

August 2007

SIDE SHOTS

Professional Land Surveyors of Colorado

Volume 38, Issue 3



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Dear Fellow Members,

I recently had the opportunity to participate in the preservation of an important survey monument located in Georgetown, Colorado. The George Wheeler survey party erected a sandstone astronomical monument in June, 1873 as part of the Wheeler geographical surveys west of the 100th Meridian. William Wilson of the Historic Georgetown Board of Directors requested assistance from the PLSC to preserve this artifact. The PLSC was more than happy to commit funds to help preserve this historic survey monument. The plan calls for a shelter to be placed over the Wheeler Monument, and a plaque that references the contributions of the PLSC will be installed.

The new Colorado Spatial Reference Network Chapter is up and running. It is working to define and refine the CSRN role in the PLSC, and to support the installation and maintenance of a virtual reference network in the Denver Metro area. CSRN held an open house in late April, in which equipment manufacturers made presentations and answered many questions. There should be a report from the Chapter President, Russ Clark, in this issue. I look forward to the success of this new chapter.

The Legislative Committee continues to be active. They have a number of items on the agenda for consideration. Please see the report in this issue submitted by Roger Nelson, committee chair.

The PLSC and the Southwest Chapter provided a combined \$6,000 in surveying and mapping program funds: \$3,000 to Fort Lewis College in Durango, and \$3,000 to San Juan College in Farmington, NM. \$3,000 was first offered by the Southwest Chapter, and they challenged the PLSC to match their funds. David Freienmuth and Parker Newby were instrumental in organizing the gift.

We have a new, fun item in this issue that we hope to continue — it's a "name your peer" photo puzzle. After the last issue, we sent out a request for old photos of members — several were submitted and are included in this issue. There is no prize, but it's a lot of fun to see old pictures and try to figure out which people you know!

A new electronic member database is currently being implemented in order to update and reconcile the Membership Roster for 2007. We will be updating mailing address, email address and other information for all members. Eventually, we hope to be able to process member changes, payments etc. through an online interface. Thanks to the efforts of Terry Sanders, Lisa Isom, Gaby Neunzert, and Art Hipp, this electronic database should be a success. Members of the Publications committee (Gene Kooper, Earl Henderson, Roger Kelley and myself) are working on the new roster. We will keep you posted on its progress.

The next Board of Directors meeting is scheduled for Friday, September 7th from 6:00 to 10:00 P.M. at Pikes Peak Community College in Colorado Springs. The meeting will be hosted by the Southern Chapter in conjunction with their annual conference. Prior to the board meeting, a short workshop on Robert's Rules of Order will be presented. The class is open to Board Members and chapter officers, and is scheduled for 4-5:30 P.M. The instructor will also be attending our board meeting to assist us in applying the information. I hope to see you all there.

Sincerely,
John B. Guyton, PLS



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*Side Shots is the official publication of the Professional Land Surveyors of Colorado, Inc.
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July 1 and October 1. All material received after the current deadline will appear
in the next issue of Side Shots.*

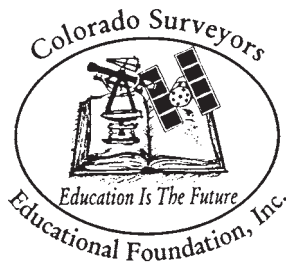
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The Professional Land Surveyors of Colorado, Inc. (PLSC) recently entered into a Partnership Agreement with Metropolitan State College of Denver.

The agreement will benefit everyone in the real estate and surveying communities who depend on quality surveying work to help their businesses thrive.

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THE EDITOR SEZ

Dear Friends & Surveyors:

Well, it's time again for a few words from the Editor. My how time flies! It's a good thing that *Side Shots* isn't a monthly issue — I'd never make it!

This will be another large and important issue, with a number of important contributions from our officers and members. Please pay particular attention to the historical/technical data presented by former surveying instructor G.M. Neunzert and the very interesting article by Mineral Surveyor and CCPS President Gene Kooper. He graphically illustrates how complicated things can become in the real world.

My sad news this time is the passing of C. Albert White, our distinguished author of several books and a long-time member. Randall Zanan, the Chief BLM Surveyor at the Colorado State Office recounts his varied and exceptional career in the Obituary Article contained in this issue.

Years ago, in the 1970s when I was honored to be on the faculty of the Advanced Cadastral Surveying Courses by the BLM/USFS in Marana, Ariz., I met Al White for the first time. Al was teaching various history courses there and I was amazed at his remarkable memory of all the details of his various survey projects. He was enthusiastic in his sharing them with us. Al also had a keen sense of humor and would introduce me as the BRAND X surveyor. After a while we became good friends and had many fascinating discussions.

Al was a great instructor and his generous nature resulted in giving to our Association (PLSC) the documents for publication of his latest book to be used for raising funds for scholarships and general research. He was a fine man, an expert surveyor, and a good friend. He will be missed by all.

I hope your individual businesses are doing well through the heat of the summer. I am ready for some cooling off.

Finally — we have 697 members at the present time and it really concerns me that 52 of you have not paid your 2007 membership dues as yet. We really need your support, so take a minute and drop me a check SOON! ■



Art Hipp

Mineral Survey Corner

The Grassy Gulch Placer Claim and Its Impact on Lode Claim Geometries

By Gene Kooper

In the August 2006 issue of *Side Shots* I illustrated a General Land Office policy where, for prior approved mineral surveys, the patent description was required to be shown on the plat and in the field notes. The GLO policy that mandated using the paper description over found, original, and undisturbed monuments was first enforced in a letter from the GLO Commissioner to the Colorado Surveyor General, dated June 17, 1899. The letter required an amended survey be conducted for Mineral Survey No. 12577. As a result, the position of the senior conflicting claims shifted by as much as 120 feet in the approved amended survey. During

the five years that this policy held sway, several other policy shifts were implemented. One of those new policies prohibited lode claim locators from placing their location posts within the boundaries of lode claims that had either been patented or entered prior to the location date. The entry date is defined as the date that the patent applicant purchased the land at the local land office.

Before I delve into the specifics, first some background information. By the late 1890s, very little open ground existed in the Cripple Creek mining district. Often, the remaining open ground consisted of small gaps and gores between previously

patented lode claims. One technique employed to consolidate a claimant's holdings in an area was to claim the remaining fractions with a placer claim location. This allowed claimants to embrace the remaining open ground with multiple 10-acre aliquot blocks. Placer claim locations can range in area from 20 acres for a single locator up to 160 acres for an association of eight locators.

On January 1, 1899, James Fox, *et al.*, located the Grassy Gulch Placer in the N1/2 of Sec. 21, T. 15 S., R. 69 W., Sixth P.M. It contained seven noncontiguous tracts

Continued page 6

On the Cover – Georgetown Wheeler Monument

On the cover of this issue is a picture of the Georgetown Wheeler Monument. Pictured are the land owner, Bob Gibbs, several PLSC members and interested Georgetown-area residents. There were a total of five Wheeler astronomical monuments erected in Colorado in 1873 and one in 1874. The locations are: Georgetown, Colorado Springs, Hughes (near modern-day Brighton), Julesburg, Labran (near modern-day Florence), and Trinidad.

Instead of using a granite stone quarried in the Georgetown area, the sandstone monument was quarried from a quarry near Labran, Colorado. According to William Wilson, a local historian and member of Historic Georgetown, Inc., there are only two other Wheeler monuments in existence today, the one in Trinidad and the other in Julesburg.

The Georgetown monument was used like a modern concrete pillar to mount the astronomical instrument on. There is a 1"

square tapered hole, 4" deep in the flat top that likely held the instrument's mounting plate. The stone is scribed on the south face with:

U. S.
MERIDIAN
AND
LATITUDE MARK
EXPLORATIONS WEST
OF THE 100TH MERIDIAN
WAR DEPARTMENT

The north face is scribed:
LONG.
LAT.
U. S. ENGINEERS
1873

It is unknown why the latitude and longitude were never scribed on the sandstone.

The astronomical observations were done by Dr. F. Kampf in the latter part of June, 1873. A report detailing the observations and the results is entitled, "Results of Observations Made by Dr. F. Kampf and John H. Clark in the Determination of the Astronomical Co-ordinates of Georgetown, Colorado - SEASON OF 1873." The report is included in the 1877 U.S. Government publication, "U.S. Geographical Surveys West of the One Hundredth Meridian," by George M. Wheeler, Lieut. of Engineers, U.S. Army, in Charge.

Look for a more in-depth article in a future *Side Shots* issue. It will detail the methods used to determine the latitude and longitude of the astronomical station.

