# The Salazar Survey

## by Clay Worst

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Clay wrote this article in 1984, many years after the his search for the Lost Dutchman Mine involving, John Reed and Erwin Ruth. The Salazar Survey story is referred to in the correspondence between Clay and Erwin Ruth and was a contemporary project in which Clay was involved.

I have included the article as part of this collection as it provides some background that dovetails with items in those letters.

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Garry Cundiff
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## THE SALAZAR SURVEY

by

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Of all the waybills to lost mines in the Superstition Mountains, few are more interesting than the Salazar survey.

I met Frank Swento in 1948. He had immigrated through Ellis Island, N. Y., where his unpronounceable Lithuanian name had been Anglicized to Swento. He came speaking only a few words of English, and had almost no money, but was filled with optimism toward making his fortune in the new world.

Frank had arrived during prohibition, and the only work he could find was as a janitor in a speakeasy. This employment, however brief, altered the course of his life.

One evening the conversation between two patrons turned to Arizona and the Lost Dutchman Mine. Frank's comprehension was sufficient to learn that somewhere in the American West lay a hidden gold mine of fantastic wealth, waiting for some lucky finder. He resolved to proceed at once to the place called Arizona.

He arrived in Phoenix tired and broke, and was directed to the south part of the city. This section was inhabited largely by ethnic minorities, mostly blacks and Mexican-Americans, plus Europeans of various extraction.

It was not an affluent area. The people were of limited education and of modest means. But there was, throughout the community, a sense of concern for the welfare of their fellows that society would do well to emulate.

Honest and amiable, Frank was warmly received into the community.

His first acquaintance was the proprietor of a secondhand furniture store, who was known as Jimmy the Greek. Frank insisted this was his Christian name, but I doubt that Jimmy's mother had him so baptized.

He provided Frank with a small area in the loft over the store, where he could sleep and keep his few meager possessions.

Through his newfound friend he also established credit at a nearby restaurant operated by Sarah Sevilla, until he could find work. His circle of friends expanded rapidly.

Frank spoke openly of his intent to find the Lost Dutchman Mine, and was at once encouraged by Mrs. Sevilla. "If you're interested in the Lost Dutchman Mine," she advised, "you must talk to my father, Perfecto Salazar."

Salazar had formerly lived in Florence, Ariz. There, in 1924, he was summoned to the Tucson office of the Alianza Hispano-Americana, a Mexican-American fraternal organization, of which he was a member.

Here he was introduced to a Spaniard of aristocratic bearing, who had recently arrived from Santander, Spain, via Vera Cruz and Mexico City.

His name was Cristobal Peralta. He had been born and raised in Mexico, and was, at the time, 72 years of age.

He had come to Arizona on business and, unable to speak English, wished to hire an interpretor. Salazar's employment was quickly negotiated.

Cristobal Peralta, Salazar learned, was descended from a Mexican family who had operated rich gold mines in the area later acquired by the United States from Mexico. He had gone first to Madrid, then to Mexico City, to inquire whether there were records under which he might reclaim some color of title to these properties.

Finding nothing, he came to Tucson, engaged the services of Salazar, and proceeded to examine the public records of both Pinal and Maricopa Counties. He also inquired into certain "federal court records," presumably those of the U. S. Court of Private Land Claims, which arbitrated Spanish and Mexican land claims following the Mexican War.

Finding nothing, and becoming discouraged, he related his story to Salazar.

In the winter of 1853-1854 his family, having failed to establish title to their mining properties in Arizona, made one last clandestine trip to the mines, which were located in an area of extremely rough terrain. Here they reopened the mines, which they worked for a winter season.

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Considering, however, that a quirk of politics might someday enable them to reassert their claim to the properties, they included in their expedition the necessary equipment to survey the mine's location.

They also brought a small camera and the chemicals to sensitize and develop the plates necessary for its use. In the spring of 1854, they surveyed and photographed the mine site.

The mines were then carefully closed and concealed, lest they fall into the hands of the "Yanquis" who had taken this area without any benefit of right.

They never again returned.

The records of this expedition, Peralta said, he had in his possession.

Discouraged upon learning that he would have to become a United States citizen to file a mining location upon the property, and being unwilling to learn a new language at his advanced age, Peralta advised Salazar that he would return to Spain. But prior to leaving, he wished to see the mountains in which the hidden mines lay.

