

Audley Dean Nicols' Tokay Panorama of 1927

Robert W. Eveleth, Sr. Mining Engineer, Emeritus
New Mexico Bureau of Geology & Mineral Resources, Socorro, New Mexico

A well-worn cliché tells us that “a picture is worth a thousand words,” but in the case of Audley Dean Nicols’ panorama a mere thousand is woefully insufficient to do it justice. The story of how artist Nicols came to create his masterpiece is found elsewhere in this volume; the following are descriptions of the principal features that can be observed or, in one case, almost observed, from Nicols’ vantage point just east of Tokay, New Mexico. These include, from left to right, the New Mexico Midland Railway, Magdalena Range, Socorro Peak, and the “M” on Socorro Peak. The mining camp of Tokay, visible at far left and major focal point for Nicols, is described elsewhere in this volume.

The New Mexico Midland Railway

Though not depicted in Nicols’ panorama, would have made its presence obvious even to the most casual observer and the artist, likely spending hours, even days, at his easel scanning the Rio Grande Valley to the west, could not have missed the black smoke plumes (note that the two “plumes” visible to the west are “dust devils” and not smoke), staccato engine exhausts, shrill steam whistles and other sounds attendant to the operations of this pre-depression era steam railroad.

The Midland was the resurrected version of the older Atchison Topeka & Santa Fe (AT&SF) San Pedro Branch built by the Santa Fe in 1882 to provide rail service to the Carthage coal mines ten miles east. A report allegedly indicating the coal resource was depleted in ca. 1895–96 (Myrick 1990, p. 172) led to the abandonment of the branch officially in 1896 although the rails at least as far as the Fraley lime quarry remained in place until May 1897 (Joe Hereford, pers. comm., 2010). Good quality coal remained however and the successor company, the Carthage Fuel Co., attempted for a time to ship coal to San Antonio via teams and wagons. By 1904 the new company decided to rebuild the San Pedro branch taking advantage of the AT&SF bridge over the Rio Grande and much of the existing grade to Carthage. Midland trains were running on the new rails by summer 1906 (Myrick 1990, p. 173). At a point common to sections 5, 6, 7, and 8, T5S, R2E, the line split with the older alignment continuing eastward to the McIntyre, Hilton, and Bernal mines at Carthage and the new line bearing southeast to service the Emerson, Kinney, and Gilmore mines at the newer camp eventually named Tokay. The Gilmore was a mile south of Tokay but accessed the RR via a mile long rail tramway (Hereford 1969).

Two steam locomotives; both Baldwins and both of them of the 4-6-0-wheel arrangement (“ten-wheelers” in the trade) comprised the entire Midland roster. No 1, affectionately called “Betsy” by the locals (pers. comm. Abe Baca, 1984) was purchased new in 1906. No. 2 was an older locomotive built in 1901 and purchased second hand from the El Paso & Southwestern RR in 1920. Operations, as for most short line railroads, were simple and Midland schedules called for one round trip per day. Service from the beginning was daily except Sunday, and classed as “mixed” in that passengers could purchase a ticket and ride in the spacious accommodations of the caboose behind whatever freight cars—coal, machinery, and an occasional stock car—were cut in behind the engine and tender. Photos of the Midland caboose indicate that it was equipped with large windows at one end and had several seats for passengers. A large door at the other end provided security for mail and baggage, and work area for the crew (pers. comm. Vernon Glover 2013).

During pre-WWI days the train overnights in San Antonio and departed at 8:30 am arriving in Carthage at 9:30 am. The return trip left Carthage at 3:30 pm and arrived back at San Antonio at 4:30 pm. From about 1916 and up through the time Mr. Nichols worked at his easel, train movements were even more visible because the trains originated on the eastern end of the line—right next door at Carthage. By 1926 the westbound run passed by early in the afternoon and returned by 5:00 pm. Travel times varied from one hour in 1913 to as much as 1-1/2 hours throughout the twenties. Considering the railroad was only 9.99 miles in length the New Mexico Midland must have operated one of the slowest trains in the west and those passengers who dared to book passage in the caboose plodded along at the breakneck speed of 6–7 mph!

