chubb. There they met under the auspices of the Merchants and Manufacturers Association and organized the Arrowhead Trails Association with Chubb as president aiming to form committees in each of the towns along the proposed route, committed to help promote the road. One of the board members from this inception was E. W. Griffith of Las Vegas.⁹

At the end of 1915 the proposed highway was called the "All the Year Route" or the "Old Mormon Trail." The new name clearly stemmed from the organizational meeting at Redlands, a community just ten miles from the large natural shrub-formed outline of an arrowhead showing distinctly on the south face of the San Bernardino Mountains. One of the leading promoters of the highway was railroad official Douglas White, who for several years had edited *The Arrowhead*, a magazine devoted to advertising the potential of the lands along the San Pedro, Los Angeles and Salt Lake route which essentially paralleled the highway.¹⁰

At that juncture, Fritz Fisher, president of the Redlands Chamber of Commerce, proposed that a group of Californians drive automobiles over that route to prove and publicize its feasibility. Spending considerable time contacting potentially interested citizens along the roadway, they also aimed at organizing other chapters of the Arrowhead Trails Association to seek improvement of the highway. The three car loads of businessmen and their wives embarked up Cajon Pass on September 25, 1916, meeting Bigelow, *Los Angeles Times* reporter, F. V. Owens and Douglas White, industrial director of the San Pedro, Los Angeles and Salt Lake City Railroad enroute. After radiator repairs and difficulty with the soft "oiled sand" a road crew on the new National Old Trails Highway was using to pave that highway east of Barstow, they camped along the road in the Amboy area. The next day, after passing Fenner, they turned northward and reached the railroad station at Cima on the San Pedro, Los Angeles and Salt Lake line at lunchtime.

Then, utilizing poor mining roads between the railroad and the present Interstate 15, they skirted east of the southeast spur of the Clark Mountains, not far from Mexican Well and after racing across the dry lakebed just on the California side of the Nevada border, passed through the present Primm area and reached Jean, Nevada toward evening. The men lined up at a bar for a cold beer while the women drank ginger ale, after which the group moved on toward Las Vegas, where they arrived after thirteen hours on the road. Staying at the Overland Hotel, the men went that night to the town hall for a meeting with local citizens forming a chapter of the Arrowhead Trails Association.¹¹

Leaving Las Vegas next morning over what was described as "poor, sandy



This 1916 photo taken by John "Fritz" Fisher shows the Mesquite celebration welcoming the first California motorists over the Arrowhead Trails Highway. (Collection of Edward Leo Lyman)

roads," they wound through desert hills and a rocky canyon which soon opened into a valley featuring great cliffs and pinnacles of various shapes comprised of vivid red sandstone. Fisher commented it looked like a valley of fire, an appellation White then resolved would become its name—which it has. Before noon the expedition reached St. Thomas, described as a small Mormon town. Then they climbed over a divide on a road so rocky and narrow later observers would marvel it was ever a main highway. The group held a road promotion meeting at Bunkerville and was treated to a melon and fruit feast across the Virgin River at Mesquite. After a subsequent difficult night drive over the Beaver Dam Mountains, long thereafter known as Utah Hill, the party arrived at St. George early in the morning exhausted after eighteen hours, traveling only a hundred fifty miles.

The roads in Utah were generally better and the promotional meetings held, equally successful. Southern Utah citizens were excited about the prospects of a southern highway link to the outside world. Accompanying the party through Utah was Griffith, then in the state assembly and a fellow Nevada legislator, State Senator Levi Syphus, of Lincoln County, whose parents had traveled over the route as Australian Mormon converts withdrawing from the abandoned San Bernardino colony. At the several promotional stops, Douglas White of the railroad, by then known simply as the Salt Lake Road, explained what his corporation had long recognized: that the highway and other good feeder roads

would help develop the lands along the railroad and significantly increase the tonnage shipped by the company to the benefit of all involved. White and his magazine, the *Arrowhead*, were of immeasurable assistance in promoting the highway and community development at both ends of the route throughout the period. Several articles featured the Las Vegas area and the Moapa Valley. After a warm reception at a dozen Utah towns, the group reached Salt Lake City, culminating a successful promotional journey of eight hundred miles. One of the reports home to Redlands stated "from the enthusiasm shown on the trip, the desire for good roads is apparent."¹²

Later that fall California association members informed their Utah and Nevada counterparts that ten thousand automobile tourists could be expected to travel the new route during 1917. Many communities along the highway geared up for the tourist trade increase with impressive promptness. Within a short time, Fillmore, Utah had a garage and a motor hotel named Arrowhead. Glendale, Nevada also established an Arrowhead Garage that is still in operation under that name. St. George too had an Arrowhead Hotel and Los Angeles, a super service station of that name, among doubtless many others. Many of these towns would benefit immensely from tourist trade over the subsequent half century, certainly none more than Las Vegas.

Advocates of the Arrowhead Trails Highway in southern Nevada, as well as their counterparts in southern Utah and California continued to face considerable opposition from backers of the Lincoln Highway still making good progress toward becoming the preeminent east-west transcontinental highway. The Lincoln Highway Association was well-organized and backed by the financial resources of some of the nation's leading auto and tire manufacturers. Henry Joy, president of Packard motor company, then one of the most prominent figures in Detroit, served several terms as president of the Lincoln promotional organization. Undoubtedly drawing on his earlier mining experience in the west Juab County, Utah, mining district named Detroit, in 1915 Joy chose the southernmost of three possible routes west from Salt Lake City as the preferred Lincoln route. This was essentially the same trail followed earlier by the famous Pony Express, which passed close to the Joy mining camp. Then jogging considerably south of the historic mail route while heading toward Ely, the Lincoln crossed formidable desert wastelands. The association guide literature noted intermittent ranches with people glad to assist with food, repairs and pulls out of the mud—for a price. Still this portion of the roadway did not help make the Lincoln route as popular as it might otherwise have been and may have inclined some promoters to engage in unfair tactics toward such rival routes as the Arrowhead.¹³

During the spring of 1917, as the nation was adjusting to involvement in World War I, some opponents of the Arrowhead Highway, perhaps from the San Francisco Bay area, informed the United States War Department the infant Los Angeles to Salt Lake City road was simply an unproved paper project. The

military was then designating highway routes in case the railroad system was disabled during wartime. Arrowhead Trails officials heard of the allegation and in cooperation with the United States Army immediately organized a timed one car road race, which although it was staged during a period of considerable rain and mud, would demonstrate how fast the new route could be traveled. Naturally Bigelow was involved as a driver, along with Captain O. R. Bird and a support crew of Sergeants H. A. Baker and Roy Hamilton. The trip took but thirty-six and a quarter hours, including time out for meals and some remarkably quick tire changes by the sergeants. This was the fastest time ever recorded between the two cities, despite driving in a blinding storm for 150 miles. The drivers asserted that the trip could be made easily in about twenty-four hours under anything like normal weather and road conditions. The War Department changed its policies because of the demonstration, although they designated the Cima cut-off blazed by Bigelow rather than the common longer route. The eminent practicality of the new highway was again fully demonstrated by the well-publicized road rally.¹⁴

Lincoln Highway promoters often sought to belittle the prospects of the Arrowhead and were doubtless involved in the attempt to prevent the Army from including it in their new national defense highway network. Bigelow acknowledged immeasurable assistance with the road race from the B. F. Goodrich Rubber Company, Los Angeles branch, which offered all the road information they had recently gathered during an early roadsign placing and marking expedition over the highway. Since the rival Goodyear and United States Rubber companies and former president, Frank Seiberling, were deeply involved financing and promoting the Lincoln Highway from Salt Lake City to Ely, Nevada and on to Reno, it was natural that the southern California company would quietly promote the rival route.¹⁵

The Automobile Club of Southern California was not visible in the initial regional movement for the Arrowhead Trails Highway. But since association president Chubb was San Bernardino County local counsel for the auto club as well as on its board of directors, that organization undoubtedly helped finance the locating efforts of Charles H. Bigelow and others. There is no doubt of the club's later involvement in promoting the new highway. Perhaps it was deemed wise not to have the association more visible to prevent suspicions the highway effort would benefit southern California most of all. It may also have been wise for the automobile club not to lend official backing to the new route until the necessary government agencies agreed to sanction the project. Certainly the communities along the existing route from Los Angeles to Salt Lake City through Tonopah and central Nevada would be angered by premature abandonment. In 1917, the auto club was still going to great expense for the sign placing project along that old Salt Lake-Lincoln Highway route.

