

Part 1 | The Colorful History of the California/Nevada State Boundary

John P. Wilusz, LS, PE

The California/Nevada state boundary has a history as interesting and colorful as the states it separates. The boundary line, described in 1849 by men who had little experience with such things, was subject to many years of doubt, disagreement, and confusion. Its location on the ground has been questioned right up to the present age. This article is an introduction to the story behind one of the most surveyed boundaries in the United States.

The Treaty of Guadalupe Hidalgo

As a result of the Mexican-American War, the United States acquired a huge area known to the Mexicans as Upper California. It included land south of the Oregon Territory, west of the Rocky Mountains, and north of the newly established border between the United States and Mexico. The Treaty of Guadalupe Hidalgo, signed in 1848, was generous to the victors. As if this were not enough, insult soon followed injury for the Mexicans. Shortly after the treaty was signed, word spread of the first gold strikes on the American River. By the spring of 1849, all the world had heard of California and became intoxicated by the dream of instant riches. The discovery of gold caused such phenomenal growth that in the fall of 1849, California was already preparing to enter the Union as a state.

The Constitutional Convention of 1849

In October of 1849 a Constitutional Convention assembled in Monterey, former capital of the Mexican government. Forty-eight delegates met at Colton Hall to debate their visions of California. They were a diverse mix including Californios, American settlers, and miners. They were young, mostly ranging in age from 25 to 53. Some were fluent only in Spanish. One of many pressing issues on their agenda was to propose state boundaries to be submitted to Congress. For several days the delegates could not agree on where to establish the easterly state line. Some sought to include all of Upper California as the Mexicans knew it. This would have put the Great Basin and portions of present day Utah and Arizona in California. Others argued that it made more sense geographically and politically to run the line along the Sierra Nevada Mountains.

Some historians speculate that those advocating the larger area were hoping for an eventual subdivision creating a new state to the south which would allow slavery. Although nearly all delegates wished California to be a free state, their reasons were as diverse as their backgrounds: some were morally opposed to slavery, some were miners who didn't want competition from slaves, and some were politicians who realized the U.S. Congress was unlikely to admit another slave state into the Union.

There were several compelling reasons to adopt the smaller proposition. For starters, a state the size of Upper California

would be nearly impossible to manage. Some delegates argued that including the Mormons, who had settled near the Great Salt Lake several years earlier, would be a mistake because they were not represented at the Convention. Furthermore, some delegates didn't like the idea that such an enormous state would have no more representation in the Senate than Delaware. They reasoned that allowing Upper California to develop into many states would eventually lead to more political clout for the West.

Boundaries Described

Ultimately the delegates agreed that drawing the line in the Sierra Nevada Mountains was the most practical solution. On October 11, 1849, James M. Jones, the youngest member of the Convention, offered the following land description. It was adopted and incorporated into the Constitution of 1849 and went on to define the boundaries of the 31st State: The boundary of the State of California shall be as follows: Commencing at the point of intersection of 42nd degree of north latitude with the 120th degree of longitude west from Greenwich, and running south on the line of said 120th degree of west longitude until it intersects the 39th degree of north latitude; thence running in a straight line in a southeasterly direction to the River Colorado, at a point where it intersects the 35th degree of north lat-





FEATURE



Astronomical station at Lake Tahoe, 1893.

itude; thence down the middle of the channel of said river to the boundary line between the United States and Mexico, as established by the treaty of May 13, 1848; thence running west and along said boundary line to the Pacific Ocean, and extending therein three English miles; thence running in a northwesterly direction and following the direction of the Pacific coast to the 42nd degree of north latitude; thence on the line of said 42nd degree of north latitude to the place of beginning. Also, all the islands, harbors and bays along and adjacent to the coast.

