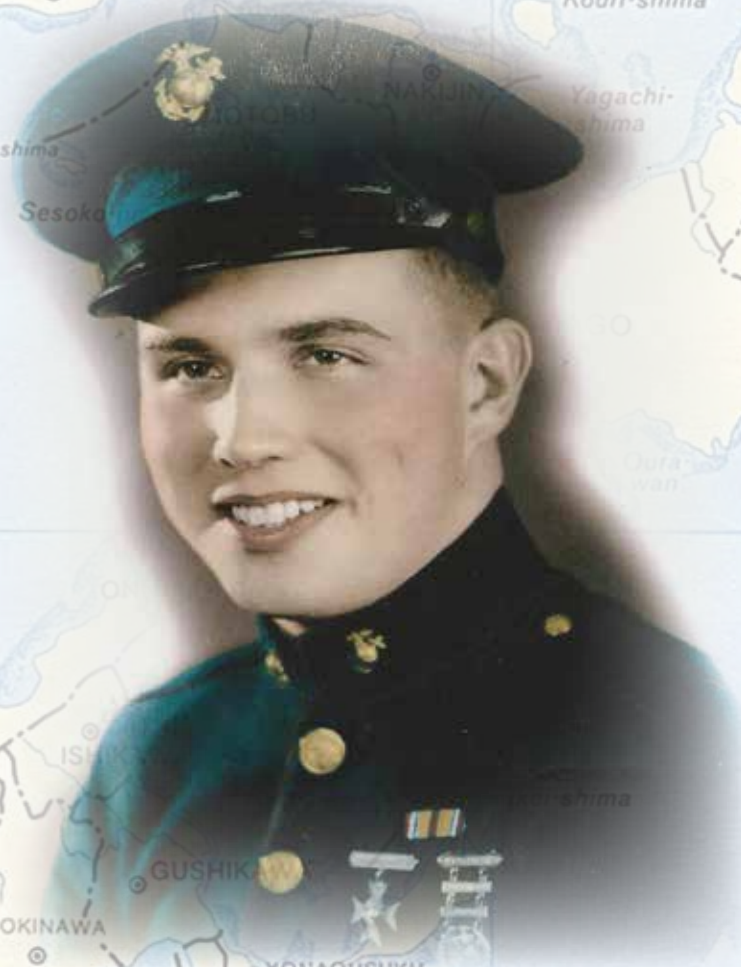


August 2014

SIDE SHOTS

Professional Land Surveyors of Colorado

Volume 45, Issue 3



Arthur W. Hipp, USMC
page 13

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*Side Shots is the official publication of the Professional Land Surveyors of Colorado, Inc.
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The June 13, 2014 PLSC Board meeting was held in Durango, Colorado in conjunction with the Southwest Chapter's annual education seminar. It has been several years since PLSC's finances provided an opportunity for the Board to hold a meeting at one of our Chapter locations. Holding PLSC Board meetings at Chapter locations provides an opportunity for our membership to attend these meetings and allows the Board members to hear firsthand challenges and concerns of differing Chapters. It is my hope that one meeting per year will continue to be held at a Chapter location. Chapters interested in hosting a future PLSC Board meeting should coordinate with Becky Roland or one of the PLSC Board members.



We are in need of new photographs for posting on the PLSC website and would like to receive any unique surveying photos our members can provide. I encourage you to visit the PLSC website for the latest announcements, job opportunities, and general survey information. We are working hard to provide valuable content on the PLSC website for our membership.

As a reminder, we are in an election year and need nominations for President, Vice President, Treasurer (all 2-year terms), and 4 Board positions (4-year terms). Bill Buntrock is accepting these nominations and compiling the ballot. Nominees will need to provide a photograph and prepare a one paragraph biography (see examples at http://www.plsc.net/plsc_board_bios.php) for inclusion on the ballot. My service to the PLSC has been one of the most rewarding experiences of my career. This service has provided opportunities to effect meaningful change in legislation, guide the direction of PLSC, and to connect with surveyors throughout our state.

The PLSC has approved \$500 to accelerate access to the Trig-Star teaching resource materials. These materials will now be available to teachers approximately two months earlier than in the past. Thanks to Jan Sterling and the City of Aurora for sponsoring Colorado's Trig-Star program and working with the PLSC to migrate this program throughout Colorado. Initiatives are underway in multiple PLSC chapters to work with their high school leadership for establishing Trig-Star programs in those schools.

We do appreciate hearing from members both positive feedback and where improvements are needed, so feel free to contact any of the board members or officers with information that will help our organization improve.

Let's elevate the Survey Profession together!

Roger D. Nelson, PLS, CFedS
PLSC President (2011-2015)

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FROM THE EDITOR



Spring and summer are typically busy seasons for members of our profession, but not so busy that people have failed to respond to my request for interesting articles. On the contrary, this issue contains plenty of material for your summertime reading.

Warren Andrews' Control Points, now up to number 25, is on "Solar Observations for Bearing." The Hosmer's Method of computing a solar position is very familiar to me, and something surveyors with even the most modern methods should understand.

"Geodesy and Business" by Harold Schuch is one of the best overviews of what he terms the "business aspects of geodesy" that I have seen. The definitions and relationships of geoids, ellipsoids and projections are excellent.

Our cover story, by Dean Glorso, provides the history of former PLSC President and Executive Director Art Hipp, including his experiences in World War II while serving in the United States Marine Corps. Art was also the founder of this quarterly magazine of the PLSC. I knew Art well, but this well-researched story of his war experiences was new to me, and well worth a read, even if you did not have the privilege of knowing Art personally. Thanks to Dean for sharing this with all of us.

Greg Markle, County Surveyor of Clear Creek County, has provided a follow up article about the mysteries of the Wheeler Monuments, popularized by Bill Wilson (See August, 2007 issue of *Side Shots*). Greg reveals the discovery of a huge boulder with an iron bar in it and some chiseled graphics that suggest that it just might have been an azimuth mark for the Wheeler Monument in Georgetown. Greg did an outstanding job of presenting the evidence, and weighing the factors that support and reject the theory. As a history buff, this

really made me want to know more. I hope to see further research on these monuments in the future.

Earl Henderson's Rule of the Month points out the importance of including a statement on documents requested by clients that are not plats or an Improvement Location Certificate, an excellent reminder of our drafting responsibilities.

Randy Bloom has provided us with the latest BLM Cadastral Surveys letter, and a separate letter offering their USB hard drive containing the rectangular field notes from the Colorado surveys of the General Land Office and the BLM from 1858 to 1998. I have one of these and consider it a very worthwhile purchase.

Mike Bouchard has written a very complete report from the Western Federation of Professional Surveyors and their May meeting in Albuquerque. We also have PLSC Board of Directors meeting minutes from the April 24th and June 13th meetings. There is also a treasurer's report on PLSC fund balances from Terry Maw, and the usual and always interesting reports from our various statewide chapters.

As Roger stated in his letter, nominations are being accepted for a variety of leadership positions in the PLSC. I would add that my terms as President were also incredibly satisfying on a professional and personal level, and I would certainly encourage younger members of the PLSC to get themselves nominated and elected at the chapter or state level and contribute to the relevancy and success of this organization. I guarantee that you will never regret a minute of it.

Have an enjoyable and successful summer.







JB Guyton, Editor, *Side Shots*

Control Points – Number 25

Solar Observations for Bearing

By Warren Andrews, PLS

With the availability and use of GPS by present day surveyors, the determination of bearing by observing the sun is fast becoming a lost art. When I took the field course in plane surveying at the Colorado School of Mines during the summer of 1953 (after I came back from hitchhiking around southern Africa), the professors talked as if taking a solar was a very difficult and arcane process and scared most of the students away from using it as a simple and usable tool. It was quite different when I took the mine surveying course at the CSM Edgar Mine at Idaho Springs the summer of 1955 under Dr. Ben Parker, who, besides being a mining geologist, was a U.S. Deputy Mineral Surveyor and used solars fairly often. He taught taking a solar as being simple and easy, using immediate field checks, when you used Hosmer's Method of calculating it.

The technique of taking a solar is simple. It involves sighting some backsight with the horizontal and vertical angles and the time. Naturally you don't look at the sun with your eyeball but focus the crosshairs and the sun on a blank 3x5" white card held behind the eyepiece. I get better results at exactly two minute intervals with the first three readings erect and the second three readings inverted. A sequence you can use is first reading ; second reading ; third reading ; fourth reading ; fifth reading ; and sixth reading . This is the hard part of the whole operation. I've found if a crosshair goes out of sight at the moment you want to read you don't have to fiddle with the horizontal and vertical tangent screws as much.

An immediate field check is made by pairing the first and sixth, second and fifth, and third and fourth readings. If the three sums vary by more than a minute of angle, take another set. You end up with a median horizontal angle, a median vertical angle, and a median time. This is the position of the center of the sun, horizontally and vertically at a moment in time.

Theoretically from spherical trigonometry there are two formulas for the azimuth of the sun from north, namely:

$$\tan Z = - \frac{\sin t}{\cos \Phi \tan \delta - \sin \Phi \cos t} \quad \text{OR} \quad \tan Z = - \frac{\cot \delta \sec \Phi \sin t}{1 - \cot \delta \tan \Phi \cos t}$$

Where Z is the azimuth from north to the sun,
t is the hour angle or arc on the equator measured westward from Greenwich to the station at the time of measurement,
 δ [delta] is the angular declination of the sun north (+) or south (-) of the equator at the time of measurement, and

Φ [phi] is the astronomical latitude or angular distance of the zenith north or south of the equator or in other words, the declination of the zenith directly overhead above the station.

If you use Hosmer's Method of computing a solar you need the latitude of the instrument station (scaled to the nearest minute from a USGS topographic map); the altitude of the sun which is the median vertical angle you recorded minus the refraction correction (from Hosmer's Tables); and the declination of the sun north [summer] or south [winter] of the equator at the median of the six time measurements you recorded on the day you made the observation. The declination formerly was given in the small K&E booklet, which is no more, now can be found from the U.S. Navy Nautical Almanac or on line, interpolated to the nearest tenth of a minute of angle. (Remember the time of observation using Mountain Standard Time is seven hours west of Greenwich, which is the table data, so 10 A.M. MST is 3 p.m. Greenwich time or 1500 hours, so you use 1500 hours in the Greenwich tables).

