

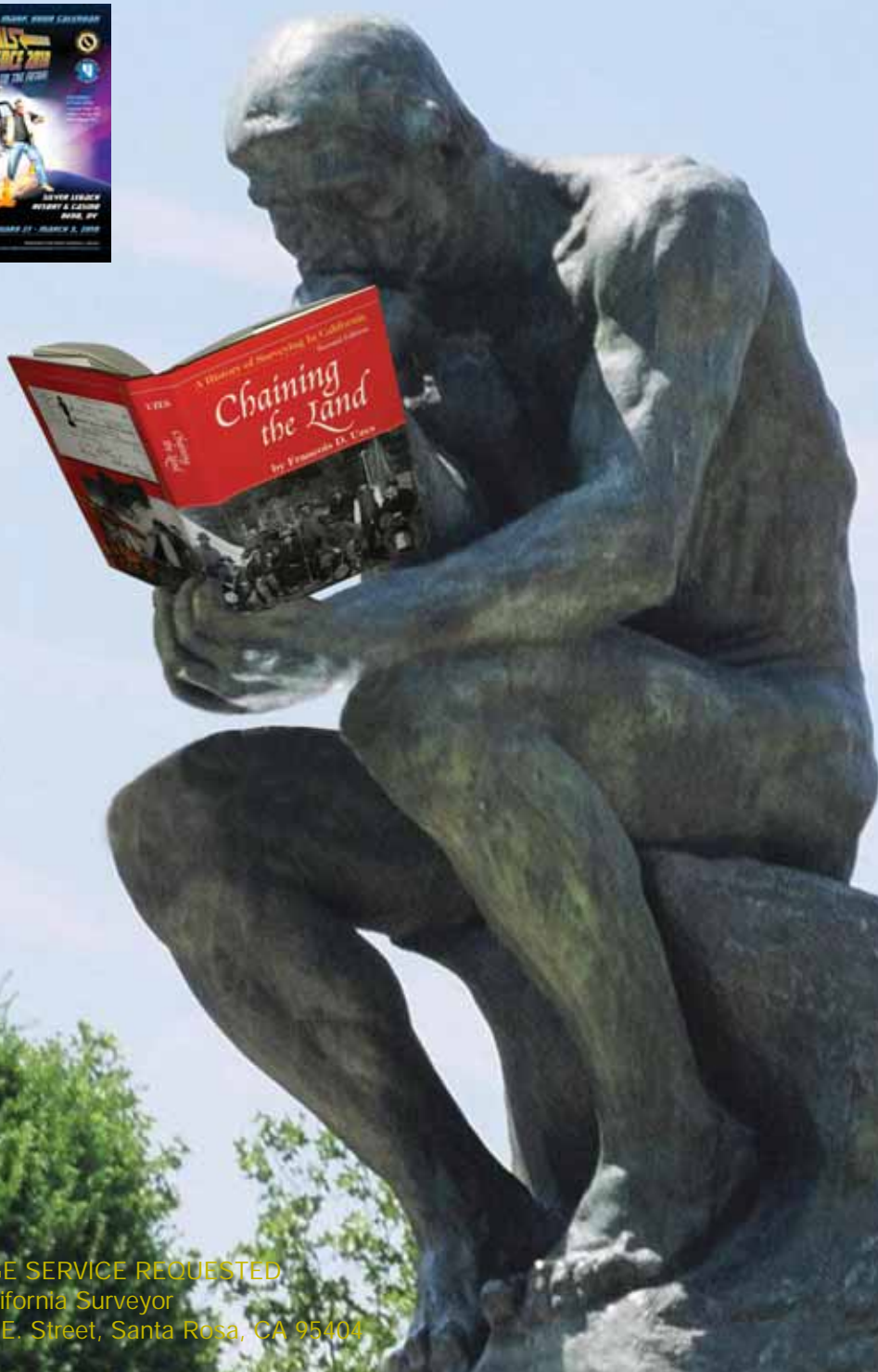
SURVEYOR

California

Winter 2009/10 Issue #160

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“Recognizing that the true merit of a profession is determined by the value of its services to society, the California Land Surveyors Association does hereby dedicate itself to the promotion and protection of the profession of land surveying as a social and economic influence vital to the welfare of society, community, and state.”