Pictured: Standing (left to right): J.B. Guyton, Doyle Abrahamson, Warren Andrews, Greg Markle. Kneeling (left to right): Bob Gibbs, Gene Kooper, Donna Malleck, Mike Greer. Kneeling foreground: Bill Wilson

totaling 5.577 acres. The smallest of the tracts was a triangle with the long side being only 36.7 feet and comprising an area of 0.003 acres (see "Tract G Detail" in the first figure). The mineral survey was approved by C. C. Goodale, the Colorado Surveyor General on April 15, 1899 with entry made October 27, 1899. In a ruling dated January 30, 1900, the GLO Commissioner asserted that the mining laws and regulations did not authorize two or more noncontiguous fractions to be embraced in a single placer location. The fact that the same claimant owned all the lode claims that created the seven noncontiguous tracts was not material. The Commissioner ruled that, *"This office cannot therefore consider said Grassy Gulch placer location as a single location, but as seven separate locations each subject to separate and distinct proceedings for patent."*

The applicants appealed the

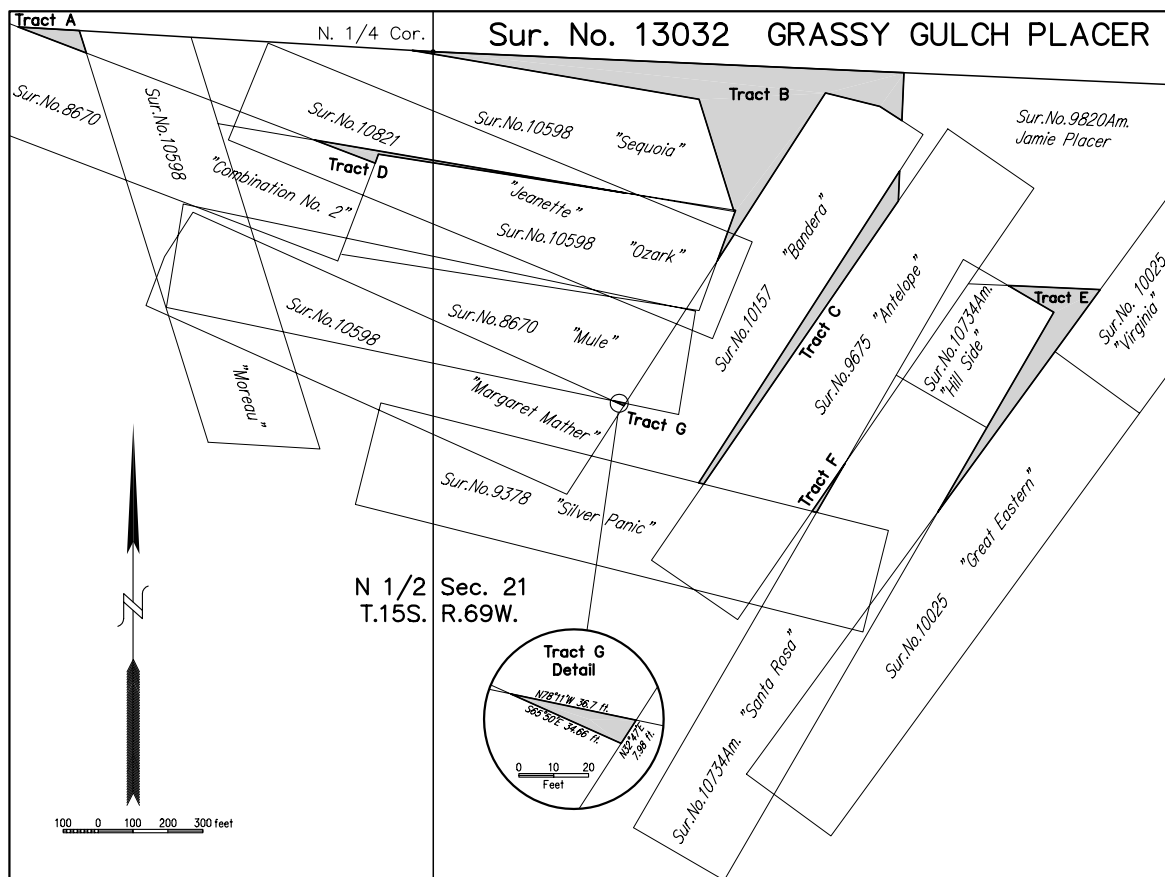
GLO Commissioner's ruling to the Secretary of the Dept. of the Interior and on July 25, 1900 Acting Secretary Ryan affirmed the GLO Commissioner's decision. In *30 L. D. 191*, (Grassy Gulch Placer Claim) two or more noncontiguous tracts could not be embraced within a single placer location. Unfortunately, Mr. Ryan also took the opportunity to rule on an issue unrelated to the applicants' appeal. Mr. Ryan's interpretation of an 1898 U.S. Supreme Court decision from Mineral County, Colorado was the basis for declaring that lode claim boundaries must be treated the same as placer claims and mill sites. Below is a sketch of the Grassy Gulch Placer Claim. Please note that Sur. No. 10821, the "Jeanette" Lode did not go to patent. The area embraced by Tract D would have otherwise been claimed by the Jeanette, if it hadn't been previously abandoned.

The case of Del Monte Mining & Milling Co. v. Last Chance Mining

& Milling Co., *171 U.S. 55* (May 23, 1898) was interpreted by the Department in the Grassy Gulch Land Decision as prohibiting the setting of location posts upon the ground of mining claims that were either patented or regularly purchased and entered prior to the date of location. Mr. Ryan's logical conclusion was that because those lands had passed from the Public Lands to private parties, the GLO no longer controlled that land. Therefore, the Department could not require a locator to trespass upon lands controlled or owned by another private party when staking his location.

The GLO Commissioner's Office determined that although the Departmental decision concerned a placer claim, it nonetheless applied equally to lode claims. Numerous office letters were issued in the months of August and September to the various state and territorial

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Surveyors General. In a September 5th, 1900 letter, Margaret Laesch and Monroe Chapman were notified that an amended survey was required for their mineral entry No., 685 of the Mattie B. lode claim in Clear Creek County, Colorado. The Mattie B. lode is located one mile southwest of Lawson on the south side of Clear Creek, approx. 1400 feet above the valley. The next figure is a sketch of the original plat for Sur. No. 13226, approved on September 8th, 1899.

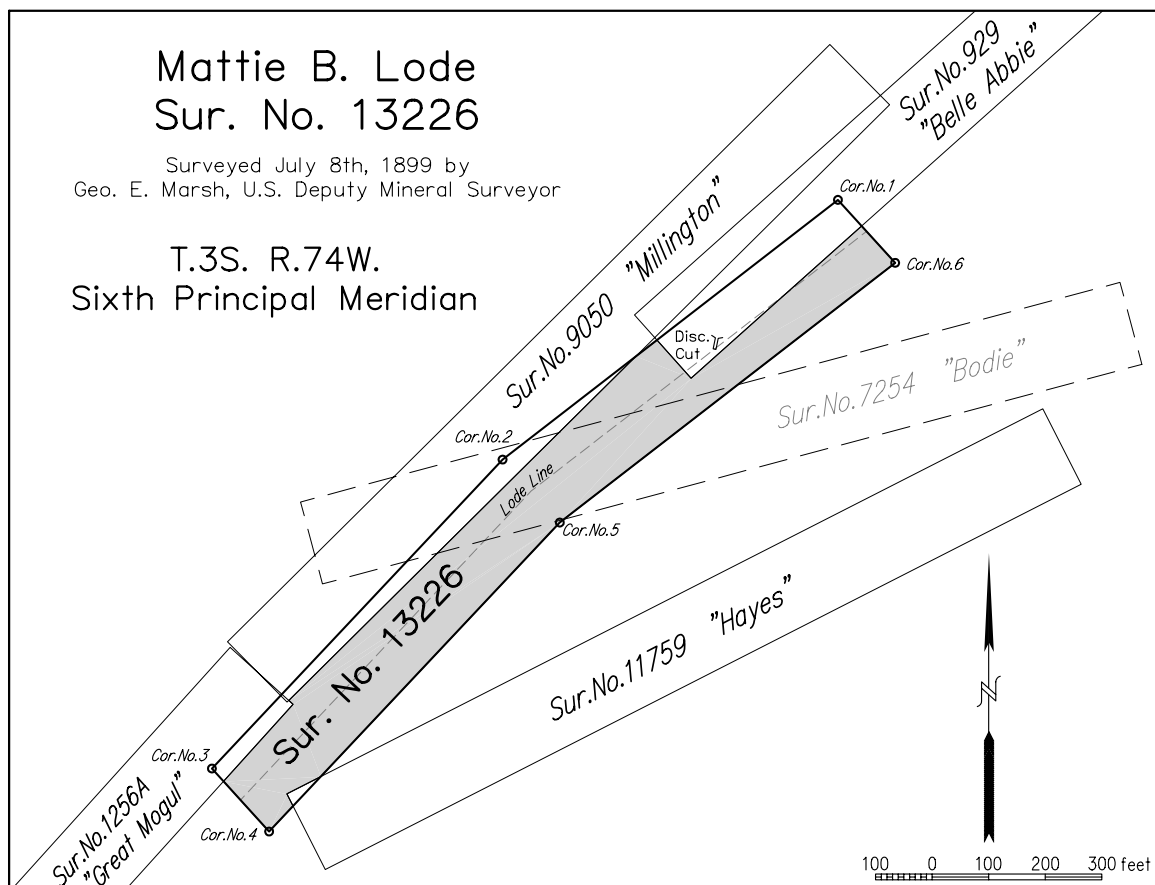
The plat shows five conflicts with prior approved mineral surveys. The Belle Abbie and Great Mogul were both entered 10 years before the Mattie B. was located. In his September 5, "N" letter ("N" is the Minerals Division of the GLO), the Acting Commissioner, Mr. William Richards stated, "As shown on the plat and field notes corner No. 1 and a portion of lines 1-2 and 6-1 are within said Belle Abbey (sic) claim, and corner No. 3 and a portion of lines 2-3 and 3-4 are within the Great Mogul claim. An amend-

ed survey will, therefore, be required to eliminate all conflict with said excluded claims." The Millington and Hayes lode claims both had senior rights to the conflicts with the Mattie B., but were entered after the Mattie B. location of November 22, 1890. Therefore, the conflicts are only computed in the "Areas" section of the Mattie B. lode field notes and excluded from the shaded area on the plat. Bodie, the remaining claim depicted on the plat of Sur. No. 13226 (shown with dashed lines), was never patented and subsequently abandoned.