Even on his early expeditions into Nevada, Charles Bigelow noted the abundant mining activity in the area of Jean and Goodsprings. The demand for zinc



Ore train above Ely. (Nevada Historical Society)

carbonates, as well as lead and copper, was great as the nation prepared for the onslaught of the World War I and thus stimulated this activity. It was also reported that the freight, including gasoline and supplies, brought in by railroad mostly from southern California, was then twenty cars per day just to that vicinity. The railroad had stimulated most settlement in the area and clearly remained essential. When *Touring Topics*, the auto club magazine, finally noticed Las Vegas in its April, 1918 issue, it mentioned much of the 385 miles of highway to that point was good, with the worst problems in the immediate vicinity of the town. But the magazine added, "the road doctors were operating on those roads" as the reporters visited and would certainly have them in good condition before auto club readers could prepare excursions over that route. This article asserted Las Vegas was then receiving produce and supplies from Los Angeles at a rate of \$75,000 per month, proving the Salt Lake Railroad was indeed the lifeline for that burgeoning city, as well as still its chief employer. The magazine writers also interviewed honored Las Vegas pioneer Mrs. Helen Stewart.¹⁶

Although by early 1917 San Bernardino County had twenty men and some teams grading the California road connection with Searchlight, there continued to be considerable dissatisfaction with that route. One of the earliest "old guard" members of the Southern Nevada Automobile Club, former surveyor of the railroad, and one of the key officials of the Las Vegas Land & Water



Goodspring, Nevada, 1917. (Nevada Historical Society)

Company, W. R. Bracken, consistently advocated the route through Goodsprings. Charles H. Bigelow thoroughly investigated at least four alternative routes he considered superior to the current indirect road.

In March 1916, San Bernardino County highway commissioner, L. B. Lothrop, promised to approach his board of supervisors with a request for \$5000 to improve the road from Barstow to Silver Lake. Although he was enthusiastic about the project, the funds were not forthcoming. The California county official also traveled from the Silver Lake station on the Tonopah and Tidewater Railroad to Goodsprings. In this he drove over a road recently improved by citizens of the two towns, with the financial assistance of a \$1500 allocation from Clark County. Lothrop's host on the trip was Clark County Commissioner, George A. Fayle, who pointed out the booming condition of the zinc mining camp in which he was then interested. Later in the spring, Bigelow and his newspaper supporters met other Clark County people at Barstow and he conducted them over the same basic route, already called the "Silver Lake cut off." Besides the natural boost in tourist revenues and land values, all involved understood the substantial savings in time and miles of the route over the one through Searchlight and many continued to advocate it over the ensuing years as San Bernardino County continued to delay commitment on the matter.¹⁷

Even as Automobile Club of Southern California finished their road sign project through Searchlight to Las Vegas, club friends continued urging Nevada engineers to investigate and lobby for the shorter routes, including one from Jean to Ludlow. By the autumn of 1919 Nevada State Road Engineer, C. C. Cottrell had assigned a department engineer to reside at Las Vegas to oversee road location and construction work with a possible budget of \$290,000. At the end of the year, Nevada officials again met with people from San Bernardino County to urge the shorter Jean-Ludlow route. Early the following year highway commissioners from Utah and Nevada, along with southern California auto club people again conferred with San Bernardino County Supervisors essentially pleading with them to select any alternative to the Searchlight route. Both the Silver Lake cut off and a roadway through Kelso, Cima and Nipton to Jean were mentioned, but not pushed because the decision was strictly up to the California county.¹⁸

In an effort to coax San Bernardino officials to make a commitment, E. W. Griffith, by then the Las Vegas state senator, stressed Nevada's commitment to good highways mentioning her citizens expended more funds per capita for highway construction than any other state. He also pointed out his state had more highway mileage per person than any other. Nevada's chief highway engineer, C. C. Cottrell, emphasized the obvious, that his people were anxious for a final designation of the favored route so that they could know where to connect with the California extension of the Arrowhead Highway. There was apparently some commitment that spring to adopt the Silver Lake road, but

there was no subsequent construction by the seemingly irresponsible California county.¹⁹

Early in 1920, Charles H. Bigelow, by then a resident of St. George, Utah, visited Las Vegas with his wife and Joseph Snow, one of the most prominent highway boosters in the Dixie region. The road locator was employed as an assistant state road engineer in charge of construction of the Arrowhead in Washington and Iron Counties. The object of the visit to southern Nevada was to encourage local citizens to commence a movement to have the Valley of Fire designated as a national monument, with Bigelow calling it "one of nature's most striking views." The Utah people then journeyed on to southern California where they helped arrange for what was called "the heaviest advertising campaign" of Utah and its attractions. The aim was to garner a large proportion of the tourist traffic so rapidly proliferating in the California southland.

Undoubtedly cooperating with the Automobile Club of Southern California, they prepared pamphlets including photographs, strip maps, information on tourist accommodations as well as the verbal descriptions of all that was to be experienced. While there was no mention in this literature of the southern California auto club, it is known that the branch offices of that organization were each given large numbers of these pamphlets to be circulated among motorists inquiring about tours in that region. Other promoters including early Zion and North Rim of Grand Canyon campground proprietor, W. W. Wylie of Pasadena and the Union Pacific Railroad were similarly engaged lavishing unrestrained praise on the canyons and other wonders to be seen along the Arrowhead route. This had remained one of the most consistent messages in Bigelow's promotions as well, pointing to the fantastic scenery the new roadway would open to the public at what was just starting to be called Zion Canyon, recently designated as a national monument, as well as the north rim of the Grand Canyon. Later in the decade the club magazine, eventually known as *Westways*, featured a well-illustrated article on the Valley of Fire.²⁰

A serious threat to the development of the Arrowhead Trails Highway was opposition from Salt Lake City businessmen who favored the Lincoln Highway which passed through their city on the way to San Francisco. One of the main Utah proponents of the northern highway was W. D. Rishel, director of the Utah Automobile Association. That organization's publications and maps carefully avoided mention of the Arrowhead Trails Highway and seriously slighted all southern Utah road interests. Similarly, a *Salt Lake Herald* article in late 1919, stated that the main three highways that intersected in northern Utah brought over twenty thousand tourists into the state during the first ten months of the year. The news item asserted that only 1,244 came by way of the Arrowhead during the same period. However, Jody Leavitt had records of assisting 4,952 automobiles through the Virgin River, besides those who got through on their own during low water periods. If an average of three persons per car were used, the southern route brought three-fourths as many people as the

other three roads combined during the same period, although northern Utah people remained totally ignorant of that fact.²¹

Northern California businessmen were similarly engaged in countering the appeal of the Arrowhead route. In the spring of 1920 James K. O'Brien, president of the Marysville, California, Chamber of Commerce was elected permanent president of the Utah-Nevada-California Highway Association whose expressed purpose was to assist in building a roadway across the state of Nevada. The California members were already notably successful securing access roads from connection with the Lincoln Highway leading into the interior of their state.

