The Colorful History of the California/Nevada State Boundary

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 latitude.

HISTORICAL DIAGRAM OF NEVADA
latitude; thence down the middle of the channel of said river to the
boundary line between the United States and Mexico, as estab-
lished 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 di-
extion 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 appoint-
ed by each government to run and mark the boundary line up-
on the ground. The results of this survey were to be deemed a
part of the Treaty as if inserted therein. This requirement cir-
cumvented future disagreements based on conflicting interpreta-
tions of the intent of the written land description. Despite the
presence of at least one surveyor at the Convention, the dele-

gates 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 abun-
dant wealth into the Union; California sprung into statehood on
September 9, 1850 without undergoing probation with a territo-
rial 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 Cali-

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-
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 scriveners 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 northerly 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.
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 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.

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.
n the spring of 1863, J.F. Houghton of California and Butler Ives of Nevada were appointed chief surveyors to solve the ongoing California/Nevada boundary disputes. They hired John F. Kidder as Engineer in Charge of the field work, who was to mark the boundary line from a point on the 39th parallel near Lake Bigler, north to the southern boundary of Oregon, and then southeasterly to a point where the 35th parallel crossed the Colorado River. Safety was an ever-present concern as the surveyors were required to cross the lands of hostile Indian tribes and overcome tremendous geographic obstacles. For the sum of $25,000, 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.

Kidder began the field work in late May of 1863 and 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. Their efforts were halted when they met up with Indians celebrating a seasonal festival. The crew turned back to wait out the festival, and on the night of October 29th, while 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.

Snow wasn’t the only threat to the Houghton-Ives survey because money was running out at the same time that the crew was shivering in camp. Most of the $25,000 dollars appropriated for the job was already spent and yet the work was only half complete. The oblique line that the field crew was forced to abandon near Aurora was essentially a precisely-calculated random line. Had the survey been completed as planned, Engineer in Charge John Kidder would have continued this line to its terminus as determined by Lt. Joseph Ives in 1861. There, Kidder would have measured the falling between his line and Ives’ position. With this data he would have returned along the oblique line to Lake Tahoe, applying appropriate corrections and resetting his monuments along the way. The oblique line would have then been marked from Lake Tahoe to the 37th parallel of north latitude, which until 1867 was Nevada’s southerly boundary.

In his report to Governor Leland Stanford, Surveyor General J.F. Houghton ac-
In June of 1872, Congress authorized another survey of the common boundary between California and Nevada. GLO Commissioner Willis Drummond hired astronomer and surveyor Alexey W. Von Schmidt to do the field work. A sum of more than $41,000 was appropriated for the survey, so it appears that someone important learned a lesson from underfunding Houghton and Ives. Drummond had complete confidence in Major's location of the northeast corner so he instructed Von Schmidt to begin there and proceed south along the 120th meridian. Von Schmidt developed other plans. In the spring of 1872, Professor George Davidson of the U.S. Coast Survey was in the Verdi area making observations to locate the 120th meridian in relation to the Houghton-Ives line. State Geologist J.D. Whitney and U.S. Geologist Clarence King requested his services to facilitate geographical surveys which were being executed nearby. Davidson used telegraphic time signals and made independent calculations for the longitude. Von Schmidt was present for some of this work and was much impressed with Davidson's use of the telegraph. In fact he was so impressed he wrote to Commissioner Drummond and requested permission to use Davidson's location of the 120th meridian and run the line north to Oregon instead of south from Major's corner. He mailed his letter and went straight to work on this new strategy. By the time he received Drummond's negative reply he had already blazed about a hundred miles of flag line on his way north. The Commissioner was not pleased about this change in plans and ordered Von Schmidt to conduct the survey per the original instructions. Upon receiving the news, Von Schmidt dropped everything and headed for Major's monument at the northeast corner of the state. From there he surveyed south along the 120th meridian, setting monuments along the way.