Production and revenues gradually declined but the loss of Carthage Fuel Co.’s contract with the El Paso Gas & Electric Co. in 1928 marked the beginning of the end for railroad operations. The last train ran in August 1931 and the Interstate Commerce Commission formally granted permission to abandon two years later (Myrick 1990, p. 173). Little remains of this transportation enterprise today beyond the abandoned but fairly well defined grade between San Pedro, Carthage, and Tokay.

The Magdalena Range dominates Nicols’ panorama on the horizon. The north end of the range rises from the desert sands at a point south of Granite Mountain about 3-1/2 miles northeast of Magdalena (just south of US Highway 60) and extends in a roughly southerly direction for about 18 miles to again plunge to earth near Puertocito Gap just north of Milligan Gulch. The highest point in the range is South Baldy at 10,783 feet while nearby Timber peak reaches 10,510 feet. North Baldy comes in a distant third at 9,858 feet. The range derives its name from a low mountain on the west side of the range and south of Magdalena that bears a cameo likeness of a woman’s face which, according to legend, reminded the early Spanish explorers of a similar mountain in their native Spain (Eveleth 2006). South Baldy is of particular interest due to the presence of two scientific research facilities both managed by New Mexico Institute of Mining & Technology (New Mexico Tech or NMT): the Langmuir Atmospheric Research Laboratory and the recently completed Magdalena Ridge Observatory (MRO). The Langmuir Lab was established by New Mexico Tech President E. J. Workman in 1963 and named in honor of his colleague Dr. Irving Langmuir. The lab studies the atmospheric conditions that produce rain, hail, and lightning, some of the latter induced by the lab itself. The MRO is located adjacent to Langmuir and is currently operating a 2.4-meter optical telescope and is constructing an infrared interferometer that will be laid out in a “Y” pattern similar to the Very Large Array radio telescope west of Magdalena. The Magdalena Ridge Observatory Interferometer, which will ultimately be composed of ten 1.4-meter telescopes, “expects first light in the Beam Combining Facility (BCF) in 2015 (New Mexico Tech 2013).”

The Magdalena Range is also home to a large portion of the US Forest Service’ Cibola National Forest and its deeply incised canyons and verdant conifer and juniper forests have long been an attraction for campers, hikers, and others out for a relatively cool day of picnicking and sight-seeing in the pines. The tallest peaks can remain snow-clad well into March and April and a trickle of pure cool water can often be found in Water Canyon and other drainages. The range is mineralized in several areas and this feature attracted prospectors even before the American Civil War. For example, “in the year of 1857 Gabriel Savedra, Perfecto Romero,

and several other natives of [Socorro] exploited a number of placers on the east slope of the Magdalenas and succeeded in saving a considerable amount of gold dust. The enterprise was successful but was finally abandoned for want of the necessary appliances of capital and experience...(Bullion 7/24/1886, p. 2)." Additionally, "Squire Sam C. Meek [also of Socorro] in 1867 prospected the placers in Water Canyon (then known as the "Canyon de Agua in the Sierra de la Magdalena") and never got less than eight colors* of gold dust. He and his colleagues commenced operations in a cut at the mouth of Water Canyon and in ten days washed \$257 in gold dust...(Bullion op. cit)." A torrential downpour was said to have swept away their sluice boxes and filled up the workings such that the boys got discouraged and the enterprise was abandoned. Another group was organized at Socorro in January 1867 to systematically prospect the placers and reported back that although good "colors" were found they were not enough to justify continued exploration (Daily New Mexican 2/23/1867, p. 1). Prospectors returned in the early 1880s to examine the lode deposits surrounding Water, Copper, and Dark canyons and several claims were located. These included the Buckeye Group, Wall Street, Jane Bowman, Minerva, and many others. A small settlement eventually accreted near the confluence of Water and Copper Canyons and boasted several miners' cabins, at least one saloon run by A. Torres & Bros. (Kiser 2004, p. 182), a livery, and post office from 1887 intermittently into the 1920s (Julyan 1996 p. 376). Hack service connected with the daily except Sunday mixed trains at Water Canyon Station on the Magdalena Branch of the Atchison Topeka & Santa Fe Rail Road. For a time Water Canyon became a popular summer "resort" for Socorroans and the cool pine-scented mountain breezes were a welcome respite from Socorro's hot pre-air conditioned days of summer.