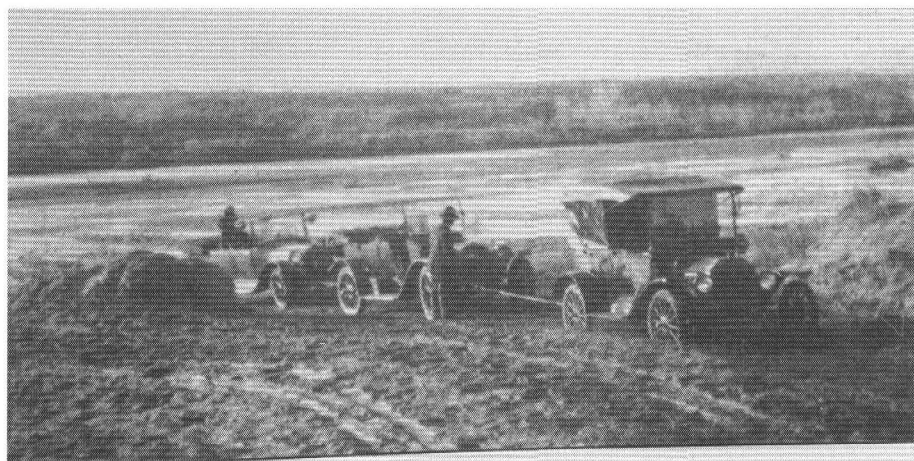
Even more serious for Arrowhead route advocates, was an April 14, 1920 meeting at the Palace Hotel in San Francisco, attended by a considerable number of interested residents of northern Nevada as well as some from northern Utah and naturally, the Californians. Mayor Stewart of Reno along with Charles S. Knight and W. H. Goodin of Lovelock, were elected to the executive committee of the highway promotion organization. The main item of discussion was diverting tourist trade from southern California and southern Nevada to the region intersected by the Lincoln Highway. Participants accepted as a goal the absolute need to "tap the transcontinental tourist travel at the point which is now diverted to southern California because of poor road facilities across Nevada and the Sierras to northern California." Utah and California members pledged to raise approximately half-million dollars to match a similar amount already appropriated by four Nevada counties, Washoe, Humboldt, Elko and Pershing, for the purpose of constructing a highway from Verdi on the lower Truckee River to the Nevada-California border farther up Donner Pass.²² This was clearly an instance where the greater Reno area businessmen attempted to damage the interests of their counterparts in southern Nevada as their Salt Lake City vicinity associates sought to do to southern Utah.²³

Certainly part of the rivalry in each state stemmed from competition over the still-meager amount of state funding for highways. Starting with the Federal Highway Act of 1916, the national government began making it immeasurably easier for the sparsely populated states of the Far West with their vast stretches needing roads to fund such construction. Similarly, after California and Oregon commenced raising highway funds through a gasoline tax in 1919, other states promptly followed. With the urging of Governor James G. Scrugham, the Nevada legislature imposed a two cent per gallon excise tax in 1923. In its first year of existence approximately \$166,000 was generated from that source, with an equal amount derived from auto license fees. With regular taxes and bonding, funds were soon available for the Silver State to accomplish its massive roadbuilding undertaking. There is no indication that state government ever particularly slighted the interests of southern Nevada in either construction emphasis or funds allocations.²⁴

The neighboring states to the east struggled more with road funding. As



The first bridge across Virgin River was completed in 1921 and inaugurated with a dance on the roadway. (Photo courtesy of Billy Pulsipher published in Dorothy Dawn Frehner Thurston, "A River and A Road in Honor of Mesquite, Nevada's Centennial, 1994")



Assisting automobiles through the Virgin River between Bunkerville and Mesquite was required before the first bridge was constructed. (Photo courtesy of Billy Pulsipher published in Dorothy Dawn Frehner Thurston, "A River and A Road in Honor of Mesquite, Nevada's Centennial, 1994")

much interest as southern Utah citizens exhibited in developing the Arrowhead Trails Highway, they ran into a series of major setbacks before finally accomplishing the necessary construction.²⁵ Arizona was even slower. The portion of the state north of the Grand Canyon had been so difficult to access from the rest of the state that it could have been easily obtained free by Utah less than three decades previously. There was a bond issue attempted in Arizona in 1920 for these road projects, but it did not pass since there were virtually no state constituents who would directly benefit from such a highway. Thereafter the Arizona state engineer expressed little hope his state would come up with sufficient funds to include the desired highways within its designated federal aid projects. It was truly impressive that the state did ultimately fulfill her obligation to neighboring states prior to final completion of the entire project.²⁶

Along with Utah's major financial obstacles to completing its segment of the Arrowhead Trails Highway, there was immense pressure on the Utah Highway Commission by the formidable Lincoln Highway Association to have their route favored over the rival north-south Arrowhead route as the primary interstate link for Utah. Commencing on November 21, 1921, and on subsequent occasions, J. H. Waters, counsel for Utah of the Lincoln organization, called on the commission to urge a prompt decision on the matter. Ill will among association members had already arisen because the state allegedly had not completed promised segments of the highway in the desolate salt flats of the extreme western portion of Utah adjacent to Nevada. This was partly because state engineers disagreed with Lincoln President Henry Joy's choice of routes in that area, preferring the more direct central route through Wendover. The association too had failed to meet some of its prior construction funding commitments in that area. Yet as late as May 1923, Lincoln Highway proponents presented a seventy-two page brief defending their southerly route through Ely and severely criticizing Utah officials for not fulfilling supposed commitments on the matter.

Even greater pressure was exerted behind the scenes in Washington, D. C., where Secretary of Agriculture Henry A. Wallace, charged by recent statute with responsibility in such highway matters, heard representatives of the rival factions in a day-long hearing. Joy, Frank Seiberling and Field Secretary Gael Hoag voiced the Lincoln case against Governor Charles Mabey, former Governor William Spry and Utah state highway officials. Though Joy naturally defended his position, at a time when the most direct and efficient permanent roadways were finally coming into favor, the arguments bolstered by Utah's professional engineers prevailed. Wallace later explained to Joy he had no power to designate an alternative route without a better reason than those presented. Ely lost out to communities along the northern route which eventually became Interstate 80 and still serves as a more efficient direct line for most motorists. The highway was completed in 1927 and was soon accepted by the Lincoln Association, although they continued to advocate a cut-off to Ely, which was

somewhat improved and utilized for a time. With this episode the mostly-private good roads movement was essentially superseded by a more professional state and federal highway route selection system. Similarly, highway number designations soon replaced the old highway names.²⁷

In late 1916 an anonymous Bunkerville correspondent to the *Age* questioned maintaining the highway through St. Thomas when the adjacent Virgin River was so often treacherous. He suggested a better route following the railroad northeast from Las Vegas to the Muddy River crossing near Moapa, then taking the old emigrant road across the so-called Mormon Mesa. Although another Bunkerville citizen answered to the contrary, the Virgin essentially proved the earlier point by washing out access to the St. Thomas bridge as well as damaging cuts and fills along the roadway in the vicinity. By the spring of 1917, Mesquite Mormon bishop, William E. Abbott, reported that he and his neighbors constructed their own road by the suggested route from Moapa, eliminating the necessity of crossing the Virgin at St. Thomas and between Bunkerville and Mesquite.

That same year, Joseph Ira Earl, of one of the earliest Mormon families in the latter community, wrote "the town people turned out, both old and young, to fix up the roads in the town and also east of town on the main road." He reported taking more than a dozen small boys to a portion of road east of Mesquite where they cleared the rocks from about two miles of roadway. It would take more than that to make acceptable as a through highway that segment of road, where buses had to back up to sufficiently turn the wheels to make several turns. Without committing herself in the controversy between routes, another Mesquite resident, Anne Woodbury Hafen, recently married to LeRoy R. Hafen, later historian of the pioneer route through the area, wrote a poem advocating the Arrowhead Highway. She concluded:

You'd better count the good time days tha't comin mighty quick
When tourists in their auto cars go spinnin past just thick;
An' ye'd better boost high for the roads and keep 'em in repair
An' the Arrowheads will hold ye up if you'll only do your share.