The Von Schmidt Survey of 1872-73

In June of 1872, Congress authorized another survey of the common boundary between California and Nevada. GLO Commissioner Willis Drummond hired astronomer and surveyor Alexey W. Von Schmidt to do the field work. A sum of more than $41,000 was appropriated for the survey, so it appears that someone important learned a lesson from underfunding Houghton and Ives. Drummond had complete confidence in Major’s location of the northeast corner so he instructed Von Schmidt to begin there and proceed south along the 120th meridian. Von Schmidt developed other plans. In the spring of 1872, Professor George Davidson of the U.S. Coast Survey was in the Verdi area making observations to locate the 120th meridian in relation to the Houghton-Ives line. State Geologist J.D. Whitney and U.S. Geologist Clarence King requested his services to facilitate geographical surveys which were being executed nearby. Davidson used telegraphic time signals and made independent calculations for the longitude. Von Schmidt was present for some of this work and was much impressed with Davidson’s use of the telegraph. In fact he was so impressed he wrote to Commissioner Drummond and requested permission to use Davidson’s location of the 120th meridian and run the line north to Oregon instead of south from Major’s corner. He mailed his letter and went straight to work on this new strategy. By the time he received Drummond’s negative reply he had already blazed about a hundred miles of flag line on his way north. The Commissioner was not pleased about this change in plans and ordered Von Schmidt to conduct the survey per the original instructions. Upon receiving the news, Von Schmidt dropped everything and headed for Major’s monument at the northeast corner of the state. From there he surveyed south along the 120th meridian, setting monuments along the way.

By late September he had traveled far enough to encounter the northerly terminus of the line Drummond ordered him to set.
to abandon. It was more than three miles easterly of the line he was currently on. That discovery must have been very discouraging. However, his faith in Davidson was unshaken, so he stuck with the professor's opinion on the location of the 120th meridian. He returned to Major's monument, chained easterly, and set a new monument for the northeast corner of California. He then surveyed south along this line to the north shore of Lake Tahoe. At that point he dispersed his crew and returned to San Francisco for the winter.

Von Schmidt returned to the field in the spring of 1873 and set a cast iron state line monument at the north shore of Lake Tahoe. He made observations to locate the angle point in California's easterly boundary, and then made his way along the oblique line to the Colorado River. When he arrived he found the river to be in a different place than where Lt. Ives found it in 1861. In his notes, Von Schmidt indicated that he re-established the intersection of the 35th degree of north latitude and the Colorado River, and then corrected back along the oblique line all the way to Lake Tahoe.

During the course of his work Von Schmidt set cut granite monuments, and reset and remarked several of the obsolete monuments of the Houghton-Ives survey. He also set several other cast iron monuments similar to the one at the north shore of Lake Tahoe. Upon completion of the survey, GLO Commissioner Drummond accepted Von Schmidt's work and directed future public lands surveys to close on his lines. For a while there was peace in the neighborhood.

Disagreement at the Corner

In September of 1872, GLO Commissioner Willis Drummond hired Daniel Major to survey Nevada's northern boundary. Just as he instructed Von Schmidt several months earlier, he directed Major to use the monument of 1868 at the northeast corner of California as the initial point of the survey. Undoubtedly his intent in using this monument, a common point in the two surveys, was to try and clear things up. The last thing he wanted was more trouble.

Unlike Von Schmidt, Major used the 1868 monument as instructed. That's not surprising since he set it himself. It also comes as no surprise that he didn't like Von Schmidt's monument any more than Von Schmidt liked his. Major's map of 1873 showed Von Schmidt's monument at the northeast corner of California to be in error by some three miles. After so much effort and money spent, the citizens still had no satisfaction.

Grunsky and Minto Survey

By 1889, Von Schmidt's work in California had aroused enough suspicion to inspire the Legislature to commission another survey. Legislators appropriated $5,000 "to correct and establish" the oblique line. Surveyor General Theo. Reichert hired C.E. Grunsky and William Minto, civil engineers, to make things right. Reichert instructed the engineers to tie into the new transcontinental control net established by the U.S. Coast and Geodetic Survey. The control net came along some years after Von Schmidt, and likely brought its inaccuracies to light. One can only speculate as to why so little money was authorized, considering that 16 years earlier the Von Schmidt survey cost more than $40,000. Perhaps the intent of the Grunsky-Minto survey was primarily to confirm the deficiencies in Von Schmidt's oblique line and thereby assist in determining if another full-blown effort was warranted.