“The purpose of this organization is to promote the common good and welfare of its members in their activities in the profession of land surveying, to promote and maintain the highest possible standards of professional ethics and practices, to promote professional uniformity, to promote public faith and dependence in Land Surveyors and their work.”

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California Land Surveyors Association, Inc.

CENTRAL OFFICE

526 So. E Street
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E-Mail address: clsa@californiasurveyors.org
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EDITOR

John P. Wilusz, PLS, PE

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EDITOR'S ADDRESS

John P. Wilusz, PLS, PE
E-mail: johnwilusz@gmail.com

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John Wilusz, PLS, PE, works in the Delta Levees Program at the California Department of Water Resources in Sacramento, CA.

From the Editor

In this issue of the California Surveyor we welcome back Annette Lockhart as Guest Editor.

Annette is the editor of the Focal Point, the newsletter of the Sacramento Chapter and the 2008 Chapter Newsletter of the Year Award. Annette chose our theme, Continuing Education, and recruited articles by Ian Wilson, William Wilson, Armand Marois, and Robert McMillan. In particular, I think you will enjoy the spirited debate between the Wilsons (they claim they are not related): “Making the Case For and Against Continuing Education.” I was surprised the subject inspired such passion. Maybe you will be too, when you see what our writers have to say about it. Thank you, Annette, for bringing this important and lively topic to the *California Surveyor*.

Continuing Education

One thing I've always liked about surveying is that the learning curve has no end. Between the diversity in professional practice, and our reliance upon evolving technologies, there are always new challenges, new skills to be mastered. I like learning new things and I like to think I am improving as a professional when I do. Many surveyors feel the same way. But where surveyors disagree is on the question of whether or not the learning should be mandated as a condition of license renewal. In California it is presently not. Those who advocate mandatory continuing education (CE) for Land Surveyors argue that it would further protect the public and improve the profession. Others have their doubts. Today California is one of only a handful of states that does not require CE for surveyors. That made me wonder: What is California's position on CE requirements for other professions?

To answer this question I did some research. I started by asking J.V. Hogan, attorney-at-law and author of “Liens by Design Professionals,” (also in this issue) if attorneys in California had mandatory CE. He told me they did. So I visited the website of the State Bar of California at www.calbar.ca.gov, and found this interesting passage from Section 6070 d. of the Business and Professions Code:

The State Bar shall provide and encourage the development of low-cost programs and materials by which members may satisfy their continuing education requirements. Special emphasis shall be placed upon the use of internet capabilities and computer technology in the development and provision of no-cost and low-cost programs and materials.

What interests me is that the State Bar is clearly aware of the cost of continuing education and has taken steps to make it affordable. From the State Bar's web page I navigated to the California Architects Board at www.cab.ca.gov. Architects, like attorneys, share some common threads with surveyors, so I was curious to see if they had CE requirements. They do.

Department of Consumer Affairs

Land surveying falls under the regulatory umbrella of the Department of Consumer Affairs (DCA). In fact, DCA's website at www.dca.ca.gov shows quite a long list of regulated activities that require a license issued by the State of California. I clicked my way through the headings to see which fields require CE and which ones do not. Here is what I learned: All boards that regulate professions related to medicine and behavioral science require CE for license renewal. Regulated activities with mandatory CE include: acupuncture, audiology, dental trades, doctoring (all forms), nursing, occupational therapy, ophthalmology, optometry, physical therapy, psychiatry, psychology, pharmacy, social work, and veterinary medicine. CE is mandatory for licensees in other fields too. It is currently required for accountants, professional fiduciaries, guide dog instructors, hearing aid dispensers, pesticide applicators and smog check technicians.