In 1923, after persistent pressure from affected residents, Nevada engineers finally conceded following the railroad north from Las Vegas was better than the old road through St. Thomas. One veteran traveler later admitted "there's been more springs busted on that road than anywhere in the state," referring to the rocky sections of the old roadway from the rim of the Las Vegas basin to the mountain canyons near the Valley of Fire, across the low mountains to the east but paralleling present Interstate 15.²⁹ The new road was thus constructed near the Moapa railroad station. By the end of the following year, Clark County could boast fifty-five miles of improved highway from within six miles of Las Vegas to the western edge of the Mormon Mesa. A half-year later, a federal aid highway project completed a similar section of road across the mesa giving the

county an improved gravel road on a direct line route from Las Vegas to the Arizona border near Mesquite. By that time a contract had been made with a Salt Lake City company to construct a bridge costing in excess of \$50,000 over the Rio Virgin between Bunkerville and Mesquite. Another bridge at Riverside, some dozen miles downstream from the new one, would also be built.³⁰

Thus the last obstacle to completion of the early interstate highway was the southern California connection. It was clearly San Bernardino County officials who blocked progress by neglecting to improve any route which would necessitate expenditure of funds when a semi-developed road already existed, albeit a circuitous one. In 1922 the Automobile Club of Southern California again proposed the Silver Lake route, and Nevada highway engineers once more accompanied their California counterparts over the route at the end of the year. This suggested road followed existing highways from Jean to Goodsprings across Columbia Summit, then followed a less improved road to the Tonopah and Tidewater Railroad seven miles from the Walker station, later known as Baker.

By early 1924, the Nevada engineers had modified the portion of the route near the border of their state, going directly from Jean to Walker, bypassing Goodsprings. Besides avoiding heavier grading required at Columbia Summit, the Goodsprings mining activity had subsided sufficiently that road officials reported "not much doing" so far as businesses to be affected. This was a significant improvement of the roadway which now went by way of what was then called the Mexican Well Pass through the Wheaton Wash, later named Mountain Pass. The maximum elevation of 4,500 feet was easily manageable for most vehicles by that time on the highways.³¹

The California situation was finally resolved in early 1924 when persistent field secretary, C. E. McStay of the Auto Club of Southern California, again invited California officials to join club and Nevada boosters to inspect the newly-proposed route. The purpose was clearly to interest, and by this time even pressure San Bernardino County officials into making the long-delayed decision essential to opening the remainder of the route. The new proposal had the roadway straightened to extend from Cronise Valley to Baker and Halloran Springs. The investigating party was compelled to travel the old way through Silver Lake and Hyten's Well because the existing road on the new route was so "poor and seldom used." Yet now, after years of vacillating between proposed routes to either side, the decision was finally made to run the highway from Halloran Summit through the adjacent valley to the north, past Valley Well then up a gradual natural grade to Mexican Well Mountain Pass, then on to the Nevada state line and Jean. Early in 1925 the editor of the Victor Valley, California, *News-Herald* predicted, in what proved to be a gross understatement, that "the Arrowhead Trails [Highway] in due time . . . is likely to be one of the important trunk lines leading into California."³²

While the California decision had still not been announced, Nevada observ-

ers were assured it would soon be because the funds were available to undertake whatever road construction project was deemed necessary. San Bernardino officials had budgeted \$25,000 for work on the National Old Trails Highway from Victorville to Needles and when the California Highway Commission assumed responsibility for that road the county was left with a windfall to be diverted to whatever project it selected. It was also understood the Automobile Club of Southern California had raised some \$10,000 in private funds to be expended on the same highway. The data gathered and the financing available no longer allowed delay and the California county belatedly accepted its responsibility to publicly designate the new route as numerous outside advocates had so persistently urged. The route was close to what Charles H. Bigelow had suggested almost a decade before. San Bernardino County ultimately spent \$35,000 on the highway before the state of California assumed control and responsibility for it in mid-1926. While slower than the neighboring states of Nevada, Arizona and Utah in choosing the favored route, California got her portion of the Arrowhead Highway paved with asphalt a full half-decade before the depression-ridden neighboring states had their segments similarly paved. The last California section of the road, predictably the one most recently designated as the final route, was completed in mid-1932.³³

Mesquite, Nevada, garage operator Howard Pulsipher's note of recollection and credit is the sole known source of another view of Charles H. Bigelow, the man proclaimed in early 1920 as the "Father of the Arrowhead Trail" highway at a Cedar City convention of the Arrowhead Trails Association. The Virgin Valley businessman recalled Bigelow as a "poor old man with only one leg who did more to establish that highway than all the officials." This hardly fits the contemporary view of Bigelow, who was not only one of the officials, but was robust and obviously influential in circles of power. However, the sources mention him having a leg injured in an automobile accident near LaVerkin, Utah, on the Virgin River in 1920 which may have led to complications, and it is doubtful if his highway engineer employment continued much beyond that point amidst the financial chaos then surrounding Utah highway construction.

Later in the decade, which is what Pulsipher appears to remember, since his own business was not established until 1924, the highway promoter's fortunes could have declined sufficiently to fit the description. The recollection was that Bigelow, "at his own expense and all alone would leave Salt Lake in his old Ford or Chevrolet with cans of gasoline, canteens, tire patching, fan belts, oil, springs and everything to bounce over the rocks and through sand and mud holes" to assist motorists in need on the road. He also persistently contacted individuals and groups along the way he thought might help improve the road by building a bridge, hauling clay to a sandy stretch, clearing rocks from a crucial segment or grading a steep hill. It was said he was always trying to get town boards and county commissions to assist as he worked his way toward Los Angeles and then returned. Pulsipher stated this continued for three

or four years and the road was greatly improved prior to its being designated Highway 91. This is evidence that the irrepressible locator and leading promoter of the road stayed with what must have become an obsession long after he faded from the official limelight and newspaper coverage he had been so adept at garnering for his earlier efforts. It is further indication such a man should not be forgotten by the myriads of travelers who continuously utilize his highway—whatever its name.³⁴

The old Arrowhead Trails Highway name remained on some maps well into the 1940s, a decade after it had been numbered Highway 91. Now that it is Interstate 15, the volume of traffic makes it one of the busiest and most important in the West. Many people vaguely understand the route is similar to the old pioneer and freight wagon road of the mid-nineteenth century. Ironically, the earlier trail blazers have been better known, with much more historical treatment, than their later road building counterparts.³⁵ Far fewer have any idea of the struggle to get an acceptable automobile and truck highway started through the same region. It was an impressive accomplishment by a few singleminded individuals and organizations whose efforts deserve remembrance.

Notes

¹*Las Vegas Age*, 20 November, 18 December 1915; 12 November 1944. The most notable of the early promoters was Edmund William Griffith, involved from the beginning of Las Vegas with William A. Clark. Another with equally important early roots in the city was W. R. Bracken. A third important early Las Vegas promoter was James Thomas. County Commissioner George A. Fayle of Goodsprings and James Cashman, later of Las Vegas, but then representing Searchlight, were equally active in advocating the new highway. See note 10 for more on the name Arrowhead.

²*Las Vegas Age*, 20 November 1915.

³*Las Vegas Age*, 7 March, 4, 11 April 1914; 20 November 1915.

⁴*Age*, 8 August 1914, 20 November 1915.

⁵*Age*, 21 November 1914, 12 November 1944; the latter being a sketch of "Early Historical Events" by Delphine Squire.

⁶*Ibid*, 5 June 1915, 12 November 1944; James G. Scrugham, ed., *Nevada: A Narrative of the Conquest of a Frontier Land*, vol. III (Chicago: American Historical Society, 1935), 398-9; *Redlands Review*, 20 August 1916, in Charles Bigelow Scrapbook, Dixie College Library, Special Collections, St. George, Utah.

⁷Charles Bigelow scrapbook, including clippings from *Los Angeles Times*, 1 November 1908; *Oakland Tribune*, 22 February 1911, and *San Francisco Chronicle*, 23 February 1911. Also *Las Vegas Age*, 13 May 1916, not included in scrapbook, which asserts Bigelow had also blazed the other routes.

⁸*Las Vegas Age*, 5, 12 February, 1 April, 13 May 1916.

⁹*Redlands Review*, 1, 26 February, 8, 11, 12 July 1916.

¹⁰*Las Vegas Age*, 25 December 1915, 5 February 1916; *San Bernardino Guardian*, 2 January 1867, for full column description of the Arrowhead formation. Promoters probably realized that Mormon Road was not entirely accurate, since the main route to California veered through Blue Diamond, Mountain Springs and Pahrump Valley and into California by a considerably different route than that proposed for the automobile highway.

¹¹William G. Moore, comp., *Fun With Fritz: Adventures in Early Redlands, Big Bear and Hollywood with John H. "Fritz" Fisher* (Redlands, California: Moore Historical Foundation Book, 1986), 45-51.

