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## CHRISTMAS MOUNTAINS - BIG BEND PARK - BREWSTER COUNTY

This interesting surveying problem was first brought to our attention in January, 1972. Mr. Frank W. Daugherty, a Consulting Geologist and also a Professor at West Texas State University at Canyon, Texas, began mining fluospar from Dow Chemical Company's "Christmas Mountains Number 6" mining claim on September 1, 1971. This claim was staked by J. T. Carney, Jr. and was presumably located in Section 4, Block G-11, Brewster County, Texas. Mr. Daugherty also obtained a mining lease from the adjacent portion of Section 3 from Atlantic Richfield Company, which was the mineral fee owner of that entire Section.

Block G-4 and Block G-11 are situated in the South Central portion of Brewster County and, other than the Christmas Mountains where the mine is situated, there is the ghost-town of Terlingua, the present settlement called Study Butte and the Chisos Basin of the Big Bend National Park. Any surveyor who works in this rough, arid portion of our State must be pretty tough. At the time of the original survey, many bad things could have happened to any survey party that ventured into that wild and remote area - one thing for sure, they had to know where the springs and waterholes were, and many appear on the map and in the notes.

For the benefit of those of you who are unfamiliar with fluospar, it is a flux used in the steel-making process. It is found in purple crystalline form in veins in Mexico and, of course, in Southern Brewster County. The mining operation that Professor Daugherty and his partner operate is the largest in the United States. Their mining operation is of the strip-mining variety and, after blasting the veins of ore free, it is necessary to use a hand-labor type of removal in order to get an ore that will give a high yield of fluospar. Front loaders or other mechanical loaders pick up too much unusable material. The labor force in this area is mainly illegal aliens and the Border Patrol often deport most of that labor force, but they always return.

During the latter part of 1971, Mr. Daugherty spent a lot of time at the mine. Urban Engineering of Corpus Christi was surveying and subdividing the area for the Great Western Corporation, a land development company which is selling that area in small tracts. One of the Urban Engineering employees told Mr. Daugherty's partner that the corner between Section 3 and 4 was not where Mr. Carney had it, and that the mining claim was therefore in conflict with Section 3.

Mr. Daugherty checked with Mr. Carney and he acknowledged that a conflict could exist. Mr. Daugherty then advised Dow Chemical Company and Atlantic Richfield Company of the situation and also began putting all money due the actual mineral owner into an escrow account and waited for the two companies concerned to resolve the issue.

Due to the illness of Mrs. Carney, Mr. Carney, the County Surveyor and at that time the only surveyor in the county, refused to do the work. Mr. C. C. Cool of Midland, Texas was employed by the two companies concerned and began a job that lasted nearly three years with periods of field work and then periods of office work and assessment, which can only be appreciated by surveyors who have searched for those fading footsteps.

Block G-11 and Block G-4 were originally surveyed at the same time by John T. Gano in 1881. He started a tie line at the Southeast corner of Section 1 of G.H. & S.A. Block 15, an established corner that had Agua Frio Springs as a witness, and proceeded by the line of least resistance through the area that includes Terlingua and thence Easterly through the vicinity of Chisos Basin of the Big Bend National Park on toward other blocks surveyed by him in the South-eastern part of Brewster County. Mr. Gano was working for a railroad company and wrote field notes that would fill in the area filed on, and also that tied to other railroad blocks in the area that were already marked on the ground.

Mr. Gano's tie line had several key points that were used as witnesses to corners in his Block G-4, and since complete retracement was too expensive and in some parts impractical, these key points need to be found if Block G-4 and



G-11 are to be established as intended by Mr. Gano's original construction. From the evidence found during Mr. Cool's work, we believe that Mr. Gano monumented his tie line so that he could return and monument the corners of the surveyed blocks. He took his pay for surveying the area, all or partly, in certificates of title to Sections in Block G-4 and he and his family formed the G-4 Ranch which later, probably due to lack of water in the area, went bankrupt. In the course of our time and efforts in the area, we have not found an original Gano corner in his blocks, but we found several of his points. He laid a circle of rocks about 18" to 24" in diameter around certain traverse points, and erected a stone mound near Sulphur Springs. We feel that a complete retracement of Mr. Gano's tie line is entirely possible.

During the course of the work in this area, we made many attempts to recover Mr. Gano's field books, but efforts were fruitless. Several lawsuits, involving the Blocks in the Southeast portion of Brewster County that were surveyed by Gano, were researched by one of our attorneys, Mr. Horace N. Burton, and never in any of these cases were Gano field books introduced in evidence. Mr. Burton is one of those boundary attorneys who enjoys digging on a problem such as we had here, and he spoke with Mr Pete Ball who is now employed by Phillips Petroleum Company. From him we learned that Mr. L. W. Durrell, the Tex Mex

Railroad Co. surveyor, was supposed to have Mr. Gano's field books. Mr. Ball, when he was working for the State in 1939 or 1940, went to see Mr. Durrell at his home in San Antonio and was refused access to the books on the urging of Mr. Durrell's son. That son, Louis F. Durrell, was the only heir of L. W. Durrell and he, the son, died in 1972. Louis F. Durrell's will left a small estate to two daughters and a son, James L. Durrell, and the will had a notation in the margin that left "any other property" I give to my son J. L. Durrell. If any Gano field books exist, they should belong to James L. Durrell of San Antonio. He was unable to produce anything from a search of his father's house.