With the indispensable tables, Hosmer's Method neatly arranges the numbers as the following examples shows:

Lat.	= 42°21'	log. sec	= 0.1313
Alt.	= 15°22.5'	log. sec	= 0.0158
Sum	= 57°43.5'		

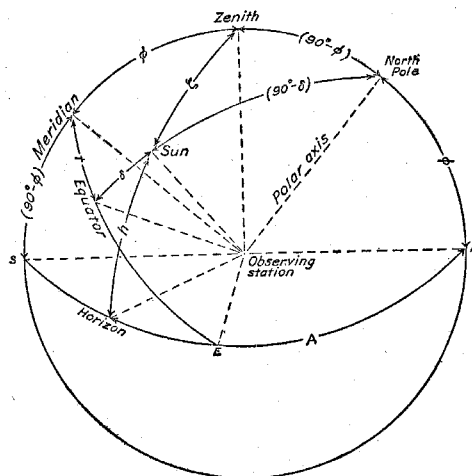
nat. sin Co sum	= 0.5340	Co sum	= 32°16.5'
nat. sin Decl.	= -0.3638	Decl.	= -21°20.1' [winter]
Alg. sum	= 0.1702		

log alg. sum	= 9.2309
log vers	= 9.3780

[versed sine = 1 - cosine]

Az of sun = 40°26.2'

And it's that simple with the Tables!



The "Pole-Zenith-Sun" triangle as viewed from outside the celestial sphere. From The Manual of Surveying Instructions, U.S. Dept. of the Interior, Bureau of Land Management, 1947, p. 47, Fig. 4.

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Geodesy and Business

By Harold Schuch, PE, CP, LSI

Introduction

Where there is dirt, there is business. One only has to take a shovel and start digging. Geodesy is like that. On the surface, this article seems to talk only about surfaces. In truth, it talks about layers of business: The business aspects of geodesy.

Various surfaces

The physical surface

That is where we stand on ("S" in Figure 1). That is the only surface we can see, smell, touch, dig into, pile dirt onto, and measure on. That is where we set up instruments (other than those that fly or are under water). This is the realm of Surveyors and Engineers. But, by itself, it has no coordinate system.



Figure 1

That is where the Public Land Survey System (PLSS) was established (which is not a coordinate system). The PLSS was built on the basis of imperfect knowledge and instruments, and therefore relies heavily on monumentation (what is physically planted into this surface).

Does the physical surface move? It does, horizontally and vertically, to a certain degree, and parcels move with it. As a matter of fact, it constantly moves (plate tectonics, glacial rebound, etc.). On average, it shifts and buckles more in one year than what the resolution of our modern instruments is. Apart from that, some projects are getting larger and required accuracies are tightening up. Therefore, re-measurements are leading to more opportunities.

At the same time, the act of reporting accuracies is becoming more demanding. Gone are the days when one could simply (and blindly) quote "National Map Accuracy Standards". Now, one has to be familiar with simple sampling techniques, standard deviations, RMSE, and confidence intervals (hint for colleges: A proper education).

The Geoid

Now we add the geoid ("G" in Figure 2). Determining the geoid is in itself a business opportunity based on some knowledge of gravity and the use of gravimeters. One can utilize satellite data (GRACE), airborne data (GRAV-D) or ground-based data (i.e. those that are taken at CORSSs). The actual "zero-elevation" surface (called "W0") has been determined based on some of those methods, resulting in different solutions for vertical datums.



Figure 2

So, does the geoid move? By itself, the geoid depends on the distribution of underground material densities. These materials shift around, but not enough to be of major concern in our lifetimes. Therefore, gravity values (discounting momentary tidal forces exerted by the moon) essentially do not change much. However, the changes introduced by gravity re-measurements will introduce significant changes. For example, if the shape of the geoid is first defined by GRACE and subsequently re-defined by GRAV-D, the geoid will still be the same, but the use of different tools can result in vertical differences of ± 2 feet, in what I call geoid "ripples" that are added to geoid undulations. This is significant for any elevation-sensitive project (\$).

The geoid does not provide us with a coordinate system. It only gives us information where "level" is (where water flows to), plus orthometric heights. Also, the smoothest flight on an airplane is when it stays within one specific geo-potential surface, and long runways are shaped in line with that (another business opportunity). This work is done with precise leveling (still the best method to follow the shape of the local geoid).

The geoid cannot be touched, measured upon, dug into, or smelled, and no instrument will tell us exactly where it is. It is smooth the world over, has no sharp edges, and its W0 value is as it was determined at Potsdam, Germany. However, long-term gravimetric observations at any point on the ground will help us determine elevations (business opportunity). This work



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is called “determining the position and shape of the local geoid”, something several developing countries are pursuing (\$).

The ellipsoid

Once the geoid is sufficiently defined in a world-wide context, one can determine the best mathematical model to represent earth. This is the “ellipsoid of revolution” or “spheroid” (“E” in Figure 3). It is defined by a perfect spheroid of a certain size that is affected by a North-South flattening.



Figure 3

Using least-squares adjustment tools and many observations, NOAA determined the size and flattening of this ellipsoid so that it fit the geoid, resulting in the GRS80 ellipsoid. It also determined the position of this ellipsoid with respect to the same geoid, resulting in the WGR80 horizontal datum.

We cannot see, touch or measure on ellipsoids or

datums. However, horizontal datums are based on these very precise mathematical models. It is a perfect shape that provides us with the all-important coordinate systems we need, such as geodetic coordinates (latitude and longitude) and geocentric coordinates (Earth-Centered and Earth-fixed or ECEF). It is the reference system used by GPS/GNSS, navigation, AGPS/IMU, UAV, and satellite work. Do ellipsoids move? Yes, every time there is a datum change.

Therefore, horizontal datums are (a) ellipsoids of a certain size and shape that (b) have been positioned in a certain way, locked into one or many points on the physical surface. If the ellipsoid is changed, or merely shifted in space with respect to those points, then we have a datum shift. That is why datum shifts are expressed as changes in latitude and longitude. Therefore, also, one ellipsoid can be the basis for many datums.

The main problem is that the US shifts differently than the rest of the world, and so we have US and worldwide solutions (NAD83 vs. WGS84, etc.), which normally are determined at different timeframes (epochs).

You will notice that vertical datums are not mentioned yet. The reason is that elevations are determined with respect to a geoid (vertical datum), but expressed in

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relation to ellipsoids (to have some reference coordinate system). So, if horizontal datums change, do vertical datums change also? They may not, because vertical datums are tied to the physical surface in the same fashion as gravity is.

From a business perspective, the household of datums represents a significant and growing collection of business opportunities, from establishing them for those regions that do not have them, to the updating of those that have them. This may require the combined use of GPS/GNSS and gravimeters.

Projections

A projection (“P” in Figure 4) is another type of mathematical construct that is built on top of ellipsoids. Projections are mathematically tied to ellipsoids. Projections provide us with local grids, or State Plane Coordinate Systems. Projections cannot be seen, touched, measured upon, or visited either. However, they provide us with plane Cartesian grids which allow disparate information to be held within a common georeference that is easy to work with (feet or meters).



Figure 4

Projections are key to many geographic endeavors such as GIS, mapping, and many very large community and governmental databases. They are the link between Surveyors, Public Works departments, local and federal agencies, and GIS departments. Without projections it would be impossible to create a common reference framework that allows many different and disparate groups to work together. If one does not have a clear understanding of what these various surfaces are, how they were constructed, how they relate to each other, and what their “purpose” is, cooperation becomes difficult. Here, the Surveyor as consultant can come into play (\$).

Do projections change/move? Only when the corresponding datum ellipsoid changes/moves. One has to keep in mind the following:

- If an ellipsoid changes (size and shape), then the projections that are built onto them also change, and
- If a datum changes (ellipsoid moves), then the projections move with it, while maintaining their geometry.

Projections differ in how they distort reality (always a given if one wants to convert information on a curved surface onto a plane one). Therefore, they

come in many types (Lambert, Transverse Mercator, Universal Transverse Mercator and others). Each type of projection is based on a significantly different mathematical construct.

Each one of these types is implemented in “zones” to minimize information distortions. Two different zones (P_1 and P_2 in Figure 5) represent different geometric constructs (they lie at substantially different angles in 3D space) even if they correspond to the same projection type. For example, this could be the case between Colorado North Zone and Colorado Central Zone. This makes data conversion difficult, since it involves forward and inverse projecting of points, going through the ellipsoid in each case. Not understanding this aspect has led to many significant errors. A detailed understanding of projection types and zones will provide the Surveyor with additional business opportunities (\$).

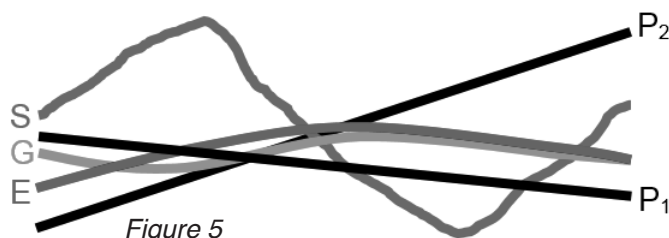


Figure 5

Relationships between surfaces

Figure 5 shows how all these surfaces can cross. To clarify the picture, we have to talk about relationships. There are two kinds of relationships: One between various surfaces of a different kind (i.e. a geoid and an ellipsoid), and another between various flavors of the same kind (i.e. one projection zone and another).

S-G

The relationship between physical surface S and geoid G is the “orthometric height”. It expresses the true elevation of a point, and is loosely identified as “reduction to sea level”. This relationship is established with the help of spirit leveling, trigonometric leveling, gravity measurements, and indirectly with GPS. The big business end of this is transporting elevations along the physical surface (\$).

S-E

This relationship is established with GPS/GNSS, and produces positions with respect to the datum ellipsoid, including “ellipsoidal height”. The business end of this is navigation, horizontal positioning, and the vast world of image and point cloud georeferencing for photogrammetry, LiDAR, street scanning, UAVs, satellite orbits, image data extraction, radar mapping, etc. (\$\$\$).

S-P

There really is no relationship between the physical surface and projections. The business end here is

found only in indirect conversions, going through other intermediate surfaces (i.e. the ellipsoid). However, this indirect relationship rates “\$\$\$” due to its importance in GIS.

G-E

As already stated, the ellipsoid is a best-fit solution to available geoid data. The remaining vertical difference between the two is called the geoidal height (a correction to convert ellipsoidal heights to orthometric heights, and back). The business end here is mostly GPS-based leveling (\$\$).

G-P

There are no significant and direct relationships between the geoid and projection surfaces. Business opportunities are part of the other relationships.

E-P

The relationship between ellipsoids and projections is based on tight mathematical expressions. Nothing else. This relationship is key in being able to go from the physical surface (GPS measurement) to the ellipsoid, and from there to the projection (in other words, establishing S-P).

P₁-P₂

In the case of Colorado, P1 could be Colorado North Zone, and P2 could be Colorado Central Zone. Since both grids are Cartesian, it is easy to assume that a conversion is as easy as shifting a parcel from one georeference to another, as in Figure 6.