¹²Moore, *Fun With Fritz*, 54-7; *The Arrowhead: A Monthly Magazine of Western Travel and Development*, issues 1913-1917.

¹³Drake Hokanson, *The Lincoln Highway: Main Street across America* (Iowa City, Iowa: University of Iowa Press, 1988), 10, 62-4.

¹⁴*Millard County Progress*, 11 June 1917; *Las Vegas Age*, 16 June 1917. The army officer was soon sent to the French sector of World War I where he helped organize the mechanized transport corps.

¹⁵*Age*, 16 June 1917; Drake Hokanson, *The Lincoln Highway: Main Street across America* (Iowa City, Iowa: University of Iowa Press, 1988), 78, 94, 97; Edward Leo Lyman, "The Arrowhead Trails Highway: The Beginnings of Utah's Other Route to the Pacific Coast," accepted for publication by *Utah Historical Quarterly*, early 2000., 11-7.

¹⁶*Touring Topics*, June 1918, 9-10; Edward Leo Lyman, "From the City of the Angels to the City of Saints: The Struggle to Build a Railroad from Los Angeles to Salt Lake City," *California History* LXX, no. 1, Spring 1991, 81-93.

¹⁷*Age*, 22 April 1916, 16 January 1917; Barstow, *California Printer*, 10 March 1916, and earlier reference in same newspaper, 9 April 1914 noted Clark County had agreed to build a road as far as Francis Springs in San Bernardino County if the supervisors of that county would construct the adjacent segment of road on to Daggett. The Nevada funds were obviously offered anyway, although the California county continued noncommittal.

¹⁸*Washington County News*, 16 October, 18 December, 25 January 1919; 28 February 1920.

¹⁹*Age*, 28 February, 1 May 1920.

²⁰*News*, 16 October, 18 December 1919, 5 February 1920; *Touring Topics*, January 1929, XXI no.1, 28-31.

²¹*News*, 18 December 1919; Lyman, "Utah's Other Route," 6.

²²*Reno Evening Gazette*, 19, 24 April 1920; *News*, 29 April 1920.

²³Lyman, "Utah's Other Route," 256-61.

²⁴James G. Scrugham, ed., *Nevada: A Narrative of the Conquest of a Frontier Land*, 3 vols. (American Historical Society, Inc.: Chicago, 1935), III, 545-6.

²⁵Lyman, "Utah's Other Route," 18, 22-4.

²⁶*News*, 3 June 1920, 11 November 1920.

²⁷Hokanson, *Lincoln Highway*, 99-102.

²⁸*Age*, 25 December 1915, 18 November, 9, 16 December 1916, 3 March, 12 May, 11 August 1917.

²⁹*Touring Topics* XXI no. 1, January 1929, 30.

³⁰*Las Vegas Age*, 8 November 1919; 13 December 1924; 22 May 1925; Charles G. Benson to C. H. Sweetzer, 26 January 1923 and H. F. Holley to George W. Borden, March 25, 1923, Reconnaissance Reports, Nevada State Highway File, Nevada State Archives, Carson City, Nevada.

³¹C. C. Boyer to George W. Borden, 11 January 1924, Nevada State Department of Highways File, Nevada State Archives, Carson City, Nevada.

³²Victor Valley *News-Herald*, 8 February 1924, 16 January 1925; Taylor Smith, "California's Interstate 15: 186 Miles of Divided Highway Across the Desert," *California Highways and Public Works* (September-October 1965), 14.

³³C. C. Boyer to Borden, 11 January 1924; J. M. Hodges and O. B. Brinkerhoff to C. H. Purcell, April 1933, Final Report, Division of Highways, Department of Public Works file, State of California Department of Transportation, Library and Archives, Sacramento, California; *News-Herald*, 20 March, 22 May, 5 June, 2, 23 October 1925, 9 July 1926.

³⁴Howard Pulsipher, "Autobiography," typescript, Utah Historical Society, Salt Lake City, Utah; *News*, 15 January 1920, 20 May 1920.

³⁵Edward Leo Lyman, *From the City of the Saints to the City of the Angels: Early Transportation between Salt Lake City and Los Angeles*, submitted for consideration of publication to University of Nevada Press, August 1999.

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BOOK REVIEWS

Living It Up and Doubling Down in the New Las Vegas. By Andrs Martinez (New York: Villard Books, 1999, 329 pages, bibliography).

Whenever an outside observer comes to Las Vegas to put it on the psychiatrist's couch, a shudder runs through those who study the town's history for fun or profit (and there is more of the former in it than the latter). The result of the author's labor usually is an innocuous tourist guide, an all-out assault, or endless praise for the Strip, all of it without revealing any awareness that Las Vegas is more than that glittery stretch of old Highway 91, except perhaps for downtown. Those who do a good job of capturing life amid volcanoes, pirate ships, Roman statuary, pyramids, medieval castles, and other fare often do not get it: They are discussing something that affects and reflects the national psyche, but is not necessarily the most profound place on the planet. Andrs Martinez does get it, and the result is an entertaining book that those inside or outside Las Vegas will find readable, interesting, and informative.

Martinez's premise is simple: Take \$50,000 from his publisher, go to Las Vegas, gamble with it, and write about what he encounters. Then he moves from resort to resort, describing his physical surroundings, the people he meets, what he does, and how he does it. Through this approach, readers spend time not only in newer Strip megaresorts like the Bellagio, but also in classic hotels like the Desert Inn, off-Strip resorts like the Hard Rock, and the downtown Golden Gate. As a result, Martinez provides a much better flavor of the Las Vegas gaming industry than other authors who simply marvel at the neon.

Martinez is not the usual writer casting his eye on Las Vegas. He is a history major at Yale with a Columbia law degree who became an editorial writer for the *Pittsburgh Post-Gazette* and a correspondent for *The Wall Street Journal*. His book reflects that background. Few visitors take a tour with a history professor (Hal Rothman of UNLV, who gives less seedy tours than I do), have lunch with a leading bookmaker, read the leading academic work on the city (Eugene Moehring's *Resort City in the Sunbelt*) or a daily newspaper, or learn about the state of the town's major industry with the nation's leading gaming attorney, Robert Faiss of Lionel Sawyer & Collins. Spending time with them and with other local characters from dealers to strippers gives Martinez's writing a richer texture and greater depth.

His observations, right or wrong and welcome or not, provide food for thought. Perhaps from his education, perhaps from his references to Fyodor Dostoevsky—a different approach to looking at gambling in Las Vegas—he

ponders the tourists and concludes, Americans, it is readily apparent, do Vegas the way they do Europe, armed with film and a checklist of sights. The only difference is that here the sights are megaresorts, instead of megachurches. In time, that difference may be academic. A few centuries from now, archaeologists studying the ruins of our civilization will no doubt determine that Las Vegas was an important religious center, boasting dozens of massive temples to which pilgrims from afar brought bountiful offerings—which may not be too far from the truth (11).

Granted, in a 329-page race through Las Vegas, Martinez could hardly be expected to get everything right or cover it in the kind of detail that a Las Vegan would find particularly welcome. His one transparently obvious factual error—the reference to Bud Greenspun, the *Las Vegas Sun* publisher who may never have heard that name in his life—is jarring. His description of downtown Las Vegas could have been more studied, given that the downtown areas of many cities have been both depressed and the object—sometimes victim—of redevelopment. However, his examination of the comp, short for complimentary, and for high-rolling tourists a payoff that longtime locals tend to view as a relic from the bygone mob past, is an interesting insight into how the casinos and their employees operate. His brief assessment of Howard Hughes thankfully does not overestimate the billionaire's importance. His too brief analysis of issues like schools and suburbs leaves the reader wishing that he would have been able to devote more space to those subjects and how they relate to the glamour and profits he saw on the Strip. He also might have paid more attention to another flip side of that—problem gambling—but he gives a trenchant analysis, which is more than can be said of many Las Vegas experts, executives, or employees. While it is easy to criticize Martinez for not writing the book a reader wanted written, he wrote a book that anyone interested in Las Vegas should want to read.

