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Four Corners — A Brief History

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WELCOME TO FOUR CORNERS U.S.A.

Four Corners

A Brief History

By Earl F. Henderson, PLS

On April 19, 2009 a story made it onto the Associated Press that was picked up by almost every major news network, indicating that the Four Corners monument isn't in the correct location. The Four Corners monument is certainly one of, if not the most famous survey monument in our country. It appears as though this story started with an article in the Deseret News of Salt Lake City, UT written by Lynn Arave. Lynn makes some very extravagant claims based on Google Earth measurements and Geocachers which should make every land surveyor feel insulted. I know I do.

I personally saw news broadcasts in Denver, CO featuring my friend, Randy Zanon, who was at that time the Chief Cadastral Surveyor for the BLM Denver Office. Randy, who has since retired, stated in no uncertain terms that the monument marked the very point of the intersection of the state lines, yet the local reporter insisted on trying to feed the flames of controversy at the end of the report, stating that the monument was still 1500' off. Even after repeated attempts by myself to contact the news desk at the local TV station, no one was interested in correcting their poor reporting of the story. I take this as an example of the current state of affairs, and the value of current news reporting. But that's just my opinion and not the subject of this article.

In addition to not understanding the concept of original monumentation the way surveyors are supposed to, Lynn didn't do his homework. But then none of the

reporters of this story did, they simply picked it off the wire and repeated it. The story claimed that the intended location for the monument was 109° west longitude and 37° north latitude. Neither of these is correct.

The story of the Four Corners monument begins in 1868 when Ehud Darling surveyed 37° north latitude as described in the enabling act of 1864 describing 37° north latitude as the south boundary of Colorado. Darling surveyed to a point west of the present location of the Four Corners monument by about 1 mile & 45chs. Darling didn't do an exemplary job on his survey, but his survey was upheld in a Supreme Court decision between the states of New Mexico and Colorado in 1925 because it was the original survey.

In 1875 Chandler Robbins was contracted to survey the west line of New Mexico. Interestingly, on the title page of his notes, Robbins describes himself as "US surveyor and astronomer". He was directed to set an initial monument at 32° west longitude and "on the Darling line". As you can see, and as surveyors, we know the difference between 37° north latitude and "on the Darling line". Darling's survey was the original survey of the south line of Colorado, after all, even though it wasn't exactly on the 37° north latitude line.

The difference between 109° west longitude and 32° west longitude isn't as immediately apparent other than the numbers varying considerably. The Greenwich Meridian, from which 109° is measured, was not



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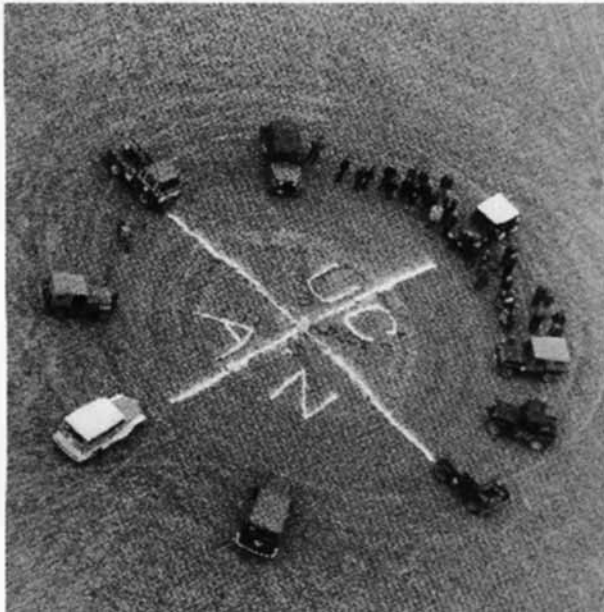


Image from the Utah Historical Quarterly



The Jefferson Stone, Washington, DC

accepted as the Prime Meridian by the United States until 1912 after the International Meridian Conference held in Washington, DC in 1884. Until that time each country established their own “prime meridian” from which measurements were made within their borders. Anyone who is a fan of Dan Brown’s *The Da Vinci Code* like I am remembers Robert Langdon following “The Rose Line” monumented through the center of Paris at the end of the story. These monuments mark France’s prime meridian. The Greenwich meridian was chosen as the Prime Meridian at the conference though because of the superiority of the British shipping and navigational charts which most countries had been using for decades, and which were all based on that meridian. So Chandler’s monument predated the use of the Greenwich meridian as the Prime Meridian. It was in fact based on the Washington, DC prime meridian. However, there have in fact been four prime meridians in DC.