They lay well to the north of the Rio Gila, Peralta advised, somewhat south of the Rio Salado above its junction with the Rio Verde, south of a mountain of four peaks, and northerly from a high picacho, or pinnacle. This pinnacle, which they had named "El Sombrero," could be seen for a long distance from the desert approach to the south.

Salazar, familiar with the region, recognized these as being the Superstition Mountains, which they had passed on their way from Tucson to Phoenix, and that the pinnacle was presumably Weaver's Needle.

Accordingly, the two men retraced their way back to the present site of Apache Junction, then northeast several miles up the Roosevelt Road, now known as the Apache Trail.

There Salazar stopped the car, and in the ensuing conversation Peralta agreed to show Salazar the documents he had brought from Spain.

From a leather valise Peralta produced a large map, which encompassed the area from a crossing near two buttes on the Gila River, which they called Los Picachos Diversos, north to the Four Peaks in the Mazatzals.

He also produced three small photographic plates.

The map, Peralta explained, was a survey of the mine site. The bearings and distances were referenced to the salient pinnacle, El Sombrero.

In particular, a line ran northward from the pinnacle, accompanied by the numerals 4 and 62. There was also a transverse line running between three red hills and a two-room cave.

A notation indicated that the pinnacle was located 14 kilometers south of the Rio Salado.

The meridian of reference for the survey was determined by an observation on Polaris, the north star, on the night of April 13th, 1854. It was important, Peralta asserted, that the survey be redone on that exact day of the year, so that the stars would occupy the same positions in the heavens as they did at the time of the original survey.

Peralta also emphasized that the distance was not measured following the contours of the terrain, but "-- straight, like a bullet."

Salazar was also allowed to view, briefly, the three photographic plates. They were darkened with age, and it was difficult to ascertain much more than the outline of the skyline, with little foreground detail remaining. All three photographs were of the salient pinnacle, El Sombrero.

The first photograph, Peralta stated, had been taken from the summit of the first high mountain in the direction of the mine from the camp on the Rio Salado. The spot was indicated on the map by a small square symbol, and lay near a meandering trail between the camp and the mine site.

The second photograph was taken from the summit of the second high mountain in the direction of the mine. The pinnacle was not visible along the route between the sites from which the two photographs had been made.

The third photograph was taken from high ground above the mine site.

The numeral 7 appeared near the site where one of the photographs had been made. Its significance was uncertain.



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At this point, Peralta returned the documents to his valise, and the two men returned to Tucson. Salazar was paid for his services, and Peralta returned to Spain, taking with him the documents Salazar had seen.

Salazar was never permitted to copy the map, but made a crude sketch from memory on a piece of brown sack paper. He realized, regretfully, that the Spanish map contained much other data which he had not enough time to memorize.

In the months following, Salazar, accompanied by friends, made several attempts to reorient the information he obtained from Peralta.

Various combinations of the numerals 4 and 62 were applied with reference to a north line from Weaver's Needle. Several systems of linear measurement were tried, including the old Spanish leagues and varas, the metric system, and even English measurement.

It came to nothing, and eventually Salazar abandoned his search.

Years later, however, Salazar's story had a deep effect on Frank Swento, who was firmly convinced that herein lay the key to his imminent fortune.

To finance his search for the mine, Frank obtained employment as a truck driver for the Salt River Project, a local utility. A hard worker, he earned respectable wages, but lived in the most frugal manner imaginable, even by South Phoenix standards. He saved every penny possible for his proposed trip to the Superstitions.

He rented a small two-room adobe on Jones Street, and soon had the premises piled high with salvaged materials of every description, which he hoped to resell at a profit. Further, the dwelling had no sanitary facilities other than a decrepit outhouse, and in general Frank probably violated every ordinance in the city code. His neighbors, however, knowing of his ambitions and his amiable character, graciously overlooked the appearance of the premises, and no one ever complained about the situation to the authorities.

He also acquired an ancient International "peddler's wagon," a small truck with a van body which had canvas roll-up curtains along either side and the rear. With the assistance of a local shade-tree mechanic, he soon had it running and ready to carry him and his provisions to the Superstitions.

On his first attempt at reaching the supposed mine site, Frank was dismayed at the difficulty of the terrain. Leaving his vehicle at First Water Ranch, the western trailhead to the Superstitions, he made his way finally to an area in Needle Canyon, north of Weaver's Needle.

Short, of stocky build and physically unconditioned, he quickly despaired of being able to locate the mine as easily as he had expected. Sterner measures seemed to be in order.