The Department of Consumer Affairs also regulates activities for which CE is not required. Land surveying, as we well know, is one of them. What are some of the others? General building contractors do not have continuing education requirements. Neither do barbers. The Cemetery and Funeral Bureau has no CE requirements either. Locksmiths are exempt from CE, as are licensed furniture upholsterers.

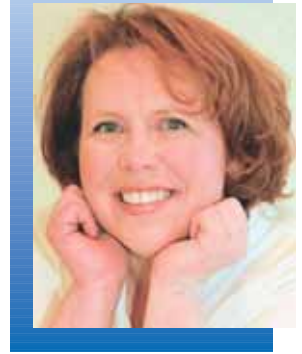
Join the Conversation

Currently, none of the licenses issued by the Board for Professional Engineers and Land Surveyors have CE requirements. Maybe that's a good thing, maybe it's not. The question is: How long will this last? Get involved and join the debate on continuing education. If CE is inevitable, we should do our best to see that it is implemented in a way that truly benefits the public and the profession. On the other hand, if you are opposed to mandatory continuing education, then speak up and make your case before it is too late. This is a conversation worth having. ❖

By: Annette Lockhart, PLS, - Assistant Editor

Annette Lockhart, PLS, currently works for the Department of Transportation in the Office of GIS. She is the secretary for the Sacramento Chapter and editor of the newsletter "Focal Point". She can be found on Facebook and reached at focalpointeditor@gmail.com. The Sacramento Chapter website is sac-surveyors.org

Photo by David G. Fredrickson, PLS FotosRPhun@aol.com



From the Guest Editor

I'm Back!

I just love this guest editor gig. You should try it. It is like being a grandparent. You come over and get the kids all wound up, and then you go back home. I am hoping that the articles I helped corral for this issue will, at the very least, give you pause to think.

Continuing education is one of those topics we just love to take out of the toy box every once in while, shake around a bit, and then put back until we want to play with it again. It is a lively topic about which (I know you will be shocked by this) every surveyor has an opinion about.

The idea of continuing education gives all of us a challenge to consider the facts carefully. How can you balance a particularly complicated job, that is brought to a well-reasoned end, against sitting in a classroom for eight hours on a Saturday? (My suggestion, do not miss out on either.) I trust these articles will give you new perspectives to consider.

Communication

I do wish to thank John and my colleagues who shared their writing talents with us in this issue. It is a treat to be able to participate in the process.

The exchange of ideas in all its many forms is a cornerstone of our human existence, and it is the sole reason we exist as a profession. In reality, we are just communication facilitators. We take ideas from one form (for instance, a desire to sell a plot of land) to another form of communication (a deed) that is understood and recognized by a community. In construction staking, we are communicating ideas on a plan to practical existence on the earth's surface. We utilize a unique and specific language to perform these tasks; however, this is not the only communication we have to perform. Occasionally, we find it necessary to communicate in more conventional terms.

There are so many forums for communication these days, the mind is challenged as to which is the best way to do what for the best result. We feel most comfortable with paper (like a map or this magazine). It has a permanency that we understand, and it is easy to index. Other forms seem less permanent, less grounded and just plain new.

Sometimes, we have just got to venture into the new to get to where we want to go. Surveyors embrace technology, and its many advances, better than most. Our technologically fast-paced profession makes us ripe for considering communication in the 21st century. CLSA just recently ventured out to Facebook! I am a fan and I hope you are too! As we move ahead as an organization it is important that we take advantage of all of our communication tools. ❖