Three other settlements were also established in the Magdalena range but these were in the foothills on the northwest side. They bore the clever and original names, from north to south, of North Camp, Middle Camp, and South Camp. The first was located at the base of the Vindicator and Hardscrabble mines on the north end of the Magdalena district. South camp was a similar small group of structures near the Iron Mask mine while Middle Camp eventually morphed into the town site of Kelly, the largest by far of the three. Commercial mining operations in the Kelly area continued until 1949 when the American Smelting & Refining Co, closed its Graphic-Waldo mine permanently. All four sites are ghosts today although a post-historic church, an adjacent graveyard, and one of the first all-steel mine headframes in the west remain at Kelly.

The Magdalena Range continues to be a popular recreational area but with the decrease of summer monsoonal rains in recent years some of it is closed to the public during especially dry periods.

* "color" = a visible speck of gold in the pan

Socorro Peak, the northernmost object depicted at far right in the panorama, rises to an elevation of 7,243 feet, 4 miles west of the town of the same name, and is of interest for two reasons: it is the location of both the Socorro Peak Mining District and the large block letter "M" on its east-facing slope. The Socorro Peak Mining District (originally "Encarnacion") is one of the oldest mining areas in New Mexico. According to a note recorded by Fray Alonso Benavidez in 1629 regarding the Socorro area:

"Well, all this land is full of great treasures—namely, very rich and prosperous silver and gold mines. As his affectionate chaplains and vassals, we customarily ask God for things like this...and applying a little diligence, as an intelligent person will do, we did indeed discover these mines. We gave Him endless thanks for this in the name of Your Majesty—in particular for the range near the pueblo of Socorro, which is the principal and primary settlement of this province of the Piroso...The ease with which silver may be taken from this range is the greatest in all the Indies (sic). It would be wiser to extract eight ounces

of silver here than many more ounces from other places, as elsewhere mining materials and supplies must be hauled from great distances to a source of water, which is certainly necessary to extract silver anywhere. But in these Socorro mines everything needed for the job is right at hand (Benavidez 1630)."

First explored by the Caballeros...the "ore was taken from [Socorro Peak] under the superintendency of the Franciscan Friars [and] conveyed to a fundacion that stood quite close to the southeast tower of the present church of San Miguel del Socorro whose walls were erected [about the same time]... Six years ago (i.e., ca. 1885) Rev. F. Lestra during the process of some improvements recovered the remains of the smelter and presented to the editor of this paper the spouts and other utensils found on the spot (Bullion 9/1/1891, p. 7)."

Subsequent to the Pueblo revolt of 1680 during which the church was destroyed by fire, no further work was done until 1840 when Estanislao Montoya operated what is now the Merritt mine. The mine was worked by the most primitive method of "gophering" by which the high-grade streaks of silver chloride (the mineral chlorargyrite, AgCl) were followed by the narrowest of workings and chiseled out by hand. "The cause that during the Spanish and Mexican regimes led to only spasmodic attempts at mining in the Socorro Mountains was the continued hostility of the Indians. This was especially the cause (sic) at Socorro where the inhabitants were particularly exposed to the raids of the aggressive [Indians]" (Bullion, op. cit., p 7). Most of the bullion produced during this period was "made into bullets which would have assayed high in silver and it is probable that many a copper-colored individual was called to the golden city by a silver summons that came from the celebrated Merritt" (Daily New Mexican, 9/2/1882, p 2). Et Tu Kemo Sabe?

With the arrival of American prospectors the mines were reopened and worked more systematically via carefully laid out shafts and tunnels some of which attained depths of 200 feet and lengths of several hundred feet. Beginning about 1880 both the Torrance and Merritt were worked profitably. Other mines received similar attention over the years including the Morning Star, Reserve, Santa Teresa, Induvigen (sic), and Cabinet. Nearly three-dozen mines and prospects were once located in the Socorro Peak district and while most of their names are forgotten today they are preserved in the New Mexico Bureau of Geology & Mineral Resources mining archives.