The first prime meridian of the USA was proposed by Charles Pierre L’Enfant, the designer of DC, to go through “Congress’ House”. This meridian was never implemented. The second prime meridian of the USA and the first to actually be put to use was defined by Thomas Jefferson and established at the right angle point of the triangle with hypotenuse drawn between the White House and the Capitol Building. This point is currently marked by the “Jefferson Stone” just NW from the Washington monument. The Jefferson Stone has a unique and interesting history that was fully described by Silvio Bedini in his wonderful book *The Jefferson Stone*. This USA prime meridian was used until 1850. At that time the US Naval Observatory (now called the Old US Naval Observatory and located near the west end of the mall in DC) was being used for making longitudinal measurements and apparently it was decided to move the USA prime meridian to the dome of the Old US Naval Observatory building for simplicity in reducing measurements. That USA prime meridian was used until the Greenwich meridian was adopted by the USA in 1912. Sometime later the current US Naval Observatory was built and the USA Prime Meridian was moved to there for measurement purposes even though all measurements were converted to Greenwich.

So, the upshot is that Chandler’s monument was set based on the USA Prime Meridian (at the Old Naval Observatory) at 32° west longitude and that does NOT correspond to 109° West from Greenwich as Lynn Arave seems to think. Of course this is not the first time that someone has looked at a map and made that assumption. In fact, in an attempt to thwart just such a misunderstanding, Chandler Robbins himself published an article in the *Santa Fe Daily New Mexican* on November 1, 1875, just a few months after he set the monument, saying this: “It seems to have been the general impression that the line was the 109° of longitude west from Greenwich. Such is not the case, as the law makes it the 32° of longitude west from Washington, which corresponds to 109°2’59.25” west from Greenwich, and which places the line as a small fraction less than three miles farther west than would have been the case if it had been run as the 109° of longitude west from Greenwich.” Oddly enough, the very same newspaper, now

called *The Santa Fe New Mexican*, published an article on February 26, 2010, fueling the flames of the controversy which in reality doesn't even exist. They indicate in that article that some New Mexico legislators may even be considering claiming additional territory from Arizona based on the false information spread about the location of the Four Corners monument.

Measuring longitude in 1875 was often based on a time measurement using the telegraphic services. But out in the wilds of the west there were no telegraph lines. Chandler's notes say: "In the absence of available telegraphic facilities for the determination of the longitude I was directed by the Hon. Commissioner of the General Land Office to adopt the Southwestern needle point or crestone, otherwise named Wilson's Peak, situated in Township 11 North, Range 3 West of the Navajo Special Meridian." The location of Wilson's Peak had been established under the U. S. Geographical Surveys West of the 100th Meridian, led by First Lieutenant George Wheeler (one of the Great Surveys of the American West which also includes King's survey of the 40th Parallel, Powell's survey of the Grand Canyon Region and Hayden's Geological and Geographical Survey of Colorado and

Adjacent Territories). Wilson's Peak has since been renamed Ship Rock. Robbins then describes the geographical position he was given for this point and how he ran a line due west after triangulating on that point to establish 32°W. Then he ran due north and intersected "Darling's Line" and established his initial point. He monumented his initial point with "a shaft of hard sand stone 7 feet long 12 inches wide and 6 inches thick; set 3 feet in the ground and marked on the N.E "Col, 37° N.L", on the S.E "N. Mex 32° W.L"; on the SW "Arizona"; on the N.W "Utah 1875". This is the monument that would eventually become the Four Corners monument.

Now as surveyors we know that the Four Corners monument isn't exactly where it was intended to be. No one can measure exactly, not even now, not even me. But given the instrumentation available at the time, the terrain, and the many other challenges to survey well in that area and era, the level of both precision and accuracy they were able to achieve is remarkable. But just as importantly we as surveyors understand the concept of original monumentation better than the average reporter. Monumentation of land is so important that laws against moving or removing monu-

mentation have been instituted since prior to the writing of The Bible and are included in The Bible. The removal of survey monumentation continues to be a criminal offense today. Retracement surveying, in which most of us participate, is by definition the re-establishment of monumentation in its original location, not where it was intended to be. Chief Justice Cooley wrote, "We all know that when purchasers (in this case States) take lands from the general government, they ascertain the boundaries by going upon the land and tracing out the lines and stakes. No one supposes that if an error shall chance to have occurred in the survey, he is liable to have the corner post removed, and perhaps the portion of his purchase, which he regarded as most valuable, taken from him by a resurvey." (Thanks to Jeff Lucas for providing this quote.)

Since the Four Corners monument was set it has gone through several upgrades described in a circular titled Field Notes of the Remonumentation of the Corner Common to the States of Colorado, New Mexico, Arizona, and Utah, of the New Mexico Principal Meridian, Gila and Salt River Meridian, and Salt Lake Meridian" executed by Darryl A. Wilson, Supervisory Cadastral Surveyor for the BLM and dated October 17, 1992 (R-573). At the time of this writing it is going through yet another rendition transition and has been closed since late February 2010, with the hope that it will re-open again in the late spring or early summer of 2010. This reconstruction is being monitored by both the NSPS and BLM to be certain that it remains in its original location, as it should be, once the construction is completed. Additional information about the history of this monument and its location can be found at www.ngs.noaa.gov/INFO/fourcorners.shtml

Just as the circular states, the monument marks the corner common to the four states. It has been there since they became states and I expect and hope that it always will.



*Four Corners Monument before renovation
(Photo: Staplegunther at en.wikipedia)*