He then enlisted the aid of his new friends from Phoenix, and a sort of syndicate was formed. From the wages of each, a certain amount would be set aside each week, to pursue the hidden mine in a more meaningful manner. A few of these actually came into the mountains with Frank. Most of their names have been long forgotten, but I remember Alex Sotol and Ralph de Palma. There were several others.

Finding little encouragement, they arrived at the consensus that they must engage a registered land surveyor to rerun the Mexican survey.

In 1941 they hired a surveyor named Bartlett, from Phoenix, and had him and his equipment packed into the Superstitions. Since the April 13th date was not at hand, Bartlett assured them that his determination of the north line by magnetic compass would be sufficiently accurate, and the work proceeded.

Again, it came to nothing.

Then, convinced that Peralta's instructions must be followed to the letter, they engaged another surveyor named Charley Rice. Rice was instructed to lay out a north line by observing the north star on the night of April 13. Along this line he was to measure off a distance of 4 kilometers and 62 feet.

Rice protested vehemently, pointing up that they were arbitrarily mixing two different systems of measurement. Further, he advised, the north star makes a daily orbit around the true north pole, and it was necessary to know the hour at

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which the original Mexican observation had been made.

The mine hunters, however, summarily dismissed Rice's protests. Since his wages were not dependent upon the outcome of the venture, Rice reluctantly proceeded in accordance with his instructions.

This survey terminated on a spot in what is known as the Red Hills, lying between Needle and LaBarge Canyons, about 2-1/2 miles north of Weaver's Needle. One of the group opined that red coloration is usually iron, and "Iron is the mother of gold." Further, the map in Peralta's possession had indicated a transverse line between some red hills and a cave. The group was encouraged.

As time passed, however, they all began to sample the disillusionment that usually afflicts unsuccessful treasure hunters. They then turned to a succession of fortune tellers, clairvoyants, mediums and sundry other wizards to whom the desperate seem to turn. The results were no better.

During their trips to the mountains, however, they often encountered one C. E. "Chuck" Aylor, another lost mine hunter, who had been in the Superstitions since 1936, and had a good knowledge of the country. He also had a wife, Peg, a comfortable camp, two burros and a mule.

The advantage of enlisting his aid seemed obvious, and a bargain was struck.

Swento and his associates were to grubstake Aylor with ample provisions for himself and his wife, as well as the pack animals, while Aylor was to search for the mine.

To Frank Swento, the solution was eminently simple. The survey had been rerun by a qualified engineer, the accuracy of whose work was hardly open to question. "You dig-em," he advised Aylor, in his heavy Lithuanian accent.

Aylor, unlike Swento, was a man whose use of English vernacular was clearly amazing. Further, he'd evidently sat up nights reading the dictionary, memorizing words which were readily understand, but which he applied in an unconventional manner. Once, when he reentered a bar after his car failed to start, he notified the bartender that his battery was "impoverished." "Disconcerting as hell," he grumbled.

Having inspected the terminus of Frank's survey, Aylor noted no evidence of prior mining activity, and that the ground was exceedingly hard. Having a natural aversion to physical labor, he set about to determine the mine's location by a process of rationalization. This process could be readily carried on in camp over coffee, certainly a more acceptable situation than spending long days on Frank's hill swinging a drift pick.

I was camped up Needle Canyon at the time, and Aylor rationalized that it was time for me to become involved in "the Salazar deal." Having few other leads upon which to work at the time, I agreed. With Frank's consent, I was made privy to the entire story.

On the surface, it appeared the story might have some merit.

First, there certainly were small, easily portable instruments capable of establishing a meridian by astronomical means during the period in question. Even a common surveyor's compass equipped with metallic sights was often designed to elevate a sight sufficiently to observe the north star in these latitudes. If necessary, a plumb line illuminated by a lantern could have reduced the elevation of the star enough to be observed with any instrument at all.

As to the photographs, most cameras using the wet process at that time were huge and cumbersome affairs, largely because no convenient means of enlarging a photograph image had yet been devised. But for those satisfied with a small image, portable cameras using several pioneer processes were available. The lack of quality produced seemed to have been borne out by Salazar's description of the primitive conditions under which the photographs had been made.

As to the observation of Polaris, several systems could have been employed.

If the observer were not familiar with the orbit of the north star around true north, he simply made his observation when the double star in the handle of the Big Dipper was either directly above, pole star. At this time the star would be on the true meridian.



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If the proper time occurred during total darkness, the instrument was illuminated by a lantern.

