

February 2008

SIDE SHOTS

Professional Land Surveyors of Colorado

Volume 39, Issue 1

Fall Technical Conference



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Dear Fellow Members,

This issue begins the final year of my term as PLSC President. It has been an honor and a privilege to promote the professional and legislative interests of our membership and to represent the PLSC to the national organizations, to our governmental leaders and to members of the public. When my term is over, I would be pleased to follow in the footsteps of other "ex-presidents" and continue to serve the PLSC in whatever capacity the Board may want in 2009 and beyond.

After the sudden and untimely loss of our friend and mentor, Art Hipp, in September, the Board approved the appointments of Gene Kooper as our new Executive Director for the duration of my term as President, and Diana Askew as our new Secretary/ Treasurer. They have done a superb job thus far in picking up where Art left off, and in tending to the necessary administrative tasks. We are also very fortunate in having Lisa Isom continue to represent the PLSC so well on a national level as she has done in the past.

The Fall Technical Session, held last November at the University of Denver, was a great success, due in large part to the efforts of organizers Mike Greer, Diana Askew, Gene Kooper, Tom Adams and Lisa Isom. The classes were well attended, and the written course evaluations were overwhelmingly positive. Thanks to instructors Jennifer Novak (the creative writing workshop), Gaby Neunzert, Gene Kooper, Jill Johnson, Andy Senti, Eric Bittner, Brennan O'Neil, and the honored Chairman of ACSM, Curt Sumner, for sharing their time and talents.

For those of you who attended the general membership meeting after the session, you are aware of the financial difficulties facing the PLSC, and the cost cutting that was necessary to get our income statement out of the red and into the black. I am pleased to report that we are well on our way to getting back on track. We have eliminated our media consultant services and have cut back temporarily on our participation in the national societies such as WestFed and NSPS. And our lobbying efforts in conjunction with the Legislative Committee have been reduced for now, resulting in no anticipated new legislation in the next session at the State Capitol. These cuts were necessary, but most are expected to be restored as our cash flow improves. Diana Askew is providing the Board with financial reports on a monthly basis, to give us the information needed to turn this situation around quickly.

Several new challenges will present themselves to the PLSC this year, including our response to the financial and syllabus problems of Metropolitan State College of Denver.

Because the cost of producing *Side Shots* is directly related to the number of pages in each issue, we are putting some items that have been printed in the past on the website instead, www.plsc.net. You can find a listing of these items on page 4.

The next Board of Directors meeting will be held on Friday, February 22, 2008 at the Tivoli in downtown Denver, following the Technical Session for the Central Chapter. I look forward to seeing many of you there.

Sincerely, John B. Guyton, PLS



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SIDE SHOTS

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*Side Shots is the official publication of the Professional Land Surveyors of Colorado, Inc.
and is published quarterly for the betterment of the surveying profession.*

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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.

As part of the agreement, funding will be provided to Metro on behalf of the school's Surveying and Mapping Program. The funding will help the program to achieve the highest academic standards and ensure quality surveying work in Colorado for years to come.

Please send your donation to:
Colorado Surveyors
Education Foundation, Inc.
c/o Diana Askew, PLS
PLSC, Inc.
PO Box 704
Conifer, CO 80433

Education is the Future!

This month on www.plsc.org

1. Minutes of the PLSC Board of Directors meeting on September 7, 2007 held at Pikes Peak Community College;
2. PLSC Legislative Committee Draft Minutes, October 17, 2007;
3. Minutes from the Western Federation of Professional Surveyors held in Las Vegas on September 15, 2007;
4. Action List from the Western Federation of Professional Surveyors;
5. Minutes from the meeting of the Colorado Association of County Surveyors held on July 12, 2007;
6. Thank you letter from Historic Georgetown, Colorado for our donation to the Wheeler Monument preservation project;
7. Notice of Cherry Creek Baseline closure; and
8. Information about the preservation of records when a railroad abandons their rights of way.

On The Cover:

(Top photo) Jeffrey B. Jones (right), NSPS Area 7 Director from Cheyenne, Wyoming, presents an official "Final Point" monument to the children of Art Hipp: his son Bill (left) and daughter Sue McKellips (center) at the Fall Technical Conference.

(Bottom photo) (left to right) Presenter Curt Sumner, CSRN Director Brian Dennis, Board member Mike Greer, and Jeffrey Jones.

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October 29, 2007

Mr. John B. Guyton
3825 Iris Ave., #395
Boulder, CO 80301

Dear Mr. Guyton and all of our PLSC Family:

It was with great pride and more than a few tears that we enjoyed the November 2007 issue of *Side Shots*, the Art Hipp Memorial Issue. How can we thank you all for the touching and heartfelt words shared by so many? With grace and love, we say “Thank You” — Art would have been so proud...

As his family, we always understood the special and important part that his profession and his fellow surveyors played in Art’s life. He truly was a dedicated and committed surveyor. He was dedicated to supporting his counterparts in the industry. This certainly has been exemplified over the years, with his involvement in education, support, and communication (such as *Side Shots*). This was his life’s passion! It kept him going, alive, and involved for many years, in particular in the years after he lost his wife, our mom, Catherine.

Thank you to everyone who helped Art as the years went by. We appreciate your efforts in so many ways! Art considered the members of the surveying world as his family and all of you demonstrated that so often, in your recognition, your support, and your admiration for Art. We will always be grateful for this...

We wish you best of success with PLSC and *Side Shots* in the future and, with our utmost gratitude and appreciation, we say Thank You once more for being such an important part of Art’s very happy and blessed life.

Sincerely,

The Art Hipp Family

I Have Been There

By Gaby Neunzert, PLS

Over the years Art and I had many trips down memory lane about his involvements as a doer with matters of surveying. Every time I asked him about an area or event, he would answer with a smile and a twinkle in his eyes state, "I have been there". Only recently would we look at each other and comment about an event with "I wish we could have been there" and worse yet he would describe in great detail a route or the beauty of the landscape and then neither of us could remember the name of the nearest town. Just a few events which would have been less memorable without Art's presence; the remonumentation of the 6th Principal Meridian or memories brought back from the Four Corners which were acknowledged with "yes, I have been there". And even though witnessed by probably few, Art left many footprints to be followed in Wyoming, the Pawnee and Comanche Grasslands, resurveys of the public and private land

boundaries along the Rocky Mountains through Colorado or a resurvey of mining claims; all perpetuated with an "LS 11607" cap.

Not only was Art a doer out in the field, but his legacy with the profession is an everlasting tribute to him. I remember Art taking notes at a board meeting in the 1960's and then informing everybody that there was not enough money in the till to mail out the previous minutes. There were many times in the 1970's when Art offered "fatherly" advice to a young surveying teacher as chairman of the advisory board for the Community College of Denver surveying program. Also, many hours were spent to develop a comprehensive program and to provide a smooth transition for students into Metro. More recently and aside from making almost daily trips to the bank with "company" business, there was the ongoing need to wait for everybody to submit reports and meet the deadlines for publishing

Side Shots; and yes, let's not forget that for years the address labels had to be printed and stuck by hand on every issue mailed out. Yes, Art has been there as mister PLSC since 1966 and every issue reflects his work for us surveyors.

Little did I initially know that the daily mail delivery was not a retirement activity. The tall stack, frequently not even fitting into the mail box, contained renewal payments (usually very much appreciated), publications from other societies, and the usual assortment of bills and advertisements (usually not appreciated). The characteristic reply to my suggestion of taking a nap first, was countered with, "I have to do it now and take care of the checks"; and so it went for 6 days of the week.

Art, my friend, I hope that your new home has a swing set and many roses which rival those in your front yard.