The Mattie B. original and amended mineral surveys are good examples to study the manner in which the Grassy Gulch Placer Claim land decision impacted lode claim locations because three different types of conflicts between lode claims are present in the survey. Historically, surface conflicts between lode claim locations were permitted to preserve the locator's extralateral rights. Oddly, the Del Monte v. Last Chance Supreme

Court decision that Acting Secretary Ryan cited in support of his Grassy Gulch Departmental decision actually upheld the legal principle of peaceable trespass on surface estates. Peaceable trespass was often required to allow lode claim locators to fully embrace the remaining unappropriated mineral lands and any associated extralateral rights as allowed under the Federal mining laws. The Supreme Court stated, "[T]he location upon the surface is not made with the view of getting benefits from the use of that surface. The purpose is to reach the vein which is hidden in the depths of the earth, and the location is made to measure rights beneath the surface. The area of surface is not the matter of moment; the thing of value is the hidden mineral below, and each locator ought to be entitled to make his location so as to reach as much of the unappropriated, and perhaps only partially discovered and traced, vein as possible." In the 1914 trea-

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tise, *Lindley on Mines*, 3rd ed., the Grassy Gulch Placer decision is cited in § 448b entitled, "The Surface Covered by the Location." Lindley included additional information on lode claim locations in § 363 and § 363a which discuss surface conflicts with prior unpatented locations, and prior patented lode, placer, mill site and agricultural lands respectfully.

The Mattie B. was surveyed under the 1895, "Manual of Instructions for the Survey of the Mineral Lands of the United States." Although the original mineral survey permitted the Mattie B. lode line to extend across the Belle Abbie claim, that practice was not permitted in the amended survey. Pages 15 and 16 of the 1895 Manual illustrate how lode claim locations must be truncated at the point where the lode line intersects a boundary line of a senior claim. The illustration below shows that the southern end line of Claim A was moved to line a-b which is at the point "x" where the lode line intersects the side line of Claim B. However, this construction method excludes the triangle a-c-x from the area embraced by Claim

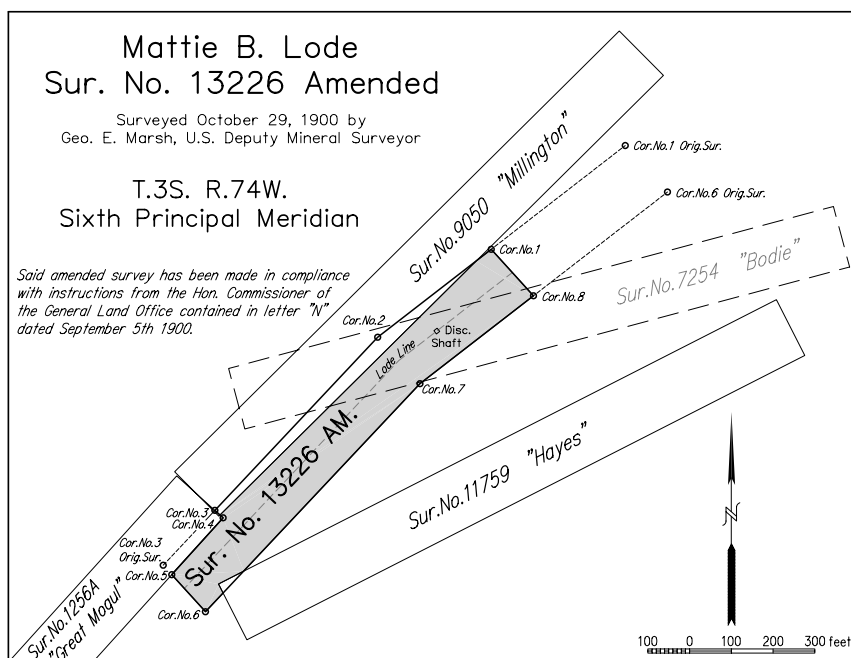
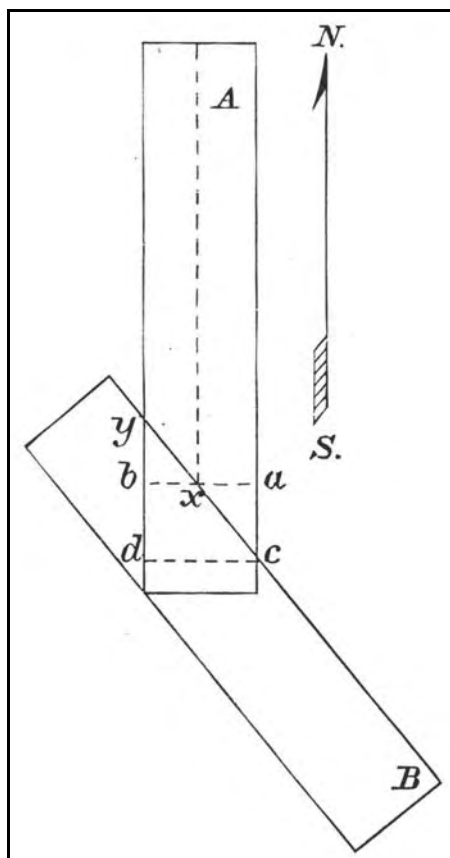
A. To include the triangle a-c-x, the end line must be moved to line c-y. Additionally, to meet the requirement that end lines must be nearly parallel to protect any extralateral rights, the north end line of Claim A would need to be rotated until it was parallel to line c-y.

The last figure is a sketch of Sur. No. 13226 Amended, approved on January 8th, 1901. It shows that the lode line was shortened by 405.5 feet due to its conflict with the end line of the Belle Abbie lode. The Belle Abbie lode was not shown on the amended survey because its patent description position failed to abut the end line 8-1 of the Mattie B by a mere 0.5 feet. The drafting convention for the official plats was to show the lines of other claims that adjoined or overlapped the lines of the survey. For nearby claims that showed no conflict, only a single tie between the two surveys would be shown on the plat. This overly detailed manner that the Deputy followed in handling the conflict provides hints to the retracement surveyor about the true nature of the conflict. I have retraced several U.S. Deputy Mineral Surveys that truncated the lode line where it actually crossed the senior line as defined by its found monuments. The official plat, however, was required to show the patent description positions of the

prior approved surveys. The patent description position was calculated after measuring the tie to the same rectangular land corner or U.S. Location Monument described in the prior survey. An unexpected benefit of this practice to the retracement surveyor is that mineral surveys done in this era often include real ties to multiple rectangular land corners. One example is Mineral Survey No. 16431 located on Mt. Bross. W. H. Powless, the U.S. Deputy Mineral Surveyor made ties to three Quarter corners and three Section corners, instead of the customary tie to a single rectangular land corner.

The amended plat shows that the prior conflict with the Great Mogul was eliminated by setting three new corners (Cors. 3, 4, & 5) on the patent description boundary of the Great Mogul and at the intersection with the original lines 2-3 and 3-4 of the Mattie B. survey. Whereas the conflicts with the Belle Abbie and Great Mogul were eliminated by moving the boundary of the Mattie B., the conflicts with the Millington and Hayes were noted in the "Areas" section of the field notes and on the amended survey plat. The reason the Bodie lode is shown on both plats is because Deputies were instructed to show all conflicts with prior approved surveys regard-

Continued page 17



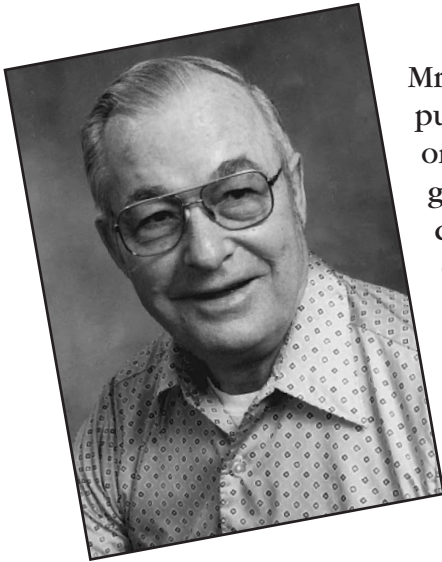
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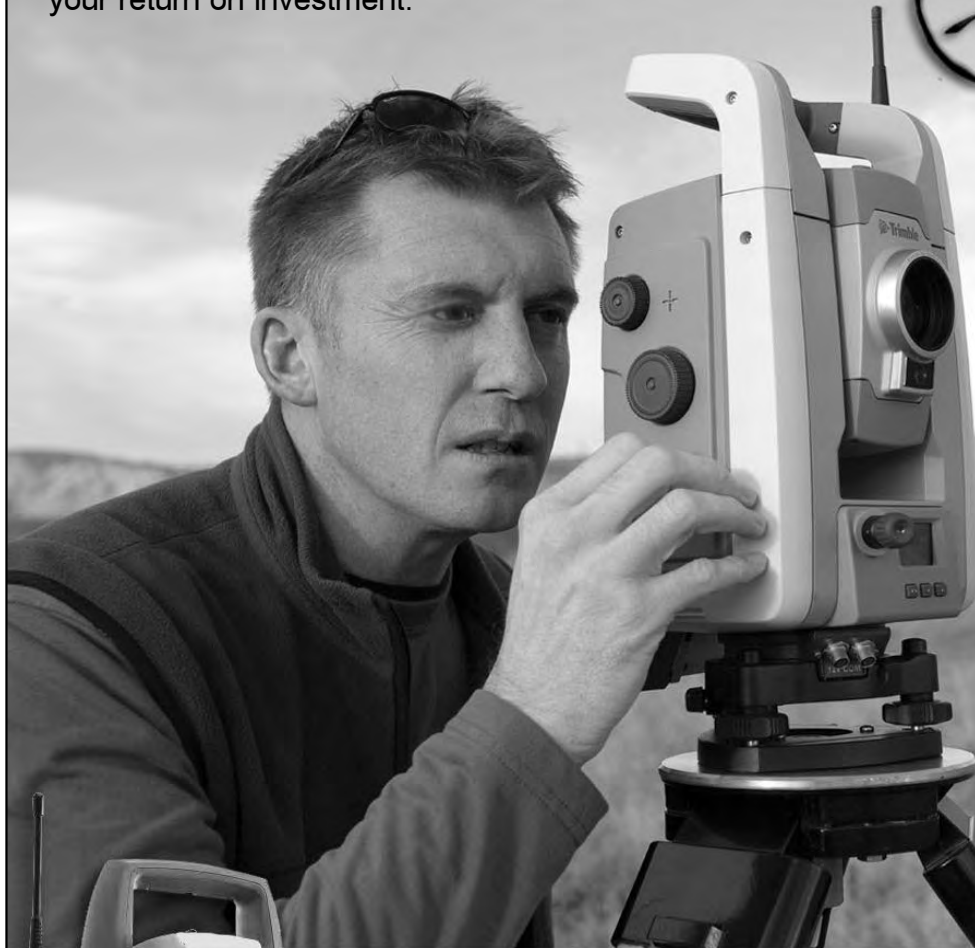
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The purpose of this organization shall be to improve the profession of Land Surveying in Colorado. (Article II Constitution)

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Meetings

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less of which claim controlled the area in conflict or if the prior approved survey was later abandoned and now open ground again. It was the responsibility of the patent applicant to determine which conflicts listed in the approved field notes to exclude from the patent application. The patent lists one item not included in the official field notes; the conflicts actually excluded from the patent.