Figure 6

However, since different projections lie in a different position (angle) in space, and the projected shapes are really extracted from the ellipsoid surface, the correct event would look like the one in Figure 7. This is because two projection surfaces are not parallel, and the same parcel assumes a different shape on each.

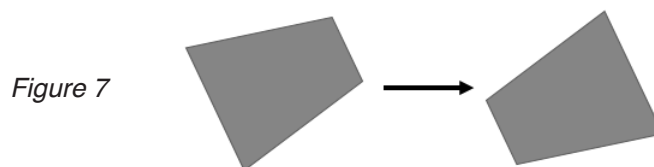


Figure 7

To give an idea about the size of the angles between projection planes, Table 1 presents a rough accounting. It shows the angles in two cases:

- For adjoining zones within the same type of projection (i.e. Colorado North and Central zones), and
- For overlapping zones of different types of projections (i.e. Colorado North and UTM zones)

Table 1

	Lambert	UTM	TM
Lambert	1° - 1.5°	7°	4°
UTM	7°	6°	3°
TM	4°	3°	3°

Table 1

Therefore, the only kosher way to convert a parcel from one projection to another (or from one zone to another) is to go through the specified datum ellipsoid, and forward and reverse project each point separately.

This rule also applies to S-P relationships, where parcels on the ground are projected onto an SPCS: Each point is separately measured with GPS (ellipsoidal coordinates) and then projected onto the grid. This (plus some bells and whistles) is the essence of Modified State Plane. In relation to georeferences, this is the most pressing survey business angle in the US today (\$\$\$\$).

Arthur W. Hipp, USMC

By Dean F. Glorso, PLS 16109

It has been almost seven years since founding editor, long time PLSC treasurer, and *Side Shots* originator Art Hipp passed away. Most every Professional Land Surveyor in the Rocky Mountain Region knows the land surveying legacy Art's name commands. But for the newer members of our profession, I would like to point out some of the sacrifices Art made—and the courage he was able to muster—as a young 19 year old United States Marine in 1945.

I first met Art Hipp at Metropolitan State College in 1976. He was teaching Boundary Law and Land Surveying Principles two or three nights a week. I felt honored to be learning from such an unassuming and eloquent man. He made every point of the complex Land Law crystal clear. Art patiently helped many of us young baby boomers become well informed Professional Land Surveyors by channeling all of his experience and knowledge into simple classroom discussion. He also provided wonderful typewritten hand-outs that we used as a study guide to prepare for the LS test. During this time as one of his students, I learned Art was also in the United States Marine Corps and served in WWII. Having also served in the Marines, in a different war, I gained a dual admiration for Art Hipp.

When Art passed away, like many land surveyors, I attended Art's funeral in September 2007. At the service I noticed several men with USMC lapel pins and struck up a conversation with them. One of the Marines I met that day was Robert L. Fischer, Colonel USMC (Retired).

Art belonged to an Arvada, Colorado Marine Veteran's Group called Cooper's Troopers. When I told Art's Marine buddies I also was in the Marines and had served in Vietnam, Bob Fischer graciously invited me to attend their monthly meetings. To phrase Bob's exact words, he said, "Please come to our luncheon meetings, Dean, I also served in Nam. At Cooper's Troopers, these World War II guys actually tolerate us Vietnam Vets." Bob Fischer's words really appealed to me, and I've been enjoying the luncheon meetings with Art's peers ever since.

At the Cooper's Troopers meetings, I learned that Bob Fischer took it upon himself to interview all the willing WWII Marine Veterans of the luncheon group, and put his findings in a book, *Voices of the Corps*. In his book is a one page bio on Art Hipp. I now feel compelled to write what I've learned about Art's Honorable Service in the United States Marine Corps.

Okinawa - April Fool's Day/Easter Sunday, 1945

Art was standing on decks, waiting to disembark in *Higgins* landing boats with hundreds of his Marine brothers around him. Art was in awe, watching the pounding guns of the *USS New Mexico* battleship and hundreds of other ships and airplanes, softening up the beachhead and surrounding volcanic mountains. One of the more seasoned Marines in the group might have said to him, "In January of this year the *kamikaze* attacks destroyed her bridge, and killed the Captain of the *New Mexico*, in the Battle for Luzon, Philippines." All the Marines must have been happy to see the battleship back from Pearl Harbor, where repairs to her bridge were made. Little did Art know then, but in a little over a month, he will personally witness more kamikaze attacks on the *New Mexico*,¹ and this time devastating strikes will kill 58 and wound 119 of her crew.

On this particular April Fool's Day, Art is part of the largest island battle of World War II. The amphibious landing currently in progress involves *182,000 Army and 81,000² combat ready Marines*. Imagine this force of Army and Marines filling six National Football League stadiums, then letting them all out at once, with each person carrying a 60 pound pack and weapon. With jeeps, trucks, tanks, accompanied with a month's provisions of ammo, food, and fuel. To assist this contingent known as the 10th U.S. Army, all these materials were being unloaded from hundreds of ships and placed on a beach about 7 miles in breadth.

Art's unit, "E" Company, of the 2nd Battalion, of the 29th Marine Regiment, was part of the newly formed 6th Marine Division. The 6th Marine Division (6th MAR DIV) made up about 10 percent of the total force being deployed on this Easter Sunday Morning. The 6th MAR DIV, Commanded by Major General Lemuel Shephard – USMC, was a mixture of combat seasoned Marines, and green Marines like Art.

The Pentagon decided to form and train the new 6th Marine Division in Guadalcanal over the previous five months to aid in the taking of Okinawa. With more Women Marines taking on the clerical and non-combat jobs back in the States, it freed up more able bodied men for overseas combat duties. Young Art Hipp was one of these men. As all Marines are first and primarily Riflemen, Art was also trained in Ordinance, and coupled with his infantry training, schooled in 60mm mortars. Upon being attached to the 6th MAR DIV, Art was

designated Company Clerk and Company Runner for E Company.

The Battle of Okinawa has been called the largest sea-land-air battle in history. It is also the last battle of the Pacific War. Three months of desperate combat leave Okinawa a “vast field of mud, lead, decay, and maggots.” More than 100,000 Okinawan civilians perish, with over 72,000 American and 100,000 Japanese casualties. ²

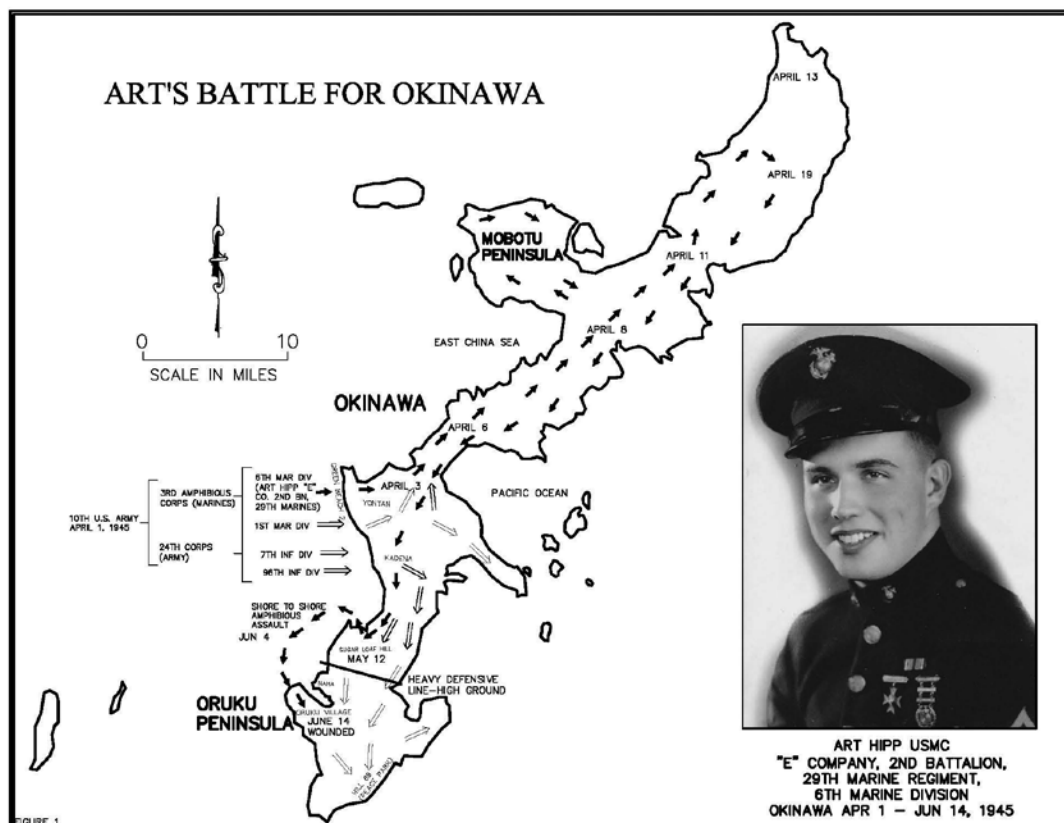
The Pentagon's further plans for the 6th MAR DIV was for it to be part of the force in the final ground invasion into the Japanese mainland. Many historians believe it was this horrific battle (with over ¼ million casualties) that convinced U.S. leaders to force Japan's surrender with a nuclear strike, rather than invade its main island.³ Therefore the 6th was the only Division in Marine Corps History to be formed and disbanded overseas, as after the Atomic Bombs, the mainland invasion was no longer necessary.

Art's unit landed on Green Beach 2 with the first wave of Marines. There was light and sporadic enemy fire, as was the plan of Japan's General Mitsuru Ushijima. But the following summary gives us a deeper perspective:

More mental health issues arose from the Battle of Okinawa than any other battle in the Pacific during World War II. The constant bombardment from

artillery and mortars coupled with the high casualty rates led to a great deal of men coming down with combat fatigue. Additionally the rains caused mud that prevented tanks from moving and trucks from pulling out the dead, forcing Marines (who pride themselves on burying their dead in a proper and honorable manner) to leave their comrades where they lay. This, coupled with thousands of bodies both friend and foe littering the entire island, created a scent you could nearly taste. Morale was dangerously low by the month of May and the state of discipline on a moral basis had a new low barometer for acceptable behavior. The ruthless atrocities by the Japanese throughout the war had already brought on an altered behavior (deemed so by traditional standards) by many Americans resulting in the desecration of Japanese remains, but the Japanese tactic of using the Okinawan people as human shields brought about a new aspect of terror and torment to the psychological capacity of the Americans.⁴

Art was assigned as Company Clerk and Runner for E Company on Okinawa. I asked one of Art's Cooper's Troopers peers, Jim Blane, who had the same job description as Art during the battle of Iwo Jima. What were some of the jobs Art had to perform on Okinawa as Company Clerk & Runner? I asked. Jim replied, "Any stupid, nasty job that had to be done, Art would have to do it. From hauling ammo and medical supplies to fellow



Marines pinned down, to retrieving bodies and body parts from the sea, in battle Marine Clerks filled in wherever necessary. Art would have to go any place where elements of his company needed him. His duties would change from day to day and from place to place.”