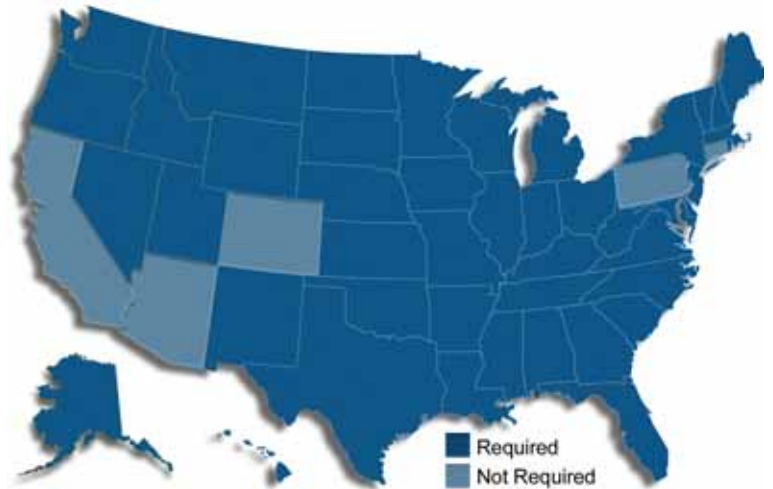
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President's Message

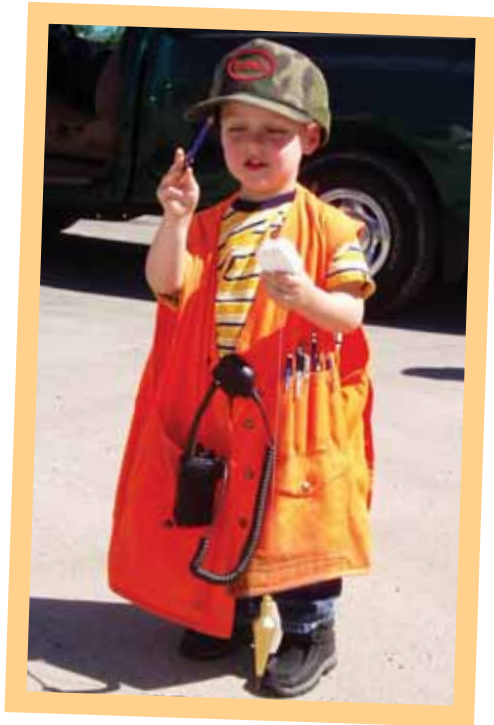
CLSA launched our updated website in November 2009. If you have not seen it, please treat yourself to a visit to find a fresh new look and functionality to this magnificent resource. The first thing I noticed is the updated look of the site that is both professional and inviting. The home page graphical links and tabs quickly get you to the places and resources you visit most often. I also found myself browsing into areas I didn't use much before. I particularly like the Find a Surveyor application where you can search for a surveyor by zip code or several other methods. The application displays a list of surveyors based on your search criteria and includes contact information. It also displays the CLSA voluntary professional development logo next to those who participate in the program. The enhanced website is faster and more useful than ever because of the meticulous programming, editing and testing by the staff at CLSA Central Office. I would like to give a special thank you in particular to Crissy Wilson for her hard work and dedication to completing this successful project.

While browsing the new CLSA website I began looking back through old issues of the California Surveyor magazines. What an amazing resource. It really is a timecapsule for the history of this organization. I stumbled across the issue published in the fall of 1999 and was struck that the main focus of the issue was continuing education. I was astonished to find that exactly ten years ago this topic was as hotly debated and important as it is today. It made me question why. Why haven't California Surveyors found consensus on this issue after more than ten years? Why have 45 of the 50 States in the Union found consensus and adopted continuing professional development, and yet California, with the largest population of Land Surveyors among the States has not? Most everyone has an opinion on this subject. I read an article I found particularly interesting on the subject in that old issue of the magazine. The article included opposing view points on the topic. Interestingly, the two authors wrote their opinions not knowing that another author was preparing an opposing view. Each author had an opportunity to rebut the others comments at the end of the article. I must say the dialog was engaging and both viewpoints offered compelling arguments. The points articulated in that dialog are the same being offered by others today with a couple of