In the end, *24/7* is a lot like its subject, Las Vegas: What you make of them more likely than not depends upon your mood and taste. Those who have never been to Las Vegas will learn that the city is both more and less than they think it is. Those who have visited Las Vegas will hear echoes of themselves, good and bad. Those who live in Las Vegas will note that an outsider saw through some of what the insiders would have us believe. Those who study Las Vegas will welcome this entertaining and informative book, and hope that Martinez comes back, because if he is like his book, he is pleasant, enjoyable, thought-provoking company.

Michael Green
Community College of Southern Nevada

The Real Las Vegas: Life Beyond the Strip. Edited by David Littlejohn (Oxford: Oxford University Press, 1999).

Between 1996 and 1998, David Littlejohn, a retired professor of journalism from the University of California at Berkeley, award-winning photographer Eric Gran, and thirteen writers, all graduates of Berkeley's Master's program in Journalism, set out to investigate and present for readers an account of the *real* Las Vegas.

To a significant measure, they succeeded.

Unlike another entry in the endless stream of coffee-table books about the United States' fastest growing city, Littlejohn's edited collection offers a view of the underside for all of those who cannot, or choose not to, see past the neon lights of the burgeoning city.

The fifteen chapter, 289 page anthology begins with Littlejohn's overview of the project's objectives, its methodology, and the editor's own theoretical perspective on the city, an intriguing, albeit brief section that likens Las Vegas to a "company town." Littlejohn contrasts the differences between true company towns, such as Pullman or Hershey, and those dominated by a single company. Yet, his argument that "The Industry" (the hotel/gaming/recreation sector of the local economy) in Las Vegas exercises a profound impact on the political, economic, social and cultural life of Southern Nevada can hardly be denied. In this way, his views are at odds with those such as Gottdiener, (Gottdiener, Mark Claudia Collins and David Dickens, *Las Vegas: The Social Production of an All-American City* [London: Blackwell, 1997]) who see significant levels of internecine competition among the dominant economic interests precluding them (the casino industry) from operating as a united coalition. Littlejohn offers the analogy cautiously, but the chapters contain much that is supportive of the thesis that Las Vegas is largely dominated by one industry; an industry that is able to apply its heavy hand in a unified fashion in order to achieve its key common objectives (such as limiting the gaming tax assessment in Nevada sharply below that found in other states).

Indeed, perhaps the single greatest difficulty with the company town analogy is that the volume's contributors did not embellish the perspective in their chapters and provide connective tissue from one vignette to another about the real Las Vegas. Instead, the journalists examine slices of daily life in Las Vegas in isolation, attempting to distance themselves from the influence of the Strip and the Downtown gambling casinos as much as possible, a task Littlejohn and his team found problematic at best. The Industry's ability to permeate every aspect of daily life—as illustrated in the team's inability to research subjects apart from the city's broader political economy makes the company town analogy more compelling.

Despite the gambling-based culture's ability to shape everyday life, the contributors to this volume render incisive accounts of homelessness, the growing

senior presence, youth-related problems, the increasing Hispanic population, the historic and continuing problem of racial discrimination against African Americans, the scarcity of water in a desert environment, the tremendous expansion of the residential market (especially in master planned communities), the highly active religious character of much of the local population, the resurgence of organized labor, including coverage of the United States' longest strike, the city's ever-present sex industry, crime (from the mob to increasingly active street gangs) and last, to disputes between the city, the state and the federal government.

Several negative critiques could be leveled at Littlejohn's edited collection, but he does an admirable job of anticipating the most serious of these. Perhaps most critically, for a history journal book review, there is little in this collection for the more disciplined, narrowly-focused historian. But acknowledging this gap, Littlejohn recommends two references for those desiring greater depth about the white European settlement of southern Nevada. From a broader perspective, Littlejohn and his team might have noted that the Southern Nevada region had long been inhabited by Native Americans, including the Utes, Paiutes, Shoshone and Anasazi. In overlooking their earlier presence, the oldest reference to "settlers" are the Mormons of 1855.

A more glaring omission is a more rigorous analysis of the industry itself and the social impact it has on the local community. Littlejohn's explanation for the absence of such an analysis is that "it is the most elusive subject of all [to investigate]" But given that the city has been identified as a kind of company town by him, a more thoroughgoing critique of the actors and machinations surrounding the industry seems warranted by Littlejohn and his research team. There are other significant omissions, but again, Littlejohn anticipates criticism for not covering issues surrounding the nation's ninth-largest school district, collegiate and professional sports in the region (the former of which is and has been particularly important in creating a sense of place for many local residents), the influence of the Mormon church in southern Nevada, and the role of the University of Nevada, Las Vegas. Although more complete coverage of these areas would have been instructive, the editor clearly recognizes the significance of their role in understanding the "Real Las Vegas."

In concluding, Littlejohn reiterates his belief that other American cities will not emulate Las Vegas and legalize casino gambling on a widespread basis. As he sees it, Las Vegas is "too special . . . too singular . . . the only American city created by casino gambling—to offer any clear-cut lessons to other places thinking of going that route." But he does agree, along with many other academic and popular observers, that Las Vegas may be one kind of model of what other American cities are becoming. Moreover, he lends support to the French-influenced urban sociologists engaged in research on post-modern cities, of which Los Angeles is generally regarded as the quintessential example. In his comparative analysis with Los Angeles, however, Littlejohn claims that any "one

of a dozen hotels in Las Vegas, let alone the city itself, would have suited Foucault's 1967 concept of a heteropia a totally alien, disconnected space, in which the juxtaposition of heterogeneous elements is so incongruous and disruptive to our normal sense of order that we are unable to realize such perversity within a coherent and familiar domain" (285). Indeed, as Littlejohn sees it, the "antihistoric, uncentered, prisonlike, and purposely disorienting" qualities of Las Vegas actually place the city ahead of Los Angeles in the race to become the first purely postmodern city.

In the final analysis, the portrait presented in *The Real Las Vegas* provides a critique of many of the social problems currently facing the nation's most rapidly growing region. While the "company town" analogy is attractive, this assemblage of essays lacks sufficient connective tissue to drive home Littlejohn's theoretical framework. Last, while the chapters themselves are, by and large, very well written and incisive, the book nonetheless has a distinct journalistic flavor. Many academic readers will likely find the book disappointing because of the often tedious, space-consuming narratives of some of the chapters and the general lack of methodological rigor.

Robert E. Parker, Ph.D.

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A Short History of Las Vegas. By Barbara Land and Myrick Land (Reno and Las Vegas: University of Nevada Press, 1999, xviii + 240 pages, foreword, illustrations).

Fifteen years or so ago, there were just a couple of book-length works on Las Vegas history: Stanley Paher's *Las Vegas—as it began, as it grew*, and the two-volume *Water, A History of Las Vegas* by Florence Lee Jones with John Cahlan. Since then, writing about Las Vegas has become something of a cottage industry. The new books seem to sort out into four clumps: footnoted scholarly works (there are a couple), lavishly illustrated advertisement-based books with text by academic historians (two), volumes on specialized topics such as entertainment or architecture, and short overviews for a general readership. The books in this last loose-knit category tend to go with the crowd-pleasers: the "mob," A-bombs, the Rat Pack, and themed megaresorts. *A Short History of Las Vegas* by Barbara Land and Myrick Land seems to divide further an already crowded market niche.

Unlike the writers of many books in this class, the Lands don't skimp on the early period. There are good short pieces on prehistory, the Las Vegas Mission, and the Gass and Stewart ranching era. Senator William Andrews Clark, usually treated as a remote two-dimensional figure who merely sets the plot in motion, appears here fully fleshed out with his Montana political baggage. In

the last chapters, the book reverts to type, spotlighting entertainers and almost every gambling tycoon and resort from Mesquite to Laughlin. Much of this is interesting and well-written, if fluffy, journalistic stuff.