Unfortunately the delegates lacked the foresight of those that drafted the Treaty of Guadalupe Hidalgo. The Treaty did more than describe the international boundary between the U.S. and Mexico; it required a commissioner and surveyor to be appointed by each government to run and mark the boundary line upon the ground. The results of this survey were to be deemed a part of the Treaty as if inserted therein. This requirement circumvented future disagreements based on conflicting interpretations of the intent of the written land description. Despite the presence of at least one surveyor at the Convention, the delegates did not incorporate similar wisdom in their description of California.

President Zachary "Rough and Ready" Taylor and the U.S. Congress did not delay in welcoming California and her abundant wealth into the Union; California sprung into statehood on September 9, 1850 without undergoing probation with a territorial government. Yet without physical monuments to rely on, people living in the vicinity of the 120th meridian and the oblique line could not know with certainty if they lived in California or Utah Territory.

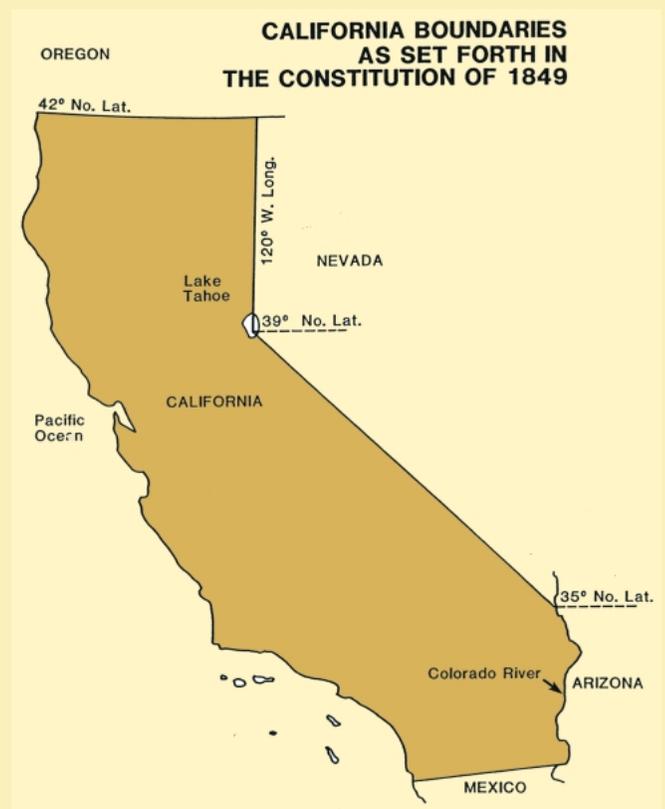
Challenges Determining Longitude

One reason why California's eastern boundaries have been subject to dispute is the difficulty early surveyors had in locating geographic coordinates, especially longitude. Using lines of lati-

tude and longitude was handy for the scrivener, but the question as to where these lines fell on the ground was left to future generations. Of the two coordinates, latitude is by far the easier to determine. It is the angular distance between the observer's horizon and the celestial pole. It can be measured by astronomical observations using relatively simple instruments. Longitude, however, is a horse of a different color. Longitude is the angular distance between the great circles of Greenwich, England and the observer's meridian. It is a function of time. Although the rotation of the earth has no bearing on latitude, it has everything to do with longitude. Because the earth rotates 360 degrees in about 24 hours, the velocity of its rotation is approximately 1,200 feet per second at 39 degrees north latitude. In other words, at that latitude a clock error of one second would result in staking a meridian nearly a quarter of a mile out of position. Correctly determining longitude was a substantial challenge to 19th century state boundary surveyors.

First Effort to Determine Easterly Boundary

The first astronomical observations for longitude used for determining the east boundaries of California were made in Placerville in 1855 by Surveyor General William Eddy. The crude protraction of the state boundaries on John Fremont's map was a function of convenience, not science, and they did not reveal to the residents of the Carson Valley upon which side of the line they stood. Eddy was a budget-minded civil servant and he knew it would be cheaper to make his observations close to home in Placerville. He determined the longitude of his position to be 120° 48' 11". The route from Placerville to the Carson Valley had been traveled enough by 1855 for the distance to be com-





monly known as at least 60 miles. Eddy's observations told him he was about 44 miles west of the 120th longitude. Without doubt, Carson Valley was in Utah Territory.