The "heyday" of mining for Socorro Peak occurred in the decade leading up to about 1894 when an event remembered by history as the "Silver Crash" caused the price of silver bullion to plummet to such low levels (below \$0.50 per ounce at one point) it could not be mined economically. During better years the Merritt Company erected a ten stamp mill on the southeast side of Socorro (near the Magdalena Branch Railroad tracks) and for a time was shipping ten to twenty tons or more of good grade ore to the plant daily. Total silver production, while not large by most standards, was given, based upon actual bullion shipment records, as 768,410 oz. Of this amount one half was produced by the Torrance while the Merritt, Silver Bar, New Find (an offshoot of the Torrance) and others produced the remainder (Chieftain 12/12/1892, p. 4). This does not, of course, include the alleged silver bullet production by the earlier Spanish era miners.

The entire area (with the exception of two patented mining claims—the Alta Vista and Dewey Lodes) was withdrawn from mineral entry ca. 1950 at the request of the US Navy to be converted to a research and development facility to test and experiment with high-tech explosive devices. No mining activity has taken place in the area since that time although the School of Mines (now New Mexico Tech) students continued to take advantage (as they had done since the Silver Crash days) of the inactive workings to conduct surveying, engineering, and geological studies. For many years the mining and geology students were given the task of surveying and mapping the workings of the Torrance, Merritt, and Boardinghouse tunnels. Their work was carefully compared to previous "standard" maps of the mines and grades issued on that basis. Examples of their work are preserved in the Bureau's

archives today. Not to be outdone, the extractive metallurgy students, as part of their senior class project, ventured up the hill to collect high-grade silver chloride ore which was then brought back to campus and reduced to silver bullion. With the recent loss of the Waldo Tunnel lease at Magdalena, attempts have been made to rehabilitate some of the Socorro peak workings to once again provide a “field laboratory” for surveying, mine mapping, geology, and ventilation surveys, but the workings have deteriorated to the point they are no longer safe enough for use.

The “M” on Socorro Peak, unlike the foregoing, is not a geological feature but a man-made one and was originally surveyed and laid out by the New Mexico School of Mines students Class of 1914. The exact date the M first appeared on the mountain remains lost to history but, as will be seen, doubtless coincided closely to New Mexico’s statehood in January 1912 (Eveleth 2010). Horace Lyons, who entered the New Mexico School of Mines (NMSM) in 1908, was the student who conceived of the idea and kept after his fellow classmates until they concurred that the school would benefit by having their own mascot on the mountain (due to the central role played by Lyons, a fourth member of NMSM Class of 1914, Antonio Abeyta, always thought that “M” day should be known as “Horace Lyons Day”). Two other western mining schools already boasted such letters on mountains prominently overlooking their campuses. The Colorado School of Mines M first saw the light of day about May 1908 while that of the Montana School of Mines (now Montana Tech) appeared two years later. Lyons reasoned that if other prestigious mining schools in the Rocky Mountains were bequeathed with such mascots, why then should not the most prestigious mining school in the southwest have one as well? And following through with the prestige aspect Socorro’s M must be even larger than its Colorado and Montana counterparts. Just for the record Montana Tech’s M is about 90-feet by 90-feet, while Colorado’s is roughly 104-feet by 107-feet. Socorro’s M, through no accident, is roughly 150-feet in height by 110-feet wide.

By the fall semester of 1911, Lyons had found just the man to lead the survey crew and turn his idea into a reality. Frank Maloit, already well experienced, had previously been employed by the Western Electric Company and had completed his first year of undergraduate work at the Armour Institute of Technology (now Illinois Tech) before entering NMSM in his sophomore year. Since the Colorado and Montana M’s required 2–3 months to construct and Socorro’s letter, due to its remoteness, likely consumed as much or more, Maloit and his survey crew, consisting of Phillip A. Campredon, Martin J. O’Boyle, and a third person possibly named Shoemaker (Maloit 1912), got to work on the project soon after his arrival. Maloit’s son Robert, in an interview with the author, confirmed his father laid out the M during the “fall 1911” time frame (Eveleth, 1987). Avery J. Smith, son of James Avery Smith (NMSM, 1913), provided confirmation of the handwritten notes that indicate the M was staked out “1911–1912.” James (son of Socorro’s pioneer photographer Joseph E. Smith) further revealed that the M was surveyed not with a transit but a Brunton compass and steel tape. His contribution to the project was to provide two burros to haul the first loads of lime and water. Socorro newspapers are quite scarce for this period so no known published accounts have surfaced but it is interesting to consider that the appearance of the M must have coincided closely with New Mexico’s statehood.