The more knowledgeable would likely make the observation at twilight, when the star first became visible, but when the sights of the instrument could still be seen against the evening sky. The relative position of the double star would then be noted, and the correction to the bearing made by estimating the hour angle of the double star. These stars, Mizar and Alcor, were known earlier as "the horse and rider."

The very sophisticated would use trigonometric tables to compute the azimuth of the star, but with simple equipment and limited knowledge, the job could be done as previously described.

Since the date of the observation, but not the hour, had been recorded, it was presumed that the observation was probably made at twilight, with the azimuth either corrected or left uncorrected, giving two slightly divergent bearings.

Calculations established that at evening twilight on April 15, 1854, the pole star lay about 1° 10' west of true north.

The figures 4 and 62, however, posed a dilemma. Salazar insisted that these two figures constituted the distance the mine lay north of the pinnacle. He believed the 4 indicated kilometers and the 62 the remainder of the distance.

This seemed unlikely. By 1853 the old Spanish system of leagues and varas was falling into disuse, having been replaced in Mexico by the metric system, in which one never mixes two different units of measurement. If the figure 4 indicated kilometers and the 62 indicated meters, it ought to have been expressed as 4.062 kilometers or 4,062 meters. This presented an apparent flaw in Salazar's recollection.

Nevertheless, I packed a surveyor's transit into the Superstitions early in April, 1949, ready to do battle with the Salazar survey. Nyle Leatham of Mesa accompanied me as rodman.

Another problem soon became evident. Although there seemed to be a precise establishment of true north, there was no indication that the bearing to the mine site was deflected any given amount to the east or west. Swento insisted that the mine lay on the line due north of the pinnacle. The odds of this happening by sheer chance, however, seemed remote.

But with nothing better to go on, we determined to establish two points 4,062 meters north of the Needle, one by the true corrected meridian and one by the position of Polaris at twilight on the evening of the Mexican survey nearly a century before.

The difficulty was that Weaver's Needle is a volcanic upthrust, the "plug" or spire of which is over 500 feet sheer vertical ascent. It would be obviously impossible to measure a horizontal distance from the summit using a surveyor's chain. The same problem would have faced the original Mexican surveyors.

In measuring across a void, surveyors resort to some form of triangulation. It the mine lay north of Weaver's Needle, some location would have to be found, probably on some high mesa, where a base line could be measured across reasonably flat terrain.

From each end of the base line, both the point of origin and the terminus of the survey must be visible. Equipped with the known length of the base line and the bearings taken from each end, the distance between the summit of the Needle and the mine site could be calculated.

Lacking a knowledge of trigonometry, the result could also have been determined by simply measuring out the resulting triangles on flat ground to a greatly reduced scale, and measuring the result with a surveyor's chain.

In the case of Weaver's Needle, only one site existed where such triangulation could be readily accomplished. The flat mesa on top of Black Top Mountain, about 1-1/4 miles northwest of the Needle, would be t he obvious choice.

This idea seemed reinforced by Spanish symbols chiseled in the rock at the extreme southeast end of the mesa. These were discovered by Barry Storm in 1937, and included in his books Trail of the Lost Dutchman and Thunder God's Gold, both long out of print. These symbols have been largely obliterated by vandals since.

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If this were one end of a base line, the other end ought to be similarly marked.

Additional symbols were, in fact, found at the extreme northwest end of the mesa. The two groups of symbols were located at the maximum distance possible and still maintain a line of sight between, which would strengthen the geometric structure. Both the summit of the Needle and the red hills were also visible from each group of symbols. Of further interest, these lines of sight were lost when one departed only a few feet from either group of symbols.

The suitability of a base line on Black Top Mountain to the Salazar survey was either by deliberate design or an amazing coincidence.

Further, when the distance of 4,062 meters was triangulated by this method, it placed one where a metal detector indicated an area of increased electrical conductivity, such as might be caused by an underground ore body.

The best we had in portable metal detectors back in those days was the early Fisher M-Scope, a tube-type null balance, which weighed 25 pounds and was laborious to operate. Since the first results seemed encouraging, we also packed in a large field transmitter, capable of deeper penetration than the M-Scope. This further verified the position of whatever was causing the indications on our equipment.

The digging began with high hopes, but again the results proved disappointing. At a depth of about eight feet we found a vein of decomposed material which retained ground moisture during the dry season. One of the shortcomings of the early detectors was their reaction to underground moisture. The vein carried no values of any consequence.

One item of interest did occur, however. Just a few feet away were the vestiges of an old campsite. This was not unusual, as the high bench on which it was located offered an ideal campsite to anyone in the area, for whatever reason.