The map of Art’s movements (Figure 1), across Okinawa is my best guess based on information I have gathered from various sources. Corporal Hugh C. Lipsius, USMC, father of Cynthia Lipsius of Buffalo, NY, was in the 3rd Platoon, E Company, 2nd Battalion, 29th Marine Regiment, 6th Marine Division, (Same Company as Art). Cynthia assembled very detailed writings of her father’s movements during the battle. The following is a portion of a letter Cynthia provided, written by her father Hugh Lipsius, dated July 4, 1945:

I will give a brief resume of my stay here. We landed about 12:30 on April 1, 1945. On April 3rd we moved West of Yontan Airfield. On about the 6th of April we started to move North. We walked 30 miles in two days (whew). We had our first fight on the 12th. On the 15th we had the worst one of the Northern Campaign. The morning of the 16th our squad was sent on patrol. We were hit with mortar fire and returned to our C. P. (command post). We were sent out on another patrol and almost got trapped but managed to get out O.K. Our next battle was “Sugar Loaf Hill”. I can’t put into words to describe it, but most of the men in the cemetery were from that battle and also the hospitals. In the next one, I was hit and got back in time to come in on the Oroku Peninsula. Five days later, I was back in the hospital and got back here (to Okinawa) for the last 2 days (of the battle for Okinawa).⁵

Art was wounded at Oroku Village on June 14th and evacuated,⁶ therefore he would have been involved in the second unprecedented shore to shore amphibious landing on June 4th. This was done to avoid the Japanese stronghold on the high ground dividing the southern portion of the island. The shore to shore landing surprised the Japanese and is credited with saving American lives. About a week after Art was wounded the Battle for Okinawa was all but won: Japanese General Ushijima refused a personal plea

from the American General Simon Buckner to surrender. Instead, hearing the sounds of the systematic destruction of positions nearby on Hill 89, Ushijima and General Cho committed ritual suicide, each disemboweling himself with a short sword followed by his beheading by his principal aide.⁷

For his combat performance Art received the following commendation from his division commander: **For gallantry in action and extraordinary achievement during operations against the enemy on Okinawa Shima from April 1st to June 21st, 1945, your courage was a constant source of inspiration to your associates, and your conduct throughout was in keeping with the highest traditions of the Naval Service”.** LEMUEL SHEPHERD, MAJGEN – USMC.⁸ (*Commanding General 6th Marine Division, Major General Shephard, was a veteran of the First World War, and would go on to become the 20th “Commandant of the Marine Corps – 4 star general “Top Marine” during the Korean War).*

The words by Lemuel Shepherd are evidence of Art’s high ethical standards, and his superior dedication to The Professional Land Surveyors of Colorado and probably all his lifetime duties and accomplishments. *Semper Fidelis*⁹. To Art Hipp, a mentor and Marine of the Greatest Generation.

FOOTNOTES:

¹ 2001 Interview with Art Hipp, by Cooper’s Troopers Col. Robert Fischer USMC (Retired)

² Battle of Okinawa, by Ted Tsukiyama

³ Woodland’s Joe Casillas recalls battle for Okinawa on TV, By Larry Shapiro (Daily Democrat.com Woodland, CA)

⁴ SSgt Rudy R. Frame, Jr. “Okinawa: The Final Great Battle of World War II I Marine Corps Gazette”. Mca-marines.org

⁵ <http://wwiletters.blogspot.com/2011/04wwii-letters-of-hugh-c-lipsius-of-e.html>

⁶ 2001 Interview with Art Hipp, by Cooper’s Troopers Col. Robert Fischer USMC (Retired)

⁷ http://en.wikipedia.org/wiki/Mitsuru_Ushijima

⁸ 2001 Interview with Art Hipp, by Cooper’s Troopers Col. Robert Fischer USMC (Retired)

⁹ *Semper Fidelis* distinguishes the Marine Corps bond from any other. It goes beyond teamwork—it is a brotherhood that can always be counted on. Latin for “always faithful,” *Semper Fidelis* became the Marine Corps motto in 1883. It guides Marines to remain faithful to the mission at hand, to each other, to the Corps and to country, no matter what. Becoming a Marine is a transformation that cannot be undone, and *Semper Fidelis* is a permanent reminder of that. Once made, a Marine will forever live by the ethics and values of the Corps.

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Wheeler Monument Story Continues

By Greg Markle, PLS

On July 26th, 2008 the Georgetown Wheeler Monument shelter and plaque were dedicated, thanks in large part to the PLSC. (see *Side Shots* Vol. 39, Issue 4).

It was shortly after the dedication that I found myself working in the neighborhood with Donna Malleck, two blocks north of the historic astronomic pillar set in 1873. Keith Murray lives in a nice log home he built on Biddle Street just north of 11th Street. I've known Keith as an acquaintance for years so he came out to talk.

He showed me a piece of a boulder he placed in his front yard that had a wheel design chiseled on the face. There were some inscriptions as well. Nicely chiseled work. It didn't look that old. I had noticed it several times before, walking past his house. I assumed it was something done within the last 20-30 years by an artist.

He told me the story. Before he built his house in 1991, the landscape consisted of an old road leading up to a mine portal which was a service adit for the Griffith mine, with some remains of stone walls where a house once sat. The surface was covered with a mine dump consisting of the shot rock from the adit, and dirt and rock from the building of the road.

There was a rather large iron bar protruding from the ground about three feet. It was two, maybe two-and-a-half inches in diameter, and had been bent. Keith

owned some heavy equipment and started to excavate for the house. He dug around the bar and within a foot of the surface he struck a large boulder. The bar was imbedded in the boulder. He eventually uncovered the boulder which had emerged as 12' x 17' and 9' high. "Wow, this is where I want to put the house?" he must have thought.

He uncovered the rock and noticed the strange design on it: a perfect circle with six 'petals'. There were some inscriptions: 'J B', 'N E' and a small triangle pointing to the top of the rock. There was also a small columbine flower chiseled neatly into the rock.

The bar was in a hand drilled hole about a foot deep. The bar itself was not a drill steel and did not have a water port in the center.

Could this be the azimuth mark for the Wheeler monument? The one that a team of PLSC members went looking for the day of the dedication? Included in that party were JB Guyton, Gene Kooper and Doyle Abrahamson. Nothing substantial or definitive was found.

Things that the rock doesn't have going for it:

1. The only thing we know of the Wheeler 'north mark' is from a sketch included in the original report of the survey that shows an azimuth mark to be north and scaled at 1000' from the monument. No other description. The location where the boulder was found at a bearing of N 7° E, not due north.
2. It doesn't look 137 years old.
3. There is just no definitive proof of what it is or isn't.
4. No one listed has the initials 'JB' in the Wheeler party.

Things that the rock does have going for it:

1. The boulder was 1000' from the monument.
2. It was covered at an early date with mine tailings, preserving the look.
3. The mine tailings are old and so must be the chiseling.
4. There are no other property corners, mining claim corners, witness or accessories, triangulation marks or control points of record in that vicinity.
5. It does fall just outside the town lots on (at that time) Town of Georgetown property, just like the Wheeler monument, so as not to interfere with a residential building lot. Given the lay of the land





The Georgetown Wheeler Monument dedication in 2007. 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.

and the buildings at the time, an azimuth mark set north at approximately 1000 feet would have been impractical.

6. A small equilateral triangle is carved into the boulder, a sign of some triangulation work?

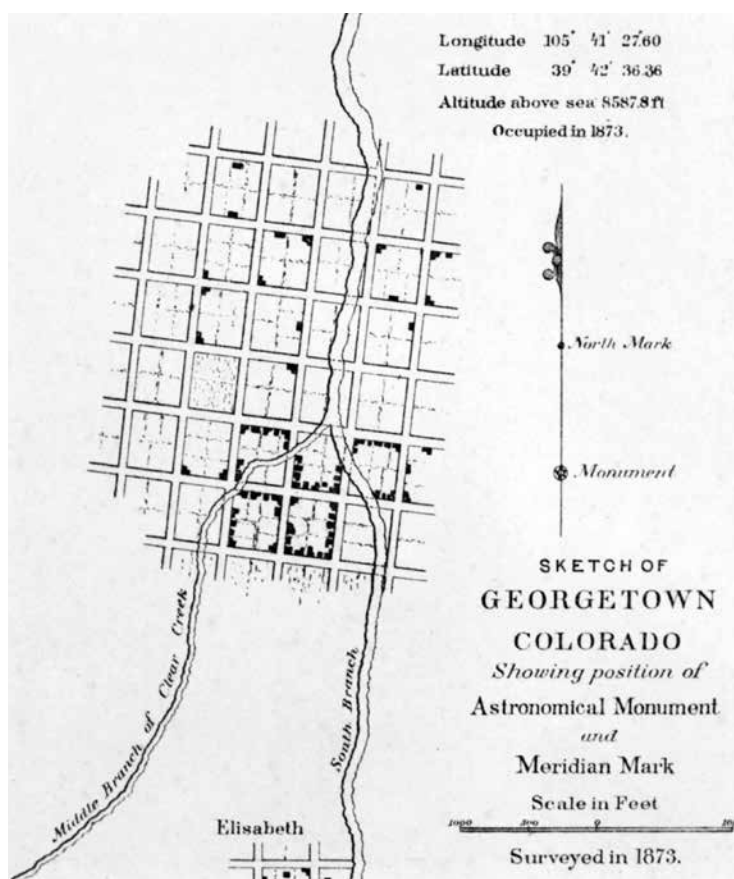
Could this be the work of a member of the Wheeler survey crew, who worked primarily at night taking observations and having a lot of time on their hands during the day? Who else would have the time to do such an elaborate drawing on some random boulder?

Was the bar their back sight for observations, maybe with a lantern resting on the boulder behind it?

Well I certainly don't know for sure but I did come away with a good lesson on this. Several times Keith Murray mentioned this inscription on the boulder to me and I never checked it out. While we were all diligently looking for the azimuth mark that dedication day, was it just up the street in Keith's front yard the whole time?

And Bob Gibbs, who owns the property that the Wheeler Monument sits on, several times mentioned to me over the years that there was 'some USGS stone with some markings under a tree' above his house. A lot of people have stones with chisel marks in their back yards in Georgetown so I blew that one off too, not realizing he was talking about the best preserved monument from the Wheeler Expedition.