exceptions. Today we have more evidence of the success of continuing professional development programs based on the experience of other states and professions who have adopted such programs. As Governor for California to the National Society of Professional Surveyors (NSPS) for over the past five years, I have enjoyed interacting with other Surveyors representing their State survey organizations. I have found that generally most of these representatives are surprised to discover that California has not adopted mandatory professional development or a four-year degree requirement for licensure. Additionally, I have not heard any disparaging comments from those who have implemented such programs. California Surveyors today are also more educated about the licensing examination process than they have been in the past. With implementation of the national examination along with a State-specific portion came the development of an open dialog between the profession and the Board of Registration to better understand the process. Many Surveyors realized through that development that the examination provides licensure based on "minimum competence". Since we are licensing Land Surveyors at the minimum competence standard, what mechanism is in place to ensure those surveyors who are just above the minimally competent line continue to educate themselves beyond mere experience? I consider the standard of minimum competency provides minimum public protection. CLSA recently completed a survey of our membership regarding this issue. The results indicated the large majority of respondents favor mandatory professional development, while the minority favored a four-year degree requirement and even less believe the system should remain as it is today. CLSA has continued to support mandatory professional development based on this information from our membership. As part of this effort, CLSA developed and launched the voluntary professional development program. The program is aimed to assist those licensee's who are continuing to educate themselves by, among other things, providing a system to track their annual professional development hours (pdh's). I anticipate the respondents to the survey that indicated support for continuing professional development will apply to this program and take advantage of the many benefits it provides. Regardless of which side of this argument you may find yourself, I think the time has come for our profession to find some common ground and speak with a unified voice on this issue. ❖

Kids Korner

Do you have a picture of a "junior surveyor" in your family that you would like to share? Send it in and we will put it in the Kids Korner.



Three year old Zachary Macintire, complete with all the necessary tools and equipment, is preparing to take line from grandpa John Margaroni, PLS.



Jessie Silvera
Photo by grandpa Don Mertens, PLS, Co-Facilitator and Adjunct Instructor surveying and Mapping Sciences Program Career Education Division, Santiago Canyon College.



Letters to the Editor Opposition to Mandatory Continuing Education

Submitted by: Michael R. Bond, PE, PLS

Mandatory continuing education being legislated as a requirement for a California Land Surveyor to maintain his/her license ought to be opposed by professional Land Surveyors.

An organization created for the purpose of representing and supporting the profession, has a first obligation to individual members as well as other professional Land Surveyors. An organization's leadership ought not to take any position or action that diminishes the professional status of a fellow Land Surveyor, whether they believe it to be an altruistic position or action on behalf of professional Land Surveyors.

As has happened in other professions, unfortunately, elitists within organizations claiming to represent the best interests of individual professionals act to cede autonomy (professional status) to states. The American Society of Civil Engineers (ASCE) supports documented continuing professional development as a **condition for maintaining** status as a licensed Professional Engineer (ASCE Policy Statement 426.) Notwithstanding its many good works, ASCE has assumed national and international responsibilities and objectives, subordinating members to its model of a professional while exploiting them for financial gain. ASCE is proud that 34 states now require **mandatory** continuing education.

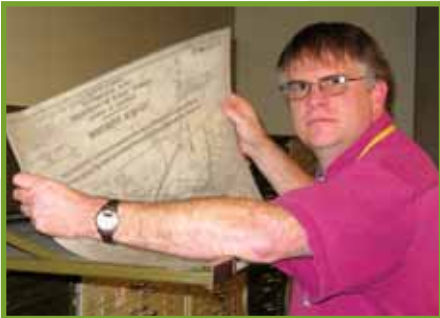
State requirements to obtain a license to practice land surveying together with the rules and statutes that govern the practice and conduct of Land Surveyors adequately protect the public and respect the presumptive status of a professional. **Mandatory** continuing education requirements introduce the notion that a professional Land Surveyor becomes less qualified and poses a greater risk to the public over time. Many specious arguments are used to justify such a mandate but none provide any evidence that time alone acts uniformly among all professionals to degrade the quality of their performance and thereby pose a greater risk to the public. There is no evidence that **mandatory** continuing education addresses any public safety issue, certainly not based upon the assertion that violators of the rules and statutes constitute a credible basis for imposing onerous conditions on the entire profession.