The campfire spot, however, had been rocked up, and an old piece of sheet metal used for a stove top. The metal was rectangular, and clearly showed evidence of having been bent at the proper angle to have been used as the return chute for a dry-blower, used for recovering gold in an area devoid of water. At the proper location for such use were two rows of square nail holes. The holes were not rectangular, such as might have been made by a modern horseshoe nail, but square.

The round wire nail was invented about 1871, though the old square-cut nails were still in use on the Western frontier for several years following. This certainly was part of a dry-blower used before about 1874, and later salvaged and flattened for use as a stove top.

We had to admit, though, that it could have been packed in from almost anywhere.

Eventually we became discouraged with the Salazar survey, and devoted our attention to other matters. That was nearly 40 years ago, and to my knowledge no one has pursued it since.

In retrospect, a few things should be noted.

Some have claimed the Spanish symbols on the southeast end of Black Top Mountain were not authentic, but were placed there by Barry Storm as a literary device to enhance the appeal of his books. Bill Barkley, pioneer cattleman, firmly believed that this was so, since as a boy he sat upon these very rocks many times during roundup. As cattle were driven up Needle Canyon this made a perfect point of vantage to see that none strayed over the low saddle to the south and into East Boulder Canyon. Bill felt certain that if the symbols had been there then, he would have noticed them, as they were chipped deeply into the rock, and plainly evident.

My last visit with Barry Storm was in his camp in the Eagle Mountains of California, where he was working a gemstone prospect. It was many years after his books were out of print, and no longer of any financial interest to him. We were close enough friends to confide in one another.

Curious about the authenticity of the symbols myself, I approached him about the matter. He vehemently insisted that he discovered them exactly as represented in his books. He further advised that they had been only hastily scratched on the rock, and were so old and faint that he,



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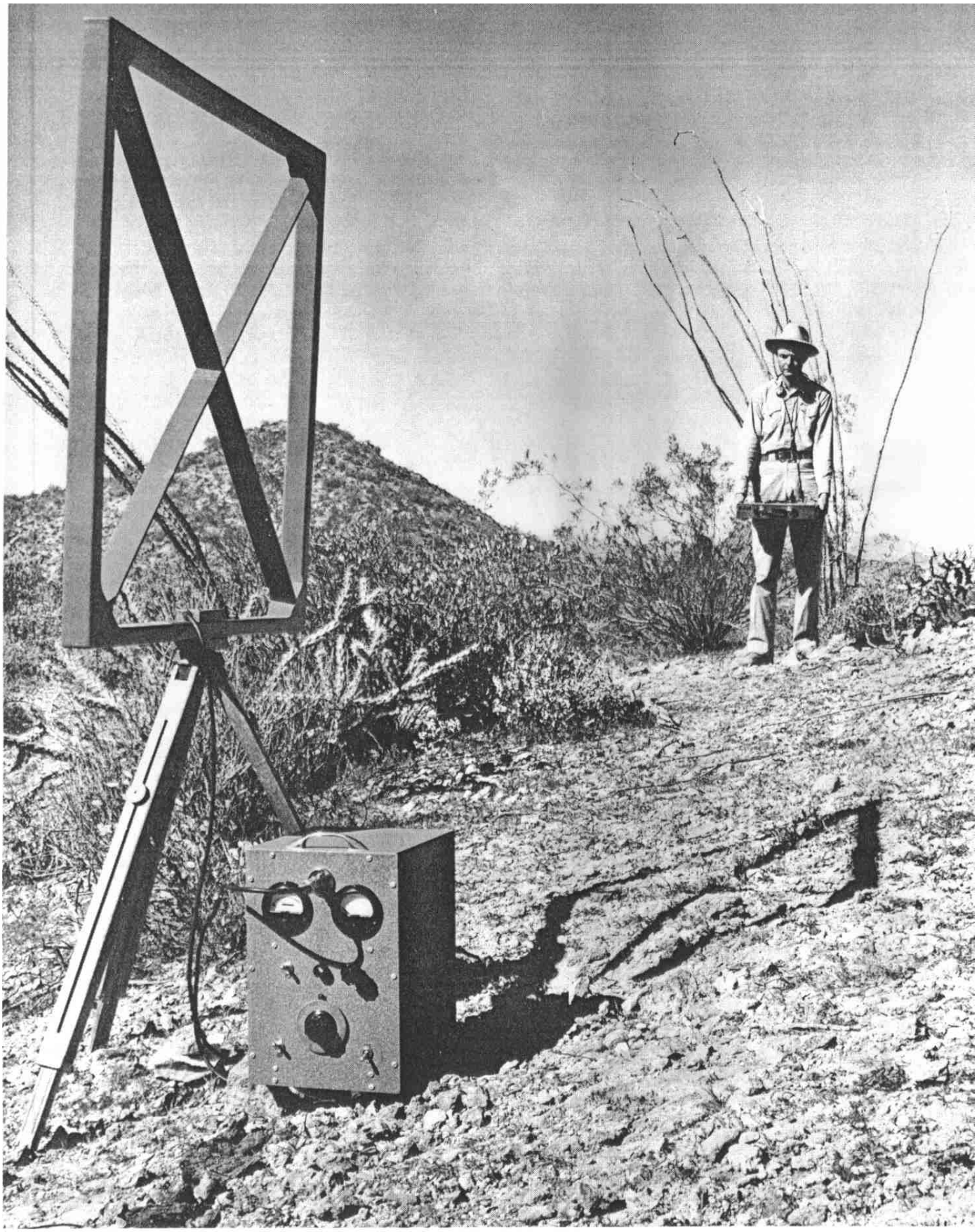