If nothing else I learned that we're not the only ones interested in survey history and not the only ones with an eye for something done a very long time ago. While we are hired to solve survey mysteries, we need to catch up with everyone else on the subject first.



Rule of the Month

6.5.5.2 - Documents Other Than Plats or Improvement Location Certificates Require Statement.

By Earl Henderson, PLS

Rule 6.5.5.2 reads: "If under the terms of a contract or by client agreement (emphasis added) a professional land surveyor performs work other than that which specifically calls for a land survey plat, improvement survey plat, or Improvement Location Certificate ("ILC"), the professional land surveyor must provide a written explanation on the document of the nature and purpose of the document being supplied to the client. Any such explanatory statement shall be provided solely for the purpose of clarifying the nature and purpose of the client's document and shall not be a means by which the professional land surveyor may avoid professional responsibilities as established by Colorado law and the generally accepted standards of practice of land surveying."

Seems pretty straightforward to me. A couple of preliminaries: First, when have you ever provided a document without a "client agreement"? I would

estimate that it has never happened. Point made. Second, why are the words for ILC capitalized but not LSP and ISP? But that's more of an aside really.

Now to the matter at hand, it's fascinating to me how often I see maps that are not intended to represent a Monumented Land Survey (38-51-102(13)) by means of a Land Survey Plat (38-51-102(12)) or Improvement Survey Plat (38-51-102(9)), let alone a map that's not intended to be an Improvement Location Certificate (38-51-102(8)) or Subdivision Plat 38-51-102(20)) with no explanation on them describing the intent of the map. And if that were the end of it then that would be the end of this article. I'd simply say, write a statement on there and I'd be done writing.

We all prepare these documents. I usually call them Exhibit Maps. They have a variety of names depending on their creators. But here's the grind. If it



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looks like a Land Survey Plat, and smells like a Land Survey Plat, then it may be interpreted to be a Land Survey Plat even if the title says something else. Do you want someone else, for instance the AES Board at DORA, to be interpreting if your document is a Land Survey Plat? Because if they do, then they will hold you to that standard, even if that was not your intention. Wouldn't you rather be in control of that interpretation yourself? I would guess that most, if not all of us, would not like to find ourselves in front of the AES Board, or worse a judge, defending a Land Survey Plat that we never intended to be a Land Survey Plat. So..."write a statement on there."

Now there are certain things that could define your work as a Land Survey Plat even if you title it something else and include a statement of intent. For instance, if you show that you set monuments at property corners, your map is likely going to be interpreted as a Land Survey Plat. So you do need to be careful when preparing exhibits that you don't want to be Land Survey Plats. You can, and some do, create maps that are by

definition Land Survey Plats, and title them something else. A Land Survey Plat (just like roses) by any other name would still map the property lines.

So take the reins. Know what constitutes a Land Survey Plat and what doesn't. Make it obvious if what you're creating is not a Land Survey Plat. Otherwise someone other than you might interpret your document as something other than what you intended it to be. And of course, that has never happened before (ILC's) has it?

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June 30, 2014

Mr. John B. Guyton, Editor
Side Shots
3825 Iris Ave.
Boulder, Colorado 80301

Dear Mr. Guyton:

This letter is to inform you of official BLM cadastral surveys in Colorado that have been accepted and officially filed from March 4, 2014, through June 30, 2014, and are now available in the Public Room, Bureau of Land Management, Colorado State Office, 2850 Youngfield Street, Lakewood, Colorado 80215. The surveys will also be available at <http://www.glorerecords.blm.gov>.

The accepted surveys are listed below by township, range, meridian, group number, type, approval date and number of plats.

<u>Township</u>	<u>Range</u>	<u>Meridian</u>	<u>Group No.</u>	<u>Type</u>	<u>Approved</u>	<u>Plats</u>
T. 36 N.	R. 13 W.	NMPM	1610	Plat & Notes	03/04/14	2
T. 36 N.	R. 1 W.	NMPM	1592	Plat & Notes	03/12/14	1
T. 7 S.	R. 81 W.	Sixth	1612	Plat Only	03/27/14	2
T. 7 S.	R. 78 W.	Sixth	1614	Plat & Notes	04/02/14	1
T. 13 S.	R. 69 W.	Sixth	1611	Plat & Notes	04/03/14	1
T. 40 N.	R. 7 W.	NMPM	1621	Amended Prot Diag	04/24/14	1
T. 40 N.	R. 8 W.	NMPM	1621	Amended Prot Diag	04/24/14	1
T. 15 S.	R. 97 W.	Sixth	1604	Plat & Notes	05/01/14	1
T. 15 S.	R. 98 W.	Sixth	1604	Plat & Notes	05/01/14	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 yours,

Randy Bloom

Chief Cadastral Surveyor for Colorado

Western Federation of Professional Surveyors Report

Prepared by: Micheal Bouchard, PLS, Colorado WFPS Delegate
May 3, 2014, Albuquerque, NM

As yesterday's needs either get met or change, **Western Federation of Professional Surveyors (WFPS)**, like many professional organizations, is looking to better structure itself to better serve those they represent. WFPS represent the surveying profession of the Western United States, including Colorado. Some of the highlights of what the WFPS has done for us include being a national voice during times when a large voice was needed: During NAFTA negotiations, developing the NCEES Model Law, influencing changes with ACSM, and now becoming a voice at the Western Governors Council to NSPS. They have aided in regional discussions and dilemmas: Helped Hawaii to define land surveying, written letters supporting continuing education and educational programs, and written letters to State Boards supporting four year degree programs for licensure. WFPS has collaborated with states to promote educational programs such as TwiST and TrigStar, as well as award surveying scholarships. The Western Federation of Professional Surveyors will continue to provide those services, but they want to provide addi-

tional help and services to those that may have needs. Some of the things they are considering are sponsoring webinars or creating videos for those states that may not have the resources but need more educational opportunities, develop a manual on public awareness (survey oriented, of course), creating a "speakers bureau" from which surveying societies may draw on for programs and workshops, and promoting and providing training for the CFeds program. These are but a few things of what is in the future for WFPS.

With all the good things that WFPS is doing, they also face many of the same issues a lot of other organizations face today: financial stability, support of professional societies, and state associations not seeing them as necessary.

Once the meeting was called to order, roll call, the approval of the meeting minutes and the financial statement were reviewed, we began our Strategic Planning Session, better known as S.W.O.T. (strengths,



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weakness, opportunities, and threats). For most of the morning all four of the topics were discussed and a plan began to be formed. In the end a list of goals and initiatives were developed. Some included (abbreviated): Improve national, regional and local image; conduct public relations program, maintain active legislative involvement; provide regional communications to all members; develop and maintain educational standards for the profession; and provide professional development activities. The final list will be discussed and voted on at our next meeting in Phoenix on September 13th.

WFPS - State news:

Idaho (ISPLS): TrigStar and TwiST are programs that the state is very proud of supporting, and both are growing in size and interest.

The Idaho Board of Professional Engineers and Professional Land Surveyors has joined the ISPLS to work on legislation related to the Definition of Land Surveying (based on upon the NCEES Model Law).

Montana (MARLS): Montana is another state that supports the TrigStar and TwiST programs and has combined both into a single committee.

MARLS will pursue legislation to clarify that retrace-ment surveys do not create parcels or aggregate parcels, therefore are not subject to an exemption review fee, for which some counties are charging up to \$200. The Montana Board of Registration has re-written their 2-hour state specific exam. The exam will be utilized when the proposed rule is adopted and published, however the proposed rule does not allow examinees to review their exam immediately after testing. MARLS has revised their chapter boundaries map to follow county boundaries and will send a letter to the Department of Environmental Quality informing them that a Licensed Land Surveyor is required to delineate well isolation zones associated with the subdivision approval process.

Montana is actively supporting their scholarship and education programs by raising about \$10,000 with a live auction, raffles, and several fun games. As of last year, the major fund raising items were guns.

Continuing Education Seminar is scheduled for September 12, 2014 in Billings – David Doyle, “Modernization of the NSRS”.

Nevada (NALS): NALS is also a supporter of the TwiST program, sending two teachers to the TwiST training in Oregon. The Great Basin College (GBC) has announced that it is suspending the Land Surveying program.

NALS annual conference will be held March 21-25 in

Reno, with the California Land Surveyors Association (CLSA).

Oregon (PLSO): Oregon’s financial picture has improved over the last two years, trying to have a 6-month reserve in the bank. They need an additional \$70,000 to achieve that goal.

In Oregon, the amount of tuition subsidized by the state has gone from 70% to 20%, and college programs are now expected to pay for themselves. Since Geomatics programs have high overhead in keeping up with survey equipment & software, it is much more difficult for them to break even. Because they are thus a “liability” to the college, and because enrollment is small, Geomatics programs are constantly under the threat of getting the axe. Oregon’s and Washington’s two-year programs have fallen in number to one program at Clark College in Vancouver. Oregon’s four-year program at OIT is also under the gun. So it is more and more important for the surveying profession to get involved with the college programs. This involvement includes communicating with college officials, recruiting students, supplying adjunct instructors, and helping financially with equipment and scholarships.

The TwiST program is supported by the PLSO and has recruited one teacher for the 2014 program.

The Oregon Surveyor is returning to six issues a year in 2014 (up from four issues in 2013), because of a better financial outlook.

Washington (LSAW): Three Washington teachers have been recruited and funded by LSAW to attend the upcoming TwiST Workshop which will be held on the Clark College campus from June 24-28, 2014.

LSAW has surveyors throughout the state coordinating with local high school teachers to come into the classroom and proctor the TRIGSTAR exams.

All chapters and their memberships were asked to participate in National GPS Day on Saturday, March 22, 2014. The goal was to observe at least 1000 bench marks throughout the country as part of National Surveyor’s week, thus LSAW was challenged to obtain 20 GPS observations on first order bench marks and submit the data to OPUS for incorporation into their network. This data would be used by NGS to improve the next hybrid geoid model, increasing access to NAVD 88 and enabling conversions to the new vertical datum in 2022.

Wyoming (PLSW): 94th Wyoming Engineering Society Convention

One of the unique features of Wyoming is that for 94 years there has been an engineering named organi-

zation that includes both engineers and surveyors as members. The organization is the Wyoming Engineering Society (WES) and was created in the early 1900's. It has held the tradition of having its annual convention on the first full weekend in February. The WES annual convention has been the traditional way for members from small rural and distant places of the state to come together and meet socially and catch up on the last year's experiences both professionally and as friends.