—Gaby

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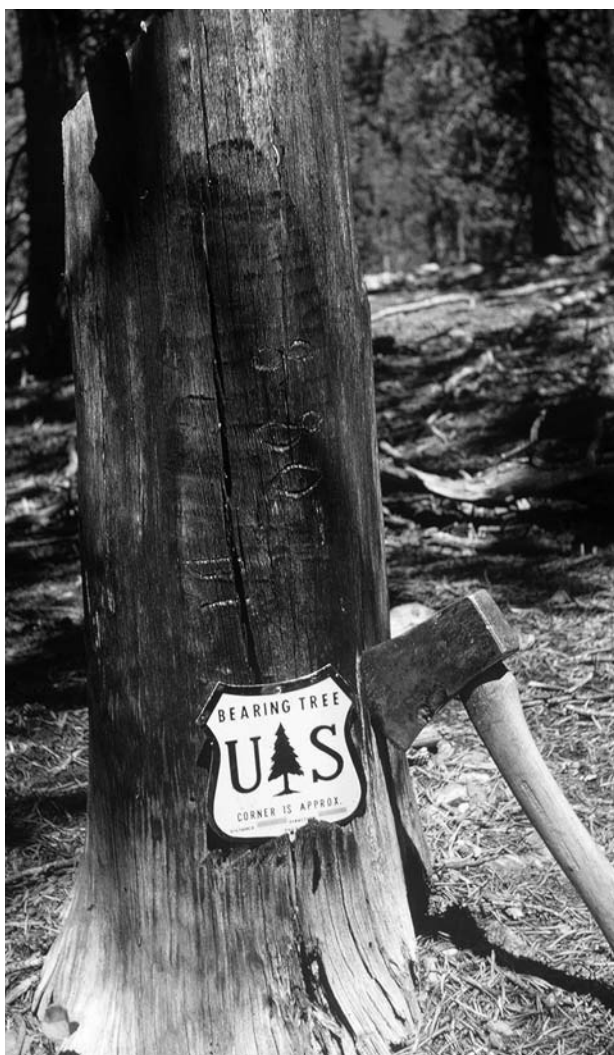
By John Stock, PLS

In forty-one years of living this fascinating adventure called surveying I have met many an individual that has had a huge influence on my life and career. Such a person was Art Hipp. Many of us in the late 70s and early 80s were scrambling furiously to get our abilities up to where our egos were. With Art it was never an issue. The ability was there along with the humility. He tolerated our corporate incompetence in the formative years of PLSC, Inc.,

kept the outfit solvent in hard times with his excellent money management and gently guided our organization into national prominence, all without fanfare.

Art could also change the direction of one's career in a few sentences. For instance, at the annual membership meeting of 1979 (Art to me), "Hey, John there's a vacancy on the PLSC Board and we want someone from the Western Slope to fill it. Are you interested in apply-

ing?" Or, at the same meeting in 1984: "John, Steve Parrish cannot instruct at P3 Advanced Cadastral School this year. Would you like to take his place?" Because of his power and national respect in the profession he could do these things. I will always be in his debt. The year he won the big PLSC award as Surveyor of the Year, Fred Adams may have given him the highest compliment, "he is the heart and soul of the PLSC"!



Photographs of a bearing tree and bearing post accessories and a homestead entry monument taken by Art Hipp during his career with the U.S. Forest Service. Courtesy of his children, Bill and Sue.

Control Points

By Warren Andrews, PLS

To me, the fundamentals and history of surveying are fascinating. For example, where do the trigonometric tables come from? If you as a surveyor had to start from scratch with nothing but a piece of paper, pencil, and a formula, how would you calculate the six functions of an angle? It sounds pretty complex but it really isn't. The six functions are the three primary ones (sine, tangent, and secant) and the three complementary ones or co-functions (cosine, cotangent and cosecant). If you remember, the cosecant is the reciprocal of the sine, the cotangent is the reciprocal of the tangent, and the secant is the reciprocal of the cosine.

So you've already cut your calculating in half if you can come up with the sine, cosine and tangent. But there's one other combination to remember and that is the tangent is the sine divided by the cosine. So now you're down to two numbers, the sine and cosine of an angle that you need to calculate from a formula.

Unfortunately, there's one other gimmick you need to know before you start calculating. The formula needs to have the angle converted from the usual surveyor's degrees, minutes, and seconds to radians which to a surveyor is a mathematician's copout and never comes out exact. The conversion is 360 degrees equals 2π radians where π is equal to 3.14159265359 to 11 decimal places.

Here's an example:

If your angle is say 27 degrees 13 minutes 45 seconds, you need that in decimal degrees which is 45 divided by 60 plus 13 and that result divided by 60 and

that added to 27 which is 27.2291666667 to 10 decimals. Divide that by 360 to get what decimal part of a circle it is (0.0756365741) and then multiply that by 2π to get radians (0.475238611).

If you symbolize the angle by the Greek letter theta (θ) then the Taylor's Series Formula for the sine of theta is $\sin \theta = \theta^3 / 3! + \theta^5 / 5! - \theta^7 / 7! + \theta^9 / 9! - \dots$ on out as far as you want to go. If you've forgotten, 3! (3 factorial) is 1 times 2 times 3 and 5 factorial is 1 times 2 times 3 times 4 times 5 and so on for 7 factorial and 9 factorial, etc.

To put numbers in the formula if you want to check it out:

$\sin 27^\circ 13' 45'' = 0.475238611 - 0.017888911 + 0.000202012 - 0.000001086 + 0.000000003 = 0.475550629$ which checks my HP 32S calculator exactly to 9 decimals.

For the cosine of theta, the Taylor's Series Formula is: $\cos \theta = 1 - \theta^2 / 2! + \theta^4 / 4! - \theta^6 / 6! + \theta^8 / 8! - \theta^{10} / 10! + \dots$

and for $\cos 27^\circ 13' 45'' = 1 - 0.112925869 + 0.002125375 - 0.000016001 + 0.000000065 - 0.000000001 = 0.889183570$ which again checks my HP 32S calculator exactly to 9 decimals. From these two numbers you can calculate the other four trig functions. And that's how it's actually done and how it's hard-wired into any calculator. (You didn't think the calculator stored all those tables internally, did you?) Just be glad you don't have to figure each one of your angles that way.

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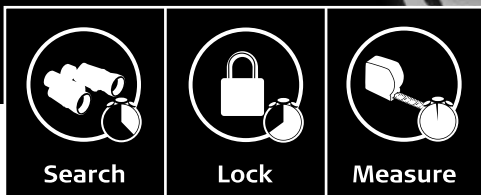
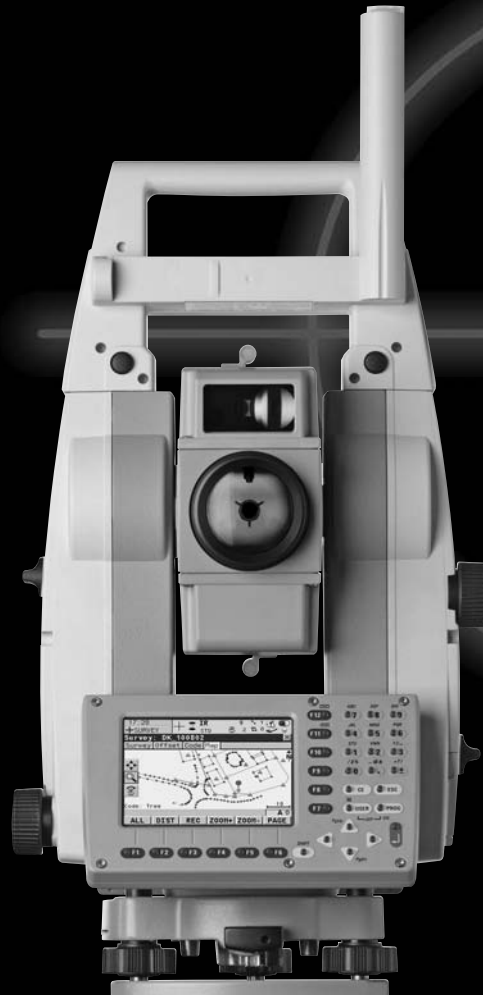
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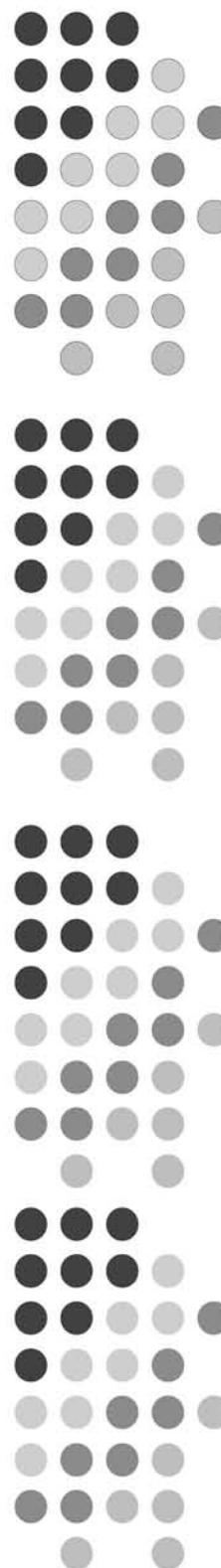
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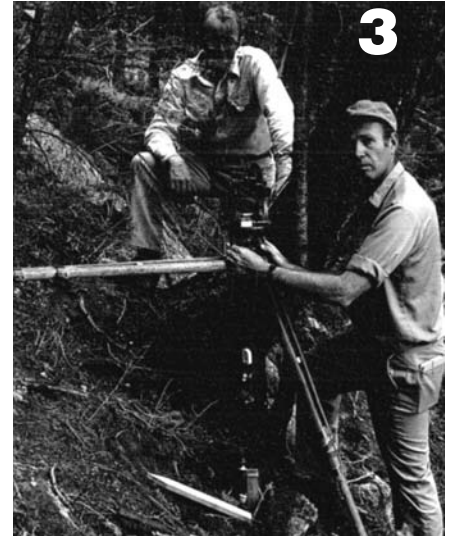
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Do You Recognize Your Peers When They Were Younger?