The problem is the void in between. It is not Las Vegas history in any meaningful sense. Aside from a bit about the 1922 railroad strike, there is almost nothing about Las Vegas from just after its founding in 1905 to Hoover Dam in the 1930s. The gambling legislation of 1931 is noted only in the margin, and treatment of gambling in the 1930s is limited to mention of Guy McAfee running the Pair-O-Dice Club (actually, it was the 91 Club). Chapter Four is good but it is almost entirely about Hoover Dam and Boulder City. After that, "Politics Las Vegas Style," consists of colorful stories about Sam Gay (Clark County Sheriff through most of the 1920s, though one wouldn't learn that here) and the turmoil at City Hall under Mayors Leonard Arnett and John Russell in the 1930s and early 1940s. Period. As for the transforming years of the early 1940s, there is no hint here that they happened. There is no air base, no defense plant, no explosive growth—just a couple of hotels that materialize for no apparent reason other than to provide a stage for gangster Ben Siegel. The decade of the 1950s is represented by nuclear testing and a little about desegregation of the Strip, not about water problems, the beginnings of urban sprawl, or the proliferation of resort hotels. History picks up again only with the reappearance of Howard Hughes in 1966. With Hughes, the authors move into territory that truly interests them, spending fully half of the book on this later period.

Some of the missteps require mention. Errors agglomerate as new popular history books build on the mistakes of earlier ones; several such books are listed as sources for this one. Charles Squires wasn't the founder of the *Las Vegas Age*; R. E. Griffith died in 1943 and couldn't have operated the Last Frontier until 1951.

Citing Nicholas Pileggi, the authors fall for the notion that Las Vegas was a clutch of "cowboy casinos" prior to Siegel's arrival. Since *The Green Felt Jungle* of 1963, writers of Las Vegas and "mob" exposés have repeated this mantra. Las Vegas's Old West image was just that, a conscious and effective public relations ploy. Beneath the facade we now see as hokey, Las Vegas gamblers of the 1930s were a good deal more sophisticated than generally supposed. Finally, a pet peeve: New Mexican traders of 1829-30 did *not* visit Las Vegas Springs and could *not* have named the area. Somehow, a clearer picture of Antonio Armijo and Rafael Rivera must find its way into the popular literature.

Missteps aside, *A Short History of Las Vegas* does offer an interesting look at selected aspects of Las Vegas's past, especially the fairly recent past. Extensive margin notes and well selected photographs add depth and perspective. If, at the book's end, readers are left with no clear idea of what the "real" Las Vegas is all about, at least they will have had some fun and profit along the way.

Frank Wright

Curator, Nevada State Museum and Historical Society

A. J. Liebling: *A Reporter at Large - DATELINE: PYRAMID LAKE, NEVADA*. Edited, with an update by Elmer R. Rusco (Reno and Las Vegas: University of Nevada Press, 2000, xxx +139 pages, introduction, photographs, maps, notes, bibliography).

In 1949 one of New York's most urbane and popular writers descended on Reno for "the cure"—the six-weeks residency required to obtain a Nevada divorce. A.J. Liebling of *The New Yorker* was one of thousands of easterners who made the pilgrimage to the only state—at mid-century—that offered a quick, surgical procedure for cutting away a painful marriage.

Scores of those who endured their exile to Nevada and testified to their "permanent" residency in order to obtain a divorce wrote entertaining accounts of their adventures. Liebling did so, but his chronicle was different. He carried his commitment to expository social inquiry into the western hinterland and permitted it to unfold even as he waited around for his enforced banishment from the East to end. He found a conflict interesting enough to keep his attention for several years and to bring him back to his topic for extended research.

Early in his sojourn, Liebling discovered the long-standing controversy between the Paiutes of the Pyramid Lake Indian Reservation and Senator Pat McCarran over the rights to the water of the Truckee River. Liebling described this conflict in substantial detail with a wit and elegance that lifted his narrative above the typical writings of this genre.

McCarran pursued his vendetta against the Indians through eight or nine sessions of congress, in spite of strong evidence and court decrees against his position, hoping to have the national legislature impose one more injustice on the hapless Paiutes. In the end, he failed.

Originally the pieces in this book were scattered through four issues of *The New Yorker* in January 1955. Now Elmer Rusco has assembled Liebling's writings on Nevada into a single small volume and arranged its publication by the University of Nevada Press. Rusco, a political scientist who served the University of Nevada in Reno for a more than quarter-century, is well-known for his studies of social justice issues, especially those relating to the efforts of minority groups to assert or defend their rights. He has done a great favor to scholars working on the Nevada scene by resurrecting the Liebling articles and writing an introduction placing them in historical context. He has also assembled twenty-seven photographs and four maps that add considerable value to the texts.

Liebling was also sensitive to environmental issues; he wrote another series, "The Mustang Busters," on the wrangling and torturing of mustangs in Nevada that does not appear here but is worthy of attention.

On one level, the Liebling series on Pyramid Lake is a serious and systematic indictment of McCarran and his abuse of senatorial power to benefit a handful of his constituents and neighbors, squatters on the Paiute lands, at the

expense of the Native Americans; a history of skulduggery attempted by the senator in his efforts to deprive the original inhabitants of resources the courts had awarded them. In their detail, the articles are a useful supplement to the excellent political biography of McCarran published nearly twenty years ago by Jerome Edwards (*Pat McCarran: Political Boss of Nevada* [Reno: University of Nevada Press, 1982]).

The Liebling pieces also dispense entertaining morsels of satire about Reno and the economy of the state in the fifties. These items remind the reader of the "infamous" Reno of the mid-century era and complement the spate of nostalgia that appeared in the media with the close of the century. There are colorful descriptions of the landscape around Pyramid Lake and humorous digressions dealing with the divorcee culture, the Native Americans, and the local folkways.

Liebling was searchingly thorough in gathering evidence for the main theme. He did extensive research in the *Congressional Record* (one attribute that apparently earned him Rusco's attention, for Rusco is one of the most diligent scholarly prospectors in the state) . He had little mercy in his caricatures of McCarran and his pompous senatorial colleague George W. Malone.

Liebling crowned this series, in the fourth article, by reporting on an interview with McCarran in the bar of the Riverside Hotel in Reno, once the center of political deal-making in Nevada. There is a near-epic quality to this final scene of jousting between the New York muckraker and the silver-haired solon. The series closes with a brief reflection on McCarran's death in Hawthorne, where he was attending a political rally, in 1954.

Raymond Sokolov, the author of one of the best biographies of Liebling (*The Wayward Reporter: A Life of A. J. Liebling* [New York: Harper & Row, 1980]), suggests that Liebling's encounter with Nevada was a transforming experience in his career. "Perhaps . . . the looking-glass world of Nevada, where lowlife was high life, turned Liebling upside down, worked on his perverse nature and spurred him into a rare and uncharacteristic experiment in straightforward reportage" (260).

Historians and social critics will be grateful for the diligence of both Liebling and Rusco for these articles. Rusco has arranged to assign any royalties he might receive to the Katie Frazier scholarship fund to benefit Native American students.

James W. Hulse
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Every Light Was On: Bill Harrah and His Clubs Remembered. Edited by R.T. King; Assistant editors: Mary Larson and Dwayne Kling (University of Nevada Oral History Program, 1999).

In the 1930s—before there was a Las Vegas Strip—a young man from Southern California named Bill Harrah came to Reno and began to build an empire. Sixty years later, Harrah's Entertainment Inc. had become one of the five dominant publicly traded casino companies in America, with well over \$2 billion in annual revenues, nearly twenty casinos and a presence in about a dozen states. The company still bears Bill Harrah's name and many of his core values, though Harrah died in 1978.

This excellent oral history provides considerable insight into Harrah and the company that he founded. It comprises interviews with twenty-two individuals who were actively involved with the Harrah's Reno and Lake Tahoe casinos, or who were close to Bill Harrah, from the 1940s into the 1980s. The subjects include several of Harrah's senior executives, casino managers and employees, as well as two of the seven women who had become Mrs. Harrah. The interviews were knowledgeably conducted by Dwayne Kling, himself a onetime employee of Harrah's, and later an owner and general manager of a small casino.

Bill Harrah's life and career are well documented elsewhere and there are other source materials that provide historic perspective on Harrah and Harrah's during Nevada's formative years with the casino industry. However, this treatment is valuable due to the variety of insider perspectives provided. The result is an enlightening portrait of the philosophy and practices of this quiet, eccentric, and demanding man, and how they affected the company he built.