The practice promulgated by the Grassy Gulch Placer decision lasted barely six months before the practice was appealed to the Secretary of the Interior. The land decision that overruled the Grassy Gulch Placer decision was published in the same volume as the Grassy Gulch decision! On January 31, 1901, Interior Secretary Ethan Allen Hitchcock issued the Hidee Gold Mining Co. decision (30 L. D. 420) that reinstated the previous

practice of locating lode claims. It properly concluded that, *"The location lines of a lode mining claim are used only to describe, define and limit property rights in the claim, and may be laid within, upon or across the surface of patented lode mining claims for the purpose of claiming the free and unappropriated ground within such lines and the veins apexing in such ground, and of defining and securing extralateral underground rights upon all such veins, where such lines are established **openly and peaceably**, and do not embrace any larger area of surface, claimed and unclaimed than the law allows."*

As to the disposition of the Grassy Gulch Placer, the applicants modified their patent application to only include the largest of the seven tracts rather than have the application administratively cancelled. The patent was issued on July 15, 1903

for only Tract B that contained an area of 3.737 acres instead of the original 5.577 acres. The final disposition of the Grassy Gulch Placer reaffirms the importance of researching the patent in addition to the plat and field notes. Patent records for mineral lands are available at both the Public Room of the Colorado BLM State Office in Lakewood, CO and the county Clerk and Recorder Office. General information on placer claims can be found in the Snow Flake Placer decision, (37 L. D. 250). It was issued on November 14, 1908 and is referenced in the 1975 BLM publication, *"Public Lands Surveying - A Casebook."* Background materials, including color images of the plats, the full texts of the referenced DOI Land Decisions, and the U.S. Supreme Court decision are available from the author by emailing him at ekooper@uswest.net. ■



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- 50 + survey and GIS vendors
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Thursday September 13

- Luncheon Keynote Speaker from Autodesk
- PLSC track: Surveying: Building GIS from the Ground Up
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I N M E M O R I U M

Charles Albert White was born June 4, 1926 on a farm in Sebek, Minnesota. He was one of five brothers and three sisters. Al began his career with the General Land Office (now the BLM) in 1946. The job took him over most of the western United States. He was on a survey crew in Alaska when he entered the military during the Korean War. He served in Japan as an army instructor teaching surveying. When he returned from Japan he met Catherine O'Hara and they were married in 1954. They settled in Colorado Springs where Al went to work for a private contracting firm as a surveyor.

In 1958 Al moved the family to Portland, Oregon and returned to the BLM as a surveyor. He was considered to be the most distinguished authority on the history of 19th and 20th Century public lands surveying.

During his career he authored four books: "Public Lands Surveying: A Casebook;" "A History of the Rectan-

gular Survey System;" "Initial Points of the Rectangular Survey System;" and "A Casebook of the Oregon Donation Land Claims." Once retired, he was still very active with associates nationwide seeking his expert advice about surveying.

Mr. White died July 12, 2007, from illness associated with congestive heart failure.

He was widowed in 1982. Survivors include sister Frances Higgs and brother George White of Spokane, Washington; sons Patrick White of Astoria, Oregon; Michael White of Durham, Oregon; daughters Ellen Kroessin of Tigard, Oregon; Margaret White of Portland, Oregon; Sharon Ryman of Aloha, Oregon; five grandchildren and one great grandchild.

Rosary prayer service was Monday, July 16 at Young's Funeral Home, Tigard, Oregon.

The funeral service was Tuesday, July 17 at St. Anthony's Catholic Church, Tigard, Oregon.



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An Ancient Riddle and a Gentle Modern Jab in the Ribs and the Puzzle is: How Did They Do It ?

By G.M. (Gaby) Neunzert

This is a gentle jab in the ribs to the modern surveyors who think they have all the answers and who not necessarily consider the high degree of sophistication the ancient surveyors possessed, to be followed by some personal observations not necessarily related to the "puzzle."

About 2530 years ago or roughly 530 BC, Polycrates (570 - 522 BC) was the ruler of the Greek island of Samos in the eastern Aegean Sea, just off the coast of Turkey. He ordered his surveyor/engineer to start construction on the tunnel to provide a secure water supply for the capital city now called Pythagorion (in honor of Pythagoras who was born on this island about the time of this story and hence his proper name "Pythagoras of Samos"). Construction started about 530 BC under the direction of Eupalinos of Magara, this is about the same time as Pythagoras left the island after some

unpleasantness with Polycrates the local "tyrant." Before the start of construction, which lasted from 15 to 25 years, Eupalinos had to consider several items, namely:

On the surface at least, the puzzle is rather simple and it involves driving a tunnel 3400 feet long from one side of Mount Kastro to the other side. Especially with GPS, the modern solution of what is fondly called a "missing course traverse," is a piece of cake; but was it that simple about 2500 years ago, when surveying a tunnel through a mountain was definitely a major accomplishment?

First of all, even to this day, it is not possible to "wiggle in" by setting an "instrument" on top of Mount Kastro, backsighting the north portal plunging and foresighting to the south portal. In the old days there were no optical instruments, not even a transit, no distance meters or total stations, levels or even a Gunter chain or a magnetic com-

pass. There might have been a dioptra, a basic carpenter's square, and very definitely a plumb bob was known.

What the ancient surveys did is a mystery, since probably no "field notes" were kept or at any rate nothing written has survived. Euclid's "Elements" was not written until some 200 years later and Heron of Alexandria, ca. 10 - 70 AD, (remember Heron's Formula for the area of a triangle with its sides known!) theorized about 600 years after the construction, that a traverse with the modern equivalent of rectangular coordinates from a right angled traverse, i.e. latitude and departures, was used. His "solution" was faithfully copied for the next 2000 years without questions. This however, requires a reality check when one realizes that the ancients had no trigonometric relationships or electronic calculators and hence

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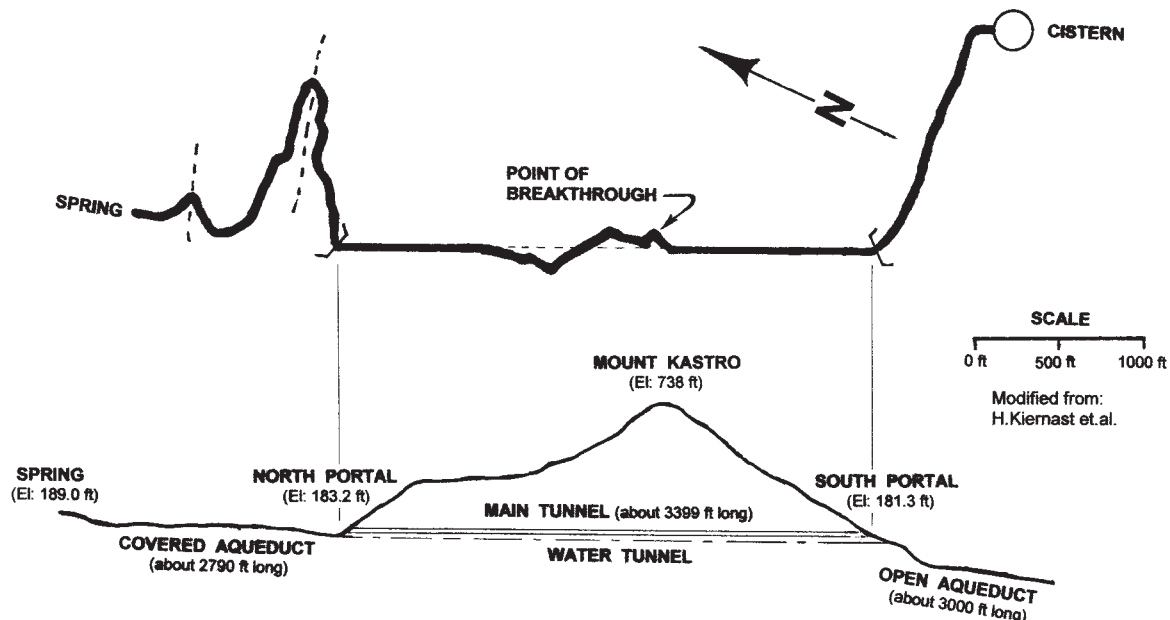


Fig. 1
Plan – Profile

could not calculate an angle on either end to start the alignment and ultimately meet in the middle. There might be, and this is open to conjecture, a possible way to use latitude and departure and lay out the alignment without mathematics. If the alignment can be solved, with or without coordinates, there is then a second difficulty and that is the control of elevations. Somehow the original tunnel was laid out and constructed nearly horizontally and only later was a second, lower tunnel constructed with the proper grade to make the water flow.