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



Diana Askew (#1 in August issue)



I am a Jefferson County native and started my career working with my step-father, John (Jack) McLane, PE-PLS in 1976.

I am a past president of CCPS, am currently on the PLSC Board of Directors, and I am the Jefferson County Surveyor. This picture was published in the Vail Daily when I was surveying a water line for the new bridge "Bob" in Avon in March of 1990.

Dan Boyd (#2 in August issue)



The photo shown in *Side Shots* was taken in 1970 while working for Trico of Pueblo West on a project at Berthoud Pass area. It

shows one unit of a two-man team using high tech "Electro - tapes". Presently, I own Dan Boyd Surveying and am the Pueblo County Surveyor.

Doyle Abrahamson (#3 in August issue)



I am Vice President of Surveying at Merrick & Company, where I have been employed for the last 28 years. I am a Professional land surveyor

in fourteen states, a United States Deputy Mineral Surveyor and a past President of PLSC. I have been active in working on surveying legislation in Colorado for the last 32 years.

Kit Shy (#4 in August issue)

This picture was taken in the fall of



1979 or thereabouts in Custer County, Colorado . The photo is of a vintage Chevrolet Suburban. The hippy with the T-16 is there

just for scale. But, since I know very little about the history of the Suburban I will tell you about the hippy. My name is Kit Shy, PLS#19883. I spent my teen years and all of them since in and around Westcliffe , Colorado. I started working for my father (Jack W. Shy PLS#5152) in 1972 right out of High School. We do mostly mountain boundaries and subdivision work but like most small town surveyors we have done a little of everything from measuring the height of Westcliffe's living Christmas tree for a contest to executing a control survey for a major dam rehab project. I have been licensed since 1982 and was a County Surveyor from 1982 until 2005 when I had to give up the job to be sworn in as a County Commissioner. Transits to GPS..... what's next? Who

knows? But I plan to stick around and find out.

Bryan Clark (#5 in August issue)

This picture was taken in 1974, while

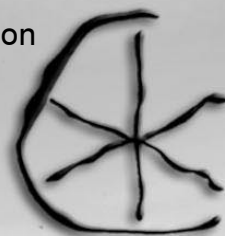


retracing a mineral survey outside of Gibbonsville, ID. It was one of the few times I had the opportunity (?) to survey with a transit. I

started surveying while in junior high school working for my father (Elmer Clark, PLS #2279). Our survey work consisted of well locations and mining claims in the Four Corners area. After I returned from the Marine Corps, I restarted my surveying career. I feel very fortunate to have worked with some very good mentors throughout my career. In 1981, I received my PLS license and since then have been active in the PLSC & CCPS. In August of this year, Governor Ritter re-appointed me to my second term on the State Board of Licensure for Architects, Professional Engineers and Professional Land Surveyors.

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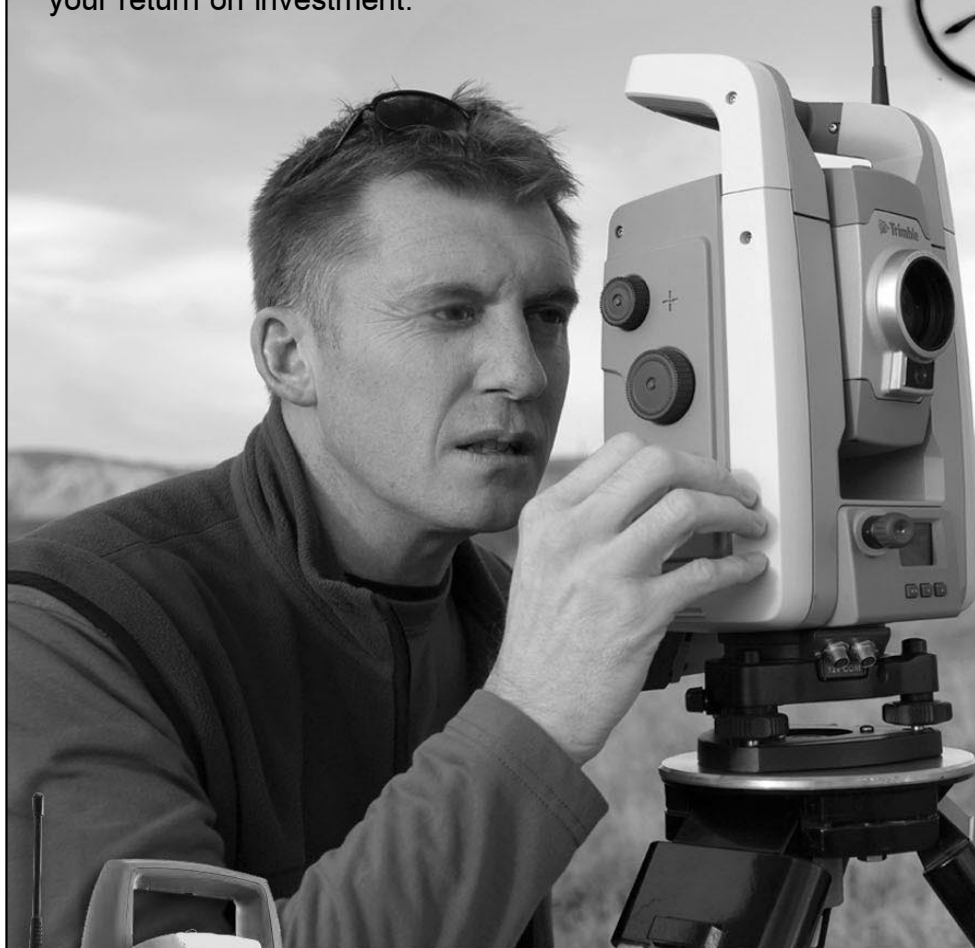
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☐ Retired \$30 (non-voting) ☐ *Student \$15 ☐ Sustaining \$200 (Business)

See reverse side for more details regarding the specific membership types.

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☐ Southern (SCPLS) \$20 ☐ Southwestern (SWC/PLSC) \$20 ☐ Western (WCLS) \$20
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PROFESSIONAL LAND SURVEYORS OF COLORADO, INC.