From my attendance in the last 34 years, I can say it has been one rewarding, raucous and sometimes rowdy affair unique to no other surveying or engineering convention. If you can ever get a chance in your first weekend endeavors in February to get away, I would recommend attending the convention. Surveyor or engineer, WES doesn't care, we are all part of the society. PLSW has its annual meeting at the convention and it's the one time of the year for all members to get a chance to see each other. At this year's WES Annual Awards Banquet, new license recipients for PE's, PLS's, EI's and SI's are invited as guests. Those in attendance stood at the call of their name and received well-deserved recognition and applause for their achievement. This year there were 58 newly licensed guests in attendance.

Colorado student wins first place in the NSPS Trig Star Awards

The National Society of Professional Surveyors (NSPS) announced the recipients of the 2014 Richard E. Lomax National Trig-Star Awards. The Trig-Star committee met on July 11, 2014 to determine the three top high school students from the national examinations submitted by the thirty seven state winners.

First Place: Lubin Deng, Cherry Creek High School, Greenwood Village, Colorado

Second Place: Benjamin Fawcett, New Hanover High School, Wilmington, North Carolina

Third Place: Natalie Sanchez, Rochester High School, Rochester, Washington

The first place student received a \$2,000 award. A past president of the NSPS, Richard Lomax was the driving force behind the elevation of the local Trig-Star program to the national level. In October, 1994, Board action named this high school trigonometry skill award in his honor.

For more information about the NSPS awards and scholarship programs, email Trisha Milburn at trisha.milburn@nsps.us.com, or visit the website at www.nsps.us.com.



The WES scholarship committee awarded five scholarships, of which one surveying scholarship (\$2,000) went to Garrett Cowley of Cheyenne. The 95th Convention will be on February 4 & 5, 2016 at the Sheridan Holiday Inn and the 96th Convention is scheduled for February 3 & 4, 2017 in Casper.

A little tidbit more from the **Land Surveyors' Association of Washington about the NSPS 100% Initiative:**

Montana made NSPS membership dues a budget item (approximately \$8,000 per year).

Wyoming raised membership dues to cover the NSPS affiliation.

Idaho raised their membership fee by \$40 to cover the cost (lost a few members).

Alaska raised dues to cover the added cost (lost a few members but it evened out over time).

Arizona raised annual membership dues to cover the additional cost of the 100% NSPS dues.

New Mexico - probably going to take additional money from what we give individual chapters. Each chapter gets a certain percentage of the dues based on the number of members but chapters have reported a surplus of funds, also looking into fundraisers such as auctions and mid-year conferences.

Utah raised the dues of all in-state PLS members by \$40 to cover their membership in the NSPS. Students, out-of-state PLS's, associates, etc. did not get affected by this change. Although every class of member went up \$10 as of the last board meeting - meaning in-state PLS members are paying \$50 more than last year, not just \$40.

Oregon raised membership dues to cover the increase.

California – didn't sign MOU.

Colorado is not participating at this time with NSPS, however we are discussing it. The consensus at the moment is we would add it to our fees if we go the 100% (knowing members may be lost).

Nevada raised dues in 2013 to cover. In 2014 the Board opted to pay the dues out of the State budget.

Washington – covered additional \$40 from State budget in 2013, but is looking for a sustainable plan.

[End of report]



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Colorado State Office
2850 Youngfield Street
Lakewood, Colorado 80215
www.co.blm.gov



CO-956
9637

Mr. John B. Guyton, Editor
Side Shots
3825 Iris Avenue
Suite 395
Boulder, Colorado 80301

Dear Mr. Guyton,

This letter is to inform you of the availability of a portable USB hard drive with case containing the rectangular field notes from the Colorado surveys of the General Land Office and Bureau of Land Management from 1858 to 1998. This 500 GB drive of field notes can be purchased in the BLM Public Room, located at 2850 Youngfield Street, Lakewood, Colorado, 80215, at a price of \$100.00. For phone orders, the primary contact is Merica Block, Lead Contact Representative, Colorado State Office, phone: 303-239-3600, e-mail: mblock@blm.gov.

With some exceptions, images of all rectangular and mineral plats for Colorado can be found at <http://www.glorerecords.blm.gov>. Rectangular field notes for Colorado from 1999 to the present can also generally be found online. Mineral survey notes are not yet available online. All rectangular plats, mineral survey plats and field notes can still be found in the BLM Public Room, 2850 Youngfield Street, Lakewood, Colorado, 80215.

For further assistance, contact Randy Bloom, Cadastral Survey Branch Chief, phone: 303-239-3856, e-mail: rbloom@blm.gov.

You may circulate this letter among the membership of the Professional Land Surveyors of Colorado.

Sincerely yours,

Randy Bloom
Chief Cadastral Surveyor for Colorado

PLSC Board of Directors Meeting Notes

April 24, 2014; 4:00 PM, Greenwood Village, CO

Call to Order: (Roger)

Recognition of PLSC Board Members and Officers:

Officers: Roger Nelson (Central), Mike Bouchard (VP - Southern), Terry Maw (Treasurer - Southern), and Becky Roland (Exec. Dir.).

Board: Todd Beers (Central), Alan Blair (Central), Bill Buntrock (Central), Patrick Green (Western), Leif Joy (NW1/4), Peter Krick (Western), Parker Newby (SW), and Kayce Keane (Northern).

Exofficio: Brian Dennis (CSRN)

Nonvoting: Warren Ward, Tom Adams (Past President), J.B. Guyton

County Surveyors Representative: Patrick Green – Also Board Member

Present: Roger Nelson, Becky Roland, Todd Beers, Alan Blair, Patrick Green, Leif Joy, Peter Krick and J.B. Guyton

Absent: Mike Bouchard, Terry Maw, Bill Buntrock, Parker Newby, Kayce Keane, Brian Dennis, Tom Adams and Patrick Green

2: 2013 Budget –Becky Roland.

2.1 –2014 Budget Review – Becky to send final 2013 financials to the Board

Reviewed current financials

Becky to send current Chapter member disbursement

3: PLSC Communications between membership and Executive Director:

Email:

3.1 – Required response emails. – expected to reply per subject line

3.2 – General Information emails. – not necessary for response

3.3 – Executive Director required responses and timeframe.

Becky is hiring an assistant to assist with communications. Roger has asked that an auto response be added to email when out of the office. Response within 24 hours for calls. Consumer calls are pointed to DORA, CFedS or PLSC member list.

Website: - Updates, Protocol, etc. – Becky Roland

3.4 – Authorized Access – Becky Roland & Alan Blair – Becky will send Alan written instructions on web access.

Need to have a system for document storage for Summit planning, minutes, etc. Possibly have a PLSC cloud storage accessible to Board members. Alan will gather information on Google Drive for Board review.

3.5 – Posting PLSC BOD meeting minutes (Member only) – need to post. Becky will get this posted as member only.

3.6 - PLSC Website Issues Updates: – what about renewals? Becky will check the spelling of surveyors on the application.

3.7 – Colorado Monument Record streamed into Google Earth Mapping. Donation to Don Lambert to maintain this site was made at the Survey Summit.

3.8 – Hosting BLM Records – PLSC would be a second host in case there is an issue with the BLM site. Becky will find out costs for hosting large amount of data. Roger will talk to Randy Bloom about the amount of files and format. Need to add a link to the BLM records on the home page (Patrick will send the link to Becky).

Social Media:

3.9 – Should management of “LinkedIn,” “Facebook,” and “Twitter” accounts be outsourced? Need to consider how often PLSC would have information to post through social media – what are other companies paying for their social media presence? Add a question on a member survey to see how many members actually access these sites/ communication methods. Send this with the survey for NSPS membership being included in PLSC membership. The NSPS survey needs to evaluate the price sensitivity to adding NSPS membership (ex: PLSC covers half, etc.). Becky will work with NSPS to complete the draft survey for review.

There are some items that we want posted that need to be provided to us, which are listed below:

1. One paragraph or less, descriptions of each PLSC committee describing its purpose and the chair name and contact for each committee.
 - a. Todd will draft descriptions for Education Committee
 - b. JB will draft descriptions for Publications Committee
 - c. Add Steve Parker for GIS in the Rockies. Steve will work with Kayce to draft a description.
2. Suggestions for an expanded “Mission” & “Purpose” Statement that is inviting and explains better the PLSC goals – Maintain, facilitate, support and improve the profession of land surveying in Colorado. Need to better define PLSC as supporting the profession (not regulating).
3. Becky Roland is to post expanded mission write-up from Roger Nelson.

4. 2014 Surveyor's Summit, Chair Todd Beers: 2015 Apprentice -
 Venue, Sponsors, Tract assignments, speakers, advertisements.
 4.1– Review of Conference Finances and closeout.
 4.2 – List of 2015 Conference Activities with Due dates.
 4.3 –Debrief of conference challenges and successes.
 Revise # of tracts?
 Good participation across the Chapters.
 Consider fewer tracks – 3 on Thurs/Fri and 2 on Saturday.
 Had some last minute speaker cancellations that had to be filled late.
 Todd sent speaker evaluations to the speakers.
 Todd will send the evaluation summary to the Board for their review.
 Need to review handout/CE production – people changing tracks, leaving early, etc. (reducing tracks might help – volunteers available to review sign-in sheets vs. certificate).
 2015 Apprentice – need to have two co-chairs that have offset tenures on the Board (Kayce Keane and Steve Parker have expressed interest. Kayce would chair the committee in 2016.).

5: Bob Stollard's House

5.1 – Rental income payments?

Because PLSC did not have a formal lease agreement, HUD cannot pay PLSC for those months. HUD is considering if rental income can be paid to the Stollards for PLSC to ask to be reimbursed.

6: Review PLSC 2014 Goals

All Chapter Membership Drive - Status

– Financial Stability

– Public Outreach - Status

- CSRN GPS Day – Status of CSRN? Brian Dennis Appointed Pres.
- Trig Star – PLSC provide State wide sponsorship?

- \$500.00 to provide timely funding to the teachers until City of Aurora can provide funding – currently there is a two month delay from the beginning of the program and when Aurora can pay.

MOTION: To approve PLSC funding Trig Star \$500 if the City of Aurora can accept the funds from PLSC. (Blair)

Beers seconded

Approved by unanimous consent.

Twist Program (2 – Teachers 2014?)

Mike Bouchard reported on success in 2013. There were no teachers interested by the deadline. There is still an opportunity to participate if a teacher can be identified. JB has some leads for interested teachers.

- JB will send information to the Board who can forward to teachers they know who may be interested.
- The Board is encouraged to send any possible

candidate's information to Mike and JB.

- Google Streamed Monument Records
- Hosting BLM Records on PLSC website?

7: Board Meeting Travel – Location? (SW or Western)

7.1 – Need to determine where (SW June 13-14 in Durango; Western May 16)

7.2 – Coordination of rooms, carpool, etc.

Board consensus is likely to meet at the Southwest Chapter. Roger will send out a request for participation and then Becky will coordinate rooms for discounted rate.