No matter the theory, the physical evidence is impressive. As shown on Fig.1, the main tunnel is about 3399 feet long with roughly an 8x8 foot cross section, see Fig.2. Already during construction the north heading encountered "bad ground" and had to deviate first to the right and later to the left of the straight alignment; finally near the point of breakthrough a sharp turn

to the east was made, probably to guarantee that the tunnels would meet. Undoubtedly the final breakthrough was made by "ear," i.e. by listening to the hammering noise of the other heading and the north bore was nearly 2 feet higher than the south heading. Without proper ventilation, excavation by "burn and squelch" was not possible and as the physical evidence shows hammers and chisels were employed. Since steel was not yet invented, bronze or possible soft iron tools were used. Especially in the north tunnel because of its deviations, surveying for alignment with candles and plumb bob strings could not have been easy and modern surveyors would probably refuse to enter an unventilated tunnel full of rock dust and spent air with only a candle. With the south entrance only about 1 foot lower, serious thought had to be given to sloping the water channel downhill. At a modern slope of 1/4 inch per foot, the calculated difference in elevation over the length of the tunnel is 71 feet start-

ing at the north (upper) tunnel entrance, a 3 foot wide "trench," about 4 feet deep was carved down on the east side, see Fig.2. As the trench got deeper and deeper, an estimated 75 feet to 80 feet deep at the south portal, "drop shafts" were used down from the main tunnel. With drop shafts at 40 feet to 50 feet intervals, alignment and vertical control, possibly with plumb bobs, was reasonably easy. The finished grade of the invert was probably controlled with an intermittent flow of water down the new channel. Finally the water was made to flow in an estimated 4000 hand formed "terra cotta" (clay) pipes or open channel clay gutters. Other than guessing, there are no records why the tunnel was abandoned after some 1500 years of use, only to be rediscovered in 1856 and excavated in 1972-73 by Hermann Kienast of the German Archaeological Institute of Athens. Now the southern half of the tunnel is lit and accessible to tourists.

For readers familiar with the Denver, Colo. area, a rather unexpected development occurred. In an attempt to find a visual illustration for the Eupalino tunnel, the author "hit upon" the large, visible from space, road cut through the hog back on I-70 west of Denver. A rough measurement for the length of the cut is 700 feet or about 1/5 the length of the ancient tunnel and with a play on words, the Greeks could have surveyed and built the tunnel with ease, rather than the modern cut.

Another coincidence, which positively could not have been staged, occurred several years ago when the author walked by a wooden crate the size of a VW car. Following up on the return address, it turned out that a massive granite slab had been sent from Switzerland to Golden, Colo., to test the cutting heads of a tunnel boring machine (TBM) at a local lab. Several months ago the Swiss broke through on a 35.5 mile (187,335 feet) for the Gotthard Base Tunnel which set a new surveying record for an alignment following the curvature of the earth. Maybe we should hire both surveyors and machines to make an equivalent length tunnel from Georgetown to Vail. Oh, by the way the cost of this tunnel is at least \$15,000 per foot!

Even though the author is old and gray, he cannot claim to have been at the construction of the Eupalino tunnel and hence have all the "correct" answers. For any body who wishes to contribute to the solution of the puzzle by "walking in the footsteps of his predecessors," the author reserves the right to edit the answers and publish them in a future issue. It, however, has to be kept in mind that the ancients were very keen observers of nature who preferred practical over long and convoluted theoretical solutions. ■

Major References:

Internet: "The tunnel of Eupalinos;" also "The tunnel of Samos"
Apostol, Tom M. 2004; The tunnel of Samos; Engineering & Science, No.1 Project "Mathematics" series "www.projectmathematics.com," about 1993.
Kienast, Hermann J. 1973 to 1995, Several publications, all in German.

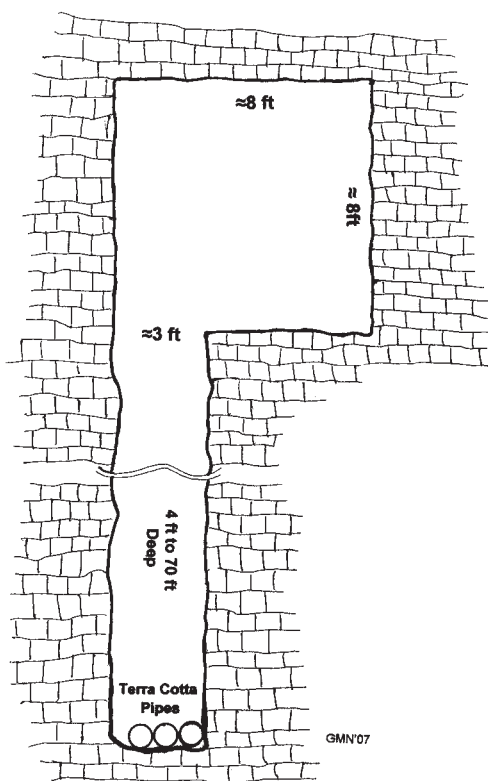


Fig. 2

Typical Cross Section

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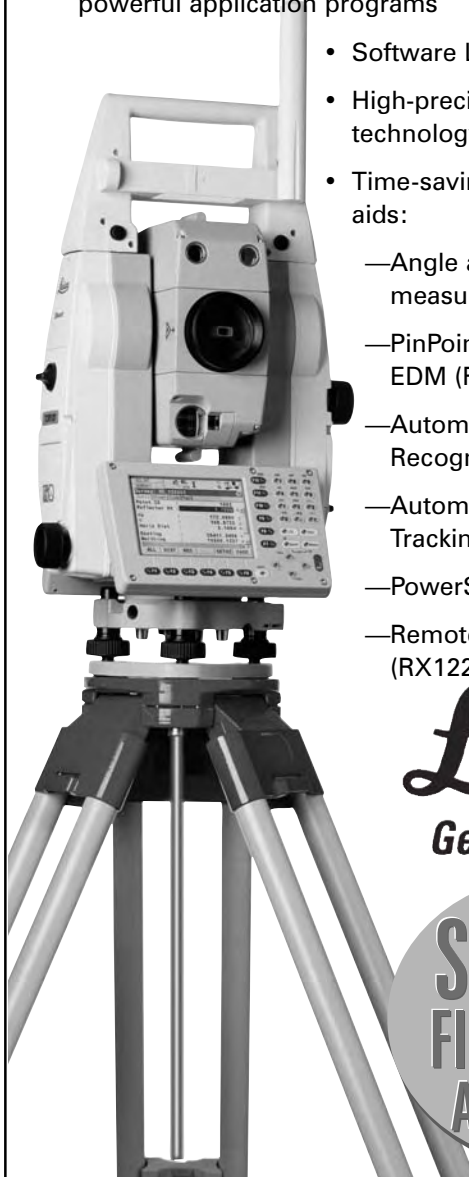
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June 28, 2007

Mr. Arthur W. Hipp, Secretary-Treasurer
Professional Land Surveyors of Colorado
9660 West 56th Place
Arvada, Colorado 80002

Dear Art:

This letter is to inform you of official cadastral surveys in Colorado that have been accepted from, April 1, 2007, through June 30, 2007, and are now available from the Public Room, Bureau of Land Management, Colorado State Office, 2850 Youngfield Street, Lakewood, Colorado, 80215.

The accepted original surveys, resurveys, supplemental plats or remonumentations are listed below by township, range, meridian, group #, type, approval date and number of plats.

<u>Township</u>	<u>Range</u>	<u>Meridian</u>	<u>Group #</u>	<u>Type</u>	<u>Approved</u>	<u>Plats</u>
T. 2 N.	R. 76 W.	Sixth	1457	Plat & Notes	04/10/07	4
T. 2 N.	R. 77 W.	Sixth	1457	Plat & Notes	04/10/07	5
T. 17 S.	R. 45 W.	Sixth	1378	Plat & Notes	04/17/07	1
T. 17 S.	R. 46 W.	Sixth	1378	Plat & Notes	04/17/07	1
T. 51 N.	R. 1 E.	NMPM	1438	Plat & Notes	04/26/07	1
T.33 1/2N.	R. 17 W.	NMPM	1472	Plat Only	04/26/07	1
T. 50 N.	R. 8 W.	NMPM	1424	Plat & Notes	04/27/07	1
T. 51 N.	R. 8 W.	NMPM	1424	Plat & Notes	04/27/07	1
T. 37 N.	R. 7 E.	NMPM	1461	Plat & Notes	05/16/07	1
T. 43 N.	R. 4 W.	NMPM	1450	Plat & Notes	06/06/07	1
T. 8 S.	R. 76 W.	Sixth	1409	Plat & Notes	06/19/07	1
T. 9 S.	R. 76 W.	Sixth	1409	Plat Only	06/19/07	1

As other surveys are completed, I will advise you of their acceptance. You may circulate this letter among the membership of the Professional Land Surveyors of Colorado.

Sincerely,

Randall M. Zanon
Chief Cadastral Surveyor for Colorado

SCPLS

The Southern Chapter has taken off the summer, no meetings for this report.

Our fall technical workshop is scheduled for September 7 and 8 at the north campus of PPCC at Colorado Springs. The tentative speakers are Matt Nawrocki on GPS, Randy Zanon on Evaluation of Evidence, Gene Kooper on Mineral Surveys, Paul Cuomo on Quasi-Judicial Functions of Surveyors and Pam Fromhertz. We will be sending out the final schedule as we nail down the completed schedule and speakers. Look for more in the mail.

Enjoy the rest of the summer, see you in September.