One of the primary routes into California in the mid 1850s passed through the heart of Carson Valley. This fork of the California Trail traversed the Sierra Nevada via Carson Pass and was considered by many to be superior to the Stevens/Townsend/Murphy route, or what today is known as Donner Pass.

In 1852, John Reese and a handful of other ambitious entrepreneurs arrived from Salt Lake City planning to sell supplies to the emigrants. They established a trading post which came to be known as Mormon Station, which in turn gave birth to Genoa, Nevada's first town. It seems more than a little ironic that Nevada, today renowned for gambling and brothels, was founded by Latter Day Saints.

The merchants at Mormon Station began arguing for territorial status apart from Utah almost immediately. However, their case did not become compelling to Washington, D.C. until the discovery of the Comstock Lode in 1859.

Early Surveys

Due to the enormity of the job, California's easterly boundary was surveyed piecemeal for the first 20+ years after statehood. During that time money was only available to survey those portions along corridors of significant development. In 1855, civil engineer George H. Goddard, working under California Surveyor General S.H. Marlette, undertook

a survey to determine the eastern boundary of the state in the vicinity of Carson Valley. He made astronomical observations at Bigler Lake (Lake Tahoe) to locate the angle point in California's eastern boundary and discovered that the angle point could not be occupied because it fell within the lake. Using data on the location of the southeast terminus point of the oblique boundary line generated in 1852 by Captain L. Sitgraves, U.S. Topographical Engineer, Goddard ciphered the spherical angle between the 120th longitude and the oblique line. Unfortunately, he never turned over the bulk of his work because he was never paid. As the saying goes, "The more things change, the more they remain the same."

The next round of astronomical observations at the terminus points of the oblique boundary line were performed by Lt. Joseph C. Ives of the Topographical Corps, U. S. Army. In 1858 he determined that the intersection of the 35th north latitude and the middle of the channel of the Colorado River occurred at longitude 114 degrees and 36 minutes west of Greenwich. Riparian boundaries can be troubling from a land title perspective because rivers move, and when the Colorado River moved, it carried the terminus point with it. In 1861 Lt. Ives relocated the northwest terminus point at Bigler Lake, and then promptly quit

his job, joined the fledgling Confederacy, and waged war against his former employer. For obvious though perhaps irrational reasons, his work lost credibility with Washington.

Nevada Territory

With the outbreak of the Civil War the mountain of silver under Virginia City became critical to national security. Nevada became a Territory by Act of Congress on March 2, 1861. The scribes of Nevada Territory's land description overestimated California's generosity because they included that portion of California easterly of the crest of the Sierra Nevada. The description reads as follows:

Beginning at the point of intersection of the forty-second degree of north latitude with the thirty- ninth degree of longitude west from Washington; thence running south on the line of said thirty- ninth degree of west longitude, until it intersects the north-

ern boundary line of the territory of New Mexico; thence due west to the dividing ridge separating the waters of Carson Valley from those that flow into the Pacific; thence on said dividing ridge northwardly, to the 41st degree of north latitude; thence due north to the southern boundary line of the state of Oregon; thence due east to the place of beginning.

It is interesting to note that longitude is not referenced to Greenwich, but to Washington, D.C.

Nevada Territory's land description set the stage for a minor civil

war even though it acknowledged that the overlap would continue to belong to California until and unless she ceded it to Nevada Territory. These qualifying words did not stop Plumas County, California, and Roop County, Nevada Territory (now in Washoe County, Nevada) from exercising jurisdiction over the same ground in the vicinity of Honey Lake Valley. The powder keg exploded when the Roop County judge arrested the Plumas County justice of the peace. This outrage prompted the Plumas County sheriff to arrest the Roop County judge. Before long shots were fired and blood was shed. Fortunately, a truce was declared before things got completely out of hand and each side resolved to petition their governor for an equitable solution. Clearly it was time to put state line monuments on the ground.