The same Professor Davidson who helped Von Schmidt in 1872 helped Grunsky and Minto establish fresh initial points at each end of the oblique line. They surveyed a dozen or so miles of the line southeasterly from Lake Tahoe and then quit for lack of money. Now there was yet another line on a map already abundant with conflicting opinions. At the north shore of Lake Tahoe Von Schmidt determined Houghton and Ives
to be about 3,100 feet west of the “correct” position. In turn, Grunsky and Minto concluded that Von Schmidt set his line about 1,600 feet too far west. Disagreements of a similar magnitude existed at the south shore of the lake and all along the California-Nevada boundary.

**The USC&GS Survey of 1893-99**

Because of the continuing disparities, California pressured the federal government to find money to solve the problem once and for all. In 1892, Congress appropriated funds, but only for a survey of the oblique line. The following year the United States Coast and Geodetic Survey began the most precise survey yet. The USC&GS made astronomical observations to locate each end of the oblique line and connected the two points using a triangulation network. Running from northwest to southeast, they reportedly missed their closing station at the Colorado River by less than 500 feet. They corrected back along the entire line, and reset temporary monuments using proportionate corrections. Along the way they discovered that Von Schmidt had not done similarly as he reported to the GLO. By locating many of his monuments, they ascertained that he corrected back only about 1/3 of the way to the lake. There he intersected his random line and put an unauthorized kink in the boundary. At no point did he faithfully trace the inverse between his astronomic positions at each end of the line.

The USC&GS survey was in progress from 1893 to 1899. It had the best resources and most advanced technology of any survey up to that time. Finally, there was a highly accurate and well-monumented boundary between California and Nevada—at least between Lake Tahoe and the Colorado River.

**Steps to Resolving the Conflict**

In 1977, California brought suit against Nevada in the United States Supreme Court. The time had come to establish their common boundary with certainty and eliminate potential confusion regarding tax collection and other issues of jurisdiction. Since 1873 both states acquiesced to the Von Schmidt line north of Lake Tahoe. The problem was that neither state's legislature enacted statutes adopting the Von Schmidt line. Despite the fact that almost no one knew where it was, the Houghton-Ives line was still the official boundary from Lake Tahoe to Oregon.

The oblique line as surveyed by the USC&GS did not figure into California’s initial argument because, unlike the Von Schmidt line, it had been adopted by both states by statutes. It was known to be substantially accurate and well-monumented. Since 1899 it had been accepted without reservation by both states. On the surface the situation looked much better than along the 120th meridian, but before the conclusion of litigation the location of this line would be argued as well.

Along with questions about tax collection and jurisdiction there were also land title issues regarding state school and selection lands between the lines marked in 1863, 1873, and 1899. Some federal lands acquired and subsequently sold by Nevada were eventually found to have belonged to California. Consequently, Congress enacted a law that protects the property rights of parties whose chain of title emanated from the wrong state.

**Litigation Intensifies**

As the litigation got into full swing, claims and counter claims flew about with a level of intensity that no one anticipated. Once shaken from her complacency, Nevada had no problem generating creative alternatives. Her primary argument was for the Houghton-Ives line, even though its very existence was unknown but to a handful. Another suggestion was to extend a line south to Lake Tahoe from the 1868 Major monument at the northeast corner of California. One alternative offered for the oblique line was based on the work of Houghton and Ives. Another was based on Von Schmidt, which is interesting, since Nevadans considered him an “officious intermeddler” who caused them to lose land to California. In short, all of Nevada’s suggestions would have pushed the common boundary to the west. California’s counter argument was to resurvey the entire line from Oregon to the Colorado River using state of the art technology and then adopt the new line as official once and for all. This would have pushed the boundary somewhat into Nevada with the result of annexing several casinos. The Golden State was prepared for this contingency; an Assemblyman from Long Beach sponsored a bill exempting those casinos from California’s anti-gambling laws.

**Peace at Last**

In 1980, the Supreme Court of the United States decreed that the boundary between California and Nevada would consist of the Von Schmidt line as marked between Oregon and the north shore of Lake Tahoe, and the USC&GS line as marked from the south shore of Lake Tahoe to the Colorado River. The Court allowed the states to determine the location of the intersection of these two lines inside the lake, which they soon did using monumentation provided by the National Geodetic Survey. After 80 years of doubt and disagreement there was peace in the neighborhood at last.

*John Wilusz is employed by Placer County Water Agency (PCWA) in Auburn, CA. In addition to his responsibilities as PCWA’s sole land surveyor, he is also responsible for approving the water systems components of development plans.*