Nevada's early experience with casinos—from the 1930s into the 1960s in particular—generated more villains than heroes. Casinos in Harrah's era were stereotyped as havens for gangsters, low-lifers, and cross-roadsers who did business on both sides of the tables. Bill Harrah was the exception to this sorry situation, and remained aloof from the goings-on in Las Vegas and from the types of casino practices and people that justified this sordid image. In so doing, he and his management team established an operational style that subsequently became the norm in many modern—and far more legitimate—casino companies of the 1990s.

Harrah was a perfectionist. This is reflected in the high standards of cleanliness and customer service that were demanded of his employees. Harrah built strong loyalties among his management and employees around his values and style; he would not tolerate dirty ash trays, litter on the casino floor, or burnt out light bulbs. When Harrah was around, such things didn't happen.

His was a time when working in a casino meant arbitrary discipline, paranoia, blind loyalties (juice), and high personnel turn-over. Harrah, motivated by a strong distaste for unions, introduced a variety of progressive practices—

such as review boards and employee benefits packages—at a time when others in the industry were in the dark ages. Some operators, such as Fitzgerald at the Nevada Club next door to Harrah's in Reno, were still paying wages on a day-to-day basis (sometimes in cash) with little thought to much more than protecting the casino's bankroll from theft by employees.

Every Light Was On develops a number of intriguing themes which anticipate important—sometimes revolutionary—changes in the casino industry. For example, Harrah's slot machine ticket redemption bonuses of the 1950s are unmistakably a precursor to modern player tracking and frequent flyer style reward systems that in recent years have transformed casinos into massive slot arcades with only a smattering of table games. Today, slot machine revenues typically outperform those of table games by two or three to one, largely on the strength of such innovations.

Harrah's was also the first pure casino company to go public, in 1971. As such, its financial directors had to convince Wall Street analysts that gaming was indeed a legitimate and lucrative business worthy of their attention and underwriting, and Harrah's was run as a competent and professional business enterprise. The interviews with J. George Drews and Lloyd Dyer, among others, provide unique insights into this bit of casino history.

Some of the vignettes are cautionary tales about the temptations and dangers of gambling. Sharky Begovich, later to become an owner of a small casino, relates how—long ago—he “borrowed” from Harrah's vault on a number of occasions to finance his nightly gambling sprees, resulting in Bill Harrah's having to fire him twice. More than one famous entertainer who played Harrah's showrooms were also drawn by the allure of the green felt, and gave back to Harrah more than had been received. Harrah himself led the high life for a while, until his wives and his own self-discipline corralled him in his later years. Also noteworthy in his later life was Harrah's growing obsession with his automobile collection, and his increasing disinterest in the casino business.

Whatever business and social lessons that can be elicited from these pages about casino management, the dangers of gambling, and expensive hobbies of the wealthy, the most sensational tidbits relate to the trauma and transition that occurred in the days and years following Harrah's death in 1978. Mead Dixon was executor of Harrah's estate and ascended to Chairman of the Board following Bill Harrah's death. Not a friend of Harrah's management, Dixon went on to arrange the sale of Harrah's to Holiday Inns in 1980. By his own account, this saved the company from a painful dismantling to cover the estate taxes. However, various observers, such as Bill's widow, Verna, were not so kind in their observations. The Holiday Inns executives were cut from a different cloth, and it soon became obvious that the old Harrah's, built by Bill, would change dramatically. Most of the people interviewed here would not be part of that change.

In sum, this is a fascinating book and a valuable contribution to the under-

standing of the evolution of casinos and gambling in America. Harrah, as a pioneer in Nevada's casino industry, chose a different path from that taken by most other operators. Now, more than twenty years after his death, the keenness of his insights have become apparent. This volume captures that spirit well.

William R. Eadington
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Black, Buckskin, and Blue: African-American Scouts and Soldiers on the Western Frontier. By Art T. Burton (Austin: Eakin Press, 1999, xi + 286 pages).

Until very recently, African Americans who were scouts and soldiers on the United States western frontier during the nineteenth and twentieth centuries were, for all practical purposes, nonexistent, especially in our understanding of the American West; therefore, that history is incomplete. This is particularly true of western (or cowboy) movies made by Hollywood during the early part of the twentieth century. In *Black, Buckskin, and Blue*, we learn that the "most important army scouts in the 'Wild West' were black men." According to historian Art T. Burton, one has only to read the old frontier newspapers, or the dictated accounts, life stories, and personal diaries to know that black frontiersmen and women participated in the evolution of the frontier.

During their day, many African Americans became great folk legends, like Frank Grouard, who was the quintessential "scout, [Native American] interpreter, trailblazer, tracker, and lawman." But hardly any of these men are known today, as if they were completely forgotten. In other words, a lot of the information about the contributions black army soldiers and scouts made is missing from the pages of history. Nonetheless, African Americans have always been an important part of the western frontier in America, providing a remarkable legacy. Sadly, however, black scouts and soldiers still had to face racial hostility, bigotry, and other discriminatory obstacles placed before them during that time.

The United States government was determined to unite the country from coast to coast, fulfilling its "manifest destiny," even though many challenged the inevitable course of events in the West. The movement westward, therefore, opened up the entire country for European immigrants, farmers, families, gold-hunters, and other adventurous individuals, and they had to be protected or defended. In many respects, this became one of the responsibilities of African American soldiers, who were later known as the Buffalo Soldiers. In a nutshell, black soldiers, or the so-called colored infantry and cavalry, saved the day on many occasions. As Burton points out, black U.S. Army units and Semi-

nole Black Indian Scouts—many of whom were of mixed Indian-blood ancestry—played a significant part in opening up the west in hostile territory, “successfully suppressing Indian raids . . .,” and protracted attacks. They may have faced more perils than any other frontiersmen and pioneers.

In essence, blacks were able to earn a decent living in the U.S. Army. Some even fought alongside white soldiers. Which is to say that by joining the army, African Americans were able to “escape the political oppression and lack of jobs and educational opportunities that were not available in their local communities in the South and North.” Further, many served and fought in battles as Indian scouts and soldiers before, during, and after the Civil War.

In this engrossing book we also find out about black explorers, black outlaws, fur-trappers like Jim Beckwourth, swashbuckling cowboys, cavalrymen, black settlers, bulldoggers, gunslingers, black bounty hunters, like the eccentric Tom Tobin, and champion horseback riders. Moreover, blacks throughout the American West were employed as herders on white cattle ranches, whose duties consisted of driving cattle to markets, branding them at roundups and protecting them from bandits and cattle rustlers.

Equally important, African American scouts were able to live among Native Americans in the West, learning the complicated and complex languages, often taking native wives and becoming Indian leaders and warriors within the various tribal nations. Essentially, Burton lists many important and famous black men who fittingly played a notable role in the westward expansion of the United States.

The history of these brave and courageous black soldiers and scouts is as colorful and fascinating as any western account to date. However, Burton’s book lacks certain factual details. For example, he fails to talk about many of the distinguished and “larger-than-life” black Army scouts, like Pompey Factor, a former army private during the Indian Wars. Factor earned the Congressional Medal of Honor in 1875 for his amazing exploits against Comanches, but he died penniless at the age of 80 in the 1920s, as he never received an Army pension. This kind of heartless treatment begs the question: Why were Factor and other noteworthy black troopers treated so shabbily? More importantly, why did they have to die without being remembered by all Americans? Was it because African American scouts were considered unimportant soldiers of the western frontier, who made no major contributions? Nothing could have been further from the truth.

In the final analysis, *Black, Buckskin, and Blue* is an eloquent narrative on the importance of blacks as fighting men and frontier guides. In fact, this work includes many superb mini-biographical essays, which emphasize much information that has been unknown to the public until now. Hence, this book ought to be read by historians and high school and college students alike, for little is taught in our educational forums today about these black heroes, who should be revered and remembered for their collective participation to the fron-

tier West. Although many have been forgotten, their legacy will live on. In this sense, Art T. Burton, in his uncommon book, *Black, Buckskin, and Blue* has done the African American scouts and soldiers of that era proud.

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