We learned that John T. Gano was one of thirteen children and his father was a Confederate general. Also, one of John T. Gano's sisters was named Elena Gano and she married a Mr. Hughes and was the mother of the late millionaire Howard Hughes. We also learned that John T. was educated in Virginia and was 28 years old at the time of his survey work in Brewster County, and also that he died when he was 35 years old and in Colorado on another job.

Another interesting facet of this surveying problem, and also it occurred chronologically: Colonel Arthur Stiles, who later gave us the gradient boundary, worked in Brewster County for the United States Geological Survey and he set a USGS monument at what was pointed out and said to be Gano Springs by a man that had worked with John T. This was prior to 1903, the date on the quadrangle sheet. Mr. Gano had set one of his traverse points and labeled it as being near Gano Springs, but gave no direct tie to the spring. This 1903 identification of Gano Springs causes later trouble for other surveyors. Mr. Cool found this traverse point and the true position of Gano Springs, which was used as a witness to the NE corner of Section 1, Block G-4.

We are of the opinion that many springs exist in rocky and mountainous country in wet weather, and that none or very few exist in dry weather. The time of year and the weather conditions at the time make identification of springs, particularly in the long, winding draws of the area around Gano Springs, very difficult. Colonel Stiles was there some twenty years after the Gano Survey Party and we feel that the person who gave Colonel Stiles the identification was in error.

Also, near this time, in 1901, another honored name, O. W. Williams from Fort Stockton, was employed in the quicksilver district around Terlingua. We obtained a copy of his field book that covers a time from 1901, 1902 and even 1903. Mr. Williams' work covers the area of our main interest, but he makes no definite identification of Gano nor were we able to find a report stating his conclusions. His work near Gano Springs was very indefinite.

In 1910, the General Land Office sent Mr. R. S. Dod into Brewster County to monument corners in the G-4 and G-11 Blocks. Mr. Dod, using mainly stadia distances, worked diligently in the area. He monumented and wrote resurvey



notes for a large portion of Block G-4. He wrote a long report to accompany his map to the General Land Office. Mainly, we think, because he was using the wrong Gano Springs as identified and witnessed by Colonel Stiles' bench mark, Mr. Dod could not construct Block G-4 as intended by Mr. Gano so he put in regular sections beginning on the West side and then made the two Eastern-most tier of sections wide to fill the area.

Even though there was quicksilver mining at Terlingua and several other mining activities including the present mine at Christmas Mountains, no boundary lawsuit has reached the courts concerning Block G-4 and G-11. Most of the present-day owners in the area occupy land patented on Mr. Dod's resurvey notes. The survey and subdivision by Urban Engineering of Corpus Christi for Great Western Corporation was going on at the time Mr. Cool was in the area and we did not discuss with their people the construction they were using, but we feel it was based mainly on Dod's monuments and construction. Most of the boundary markers of the Big Bend Park are on this construction. This construction will be near Gano's construction in the Western edge of the Block, but become progressively worse as you move Easterly into the Block.

Mr. Cool used C. & G. S. control that was available in the area and all his traverse points were computed using Lambert coordinates. By using distance measuring devices, he was able to get almost first order closure. Not only did he traverse between established monuments, he ran a closed loop and that is no easy thing to do in that area, especially since the Park Rangers would not allow his 4-wheel drive vehicle for getting around in the Big Bend National Park, and all work done there was done the hard way - by walking.

This problem was interesting and involved several interesting people who influenced our history and lives. Also, it was frustrating because we did not find Gano's field books and because the revenue from fluospar did not warrant our continuing our efforts, we stopped our search for those fading footsteps and made a boundary agreement with Dow Chemical Co. on the escrow money. The company surveyor for Dow Chemical Co. chose not to accept Mr. Cool's survey. For those of you who may ever work in this area, this is written for your information and aid. Atlantic Richfield Company unilaterally filed Mr. Cool's map in the General Land Office; and, as far as our minerals in the area are concerned, our attorneys feel that they can defend this survey in the event of a future lawsuit.

I mentioned that Colonel Stiles did the topography on the 1903 quad sheet printed by the U.S.G.S. We were fortunate that new quad sheets with 1971 control were available to us. With a set of these new sheets, at a scale of 1" = 2000' and included thereon Lambert grid ticks, I was able to plat Mr. Cool's traverse points. I must admit that the U.S.G.S.'s latest quad sheets are excellent and Mr. Cool's traverse points all seemed to fit the terrain and common points of survey very well. During the field work on this job, it was my pleasure to visit the field with Mr. Cool and see those ninety-year-old footsteps.

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C. B. Thomas:ss  
February 13, 1979



South Part-Box 5

File No. FN 35

Brewster County

Report-Block-G-4 & G-11-

Filed 12-11- 1979

BOB ARMSTRONG, Com'r

By James E. McCarty

Report by C.B. Thomas



February 13, 1979  
C. B. Thomas:sa

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