Furthermore, allowing the state to impose new, perpetual, compulsory and costly requirements to maintain one's license effectively redefines the meaning of "professional" to that of "state agent." Leadership of organizations who presume to know better than the individual professional as to how best to conduct their practice and career and who collude with the state to affect conditions on another professional's license abdicate their responsibility to represent the interests of professional Land Surveyors.

The proper position on **mandatory** continuing education for any organization representing Land Surveyors is to strenuously oppose state control that in any way diminishes the professional status of Land Surveyors. ❖

Continuing Education Debate

William Wilson, PLS and Ian Wilson, PLS make the case for and against Continuing Education.



William Wilson, PLS, is a twenty-year-plus veteran surveyor; he obtained his initial training as an 82B (Construction Surveyor) in the US Army. He has worked in Saudi Arabia,

Georgia, Utah, and has been practicing surveying in California for the past eleven years, during eight of which he has been licensed. His experiences include field and office work, technician through survey project manager, researcher, drafter, instrument man, and crew chief for design, construction, and cadastral surveys. He is a regular contributor to the *Focal Point*, the newsletter of the CLSA Sacramento Chapter, and is currently employed with Caltrans, North Region Office of Surveys, Survey Data Center, in District Three.



Ian Wilson, PLS, is the Director of Survey for Cardno WRG, Inc., in Roseville, CA. Ian and his wife Laura are enjoying life in Northern California; kayaking on

the many waterways around the area and tasting local wines, though not necessarily at the same time. Ian is also enjoying being part of the award-winning Sacramento Chapter of the CLSA. Life over 50 keeps getting better and better and being married to Laura makes it even better. (No wine was consumed while writing this article.)

The Case For Continuing Education

By: William J. Wilson, PLS

First off, let me start by clearing up any wild speculation that is going on out there about Ian and me; yes we do share the same last name, but as far as I know, Ian and I are not related in any way other than our love and passion for our chosen profession, land surveying. Now with that said, I would like to thank Ian for taking on the task of arguing against Continuing Education (CE); from my perspective, his is on the losing side of the debate, and I would have not liked to argue it.

If Continuing Education implies to anyone that all of us have education to begin with, I should hope so. Just because some of us, myself included, do not have a "sheepskin" (colloquialism) piece of paper hanging on our wall saying that we attended and passed a set curriculum, at some institute for higher education, that does not mean we have not been educated in surveying. According to Merriam-Webster's online dictionary Education is defined as: 1 a: the action or process of educating or of being edu-

cated; also: a stage of such a process b: the knowledge and development resulting from an educational process <a person of little education> 2: the field of study that deals mainly with methods of teaching and learning in schools.

We must not fall into the mindset that continuing education is trying to force us into college courses or programs, as described in the second portion of the definition; CE is simply a term to describe the action or process we should do in order to maintain and/or advance ourselves within our profession. Perhaps everyone would feel more comfortable if we called it Continued Training? Merriam-Webster's online dictionary describes Train as: 1: trail, drag 2: to direct the growth of (a plant) usually by bending, pruning, and tying 3 a: to form by instruction, discipline, or drill b: to teach so as to make fit, qualified, or proficient 4: to make prepared (as by exercise) for a test of skill 5: to aim at an object or objective: direct <trained his camera on the deer> <training every effort toward success> intransitive

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Continued from previous page

verb 1: to undergo instruction, discipline, or drill 2: to go by train. Personally, I like 3b: to teach so as to make fit, qualified, or proficient. This says more than education, and as it seems as surveyors, we love to find and use ambiguity without acknowledging it, train, trained or training would be a better description word for what is proposed here.