Purpose

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

Membership

Voting Member --- Any person who is a registered land surveyor in the State of Colorado, and whose registration is in full effect, shall upon payment of \$75 annual dues, be a voting member of P.L.S.C., Inc. and as such shall have full voting and office holding privileges. (Article VIII a., Articles of Incorporation)

Associate Member --- Any person who is interested in land surveying shall, upon payment of \$55 annual dues, be an associate member of P.L.S.C., Inc., but shall have no voting or office holding privileges. (Article VIII b., Articles of Incorporation)

Student Member --- Any undergraduate student who is interested in land surveying shall, upon payment of \$15 annual dues, be a student member of P.L.S.C., Inc., but shall have no voting or office holding privileges. (Article VIII c., Articles of Incorporation)

Retired Professional Land Surveyor --- A Colorado licensed Professional Land Surveyor who no longer practices land surveying (including field work, office work and consulting). He/she however may continue to maintain his/her license in effect and shall not be precluded from acting as an expert witness or court appointed commissioner. This is a non-voting classification. The annual dues shall be \$30.00. (Article VIII e., Articles of Incorporation)

Sustaining Member --- Any person or firm engaged in a business related to land surveying or interested in the land surveying profession shall, upon contribution of \$200 annually, be a sustaining member of P.L.S.C., Inc., but shall have no voting or office holding privileges. (Article VIII d., Articles of Incorporation)

Dues --- Dues shall be due and payable as of January 1st for the coming year and shall be delinquent if not paid by April 1st following. Membership rights cease when dues become delinquent. (XVII. Bylaws)

Standing Committees

PLSC has both standing and special committees. If you would like to be involved with any committees, please contact the executive director at "ekooper@uswest.net" or contact the committee chair as found on the PLSC Website at www.plsc.net Following is a list of the standing committees. See the website for special committees

Nominations and Elections	Legislative
Publications	Liaison
Survey Monumentation and Standards	Membership
Ethics and Fair Practices	Education and Seminars

Meetings

Directors' meetings shall be held at least quarterly and, if possible, in conjunction with the annual general membership meetings and chapter workshops.

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2008 Colorado Refresher Course

The Central Colorado Professional Surveyors, Professional Land Surveyors of Colorado, and Metropolitan State College of Denver Surveying and Mapping Program are offering a comprehensive Land Surveying Refresher Course for 2008. This course offers a review and self-study plan for those taking the NCEES Fundamentals of Surveying and Principles and Practice of Surveying (which includes the Colorado specific) examinations. The course is specifically designed as a refresher class to aid candidates in **developing and expanding exam-taking proficiencies**.

REFRESHER COURSE SCHEDULE

FUNDAMENTALS OF SURVEYING

Session	Date	Topic	Instructors
1	Wed Jan 9	Overview NCEES/Colorado Exam	Herb Stoughton/Alan Blair
		Basic Calculations	Gaby Neunzert
2	Wed Jan 16	Trigonometry/Algebra	Gaby Neunzert
3	Wed Jan 23	Horizontal & Vertical Curves	Gaby Neunzert
4	Wed Jan 30	Coordinate Systems, Geodesy, & Photogrammetry	Gaby Neunzert/Trevor Greening/ John Bloodgood
5	Wed Feb 6	Legal Terminology & Definitions	Diana Askew
6	Wed Feb 13	U.S. Public Land Surveys I	Randy Zanon

PRINCIPLES OF PRACTICE AND COLORADO SPECIFIC

Session	Date	Topic	Instructors
7	Wed Feb 20	U.S. Public Land Surveys II	Randy Bloom/David Tomaschow
8	Wed Feb 27	Colorado Law I	Doyle Abrahamson/Roger Nelson
9	Wed Mar 5	Colorado Law II	Doyle Abrahamson/Roger Nelson
10	Wed Mar 12	Business, Ethics, Prin. & Practices	Alan Blair
11	Sat Mar 22	Mock PS and FS Examinations	Randy Zanon/Gaby Neunzert

Times

The Wednesday evening classes will be 3 hours in length, starting promptly at 6:00 PM. The Saturday, March 22 session will consist of a mock FS and PS/Colorado NCEES examination. The exam will start at 8:00 AM and end at 12:00 Noon.

Registration and Costs

The fee for the entire course is \$275, or \$50 per 3-hour block taken individually. Complete and mail the Registration Form to the address provided. Early registration is recommended so that adequate handout materials can be assured. Optional: Technical Aspects of Land Surveying by Dr. Herbert W. Stoughton, Ph.D., PE, PLS, CP, Head of MSCD Surveying and Mapping Program, offered on DVD with lecture notes at a price of \$150.

Materials

It is suggested you bring a NCEES approved calculator (see list below) that you are very familiar with, any surveying textbooks available to you, a Manual of Surveying Instructions, 1973 Black's Law dictionary, a 3-ring binder for notes and handout materials and an inquiring mind. Homework and quizzes are to be expected. NCEES Approved Calculators: Hewlett Packard (HP) 33S; Casio - FX 115MS and FX 115MSPlus (Note: Models with "-SR" designation at end are also allowed.); Texas Instruments (TI) - TI 30X IIS and TI 36X Solar).

Location and More Information

The Colorado Refresher Course will be held at the Metro State Auraria Campus, Central Classroom 218. This latest updated flyer will be posted at <http://www.colorado-surveyors.org/>. For questions on registration contact Dr. Judy Campbell, MSCD Surveying and Mapping Program, MSCD Extended Campus at 303-721-1313. Deadline for Registration is December 17, 2007. Late registration begins December 18th, please see registration form for late registration details. Registration and payment must be received prior to attending a session. For other questions contact Randy Zanon at 303-239-3856.

Oil & Gas Well Survey Plat Requirements

by Roger Nelson, PLS

Recent review of surveying practices relating to Oil & Gas Well Location Certificates (COGCC Rule 303(c)) has revealed concerns that should be addressed. The following is meant to clarify surveying requirements for these types of surveys.

Considering the requirements of the U.S. Departments of the Interior and Agriculture, Colorado Oil & Gas Conservation Commission (COGCC) rule 303(c), the Colorado Revised Statutes (C.R.S.) pertaining to land surveying, and the Rules promulgated by the State Board of Licensure for Architects, Professional Engineers and Professional Land Surveyors (AES); oil & gas well surveys (and the resulting 8 1/2" by 11" drawings, Well Location Certificates) constitute the practice of professional land surveying and, therefore, come under the regulation of the AES Board.

In accordance with Onshore Oil & Gas Order Number 1, the components of a complete Application for Permit to Drill (APD) are, among others, a well plat and geospatial database prepared by a registered surveyor. Well plats under this order must depict the proposed location of a well and identifying points of control and datum used to establish section lines. The purpose of the plat is to ensure that operations are within boundaries of the lease or agreement and that the depiction of these operations is accurately recorded both as to location (latitude and longitude – North American Datum 1983 or latest edition) and in relation to the surrounding lease or agreement boundaries (public land survey corner and boundary ties). Well plats are also required to show the distance in feet from the nearest two adjacent section lines, or, if not within the Rectangular Survey System, the nearest two adjacent property lines. The surveyor who prepares the plat must sign it, certifying that the location has been staked on the ground as shown on the plat.

These requirements are consistent with the COGCC rule 303(c) in that they require a drawing showing the field measured dimensions of well locations relative to the nearer north/south and nearer east/west

section lines measured at ninety (90°) degrees from said section line to the well. The latitude and longitude with a minimum of five decimal places shall be shown and all GPS data must be differentially corrected (COGCC Rule 215). Complete descriptions of all section corners and/or collateral evidence found shall be described.