8: PLSC Elections: President, Vice President, Treasurer, 4 BOD's Positions (Todd Beers, Peter Krick, Bill Buntrock, & Parker Newby). – Board is asked to solicit for directors. Mike Bouchard is willing to serve as President.

Assignment of new PLSC GIS in the Rockies representative. – Steve Parker

9: Reports:

Executive Director, Becky Roland – Revise By-Laws to remove procedures – Becky to send to Board
 NSPS Governor – Warren Ward – report will be sent at a later date.

WFPS Delegates Mike Bouchard and JB Guyton - JB reported in *Side Shots*.

Front Range Surveying and Mapping Program, JB Guyton, Chair

Lynn Paton on-line program.

Three meetings with Apostol Panayotov, PhD at UCD – need an endowment to produce an ABET accredited bachelors program. Most students are out of state and even out of the country. PLSC should encourage membership to create and offer internships and to provide advertising on the PLSC website.

10: Standing Committees

Legislative Committee – Alan Blair, Chair –

Status of ILC revision – completed panel discussion on plot plan and there is interest in pursuit; 208 – Veterans or active military are provided special treatment to reinstate their license. PLSC is in support for those serving overseas when renewal is due, but not in support of individuals that simply let their license lapse.

Survey Monumentation and Standards, - Inactive

Membership Committee, Mike Bouchard, Chair –

All Chapter membership drive, New SI's and LS's free membership invitation

Education Committee, Todd Beers, Chair –

Apprentice 2015 – Kayce and Steve

Becky will send list of members interested in serving on the Education Committee

GIS-In-The-Rockies – Steve Parker – Assignment of new representative. – no additional report

11: Chapters

CSRN – Jan Sterling, President – Status of CSRN – no report.

NGS – Height Mod meeting next week in Mobile – can join remotely; will send info to post on website; CDOT is sending one person; focus on disaster recovery; encouraged Board to provide input if desired.

National Surveyors Week – CDOT offered to do two points in each region; GPS on benchmarks; OPUS Share provides a way to record data; Pam would like to promote this throughout the year; Pam is willing to present on this

topic; Pam has information on Pennsylvania's program as a benchmark; Roger suggested contacting Brian Dennis with CSRN; Roger encouraged Chapters to invite Pam to present on OPUS Share; Pam will be working on calibration Baseline measurements in Spring/Summer and can present to local Chapters then; Pam was asked to send schedule to Becky to post on the website when known.

12: Next Meeting Date and Location: SW Chapter Meeting June 13-14, tentative.

13: Adjourn: 5:56PM

PLSC Board of Directors Meeting Notes

June 13, 2014; 5:30 p.m., Durango, CO

PLSC Board of Directors Meeting Agenda

June 13, 2014; 5:30 p.m., Durango, CO

Call to Order 5:35PM: (Roger)

Recognition of PLSC Board Members and Officers:

Officers: Roger Nelson (Central), Mike Bouchard (VP - Southern), Terry Maw (Treasurer - Southern), and Becky Roland (Exec. Dir.).

Board: Todd Beers (Central), Alan Blair (Central), Bill Buntrock (Central), Patrick Green (Western), Leif Joy (NW1/4), Peter Krick (Western), Parker Newby (SW), and Kayce Keane (Northern).

Ex-officio: Brian Dennis (CSRN)

Nonvoting: Warren Ward, Tom Adams (Past President), J.B. Guyton.

County Surveyors Representative: Patrick Green – Also Board Member

Present: Roger Nelson, Terry Maw, Becky Roland, Todd Beers, Alan Blair (phone), Bill Buntrock, Parker Newby (phone), Kayce Keane (phone), Brian Dennis, J.B. Guyton (phone).

Absent: Mike Bouchard, Patrick Green, Leif Joy, Peter Krick, Warren Ward, Tom Adams.

Determination of Quorum (Terry Maw – at least 6 voting members)

Welcome of Guests: Pam Fromhertz

Additions, deletions and modifications to agenda: Pam Fromhertz will report after Minutes approval.

Agenda approved by unanimous consent.

1: Approval of Minutes from Previous meeting(s): (Terry Maw)

Reviewed Action Items from last meeting.

Becky Roland is to post expanded mission write-up from Roger Nelson.

MOTION: To approve as amended. (Maw/Bouchard) Approved unanimously.

1.5: Pam Fromhertz Report

Pam will be developing a session for GECO and asked for presenters (Grand Junction – Sept. 23-25).

Pam will send the June-August baseline re-measure event information to Becky and the Board.

Pam will be asking Chapters for meeting dates to present SHARE database information and why it is important. Pam will submit a more formal report on this, as well.

2: 2014 Budget – Terry Maw & Becky Roland.

2.1 –2014 Budget Review – Terry Maw reviewed numbers with Board – home sale last year was \$117,000.

2.2 – Scholarship Funds, Checking & Savings Accts. – Terry Maw reviewed numbers with Board. Southern Chapter needs to send back-up on CFeds scholarship award for reimbursement.

2.3 – Membership Renewals – Becky Roland will send list this week once verified against ProPay activity.

MOTION: To review the 5 PLSC checking accounts (3 operational and 2 scholarship) at Wells Fargo and consolidate to two or three accounts (1 operational and 1-2 scholarship based on donor intent). (Bouchard/Maw). Approved unanimously.

Decision will be made by Maw, Nelson, Roland and Bouchard.

Roger Nelson noted that the funds from the home sale should go towards a scholarship or a program named after Stollard. JB Guyton suggested a small donation towards an endowment for a surveying program in Colorado. Roger Nelson asked that JB Guyton bring this request forward when there is more

information and the program is farther along.

MOTION: To make the Stollard house sale income temporarily restricted income to be used only upon Board approval. (Nelson/Bouchard)
Approved unanimously.

MOTION: To distribute the final distribution to participating Chapters of the 2014 Summit based on current financial status of PLSC. (Beers/Maw)
Approved by unanimous consent.

3: 2014 Surveyor's Summit, Chair Todd Beers:
Apprentices: Kayce Keane & Steve Parker
Venue, Sponsors, Tract assignments, speakers, advertisements.

3.1 – # Tracts Set for 2015 – possibly modify by reducing number of tracks each day to maximize attendance across the program (3 tracks-TH/F and 2-3 on Saturday).

3.2 – List of 2015 Conference Activities with Due dates.

3.3 – Notify IRWA contact Al Morganfield as soon as agenda is set and additional outreach to other groups (assign to someone on Committee).

Todd Beers will meet with Kayce Keane, Steve Parker and Becky Roland and then set a meeting with the Committee.

Todd Beers will distribute evaluation form survey and the list of speakers/topics for this year.

The focus for next year will be "Education".

February 26-28, 2015 – at Arvada Center – Doubletree is contracted with for rooms.

4: Review PLSC 2014 Goals

- All Chapter Membership Drive – Status – While not as successful, still need to continue as it is very important. Mail is good first step, but phone call makes the difference.
- Financial Stability
- Public Outreach - Status
 - CSRN GPS Day – Status of CSRN? Brian Dennis Appointed Pres.
 - GPS Day – not in 2014 but in 2015 at a different venue and expand focus to include parents, college students, etc.
 - Considering paid speakers (not to compete with PLSC Seminars)
 - Trig Star – PLSC provide State wide sponsorship?
 - \$500 to assist Aurora in providing funding earlier. Jan Sterling will contact Becky Roland when check is needed.
 - Twist Program (2 – Teachers 2014?)
 - Due to personal reasons, Colorado participants were not able to attend. Twist still had enough participants to produce program for this year.
 - Hosting BLM Records on PLSC website?
 - Roger Nelson is still working on this.

■ Parker Newby noted that BLM is making field notes available for \$100 upon request. Roger Nelson noted this may not be a viable option for PLSC to host this type of information.

■ Roger Nelson suggested PLSC promote potential interns/internships on website. Need to reach out to engineering/surveying programs across the country. Parker Newby will promote this program of PLSC's to Fort Lewis/CSU. Becky Roland will obtain a list of programs in the country and work with web programmer on setting up an internship program on the website that posts internship opportunities and interested individual's information.

5: **PLSC Elections:** President, Vice President, Treasurer, 4 BOD's Positions (Todd Beers, Peter Krick, Bill Buntrock, & Parker Newby).
Assignment of new PLSC GIS in the Rockies representative.

Nominations:

President: Mike Bouchard

Vice President:

Treasurer:

Board Member #1:

Board Member #2:

Board Member #3:

Board member #4:

Ballot will have to be sent by December 24, 2014.

Bill Buntrock has 2 Board Names and possibly other nominations. He will provide an update to the Board and request candidates send the required information for the ballot.

Roger Nelson will send a request for Chapter President, VP or Treasurer to make an announcement at their next meeting.

Roger Nelson will send a Call for Nominations to JB for SideShots. Becky Roland will send a Call for Nominations email to the membership.

6: Reports:

Secretary-Treasurer, Terry Maw – Terry Maw will be retiring from his employment on July 4. He was encouraged to submit an article to SideShots on his career.

Executive Director, Becky Roland – Revise By-Laws to remove procedures

Picking up books from others – Becky Roland will send the donor's contact information to Roger Nelson, who will send a letter of appreciation

Phoenix AMC has added a staff person, Anette Sadler.

NSPS Governor – Warren Ward – not on call – still need write-up for members survey on NSPS membership

WFPS Delegates Mike Bouchard and JB Guyton – WFPS is redefining their direction. Mike Bouchard

will submit an article to SideShots on this. California is working on an MOU with NSPS. Mike Bouchard encouraged Colorado to be a part of NSPS. 46 states have signed on so far and two are considering.

Front Range Surveying and Mapping Program, JB Guyton, Chair

University of Colorado – making progress and reported on endowment earlier in the meeting. Doctoral and Masters programs online. He is working on adding a Bachelors program. JB Guyton will define the audience that could be potential donors for Board consideration/ review.

7: Standing Committees

Legislative Committee – Alan Blair, Chair – Status of ILC revision, - has not heard if Board Rule was changed – Alan Blair will report to the Board when known

Membership Committee, Mike Bouchard, Chair – All Chapter membership drive, New SI's and LS's free membership invitation – download list from Surveyor

Board in December for new LSI and PLS

Education Committee, Todd Beers, Chair –

Apprentices: Kayce Keane & Steve Parker. Becky Roland will add language to member renewals/ applications to point them to the Committee page to contact the Chair of the Committee if interested in serving.

8: Chapters

Southwestern – Josh Casselberry, President –

Peter Krick passed on the appreciation of the Chapter members for the PLSC Board meeting in Durango. Terry Maw suggested hosting the Board Meeting in conjunction with the Chapter Board Meeting to get more attendance at the PLSC Board Meeting or host the PLSC Board Meeting before a general member meeting.