I agree there is no substitution for on-the-job training (what did I just say?), but isn't that education? Whether it is behind the total station in the field or behind a desk in the office, every surveyor, college trained or not, must have a minimum of one year of each before they can even consider sitting for the exam. A few years ago, I was wondering about the differences between those that attended a survey program at a college and those of us that had not, aside from those employers that prefer college education, similar to their own. Therefore, I asked a fellow surveyor whom I knew had graduated from a four-year surveying program, if he saw any differences between formally and non-formally trained Licensed Surveyors. His response was surprising and enlightening; it seemed to him formal education gave an advantage in passing the licensing exam, simply because those individuals were more accustomed to taking tests, but five years after obtaining licensure, from his point of view he saw little or no difference between the two. I am guessing the school of hard-knocks puts everyone on the same page.

Ian asks the question about what programs are out there to learn from? I agree the seminars available, at least here in the North State, are few and far between, and the ones that are available do seem to repeat themselves annually or even every few years. However, as I have pointed out in my opening statement, attending the annual convention will satisfy the requirements. Prepare and submit articles to this periodical, any local newsletter, or national surveying publication, and if you still find yourself coming up short because there are no seminars to attend, put on your own; it could be in-house training for up and coming LSIT's, or just the staff in general. If you are not a member of your local CLSA chapter, sign up and become an officer, or better yet suggest the chapter have some type of training of an hour or more during or after the monthly business meeting. There are answers; do not be afraid of finding them or implementing your own.

As for cost, it seems to me a lot of you were willing to shell out some serious coin to attend any number or all of the exam preparation classes, and this was before you were making the big bucks. In fact isn't that why so many pay for those classes, so they will pass the exam opening the door to licensure and possible pay increases? If we are willing to pay to get here, why should it be so hard to pay

Continued on next page

to stay here? Furthermore, I would like to point out that once the need is there more people will be attending the seminars that are available, either causing the cost associated therewith to go down or opening the door for others to create new continuing education programs at reduced cost.

As for where to set the bar, if we follow some of the other states, and the voluntary program already in place here in California, it is just 30 Professional Development Hours (PDH's) for two years. For some that may not be enough; at least they got some. For others, well, they may already be exceeding that amount in one year, so I think 30 PDH's is a good compromise. It may be just the catalyst needed to get some surveyors, more involved in finding out new things and expanding things they think they already know.

Continuing Education is necessary. Should you ever find yourself faced with a lawsuit (I hope you never do!), one of the things the court will look at is your level of care in relation to that of a prudent surveyor. Which, in short, means if you are just doing the same thing day after day,

never keeping up with how your peers are performing their work, you could potentially fall below where the courts set the bar as to what a prudent surveyor is. Proof that you are keeping current with your field of expertise is in the form of Continuing Education, PDH's.

Continuing Education sounds like a great idea because it is a great idea; the details are what you make them. As a profession within the State of California, we must present ourselves as professionals in all that we do; that includes stepping up and saying we need continuing education. Should you not like an aspect about CE, now is the time to voice your opinion to make it better; but to simply dismiss it because you do not see the need for it or don't like the thought of someone checking up on you, will only serve to get someone else's ideas implemented. Let us embrace the future, take hold of the reins to our profession, and guide it in a direction that other professions have recognized and put in place for themselves, and that the public will see as a step towards bettering ourselves. A course correction is due; Continuing Education is the direction in which we need to turn.

Rebuttal to Argument in Favor of Continuing Education

By: Ian Wilson, PLS

California is one of five states that do not have Continuing Education requirements. What would be more interesting is: Of the 45 states that DO have continuing education requirements, how many have seen a statistically significant reduction in adverse actions against licensees in the state? In short, does continuing education actually do the job it's touted to do?

The supposed point of continuing education, or more properly in California, since we do not have an education requirement – Professional Development, is to raise the level of professionalism and knowledge. The very existence of such PDU programs should significantly reduce the number of actions by Boards against licensees. It stands to reason that if the licensed population is being made more aware of their profession and the requirements of it, the number of infractions should go down. Significantly. Does it? Why isn't this the foremost argument of the PDU group?

The voluntary PDU program in California suggests a minimum of 30 Professional Development Hours per renewal period. That amounts to 2 days of seminars per year, unless, the participant attends professional association meetings, serves as an officer in a professional association, presents a lecture, acts as an instructor or publishes an article, paper, book or exam item.