Terry R. Maw, PLS
President, SCPLS

CCPS

The Denver McComber Mentoring Program ended its Spring 2007 classes on June 27. I want to personally thank Doyle Abrahamson, Ed Bristow, John Guyton, Dave Pehr, and Gaby Neunzert for taking time out of their busy schedules to present topics. Thank you also to Mieke and Brian Aregood of Survey & Construction Supply, 930 W. Byers Pl., Denver, for hosting the sessions.

The annual election for Central Colorado Professional Surveyors Officers and Directors is just around the corner. In addition to president and vice president, this year the ballot will also include the secretary and three director positions. If you would like to nominate someone, please contact a current member of the Board. We are in the initial planning stages for our annual conference to be held at the Tivoli Center on February 22 and 23, 2008. Please contact any of the CCPS board members with ideas on topics and speakers.

The CCPS awarded one scholarship in the amount of \$750 for the fall 2007 semester to Paul Rogalla

from Metropolitan State College of Denver. A quick reminder that scholarship applications for the spring 2008 semester are due by December 1, 2007. Please contact Georgia Satterlee (gsatterl@douglas.co.us, 720-837-0959) or John Lautenschlager (john.lautenschlager@ci.denver.co.us, 720-865-3127) for more information.

The August General Membership meeting will be held on August 23, at Table Mountain Inn in Golden. Dinner starts at 6:30 p.m. Details will be published in the CCPS August Newsletter.

I'd like to conclude this summer edition with some good news. After a long stay in the hospital, Dusty Thomas will be returning to his teaching duties at Westwood College at the end of July. Glad to hear that you are back mentoring the next generation of surveyors, Dusty!

Respectfully submitted,
Gene Kooper, PLS
President, CCPS

WCLS

WCLS held our last meeting on July 11. We had 17 members attending with excellent participation and good discussion. Steve Hagedorn set up the meeting and presented the meeting topic. We discussed our concerns of continued participation in the legislative committee. Not to dwell on past issues, we are going to use the following procedure to provide input to the committee.

I am going to forward the minutes and other items of interest from the legislative committee to WCLS members. Once they get the email they will have one week to respond. I will then compile the responses and give the legislative committee our input.

We appreciate the committee's effort to keep us in the loop and look forward in giving input to improve the laws that impact our profession.

Our education committee has

started a distance learning course on Geodesy, with four members taking it so far. Tom Sylvester noted that the mentoring program will not be held this fall. He said he may be interested in starting up again after the Geodesy course.

The seminar committee is currently searching for a speaker for the spring seminar.

Rick Mason and Dennis Shelhorn (the election committee) have also been working on how to handle next year's election.

Sincerely,
Les Doehling
President, WCLS

NC/PLSC

The Northern Chapter plans to resume meetings in September. Most of us spend the summer trying to keep up at work.

A few of us are working on new survey classes we hope to offer this fall. Some of those that participated in the mentoring classes last year are taking the LSI examination soon and are looking forward to more classes.

We would like to thank all those that participated in our classes and seminar last spring. There were a number of new faces we hope to see at our next meeting.

Steve Variano
Northern Chapter President

SWC/PLSC

There was a great turnout at the Southwest Chapter of the Professional Land Surveyors of Colorado annual Four Corners Area Survey seminar on June 8 and 9 on the Fort Lewis College campus. Participation was strong and the speakers were well attended.

I would like to thank all of the speakers for their hard work and great presentations. Special thanks go out to chapter members Dave

continued on page 24

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CHAPTER NEWS

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Freienmuth, Larry Connolly, Tom Au, and Dave Seiler and the other members of the Southwest Chapter for all of their efforts and hard work in coordinating this year's seminar.

At the seminar this year the Southwest Chapter was pleased to announce the contribution of \$1,500 from the past seminars to both the Fort Lewis College Engineering/Surveying department and the San Juan College Surveying program in Farmington, New Mexico. The PLSC board of directors generously provided matching funds of \$1,500 to each recipient. These schools are very appreciative of the donations from the survey community and look forward to updating their equipment and teaching materials with the funds.

The Chapter is coordinating with the program directors at the schools to present the donations later this summer. Look for the story in the next *Side Shots* issue!

The Southwest Chapter will also be donating \$500 to the local chapter of Engineers Without Borders. They are currently involved with a project in Guayaquil, Ecuador and are utilizing both surveyors and engineers from the Durango area.

The SW Chapter will continue with our bi-monthly meetings in August and will be featuring speakers from the different agencies in the region along with professionals from the survey and mapping community throughout the year.

Respectfully submitted,
Parker Newby, PLS
Southwest Chapter President

CSRN

Considering that GPS technology is a moving target and in a constant state of advancement, the CSRN has been making progress

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and moving forward. On March 8 2007, the charter members met, elected officers, drafted bylaws and provided for the functioning of the chapter. A formal request to organize was submitted on March 23, 2007. The chapter was officially recognized by the PLSC Board at the 5/04/07 meeting in Grand Junction.

The chapter's officers are: Russ Clark, President – Clark Land Surveying, Colorado Springs; Dan Smith, Vice President – CDOT, Denver; Pam Fromhertz, Secretary – NGS, Denver; Tom Adams, Treasurer – CDOT, Pueblo. The chapter's directors are: Brian Dennis – Clark Land Surveying, Colorado Springs; Roger Nelson – Merrick, Denver; Frank Kochevar – Mesa County, Grand Junction; Larry Connolly – Animas Surveying, Durango; Kevin Hoffman – Woolpert, Denver.

In accordance with its bylaws, the purpose of the CSRN shall be to design, create, expand, operate, maintain and/or provide professional oversight of a network of continuously operating reference stations. They will provide rapid, reliable, real time geodetic control data and positioning corrections to a variety of field surveying, mapping, navigation, emergency response and geospatial services in the state of Colorado.

The chapter kicked-off its efforts by holding an open house at Merrick on April 26, 2007, during which the following equipment manufacturers and software developers gave talks about their network activities, and shared ideas on partnering and working with the chapter to increase the development and use of real time GPS networks in Colorado: Eagle Point – Jeff Krueger, Senior Sales Executive and Loran Chick – Senior Land Development Consul-

tant; Leica – Gary Belschner, Director of Sales, NW Region and Shannon Hixon, Director of Sales, Western US; Rocky Mountain Lasers, Jeff Hull – Survey & Infrastructure Manager; Dennis McGovern – Store Manager; Trimble – Nathan Pugh, Infrastructure Sales Manager for the Americas. Talks were also given by the network administrators of two of Colorado's operational real time networks: Frank Kochevar – Mesa County Staff Surveyor, network administrator for an eight station (and growing) Trimble network covering the Mesa County area, and Larry Pepek – King Surveyors President, network administrator for a six station network (also growing) covering the Northern Colorado area.

Upcoming activities of the chapter shall include the development of a website as well as working with the various manufacturers, software developers, and government and private entities on the development of standards and specifications.

The chapter would like to thank Paul Kellogg and Jack Sparks for their monetary donations, and to thank all of its members for their continued support. Please feel free to contact any of the chapter's officers or directors to share ideas or to make to an inquiry.

Dan Smith
Vice-President, CSRN

NW 1/4 CLS

News from the Northwest:

As I last reported, things could not be more active here. I talk to every area surveyor on a regular basis, and all are working long days, and probably too many of them. We all remember when we once waited for the telephone to ring, but those

days seem distant today.

We're having our next Chapter meeting on August 3, and most agree that while we can barely find a location and date that works for the most members to meet, we have more issues and decisions, ideas and concepts, projects and projections, than we could deal with on a monthly basis. Meanwhile, we struggle to meet our Chapter quota of four meetings a year.

We are meeting this week with Pam Fromhertz, of CDOT and NGS to try to move our "Base Station Project" forward. The lack of support from all regional entities (read: sources of funding) has mired the project into complete intransigence. We all appreciate Pam's willingness to help us review and, hopefully, jump start the project.

This issues kudos to Tom Effinger. Although retired from the USFS after 30 years of tireless work, Tom ignores the opportunity to golf his summer away via a well-deserved government pension, and is working as tirelessly as the rest of us. Meanwhile, he has begun a spreadsheet of Routt County Land Survey Plats in his spare (where?) time. 100 done. 1,700 to go. We'll be discussing assistance to that project at our upcoming meeting.

Best wishes to all who read this: may your days be busy, and your lives fulfilling. Let all of us try to remember: No one ever made a dying regret that too little time was spent working. Land Surveyors commit this anecdotal sin more than anyone I know.

Good health, good family and friends, and prosperity to all.

Respectfully submitted,
John C. Noon
Secretary-Treasurer
NW 1/4 CLS ■

Do You Recognize Your Peers When They Were Younger?



Email your answers to
Tom Adams at
tom@plsc.net

Answers will appear
in the next issue
of *Side Shots*.

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Legislative Committee Report

by Roger Nelson

Once again the legislative committee is beginning the process of hashing through the PLSC Board of Directors approved legislative items listed below. The process is a lengthy one and many passionate discussions are in store. I would also like to take this opportunity to remind the PLSC membership that their participation in the development of items for consideration is expected and welcomed. As chairman, I have contacted each PLSC chapter president to determine a designee to interact with the Legislative Committee. The following is a list of each chapter's contact: Gene Kooper, Central Chapter; Les Doehling, Western Chapter; Parker S. Newby, Southwest Chapter; Ridgeway C. Moon, Northwest 1/4

Chapter; Steve Varriano, Northern Chapter; and Terry Maw, Southern Chapter. I encourage each of you to exercise your right to be heard in the process. Please contact your respective representative with any thoughts that you may have or contact the PLSC Board of Directors directly with input.

1.) GPS machine control — To protect the public safety and welfare, the survey community should monitor and validate the use of this technology to avoid damage to neighboring land owners. Any GPS machine-controlled operation for construction purposes related to land boundaries shall be validated and a signed and sealed report generated by a professional land

surveyor that details said validation.