Looking at how these requirements tie with Colorado statutes and AES Board Rules will be the subject of discussion below. In order to meet the requirement of COGCC a surveyor must field survey the nearer north/south and nearer east/west section lines. Colorado Revised Statute (C.R.S.) 38-51-102(11) defines "Land survey" as a series of observations and measurements made pursuant to Sections **38-51-103 C.R.S. (Procedure for subdividing section)**, 38-51-104 C.R.S. (Monumentation of land surveys), and 38-51-105 C.R.S. (Monumentation of Subdivisions) for the purpose of locating or restoring any real property boundary. 38-51-103 C.R.S. states, "Whenever a professional land surveyor conducts a survey for the purpose of locating a parcel of land which is described in terms of the nomenclature of the public land survey system, such professional land surveyor shall proceed according to the applicable rules contained in the current 'Manual of Instructions for the Survey of the Public Lands of the United States' published by the United States government printing office; except that all monumentation shall conform to Section 38-51-104 C.R.S."

When field surveying the controlling monuments to determine the nearer north/south and the nearer east/west section lines, monuments that are missing or that do not meet physical standards must be monumented or upgraded per 38-51-104 C.R.S., and monument records filed per 38-53-104 C.R.S. In addition to the 8 1/2" x 11" drawing required by the COGCC, plats may need to be deposited with the County per 38-51-107 C.R.S. Any controlling monuments used to establish the nearer north/south and nearer east/west section lines also shall meet physical

standards defined in 38-51-104 C.R.S., monument records filed per 38-53-104 C.R.S. and plats deposited with the County per 38-51-107 C.R.S. The minimum physical standards (Board Rule 6.4.1) for section corner, quarter section corner, one-sixteenth section corner, General Land Office/Bureau of Land Management (government) lot corner, or any corner established by a Public Land Survey Monument (PLSM), as defined in Section 38-53-103(18), C.R.S. (1994), requires that the corner shall be monumented with a metallic pipe or rod possessing a magnetic field and having a minimum outside diameter of 3/4 inch, a minimum length of 30 inches, and a two-inch minimum diameter durable metallic cap.

Per COGCC Rule 303(c)(13) each controlling aliquot monument must be completely described and collateral evidence found shall be described. Per 12-25-217 all **documents**, plats, and reports **resulting from the practice of land surveying shall be identified with and bear the seal or facsimile, signature and date of signature of the land surveyor in responsible charge**.

In summary performing oil & gas well location surveys constitutes the practice of professional land surveying and, therefore, falls under regulation of the State Board of Licensure for Architects, Professional Engineers, and Professional Land Surveyors. All monuments must meet the physical standards in Board Rule 6.4.1, monument records must be completed per 38-53-104 C.R.S., Land Survey Plats may need to be deposited with the County per 38-51-107 C.R.S., and the professional land surveyor in responsible charge must sign, seal and date the resulting work.

The author may be contacted at Roger.nelson@merrick.com

References:

[Federal Register: March 7, 2007 (Volume 72, Number 44)]
[Rules and Regulations]
[Page 10307-10338]

Colorado Oil & Gas Conservation Commission (COGCC) Rule 303(c) and 215.

<http://www.dora.state.co.us/aes/lawsrulespolitics.htm>

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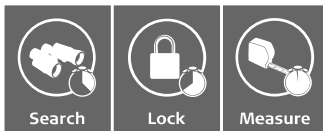


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The Puzzle of the Eupalinos Tunnel Revisted and Yet Another Riddle

By Gaby Neunzert, PLS

Some readers may remember Eupalinos, the “tyrant” of the Greek island of Samos, who about 2530 years ago (about 530 BC) had a 3399 ft long water tunnel surveyed and excavated. Work was started on both the “north” and “south” ends with a roughly 8x8 ft opening and both portals were nearly at the same elevation; only later was a flow channel for the water constructed at a downward grade on the east side of the main tunnel. The question, then and now, is: How was the tunnel surveyed for both alignment and elevations?

After waiting for copious replies to the original publication (August, 2007 *Side Shots*), the author realized that the modern electronic gremlin had struck and the e-mail address (gneunzer@mines.edu) had been omitted, thus nobody other than a few individuals who expressed a verbal opinion, managed to present an opinion or “solution.” It is still not too late and any thoughts would be appreciated.

While waiting for the replies which never came, the author had at least two thoughts for a possible surveying scenario:

a) Alignment: it was initially assumed that the 2 portals had to be selected first, which is inherently difficult because it requires “wiggeling in” for alignment. But, since the southern slope of Mount Kastro was within the city’s walls, the south portal could be located anywhere on the south slope. With

3 plumb bobs and maybe 100 ft sights, it is possible to “shoot” a straight line from the north portal, over the top of Mt. Kastro and down its southern slope. Nowadays, this would be called a random line. The south portal could now be located anywhere along this line, a line even possibly marked with stone monuments. b) Without a leveling instrument, running elevations is difficult, but the ancients relied on water; for example when the Parthenon was constructed overlooking the city of Athens, the builders first constructed a ditch following the outline of the temple and filled it with standing water, thus establishing a horizontal. The present temple of Athena was started about 447 BC or about 100 years after the tunnel. The base of the Parthenon is 101.34 ft wide and 228.14 ft long and since there were no water pumps, the water had to be carried by slaves about a mile up from the river Ilisos. At Samos it was much easier; water could be run downhill from the spring to the north end of the tunnel, from there again a small horizontal ditch could be dug by hand along the “contour” of Mt. Kastro until it intersected the tunnel alignment, and “presto” the south portal was located. It should not be surprising that all traces of the horizontal ditch have disappeared in the last 2500 years. After the tunnel was started, standing water could

again be used to maintain a level working.

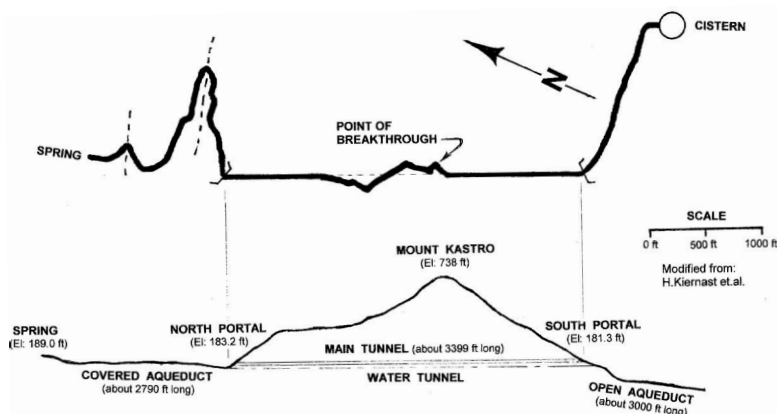
The second “riddle” of today deals with keeping notes:

Until most recently the dogma has always been: “write it into the field book or if it’s not in the field book it does not exist”. A classical example is the ink-written field notes of the Government surveys starting possibly with the Old Seven Ranges in Ohio in 1784. Undoubtedly these notes were ink written by the party chief in a tent, probably in the evening, or at any rate after the field work had been completed. And now the question: how did the field information, i.e. distances chained, bearings measured, etc. get back to the camp to be written down later?

Since the first patents for pencils were not issued until the 1850’s and 1860’s and it probably took some time before pencil and paper made an appearance at the frontier, what medium was used to keep some temporary notes? Chaining pins in the possession of the rear chainman served as physical evidence of total chains laid down, but where were the links of a partial chain temporarily recorded? A slate writing tablet comes to mind, or was some charcoal on a sliver of wood used?

The author has never read any contemporary stories of field work and as a best guess offers this undocumented statement: “Why bother, the old timers just remembered the few numbers and told the party chief in the evening at camp”. Is that maybe the reason why some entries in the old notes don’t make sense? Argue with the author, or better yet, offer some documented evidence!

Please contact the author with your suggestions, solutions, or questions at the following email address: gneunzer@mines.edu



SCPLS

The Southern Chapter had meetings on August 21 and October 16.

At the August and October meetings we discussed the upcoming elections for the Southern Chapter, positions available, procedures for nominations, and dates for nominations and when to send out ballots. We received a report on our annual Paul Grout Memorial Golf Tourney. Seventy-two brave souls enjoyed a beautiful day on the links. We banked +/- \$800 for our scholarship fund. Thank you all who participated. Thanks to Randy Reeves and Nathan Lira for a good show. We also had continuing discussions on the preservation of survey records both public and private, more to come later on this.