9: Next Meeting Date and Location: Merrick or TBD, September 10 at 4PM.

10: Adjourn: 7:24PM, Maw/Bouchard

PLSC Treasurer's Report - Fund Balances

Account	Date	Balance	Date	Balance
PLSC Business Checking - Wells Fargo (1)	5/31/14	\$ 30,422.77	9/19/13	\$ 30,400.74
PLSC Business Checking - Wells Fargo (2)	5/31/14	\$ 50,687.98	9/19/13	\$ 70,317.17
PLSC Business Checking - Wells Fargo (3)	5/31/14	\$ 100,806.56	9/19/13	\$ 23,656.43
Total Checking		\$ 181,917.31		\$ 124,374.34
PLSC Scholarship Fund Savings - Wells Fargo	5/31/14	\$ 50,791.88	9/19/13	\$ 50,754.91
PLSC Scholarship Fund - Wells Fargo	5/31/14	\$ 1,394.62	9/19/13	\$ 139.62
Merrill Lynch	3/31/14	\$ 24,029.33		
Franklin Templeton Investments	3/31/14	\$ 33,810.33		
American Funds	3/31/14	\$ 81,902.87		
Total Scholarship		\$ 191,929.03		\$ 50,894.53
Total, both balances		\$ 373,846.34		\$ 175,268.87

CSRN

The CSRN has been discussing the creation of "For Fee" and "For Free" micro workshops that are GPS/GNSS/Network specific. At the June PLSC meeting in Durango, the CSRN attended and this topic was discussed with the PLSC Board and attending members and the CSRN was approved to move forward with this concept. This will not be a replacement for the CSRN's participation in the annual PLSC Rocky Mountain Summit Conference but more of an extension of such. The CSRN will be searching for speakers both paid and volunteer to speak about a variety of GPS/GNSS topics. We want to provide topics and speakers for the beginning surveyor and for the advanced to continue our education outreach efforts and make the workshops interesting and educational for all levels. It is our intention to separate the beginning/intermediate/advance courses to have a more focused workshop for each topic and speaker. If you are interested in being a speaker for one of these workshops or have a great topic idea, contact us at info@csrn.us or contact Brian Dennis at 719-337-1262 and share your ideas. We will be advertising each workshop on the CSRN website at www.csrn.us and the PLSC website at www.plsc.net. Stay tuned for details.

We are currently planning GPS Day for April, 2015. We will send an email blast soon with the exact date/place/time of the event so start marking your calendars for April to attend. We are also looking for volunteers to help organize and operate the event, so let us know if you are interested and at what level you would like to participate. This is a free event each year and we look forward to seeing you there as a participant or guest.

Brian Dennis, PLS
President, CSRN
Brian@titancon.net

CCPS

The CCPS is happy to announce that the newly constructed (2013) "Arsenal Baseline" has been spared by recent construction and will be measured by NGS this summer. We should all be able to utilize this new resource very soon.

We are currently offering the "Colorado Land Surveying Laws – 2014 Sunset" booklet to our membership. This booklet is an invaluable reference and can be obtained at one of our general membership meetings.

The upcoming CCPS general meeting is scheduled to be held at the Aurora Doubletree Hotel on Thursday, August 28th. Meeting and speaker details will be announced shortly. The subject of April's general membership meeting was a recapitulation of Paul Lukacovic's 2,650 mile adventure on the Pacific Crest Trail from the Mexican border to Canada. Along the way he encountered desert heat, miles without water, snow covered mountain passes, treacherous stream crossings, bone soaking rain, snow storms, beautiful views, and amazing people. Paul gave an inspiring presentation about his hiking experiences and shared photos and comedy tidbits from a great adventure.

We have seen increased attendance at our meetings this past year and would love to see that trend continue. Free dinner, cash bar, great speakers! Come out and support your chapter.

If you know of anyone pursuing an education in land surveying or a related field please advise them to review the scholarship application on our website and contact David Kuxhausen at 303.925.1400 for more information.

The 2014 CCPS board of directors consists of:

Officers; Christopher Raml, President; David Kuxhausen, Vice President; Mark Wilson, Secre-

tary; Aaron Willis, Treasurer. The directors are Shawn Clarke, George Robinson, Devon Arnold, Terry Pickering, Kevin Kucharczyk, Ken Baker, and Tony Perazzo. Thanks to all of you who serve on our board.

Please visit us at www.centralcosurveypro.com for contact information, meeting details, and general CCPS news.

Christopher Raml, PLS
CCPS President

NC-PLSC

We've had a couple meetings since the last *Side Shots* submittal. For our April meeting we had the pleasure of having Earl Henderson, President of Zenith Land Surveying and Board Chair for DORA, come in and talk to us about lessons learned from sitting on the State Board of Architects, Professional Engineers and Professional Land Surveyors. Each attendee walked away with something learned and ways to improve their professional work.

For our May meeting, we had Jason Emery, President of Boulder Land Consultants and County Surveyor for Boulder County, provide a presentation on the flooding in Boulder and its effects on land surveying. Very fun topic to learn about and discuss among peers.

Per usual, we are now on our summer hiatus (June thru August), with our next meeting in September. I'm happy to say that Laine Landau, PLS will be the new Chapter President. I'm certain she'll do a terrific job and look forward to seeing how she'll guide the Northern Chapter.

There will be email voting in the coming months for some positions on the Board of Directors. If you are interested in holding a position, please email me. Great way to get involved and great resume builder.

Kayce D. W. Keane, PLS
Northern Chapter President

NW 1/4 CLS

The NW1/4 met in Hayden, Colorado on April 2nd at the BBQ Restaurant on the west side of town. The main subject of the meeting was bidding on projects, both private and public. We have noticed certain business practices taking place in this area, and perhaps others, that a number of members were concerned about. Specifically, individuals, particularly Realtors, would call around the area looking for pricing on a certain type of survey. In some cases, these individuals would call one or more surveyors back and indicate they would get the job if they could match the price of another surveyor, even though Surveyor #2 originally had the higher proposal than Surveyor #1. Even though the pricing structure could not be substantiated and in some cases, the Realtor made up an even lower number which Surveyor #2 felt compelled to match.

The result of this type of practice is that it drives prices down. How low can you go? Not how good a job you can do, or what type of service you are providing, but how low can you go?

Some of us had noticed this same practice in public projects. In some of these cases, if proven, it is actually illegal and a form of price fixing. The tough part is proving it, as the contractor is holding the information and may not have released it to CDOT, the FAA's engineer, County or City. They simply take the lowest number out of the pile and call a surveyor they would prefer to hire and ask if they can match that number. We all agreed it was unethical...illegal is much tougher to prove as witness the shenanigans on Wall Street! And we all agreed it had the net result of driving prices down. This is in a time when the surveying industry is recovering from the Great Recession and hourly rates are just

starting to get near 2007 rates in many cases-seven years ago!

We all know there has been no inflation during this last seven years...food, gas, insurance and the necessities to operate a surveying business must be the same as they were seven years ago. Ha!

That was the net of our roundtable discussion. We have all heard it constantly throughout the years, but if the surveying industry wants to be treated as professionals, they need to act accordingly. Once we name a number, we should strive to stick to it. Maybe we blew the bid or proposal. Tough luck, do better on the next one. That's how we get better!

Brian T. Kelly
President, NW 1/4 Chapter

SCPLS

The SCPLS May members meeting hosted Robert Pisciotto, PLS, who gave a presentation of the new City of Colorado Springs 5x5 block corner records system now showcased at the top of the reference page of the chapter website. Check it out. In June, Spencer Barron, PLS, of Barron Land was appointed by the board of directors to serve as director (2014-2015) in the place of John Sakariason, PLS, who resigned to relocate to New Mexico. The 26th Annual Paul G. Grout Memorial Golf Tournament and Barbeque is scheduled for August 9th; sponsors reserve your holes ASAP, and players put your best teams together. Download your sign-up form at scpls.net. And, join us Tuesday August 19th @6:30 PM in Colorado Springs for a members meeting. Paul Lukacovic, PLS, 32yrs BLM Surveyor presents his once in a lifetime adventure, hiking 2650 miles on the Pacific Crest Trail.

Steve Parker, PLS CFM
SCPLS President

SWC-PLSC

The SW-PLSC held our most recent chapter meeting on Tuesday, May 13 in Durango. We would like to thank Michael Boeckman, PLS for being our guest speaker. Michael works for the BLM and spoke to us about "bona fide" rights.

Our Four Corners Survey Seminar, which was held Friday and Saturday, June 13 and 14, 2014 at Fort Lewis College in Durango was a success. Speakers included Kristopher M. Kline, Michael Boeckman, and Jan Van Sickle.

The 2013 Colorado Land Surveying Refresher Course is now available to surveyors in the SW Chapter area. This course offers a review and self-study plan for those taking the National Council of Examiners for Engineering and Surveying (NCEES) Fundamentals of Surveying (FS) and Principles and Practice of Surveying (PS) examinations. Attached is the order form for the Refresher Courses. These are on DVD and being offered to the Chapters at a 25% discount. Please contact Parker Newby at pnewby@goffengineering.com with questions or to request an enrollment form.

Our next meeting is scheduled for Tuesday, September 9 here in Durango. Our meetings are the second Tuesday of every other month. Look for guest speaker information, time and location in the upcoming email. Southwest Chapter members are encouraged to show up and receive a copy of Paul Bacus' Colorado Land Surveying Laws Booklet.

Joshua J. Casselberry, PLS
President, SWC-PLSC

CHAPTER NEWS

WCLS

Our May 16th Spring Seminar was very well received, along with our guest speaker, Mr. Richard Vannozzi from the University of New Hampshire. The two topics of the seminar were: "Perspectives on the Future of the Surveying Profession" and "GPS: To Infinity and Beyond".

We held a WCLS business meeting immediately following the seminar with the main topic of conversation being focused on sponsoring additional scholarships for young and upcoming surveyors.

Our regularly scheduled July meeting was canceled due to the extremely large number of members on family vacations. Our next regular meeting of WCLS is scheduled for September 10th and will be held at the Grand Junction City Hall. Our guest speaker has yet to be determined.

Peter T. Krick
President, WCLS



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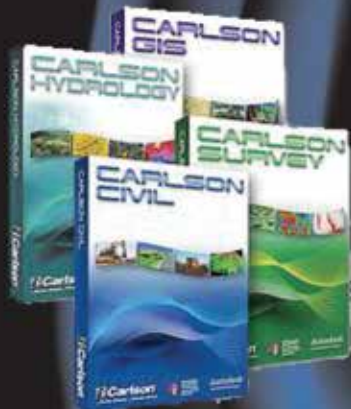
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