2.) A minimum requirement for property corner monumentation — C.R.S. 38-51-104 (1) (a) & (b) and 38-51-105 (1) (a) & (b) state that corners shall be marked by "reasonably permanent monuments solidly embedded in the ground" and shall have a "durable cap . . . affixed securely to the top of each such monument." Board Rule 6.4.1.1 dictates minimum requirements for PLSS monuments. Private property monuments are just as important and, in the interest of protecting the public, should have similar minimum standards. An iron pipe or bar having a minimum diameter of 5/8" and having a minimum length of 18" is

Continued page 28



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proposed. Special consideration needs to be provided for property corners falling where this type of monument is not feasible.

3.) Establishment of center-line control within newly constructed (platted) subdivisions —

Proposed revision to Statute: C.R.S. 38-51-105 (4) (a) "Block monumentation may SHALL be set on the center lines of streets ~~or on offset lines from such streets~~ as designated on the recorded plat."

4.) Amend 38-51-107.

Required plats — (1) Every professional land surveyor who accepts a monument while performing a monumented land survey shall prepare and deposit a plat if such monument is not of record either in the clerk and recorder's office of the county in which the monument lies or in the public office designated by the county commissioners pursuant to section 38-50-101 (2) or if such monument is set pursuant to section(S) 38-51-104 AND/OR 38-51-105. ~~(2) No plat shall be required to be prepared or deposited if the monuments accepted or set are within a platted subdivision that was filed in the clerk and recorder's office within the previous twenty~~

~~years.~~ (3) Plats required pursuant to this section shall comply with section 38-50-101.

Back when the plat law was originally passed, the majority of our profession did not approve having to deposit plats when monuments were set in newly created subdivisions. Our first plat deposit law stated if the subdivision plat was filed on July 1, 1975 or after that date no plat had to be deposited. That wording was adopted as a compromise so we could get some kind of a plat law started in Colorado. The depositing of survey plats will give the public and survey profession a history of how all monuments set, which mark the line of property rights, were set. Another reason for the original July 1, 1975 date was that was the first time in Colorado when monuments had to be set for subdivision plats.

5.) Amend 12-25-208(1)(e)(I)

— Add "OR ANY OTHER COLORADO STATUTE PERTAINING TO LAND SURVEYING OR REAL PROPERTY BOUNDARIES." Omission of this statement in 2004 was likely an oversight.

6.) Amend 12-25-202 (6) (a) —

Add the following item: (XI) THE PRACTICE OF REVIEWING PRO-

POSED SUBDIVISION PLATS FOR COMPLIANCE WITH STATE-SPECIFIC SURVEY AND PLAT REQUIREMENTS, AS A CONDITION FOR RECORDING INTO THE PUBLIC REAL ESTATE RECORDS." This will prevent the practice of non-licensed government personnel from requiring illegal plat standards as a condition of recording new subdivisions. Several complaints have been made over the years regarding non-licensed personnel holding up entire subdivisions over their misunderstanding of survey laws and requirements. An extensive effort at dialogue by representatives of surveying and engineering groups met at the State Board with representatives of Counties and Municipalities, resulting in a document entitled "Government Interaction Task Force."

7.) Possible expansion of time period to file a mechanics lien

8.) Review the statutory language regarding Improvement Location Certificates — The committee has been asked to review the certification language for ILCs and, if warranted, suggest revised certification wording.

9.) Require continuing education as a requirement for license renewal — The PLSC has attempted numerous times in the past to require continuing education for license renewal. Because of its effect on all licensed surveyors, this item is being considered for the 2009 legislative session. ■

Respectfully submitted
Roger Nelson
Legislative Committee
Chairman

PLSC, Inc. Committees

Following is a list of PLSC Committees. Many of these committees need additional members to be fully effective, so if you are willing and/or able to participate, please contact the Committee Chair.

Nominations and Elections

Committee - Larry Connolly

Legislative Committee - Roger Nelson

Publications Committee - JB Guyton

Liaison Committee - Gary Gable

Survey Monumentation and Standards Committee -

Membership Committee - Tom Adams

Ethics and Fair Practices

Committee - Larry Connolly

Awards Committee - Larry Connolly

Fall Technical Session 2007 - Mike Greer

GIS in the Rockies - Dan Smith / Mike Greer

Metro State College of Denver - Randy Bloom

GPS User Group, (G2) - Pamela Fromhertz/Dan Smith

Real Time Reference Networks - Russell Clark

PLSC "Leadership Academy" program - Randy Bloom

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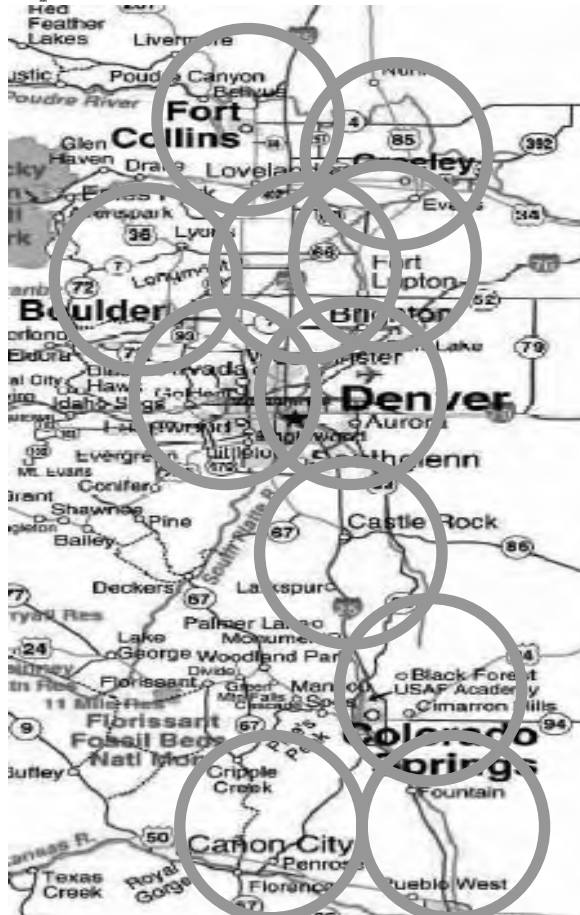
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PLSC BOARD OF DIRECTORS MEETING MINUTES

May 4, 2007

Grand Vista Hotel, 2790 Crossroads Blvd., Grand Junction
Hosted by the Western Colorado Land Surveyors

- 1) Call to Order 7:10 PM
- 2) Recognition of Board Members Present: John Guyton; Tom Adams; Michael Greer; Gary Gable; Larry Connolly; Diana Askew; Doug Berling; Micheal Bouchard; Roger D. Nelson; Russell Clark;
Absent: Art Hipp; Lisa Isom
- 3) Welcome of Guests: Les Doehling; Sharolyn Cunningham; Maurice Schumann; Dexter M. Brinker; Wendy Lathrop; Gene Kooper
- 4) Additions, Deletions and Modifications to Agenda
- 5) Approval of Minutes from previous meeting - In the Side Shots
- 6) Comments from Hosting Chapter - *Les Doehling, President Western Colorado Land Surveyors: We had a good conference with 50 or so attendees present.*
- 7) REPORTS- if bracketed, no request to present a report was received
 - a) Secretary Treasurer - Art Hipp
 - i) Report to the Board of Directors - faxed and distributed to meeting attendees

Tom Adams reported that the separate checking account to handle credit cards has an approximate \$10,000 balance that will be transferred into the PLSC checking account.

Mr. Moos Estate donation does not appear to be reflected on the Treasurer's report. Diana and Michael Greer will meet with Art to initiate electronic record keeping.

- b) (President - John B. Guyton): No report
- c) (Vice President - Tom Adams): No report
- d) (Executive Director): No report
- e) (NSPS Delegate-Warren Ward): Absent
- f) (WFPS Delegates - Dave DiFulvio / John B. Guyton): No report
- g) STANDING COMMITTEES
 - i) (Nominations and Elections - Larry Connolly, Chair): No report
 - ii) Legislative - Roger Nelson, Chair
 - (1) Report requested; emailed to JB May 3, 2007, published in Side Shots
 - iii) Publications - JB Guyton, Chair

Side Shots has gone to press and is available online at

the PLSC Web site. The online publication is read all over the US. This is a great way for PLSC's to share information with the entire state so we are not perceived as a Front Range organization.

iv) Liaison - Gary Gable, Chair

Funding problems with the Metro State Surveying and Mapping Program have been subsidized by the BLM in the past. Randy Zanon has announced that the funding has been discontinued due to budget constraints. This is the only 4 year program in the area. Distance learning has attendees in many states and is doing very well. Dr. Stoughton wants to add another professor to the program. Gary suggested that a professional fund-raiser could help find funding.

JB indicated that this is a serious issue. The PLSC has been helping to support the Metro State College for many years. What should we do to help the program?

Gene said Gaby was asked his opinion and he asked if the chapters could make a financial commitment by August.

JB requested the Board to make a decision right now.

Gary feels we should not use the PLSC funds for the program — can we find someone to appoint as a fundraiser? The Coors Foundation and Boettcher Fund are good examples.

Roger asked what Metro has done itself to gain funding.

Wendy feels they should have a division that does fund-raising (Metro) would be a resource and should help with the effort. Firms with a vested interest in surveying should be willing to help support the program. Check with Metro's own fund-raising section.

Sharolyn Cunningham stated that in Tulsa the Wilson Company has been a big contributor to many different organizations. Initially she was not aware of what surveying was and suggested that there was a need to educate young folks as to what it is.

JB has offered a line of credit to Metro of \$20,000 or so. Surveyors don't know PLSC's prime directive is to support education. We need to come together and find a way to get more students involved and support the program.