Our fall technical workshop was quite successful. We had somewhere in the neighborhood of 50 in attendance. We had presentations from Matt Nawrocki on GPS, Randy Zanon on Evaluation of Evidence, Gene Kooper on Mineral Survey Retracements, Steve Parrish on Corner Site Investigation and Walking in the Footsteps, and Pam Fromhertz on Survey Advancements in the National Geodetic Survey. Great presentations. I would like to thank Mark Johannes, Bill Brooks, and Joe Alessi for a great program.

Our annual Christmas party was held at "La Renaissance" in Pueblo on December 7th. Twenty souls braved the inclement weather to have an outstanding meal and fellowship. After the meal a Chinese auction was held as a gift exchange. Invited to the dinner was Michael Mincic, Professor of the CSU-Pueblo CAT program, and his wife, together with Shaylyn Mincic and Dillion Thurston. Shaylyn and Dillion were each presented with \$500 scholarships for the next school year. This was our first awards in the last few years.

Thanks to Mike for pushing Shaylyn and Dillion to apply for the scholarships. The funds are generated from our annual Paul Grout Memorial Golf Tournament. Congratulations to Shaylyn and Dillion for winning the scholarships.

On a personal note I would like to thank the officers and members of SCPLS and PLSC for your assistance and support during my terms as President. It was greatly appreciated. Come January, I will be put out to pasture and a new President will take over. I will keep my fingers in as much as possible.

Have a safe and happy holiday season. Enjoy and see you all next year.

Terry R. Maw, PLS
President, SCPLS

CCPS

Our annual conference will be held later this month on February 22 and 23, 2008 at the Tivoli Center, Metropolitan State College of Denver. Details about the conference speakers and topics can be found in this issue of Side Shots. Conference information and online registration can be accessed via links on the PLSC (<http://www.plsc.net>) and CCPS (<http://www.colorado-surveyors.org>) web sites.

I would like to welcome Heather Robinson to the CCPS Board. Heather replaces Anthony Syers, who resigned his Director's position after accepting employment with an Indiana surveying firm. The ballots have been counted and the results of the CCPS 2008 election are as follows: Bill Buntrock, President; Todd Beers, Vice President; Georgia Satterlee, Secretary; and James Rihanek, Robert Snodgrass, Earl Henderson, and Norman Simonson, Directors. The new officers and directors will be installed at the CCPS conference on February 22. I would like to personally thank our outgoing Secretary, John Lauten-

schlager for his many years of service as a Director and Secretary.

The CCPS will be selling a reduced-size (11" by 17") folio of the Hayden Atlas along with full-size, laminated prints of individual plates. Proceeds from the sale will help fund CCPS scholarships and preservation of the atlas. Examples of the half-size folio and laminated prints will be displayed at the CCPS conference.

The next CCPS general membership dinner and meeting will be held on March 27, 2008 at the Table Mountain Inn, 1310 Washington St., Golden, CO. The dinner is at 6:30 PM with the meeting and program following at 7:00 PM. I hope to see you there.

Respectfully submitted,
Gene Kooper, PLS
President CCPS

WCLS

Western Colorado Land Surveyors capped off 2007 with our last meeting on November 14. Besides the usual reports, efforts by PLSC Legislative Committee were discussed and our representative on the committee was asked to convey our lack of support for the proposed legislative initiatives. Additionally, the Chapter Education Committee plans to continue mentoring classes for aspiring young surveyors and asked for volunteers to assist with classes. Finally, the rear-end task of rounding up leadership volunteers to serve through the next year's Officer positions was completed. Ballots for these positions should be in the mail via our last Newsletter of the year. Next year's Newsletters will be distributed solely via e-mail, so please return the ballots along with your e-mail address.

Next meeting will be Wednesday, January 9, 2008. We hope to count ballots and install new officers. Our first meeting after February is March 12, 2008.

Les Doehling

continued on page 21

CHAPTER NEWS

from page 20

President, WCLS NC/PLSC

The Northern Chapter has been holding meetings at a variety of locations on the first Wednesday of the month since September. The annual December dinner was at Abbondanza Pizzeria in Longmont. We discussed contributions to the survey program at Metropolitan State College of Denver and topics being addressed by the PLSC Legislative Committee.

For information on times and locations of Northern Chapter meetings contact Steve Varriano at (970) 613-1447.

Steve Varriano
Northern Chapter President

SWC/PLSC

The Southwest Chapter of the Professional Surveyors of Colorado held its annual holiday dinner and meeting on November 15th, 2007. The meeting was held at Ska Brewery in Bayfield, CO. Elections were held for officers and the new officers are as follows:

Tom Au – President, Clyde King – Vice President, David Seiler – Treasurer, and Rob Trudeau – Secretary.

The planning for the 2008 Four Corners Area Surveying Seminar has begun! We are looking forward to a great lineup of speakers and some new and interesting topics. As the seminar draws closer we will post the schedule online and in Side Shots. Stay tuned!

As the outgoing president of the Southwest Chapter I would like to thank all of the members for their strong support involvement over the years. Everyone is very busy in this corner of the state and making time to participate in the PLSC is much appreciated.

continued on page 22

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The next chapter meeting will be held at Christina's Bar and Grill on January 10, 2008.

Sincerely,
Parker S. Newby, P.L.S.
Southwest Chapter President

CSRN

The Colorado Spatial Reference Network has been actively working with the real time networks that have come on line this year in Colorado. At this point, the CSRN, sees its role as an advisory role.

The Colorado Spatial Reference Network officially launched its website www.csrn.us at the PLSC Fall Technical Conference, General Membership Meeting on Saturday, November 10, 2007. The website will function as a clearinghouse of information to keep members informed of the latest activities per-

taining to Real Time Reference Networks in the state. The website design was a collaborative effort between the CSRN Board and Merrick. The CSRN website subcommittee chaired by Brian Dennis worked closely with Merrick's information technology staff Greg Morrissey and Brian Whiting to develop the site in only 2 1/2 months! Additional members of the subcommittee were Roger Nelson and Dan Smith. The CSRN extends its gratitude to Merrick for their partnership contribution, design, and continued hosting of the CSRN website.

CSRN elections are currently underway for 2008 positions of President, Vice President, Treasurer and two Directors. An official ballot may be obtained from the CSRN website under the CSRN Elections tab. This year's candidates are:

- President: Russell Clark, PLS

- Vice President: Daniel A. Smith, PLS
- Treasurer: Todd G. Beers, PLS
- Directors: Roger Nelson, PLS
Mathew J. Barr, PLS
Brennan O'Neill

The CSRN membership has grown by six new additional members since the last issue of Side Shots. If you are interested in becoming a member please submit a membership application form availed under the CSRN tab on the website.

The next CSRN Board meeting is scheduled to be held on January 16, 2008 at Merrick.

If you know of any permanent GPS reference stations please let the CSRN know about it so we may contact the owner about partnering opportunities.

Dan Smith
Vice President, CSRN



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CHAPTER NEWS

from page 22

NW 1/4 CLS

The most recent meeting of the Northwest One-Quarter Chapter had several people in attendance, including Steve Archibeque, Tom Effinger, Peter Epp, Chad Fox, Jeff Gustafson, Jim Joy, Brian Kelley, Skidge Moon, John Noonan, Lloyd Powers and Jack Quintana.

We continue to try to move our "Base Station Project" forward. A

diversity of opinions were presented on procedure, station status, equipment procurement, and of course funding. Reports were presented and further review by sub-committees would be considered at the next meeting.

Tom Effinger continues his work on entering data from the Routt County Land Survey Plat book into a spreadsheet. Several members volunteered to take a group of pages to begin entering them into

Tom's preliminary spreadsheet, but given everyone's workload, this project is going to take some time.