The author making geophysical tests in the Red Hills area, April, 1949.
Nyle Leatham photo.

The author reworking the Salazar survey, April, 1949. Note the Miner's symbols on the rock directly beneath the instrument. This spot marked the northwest end of the presumed triangulation base leg atop Black Top Mountain. Nyle Leatham photo.

too, had sat on these rocks many times, studying the upper reaches of Needle Canyon, before he noticed them.

They were, in fact, so faint that they could not be visualized properly without tracing them in chalk, which he did prior to photographing them for his book. He said that at some later date other persons had evidently gone back and chipped them more deeply into the rock to preserve them.

Storm may well have been telling the truth. The discovery of additional symbols at the opposite end of the same mesa, of which he knew nothing, may confirm this judgment. These latter signs consisted of a rising sunburst and the letter P.

In any event, of the signs which Storm discovered, the symbol we called "the bug" has baffled treasure hunters now for nearly 50 years.

As to the Salazar survey, it simply became apparent that Salazar's information was too incomplete to be readily applied.

As to verifying Salazar's story, to my knowledge no one has ever determined if such a person as Cristobal Peralta did in fact exist in Santander, Spain, during the 1920's. I checked the records of the Spanish-American Alliance in Tucson, but there was no record of his having been there. Since his business consisted simply of hiring an interpreter, however, there was little reason to expect that a record of his visit should have been retained.

I have mixed feelings about the Salazar survey. Yet while most of the lost mine stories centered about the Superstitions must be dismissed simply as gratuitous speculation, the Salazar story does stand out as one of those to which there might possibly have been some basis in fact.

All of the principals mentioned in this story are long since dead. The entirety of what they knew has been set forth here. The only hope of obtaining further data would be by pursuing the heirs of Cristobal Peralta, if, in fact, such a person really did exist. I do not know whether the immigration records at Vera Cruz are still extant.

But I shall long remember the clear starlit nights in Needle Canyon when we reworked the sights on the north star, and the warm days spent digging at the end of Salazar's rainbow.

And I can hear Frank Swento as though it were yesterday, admonishing, "Clay, you got to shoot the star on the night of April 13th. Then everything's going to be the same. Then all you got to do is dig-em."

AUTHOR'S NOTE: The Salazar story is offered here as a part of the lore and legends of the Superstitions. Neither the author, nor the Superstition Mountain Historical Society, represent the story as having its basis in historic fact.

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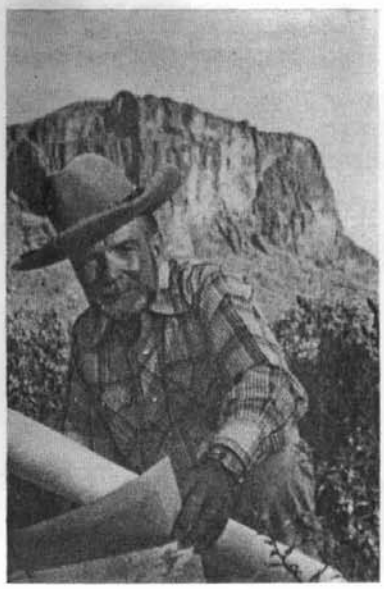

Author Clay Worst