Houghton and Ives Survey of 1863

In the spring of 1863, Governor Leland Stanford of California, and Orion Clemens, older brother of Mark Twain and Acting Governor of Nevada Territory, jointly appointed surveyors to mark their common boundary. Stanford appointed California Surveyor-General J.F. Houghton. Clemens chose Butler Ives as Commissioner for Nevada Territory. Everyone involved hoped this would put an end to further confusion.



Old instrument blocks, upper Truckee River.



FEATURE

The two chief surveyors hired John F. Kidder as Engineer in Charge of the field work and instructed him, per the Act of the California Legislature which authorized the survey, to mark a . . . transit line between the point of intersection of the 39th degree of north latitude with the 120th degree longitude west from Greenwich, near Lake Bigler, and the point where the 35th parallel of north latitude crosses the Colorado River, as the said points were established by Lieutenant Ives, Chief Astronomer of the United States Boundary Commission."

They also instructed Kidder to run and mark ". . . in the same manner all that part of the said boundary lying between first named point, near Lake Bigler, and due north from said point to the southern boundary of Oregon."

Twenty-five thousand dollars was appropriated to mark the line. In the words of Surveyor-General Houghton, the California/Nevada boundary was "six hundred and thirteen miles long, over a rugged, mountainous country, through several tribes of Indians not known to be friendly, passing through dense forests, over almost unexplored and uninhabited deserts with intervals of thirty, fifty, and eighty miles without water." With this sum Houghton was expected to organize the project, hire technical consultants to cipher complex geodetic calculations, purchase equipment and supplies, pay his men's wages, provide and maintain a large train of pack animals, set cut stone monuments, prepare maps in triplicate, cover travel expenses, prepare reports, and settle all incidentals. Not surprisingly, twenty-five thousand dollars proved to be inadequate to complete the job in its entirety.

John Kidder began the field work in late May of 1863 by recovering and occupying Lt. Ives' observatory at the south end of Lake Tahoe. There he made test observations for latitude. Finding his observations agreed substantially with Lt. Ives' work of 1861, he sent three members of his party to the north shore of the lake and put them on the meridian of the observatory by use of signal fires. After measuring westerly on the north shore of the lake to the 120th meridian, the entire party proceeded to north to Oregon. They marked the line as they went.

By late July the surveyors completed their work on the 120th meridian and had returned to Lake Tahoe to blaze the oblique