Best wishes to all who read this: May your days be busy and your lives fulfilling.

Respectfully submitted,
Ridgeway C. Moon
President
NW 1/4 CLS

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AEROTEK

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WHEN: FEBRUARY 22ND AND FEBRUARY 23RD
Registration begins at 7:00 a.m. and classes start at 8:00 a.m. both days.

WHERE: THE TIVOLI CENTER, METROPOLITAN STATE COLLEGE OF DENVER
900 AURARIA PARKWAY, DENVER, COLORADO 80204

SPEAKERS: Dennis Mouland, David Pehr, John Guyton, Edgar Bristow, Randy Bloom, Roger Nelson, Gaby Neunzert, Alan Blair, Randall Zanon, Tom Adams, & Michael McInnis

PROGRAM:

FRIDAY, February 22nd

PROFESSIONAL-LEVEL SESSIONS

8:00 a.m. – Noon Mr. Dennis Mouland, PLS "Thinking Beyond Technology"

8:00 a.m. – Noon Mr. David Pehr, Esq. "Adverse Possession"

TECHNICIAN-LEVEL SESSION

8:00 a.m. – Noon Mr. Alan Blair "Horizontal and Vertical Curves"

Noon – 1:00 p.m. Lunch / CCPS Meeting

PROFESSIONAL-LEVEL SESSIONS

1:00 p.m. – 5:00 p.m. Mr. Dennis Mouland, PLS "CFeds Program", and
Mr. Randy Bloom, PLS & Mr. Roger Nelson, PLS "Onshore Order No. 1 Well Survey Plat
Requirements"

1:00 p.m. – 5:00 p.m. Mr. John Guyton, PLS & Mr. Edgar Bristow, PLS, Esq. "Legal Principles of
Boundary Conflict Resolution – A refresher for the Colorado-specific PLS exam"

TECHNICIAN-LEVEL SESSION

1:00 p.m. – 5:00 p.m. Mr. Gaby Neunzert, PLS "Colorado State Plane and UTM Coordinate Systems"

SATURDAY, February 23rd

PROFESSIONAL-LEVEL SESSIONS

8:00 a.m. – Noon Mr. Randa Zanon, "Evaluation of Evidence/Acceptance of Local Corners"

8:00 a.m. – Noon Mr. Michael McInnis "GPS Survey Issues"

Noon – 1:00 p.m. Lunch

1:00 p.m. – 5:00 p.m. Mr. Tom Adams, PLS "Property Descriptions"

1:00 p.m. – 5:00 p.m. Mr. Michael McInnis "GPS Survey Issues (cont.)"

Online registration forms are available at the PLSC web site (www.plsc.net) and CCPS web site (www.colorado-surveyors.org). Conference costs for the professional sessions are \$125.00 for a single day and \$210.00 for both days if registering by February 13, 2008. An additional \$25.00 will be added to late and walk-in registrations. Conference costs for students are \$35.00 and \$50.00 respectively. The Friday technician program is \$35.00. A catered lunch is provided both days and is included in the conference fees.

PLSC Annual Membership Meeting

November 10th, 2007

University of Denver, Driscoll Center South

2050 E. Evans Avenue, Denver, CO 80210-4702

Hosted by the PLSC

Meeting Minutes

- 1) Call to Order 1:35 PM
- 2) Recognition of Board Members Present
JB Guyton; Tom Adams; Gene Kooper; Diana Askew; Michael Greer; Gary Gable; Larry Connolly; Michael Bouchard; Doug Berling; Roger Nelson; Russ Clark; Les Doehling; Warren Ward; David DiFulvio
- 3) Recognition of Members Present
Pam Fromhertz; Bryan Clark; Chic Chichester; Larry Bucar; Bob Stollard; David Freienmuth; Dan Smith; Jack Sparks; Tom Sylvester; Gary Wilkinson; Brian Dennis; Ian Cortez; Jack Messenger; Mike Dlin; Don Hansen; Warren Andrews; Charlie Tucker
- 4) Welcome of Guests: introductions
Jeff Jones NSPS Area Director
Curt Sumner Executive Director ACSM/NSPS
(see attachment: Jeff Jones, NSPS Area 7 Director, Cheyenne, WY)
- 5) Approval of Minutes from previous meeting (see attachment)
- 6) REPORTS
 - a) Secretary -Treasurer – Diana Askew
 - i) Overview of the state of the financial affairs
 - (a) \$20,000 was borrowed from the CSEF account in August to cover expenses. This amount will be returned to the account when funds are available.
 - (b) The spending by the PLSC Board will need to be scrutinized to avoid future shortages in funds.
 - (c) A full report of spending will be distributed to the Board following the finalization of the conference expenses and receipts (by the February meeting).
 - (d) All non-essential spending has ceased, however, all existing invoices will be paid.
 - (e) Existing monthly debts are:
 - (i) PLSC Library \$500.00 (PLSC is past due 3 months)
 - (ii) Gene Kooper Executive Director salary \$1000.00 (PLSC is past due 2 months)
 - (iii) Web hosting \$25.00 (current)
 - (iv) Memberclicks \$110.00 (current)
 - (v) Colorado Real Estate Journal Ad \$175.00 (current) (to be suspended)
 - (vi) Side Shots \$4000.00 - \$4500.00 Quarterly
 - (vii) Stamps, printing, misc. office expenses, travel expenses
 - (f) Recently suspended monthly expenses:
 - (i) Peg Ackerman \$1000.00 + expenses
 - (ii) Paul Suter \$1000.00
 - (g) Report to the Board of Directors – (see attachment)
 - b) President – John B. Guyton
 - i) A memorandum was distributed to the Board of Directors and the Committee Chairs detailing the Policies and Procedures for Standing and Special Committees of the PLSC, Inc. This is to be considered the basis for behavior of all committee members and will be forwarded to all chapter presidents. (following)

Policies and Procedures for Standing and Special Committees of the PLSC, Inc.

To address the significant number of comments and concerns received regarding committee operations and actions, the PLSC, Inc. Board of Directors has agreed on the following points:

The Chair of a Committee shall not alter policy decisions without pre-approval from the Board of Directors. Proposed policy changes will be submitted to the Board of Directors at least one week prior to the Board meetings. Committees should distribute copies of their reports to all Directors prior to the Board meeting to allow Directors to bring themselves up to speed on the committee actions and proposed policy changes. Each PLSC, Inc. Chapter will be asked to appoint a voting Legislative Committee member in order to ensure Chapter-appointed representation within the Legislative Committee. If no Chapter representative is appointed by a Chapter, the Legislative Committee shall actively solicit the participation of at least one member from each Chapter. The Legislative Committee must include representatives from all regions of the state. Use of Robert's Rules of Order will be required based on the number of members on the committee (see below). When Robert's Rules of Order apply to a committee, the following information lays out the behavior expected of

all committee members.

The purpose of PLSC, Inc committees, as stated in Section XI of the By-Laws, is that committees are working groups that study a problem and make recommendations to, or take on specific tasks under the guidance of, the PLSC Board of Directors. Committees are not generally meant to take independent action. The communication flow between the Board of Directors and all of the committees must be bi-directional and continuous for the success of the organization. Committees in general are of an advisory rather than a deliberative nature, and with the exception of the Executive Committee, committee members and Chairs actually serve at the pleasure of the Board of Directors; the elected representatives of the society.

The current Bylaws state that the Board of Directors must follow Roberts Rules of Order for meetings. Extending this requirement to the committees will address many of the recent issues. In particular, the two committees in which following Robert's Rules of Order would be beneficial are the Executive Committee and the Legislative Committee. These committees have a larger number of members, may be deliberative in nature, and by nature are more subject to differences of opinion. For these reasons, it would benefit their meetings to follow the parliamentary procedures outlined in Robert's Rules of Order. In this way, every member has an equal opportunity for their thoughts to be heard. In committees with fewer members, such as the Publications Committee, it may be unnecessary to follow Robert's Rules to the letter.