The logistics of the actual layout are of more than passing interest. Various positions were likely considered for the best visibility and the slope of the peak also played an important role in the design. The letter must be recognizable from a great distance and retain its proportions and perspective throughout a wide field of view. Since the slope of the peak is about 60 degrees the height of the letter must be greater than the width to maintain the appearance of a roughly equal height to width ratio. The fact that artist Nichols very clearly could see the M from a point as distant as Tokay is testament to the success of Maloit and his crew.

Some observers nevertheless think the letter is a little askew. The topic came up at a most unusual time and place—the dedication

of Maloit Park at Minturn, near Gilman, Colorado in 1959, the planning and execution for which Frank Maloit was heavily involved. When speaking of Maloit’s long and illustrious career one of the speakers (Hayes 1959) stated, “another extracurricular activity still shines from near the top of a tall mountain overlooking Socorro. It is a large, painted block letter “M.” It is reputed to have been surveyed and staked out by an undergraduate by the name of Maloit. A quiet controversy usually springs up upon viewing it whether or not the letter is straight. The school says it stands for “Mines” if the letter IS straight but if it is not straight then it stands for ‘Maloit.’ Each of you can be his own judge upon viewing it. My observation is that it is just as straight as most of the underground mine survey connections by the engineers serving under Maloit. They had better be straight!”

Today the M, having reached the century mark, is the oldest visible icon of the New Mexico School of Mines, now New Mexico Tech and the school is to be commended for maintaining the Mascot through good times and bad so that future students, citizens, and passers-by can enjoy it long into the future.

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References

- Benavides, Fray Alonso, 1630, “A Memorial to King Philip IV of Spain on the Indians Missions of New Mexico, Madrid, 1630.” (Father Alonso de Benavides served as the director of the New Mexico missions from 1626 to 1629).
- Bullion, (a/k/a Socorro Bullion) 1886, 1891; territorial newspaper published first in Socorro, NM and later in El Paso, TX.
- Chieftain, (a/k/a Socorro Chieftain) 1892; territorial newspaper, Socorro, New Mexico.
- Daily New Mexican 1867, territorial newspaper, Santa Fe, New Mexico.
- Eveleth, Robert W., 1987, notes of an interview with Robert J. and Agnat Maloit, 4/24/1987, Socorro, NM, 1p.
- Eveleth, Robert W., 2006, “Our Lady on the Mountain—History, Geology, and Folklore of Magdalena Peak,” *New Mexico Geology*, Vol. 28, No. 2, May 2006, pp. 43–53.
- Eveleth, 2010, “Mines, Minerals, and Midnight Oil, The Story of the M on Socorro Peak,” *El Defensor-Chieftain*, July 3, 2010, pp. B1–B6.
- Glover, Vernon, 2013, personal communication.
- Hayes, A. L. [Lee], 1959, Notes of a talk given at the dedication of Maloit Park on July 4, 1959, 3 pp.; author’s collection, courtesy Robert J. Maloit.
- Hereford, Joseph, 1969, unpublished manuscript map of the New Mexico Midland Railway, August 1969, 1p.
- Julyan, Robert, 1996, “The Place Names of New Mexico,” Univ. New Mexico Press, Albuquerque, 385 pp.
- Kiser, Billy, 2004, “New Mexico Trade Tokens,” privately published Las Cruces, NM, 193 pp.
- Maloit, Frank J., 1912, personal field book of transit surveys Oct 14, 1911–May 11, 1912, not paginated; author’s collection.
- Myrick, David, F., 1990, “New Mexico’s Railroads, A Historical Survey,” revised edition, Univ. New Mexico Press, Albuquerque, 276 pp.
- New Mexico Tech, 2013, Magdalena Ridge Observatory (MRO), mro.nmt.edu/about-mro