Roger added quick note that may be a consideration. We may want to invest the money with the high school students rather than just continue to donate money to the college.

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Mike Bouchard agrees with Roger on that point.

- v) (Survey Monumentation and Standards -)
- vi) Membership - Tom Adams, Chair

Lots of free memberships given this year and Tom would like to track how many rejoin following the free year. We now have over 700 members. Larry was given a free membership certificate when he became an SIT in 1990, so we need to continue the program to provide free memberships to new PLS's and LSIT's.

(1) Proposal for Updated Logo

Tom - suggested organizing a contest to change the Logo.

JB feels the existing logo is archaic. We could use this opportunity to market to the college students by asking them to create a new logo. We can give them a scholarship if they win.

Vote to change or update the logo: JB - aye; Di - aye; Tom - no opinion; Les - no (would prefer to add to what we have); Doug - no (would prefer to add to what we have); Mike - no (would prefer to add to what we have or save the old and add a new one); Gary - aye (also agrees to save the old and add a new one); Roger - aye (believes it would go a long way towards update our image); Larry - aye

Tom has a motion to title the education committee... Gary has seconded the standing committee - and could be part of the 4-year education support committee

(2) Proposed Education & Seminars committee

Tom Adams presents a motion to form a new standing committee title the "Education committee."

- (a) *In charge of Fall Technical Sessions*
- (b) *Possible preparation of video or live courses*

Discussion:

The Fall Technical session committee is chaired by Mike Greer but it is not a standing committee. Russ asked if this need to be a standing committee. JB calls for a vote and would like Mike Greer to chair the committee. Mike mentioned GIS in the Rockies may be a conflict but agreed to chair the new committee with Tom as a co-chair. Roger added that he is opposed because he wants to further define the mission of the committee.

Vote: 8 for 2 opposed

- vii) (Ethics and Fair Practices - Larry Connolly, Chair)
- viii) (Executive Committee - JB Guyton, Chair)
- ix) (Awards - Larry Connolly, Chair)

h) SPECIAL COMMITTEES

- i) (Trig Star / NCEES Multi Media - Warren

Ward)

- ii) GIS in the Rockies

Mike mentioned that the GIS in the Rockies is celebrating it's 20th year this year. Mike sent an email regarding the topic. JB mentioned Joel Schmidt and thanked Mike for all of his efforts.

- iii) Marketing - Paul Suter - *status of Summit Article*
- iv) Electronic Secretary - Lisa Isom

i) CHAPTERS

Please provide brief report on Chapter activities when Board of Director's Meeting is hosted by your Chapter.

- i) (Northern - Lonnie Sheldon, President)
- ii) Central - Gene Kooper, President

The Mentoring program will have 4 classes on legal topics. There is less participation in the sessions this year and Gene suggested that some of this be incorporated into a SIT "refresher" course as many of the students were there to learn and not refresh.

The Wheeler Monument walk around is planned for May 14, with a ceremony on May 21.

The Central Chapter has suggested making DVD's of the Hayden Atlas to sell.

They are also considering a commitment to help fund Metro.

The Range Line replacement program is under discussion.

- iii) (Southern - Terry Maw, President)

Don Wilson and Dave Doyle are facilitating at the conference.

- iv) (Northwest 1/4 - Ridgeway Moon, President)
- v) Western - Les Doehling, President

We had a successful seminar and financially we are solvent. General attendance at the chapter meeting is 15 to 20 per meeting. We found that changing the meeting locations has helped with attendance. Some members feel the Front Range is running the show and does not feel the affidavit was the right thing to do. Les feels there needs to be more explained about the intent of the affidavit and share the entire story with everyone who saw the email.

Mike makes the point that the entire board should have been part of the process.

JB asks how the members of the committee are appointed.

Roger says Georgia resigned previously, another has been appointed from the general Colorado Springs

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region, one more resigned when the affidavit was disbursed.

Tom has read the letter from Maurice and he feels it was not the right thing to do.

Wendy suggests to overview the responsibilities of the committee members to the membership in general at the general meeting in the fall. The ethics and fair practices committee should address this issue and discuss it openly

JB suggests that the legislative committee minutes be posted on the Web site.

JB will find a way to address the issue to the membership

JB will draft and disburse a memo to the Board for comments and editing to help support the committee chair.

Loretta Simonson in Colorado Springs 719-635-0217 is a parliamentarian and could speak at our next conference

vi) (Southwest - Parker Newby, President)

8) UNFINISHED BUSINESS

Fall Technical Session November 8-9-10

Parliamentarian Procedures topic; Technical Writing (Gary G); Business Negotiating Skills (Gene); Jan Van Sickle (GPS update); 1/2 Day Machine GPS discussion; Arcview 101 for Surveyors (classroom has computers); CST testing venue proctor; What did we pay last year at the school of mines?

9) NEW BUSINESS

- a) Legislative Committee
 - b) New Chapter - Colorado Spatial Reference Network of the PLSC
 - i) Status update
- Colorado Spatial Reference Network of the PLSC

Russ Clark, Committee Chair - The Chapter is submit-

ting a Certificate of Charter to Art Hipp per the by laws. His meeting was very upbeat, no arguments, vendors were very helpful and had many good ideas. G2 has melded into the committee and the role of the committee will be defined as we go. Directors are from all over the state and it will stay a statewide voice.

- c) "Your Career in Surveying" DVD
 - i) Prepared by CLSA, customizable to PLSC for a fee
- d) Paul Suter fees:
 - i) Keep as monthly 'retainer' or change to "task based" fee schedule
- e) Online registration and payment for workshops & dues
 - i) Terry Sanders is setting this up for the PLSC and CCPS
 - ii) Look into making PLSC merchandise available for purchase
- f) College support

In 2004 the Southern chapter donated \$1500 to Fort Lewis College and San Juan College in Farmington. Larry is asking PLSC to do this again. Larry makes a motion to match funds once again and is penning a motion. Di Seconds

Question - Does this fall under the education committee?

Mike motions to amend the motion to read that if the education fund is not Metro specific then we match it. Larry changes the motion to add "pending"

Unanimous approval

10) NEXT MEETING DATE, TIME, PLACE

To be hosted by the Southern Chapter, the weekend of the 7th of September.

11) ADJOURN 9:59 PM ■

Administered by: Lisa Isom

Professional Land Surveyors of Colorado has the Insurance Program that's Designed for Its Members.

As you know it has been a cold, hard winter for most of us in the state. I am looking forward to our summer and the busy field time of year.

I have had several conversations with clients over the past few months; about the "what if" of insurance. Therefore, I want to address a few risk management topics with the PLSC members in this article.

What if...a client slipped and fell on your property? A customer sued me for an error I made? An employee stole funds? A power surge zapped your equipment?

Unfortunately, today's surveying business owner faces big risks every day. And while it's impossible to eliminate risks, it's possible to reduce the financial impact on you by using a few proven risk management ideas.

The following will be a general overview of three ways or tips to manage your business risks or how to control property losses, lawsuits, vehicle losses, and workplace accidents.

Accidents. Surprises. Losses. They all come with owning your own business. But there's no reason you have to be a "victim" of these unexpected losses, not if you take advantage of following three key ways to manage your risks.

1 You can insure risk

One primary approach to risk management would be purchasing insurance to transfer the losses to your insurance company.

Know your insurance policies. If you don't know what types of losses your policies cover, you may be in for a surprise when a loss occurs. You need to review your policy and if necessary purchase additional coverage to ensure that your company is fully protected.

2 You can transfer risk

When appropriate; you'll want to shift the risk to your subcontractors, competitors and even your customers. Here are some tips on how to transfer some of your business risk to others.

- **Hire the right subcontractors.** Using knowledgeable, properly insured subcontractors can reduce your risk and minimize high risk professional liability exposures. Request Certificates of Insurance to verify that your subcontractors have current insurance.

- **Consider "hold harmless" agreements.** A "Hold Harmless" agreement is a tool that shifts legal and financial risk from you to another party

- **Don't try to be all things to all people.** Let your competitors take the job and the chances on potentially problem projects.

3 You can control risk

Of course; there are some things you can't prevent, like storms, power failures, or accidents. But there are ways of minimizing either the likelihood something will occur, or the impact it will have on your business after it occurs.

Fire. Theft. Water damage. Just a few of the things that can do damage to your property—one of your business' most valuable assets. Unless property and equipment are maintained properly and insured adequately, they can be at significant loss and damage to your business.

Some tips:

- Review your insurance to make sure you understand what is and is not covered.
- If your policy has "blanket" coverage for a number of different properties, make sure that all properties that should be insured are actually listed on the property policy.
- Be sure that your property is insured to replacement value. Improvements or changes in building costs should be reflected on your insurance coverage. So periodically review and update your property values and adjust the coverage accordingly.

Managing Your Vehicle Risks

Your business' autos represent many types of risk in one place such as loss of equipment, loss of jobs, and liability to persons and injury to your employees. No wonder your auto premium can account for a large portion of your commercial insurance cost. However, risk management can be used to reduce motor vehicles liabilities, by simply:

- verifying driving records of potential employees.
- monitoring employee driving records.
- keeping your drivers properly trained.

Like any other aspect of owning your business, risk management is an on-going, ever-changing process. As your business grows, so do the risks. As your business changes direction, new risks may arise. Like any small business it is not able to have large losses that would be uninsured. Your profession depends on the small surveying businesses, yet small surveying businesses are more vulnerable when claims, lawsuits, or accidents strike. I can help you identify and insure those risks before they become threats. And, of course, help you understand and obtain the insurance that is right for you.

As a member of PLSC you have available to you the PLSC Insurance Program that will provide coverage necessary to cover your business needs.

I am here to discuss your own situation as to whether you are insured properly and the most competitive way.

Lisa Isom
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