In the case of the Legislative Committee, the committee should investigate items to pursue and submit to the Board of Directors all items considered along with the Legislative Committee's recommendations. Suggestions from the membership and the Legislative Committee are encouraged, however it is the Board of Directors that should make the final determination on what to pursue as it is the Board of Directors that must keep the interests of the entire membership in mind. Once the items to pursue have been determined, the Legislative Committee should then review language, recommend revisions, submit opinions, and prepare a final report of recommendations to the Board of Directors for approval.

Following is a very brief recap of Committee behavior as outlined by Roberts Rules of Order.

Per Robert's Rules, committee members, including the Chair, have certain duties. Included among them are: Being familiar with the rules of parliamentary procedure Performing tasks assigned by the committee or the Board of Directors in a timely manner

Working along with other committee members, even if not necessarily in agreement with them

Respecting the committee majority's wishes, and working to make those wishes successful even if the member is in the minority

Being impartial, fair and courteous in meetings and respecting the rights of other members, particularly in debate situations

Calling a 'point of order' when another member seriously breaches the rules of parliamentary procedure

Ensuring that the rights of members in both the minority and in the majority are protected

This listing is a brief summation of Members Duties from Robert's Rules of Order, and is not intended to be complete or comprehensive.

Since Robert's Rules clearly outline the expected behavior of committee members and procedures for committees, it is anticipated that by following Robert's Rules of Order we will eliminate the need for other regulation of committee participation.

- ii) Appointment of Diana Askew as Secretary-Treasurer
- iii) Appointment of Gene Kooper as new Executive Director, discussion of salary
Lisa to continue to represent the PLSC out of state
Appointed Gene Kooper to be the Executive Director
To pay him \$1000.00 per month to handle the day to day business
Two year contract to follow the presidency – up to the next president and Gene as to whether he will continue on as Executive Director
- iv) Invitation for all ex-presidents of PLSC, Inc who are present to stand – Bob Stollard, Chic Chichester, Dave DiFulvio, Warren Ward, Warren Andrews
- c) Vice President – Tom Adams
 - i) Report on recent email voting to facilitate the election of new officers to replace the Secretary-Treasurer and Executive Director positions. There was a brief discussion regarding the process for appointing Board of Director members to replace the functions which Art performed for the organization.
 - ii) Report on the call for removal of the President and Chair of the Legislative Committee – we will address and investigate the complaint
 - iii) Mike Bouchard has replaced the Executive Committee position vacated by Diana Askew as she is now a member of the Executive Committee as an officer (Sec/Treas)
- d) Executive Director (Gene – please provide a report)
 - i) Without an official job description he stated that his salary as Executive Director should not exceed that of the publicist or the lobbyist.
 - ii) Tasks that Gene will take responsibility for as Executive Director:
 - (1) Advertisers for Side Shots and is requesting to change to the format of Side Shots to gain funding for ads within the publication
Increase the advertising rates
Color ads
Gaby has other journals and rates for which are similar to *Side Shots*
Members have business cards published in *Side Shots*
 - (2) Memberclicks – is the online database we

want to use for memberships and will also provide payment online
Sustaining members have asked for access to member emails and we are hesitant to do so – members don't want Spam

Lisa said it is illegal to release email addresses for the membership to others (JB) without permissions

Dave? Suggests that the dues notice be set up for check the box if they want to have their email addresses made available

- (3) Gene would like to get a program together for next year's Fall Technical Session sooner in the year – special committee will be formed by July
- (4) He is not permitted to be a chair of a standing committee
- (5) McComber library to be indexed
- (6) Financing and raising revenues
Dues increase?
- (7) Silent auctions – better for vendors
- (8) Sustaining members
- (9) Publication costs – Membership roster will have a one year hiatus
Consider online publications
Kansas publishes roster every other year
Paperless roster is possible (pdf)
- e) NSPS Delegate-Warren Ward – (Report will be presented)
 - i) The ACSM and the NSPS went through a period of years with structural and financial issues and many quit and Art stuck with it and it turned around. Warren is here to stick with it.
 - ii) Warren attended the NSPS meeting on Sept. 29th in Arlington, VA. It began with a moment of silence for Art.
 - iii) RR abandonment language prepared and disbursed to members. A committee is looking for wording for the legislation and finding a way to pay for surveys of some type for the abandonment of RR's. The RR's won't pay for these surveys. The intent is to craft language and build coalition with the RR's and find something that suits our purpose without blowing the RR's away from the winning solution for everyone.
 - iv) TrigStar reported a growing number of participants – CO is behind so Warren has asked for help
 - v) Membership has grown to almost 5000
 - vi) We should consider joining NSPS
 - vii) Warren is going to look for funding for his visits to NSPS
 - viii) Lobby day – locals lobby with those on the "hill"
 - ix) Resolution of National Surveyor's week
- f) WFPS Delegates – Dave DiFulvio / John B. Guyton (see attachment, minutes)

- i) We will try to find funding to get to the meetings.
WFPS want two representatives from every state but only one will go for awhile.

7) STANDING COMMITTEES

- a) Nominations and Elections – Larry Connolly, Chair
 - i) We need to gather nominations for the upcoming elections next year
- b) Legislative – Roger Nelson, Chair
 - i) Roger presented a hard copy for the minutes
 - ii) He has a member from all the chapters in the state on the committee
 - iii) Items of interest to be presented by a representative to the Legislative Committee
 - iv) Two way street between the areas of the state and the differing opinions and perceptions will continue to be a priority
 - v) The Continuing Education requirement to be discussed further. We need more participation
- c) Publications – JB Guyton, Chair
 - i) JB offers his services for the publication following his tenure as President
- d) Liaison – Gary Gable, Chair
 - i) Report provided on Metro State Funding (see attached)
- e) Survey Monumentation and Standards – no report
- f) Membership – Tom Adams, Chair – no report
- g) Education & Seminars – Tom Adams and Mike Greer, Co-chairs – no report
- h) Fall Technical Sessions, 2007
- i) Verbal comments on meeting & planning for 2008 Technical Session
 - i) Ethics and Fair Practices – Larry Connolly, Chair – no report
- j) Executive Committee – JB Guyton, Chair –
 - i) Report provided - see attachment
- k) Awards – Larry Connolly, Chair (awards presented prior to this meeting)

8) CHAPTER REPORTS

- a) Colorado Spatial Reference Network of the PLSC – Russ Clark, President
 - i) Unveiling of new website: www.csrn.us

9) UNFINISHED BUSINESS

- a) NOAA 200 year celebration (see Pam or Dan for more information)
- b) New updates on November 1, 2007
- c) Cherry Creek calibration baseline is closed – monuments to be removed

10) ADJOURN 3:30 PM

Next Meeting will be following the CCPS Conference on Friday, Feb 22, 2008.

Respectfully Submitted,
Diana Askew as Secretary-Treasurer

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

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 main-

tained 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
ASSURANCE RISK MANAGERS
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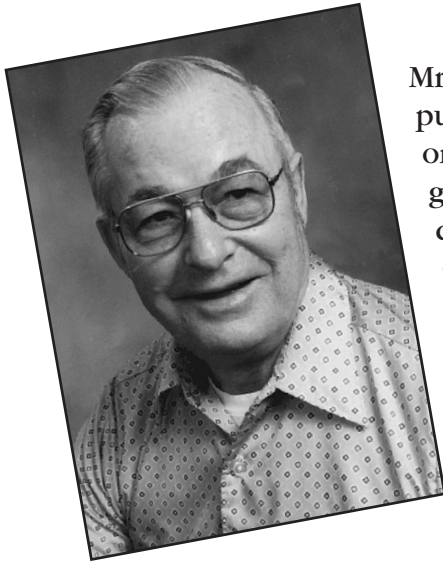
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Published by the Colorado Professional Land Surveyors Educational Foundation, Inc., a non-profit foundation, Initial Points of the Rectangular Survey System is undertaken in the spirit of, and dedication to, Mr. White's remarkable contributions to his field. Net proceeds from its sale will be returned to the educational foundation.

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