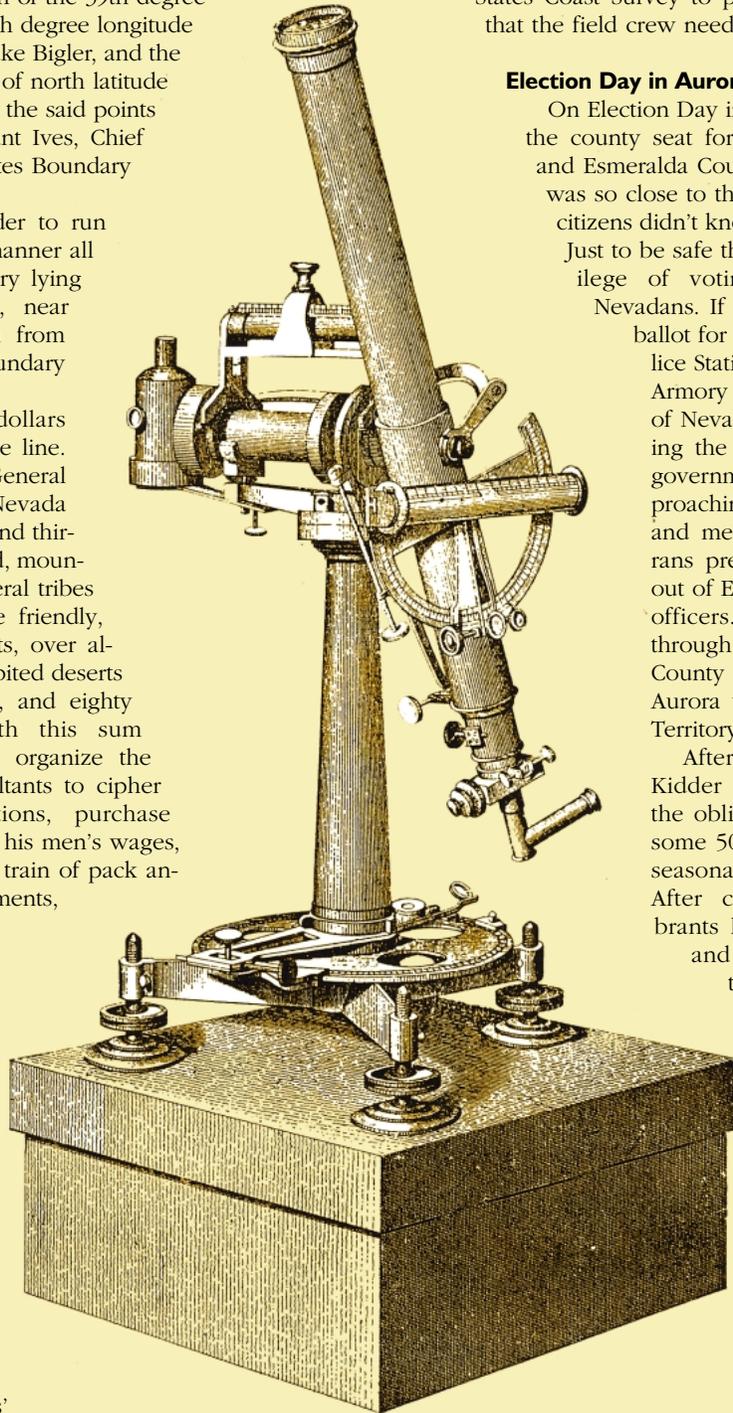
line southeasterly to the Colorado River. The oblique line presented a special challenge. It is a line of constantly changing azimuth and therefore required the expertise of a geodesist. Houghton retained Professor J.E. Hilgard of the United States Coast Survey to provide the complex calculations that the field crew needed.

Election Day in Aurora

On Election Day in September of 1863, Aurora was the county seat for both Mono County, California, and Esmeralda County, Nevada Territory. The town was so close to the oblique boundary line that her citizens didn't know for sure which side it was on. Just to be safe they afforded themselves the privilege of voting both as Californians and Nevadans. If so inclined, a voter could cast a ballot for his favorite Californian at the Police Station, then walk down the street to Armory Hall and do likewise as a citizen of Nevada Territory. Instead of postponing the election until the arrival of the government survey party, which was approaching the area from the northwest and merely several weeks away, Aurorans preferred to make a public wager out of Election Day and elect two sets of officers. After the surveyors passed through, politicians representing Mono County were promptly retired because Aurora was found to be inside Nevada Territory by approximately 3 miles.

After resolving Aurora's dilemma, Kidder continued southeasterly along the oblique line and soon encountered some 500 Indians who were enjoying a seasonal celebration directly in his path. After communicating with the celebrants he decided to return to Aurora and wait out the festival before continuing with the survey. On the night of October 29th, while the crew was camped between Adobe Meadows and Aurora, a 36-hour blizzard began. Winter arrived in the high country and ended field work for the Houghton-Ives survey of 1863.

Special thanks to François D. Uzes, LS, and Judge James Thompson, without whom this article would not have been possible. ▼



Zenith telescope

JOHN P. WILUSZ is employed by Placer County Water Agency (PCWA) in Auburn, California. In addition to his responsibilities as PCWA's sole land surveyor, he is also responsible for approving the water systems components of development plans. He can be reached at: jwilusz@pcwa.net.