The very fact that I am writing this article garners me some PDUs! Can anyone tell me how writing this treatise makes me a better surveyor? Or is there some other motive?

I am all for membership in our CLSA. I have encouraged others and paid for my employees to be members and attend

meetings. I considered it an investment in myself and my company. I've learned a great deal from surveyors at CLSA meetings over the past two decades. I have a hard time, though, of equating swapping war stories over beers with eight hours of a solid seminar by Don Wilson.

I have served as an instructor at Chapter LS Exam Prep Seminars. That work counts toward my PDUs. Why? I'm there to teach others. How does that make me a better surveyor?

If those who promoted Professional Development programs could create a solid program that:

- ☞ relied on real education rather than extraneous bits;
- ☞ covered a broad range of topics with new seminars on a regular basis instead of the same old five or ten on the circuit today;
- ☞ found a way to reduce the cost and expense in terms of lost work, time and dollars; and,
- ☞ provably accomplished its goals and increased the level of professional practice, then I would be much more in favor of mandatory Professional Development Programs.

Until then, those of us who want to continue to improve will do so and will pay the cost for good programs...willingly. Those of us who could really use the programs simply will not take the time, make the effort or spend the dollars.

Continued on next page

The Case Against Continuing Education

By: Ian Wilson, PLS

Surveying is an endeavor that requires experience. It is an avocation that lends itself well to mentoring and the passing down of knowledge and lore from one generation of surveyors to the next. It is a profession learned best informally in the field. It does not require huge investments in formal schooling. And therein lies the rub.

The very term "continuing education" implies that all of us have education to begin with. After all, how can we continue something we never began? Many of us who currently hold licenses issued by the State of California to practice the art of land surveying have little or no formal education in land surveying. Formal education in land surveying is not something that is required under the California statutes that govern our practice.

Many of us know someone who has extensive formal education in math, science and surveying, but who couldn't come up with the correct boundary location if it was painted on the ground. We all know someone who has no formal education beyond high school, if they managed to graduate, but who has an uncanny talent for figuring out where the fading footsteps are and where the boundaries are hidden. While these are anecdotal stories, they point to one thing: a formal education is not necessary to do what we do as "professional" Land Surveyors.

If we don't need a formal education to sit and pass the Professional Land Surveyors Exam, why must we be required to start some course of formal learning once we hang our license on the wall?

Beyond the obvious lies the more subtle, in terms of "continuing education." What programs are out there to learn from? We all get the same half dozen or so mailers trotting out the same subjects year after year. While I thoroughly enjoy Mike Durkee's Subdivision Map Act Seminar, how many times can I attend the same program and still call it "continuing education?"

There simply aren't enough programs on the market to cater to mass audiences with enough breadth and depth to make up a well-rounded continuing education program.

Finally, the cost of such programs under a scheme of mandatory continuing education is really a hidden tax. A mailer came across my desk today touting a nationally known pair of speakers. The program is an excellent one. I know. I've been to it four times in the past eight years. At nearly \$300, combined with the day away from billable hours, the expense of traveling well over a hundred miles to the site, gas, meals and other expenses, the program would cost me well over \$500. One such program a year is not enough to constitute real continuing education. Where do we set the bar? One such class a quarter? Every other month? Every month? Soon, this ideal of continuing education begins to cost a lot of money.

In short, continuing education is not necessary. There aren't enough programs on the market. Those that are available are expensive in terms of cost, lost revenue and expenses.

Continuing education sounds like a great idea until you start looking at the details.

Rebuttal to Argument against Continuing Education

By: William J. Wilson, PLS

So... you say we don't need Continuing Education for surveyors in California; well, as we are all surveyors let us approach this as we would (should) any survey problem: by assembling the Facts:

1. All but five states have Continuing Education requirements, California being one of the five:

- a. California
- b. Arizona
- c. Colorado
- d. Connecticut
- e. Pennsylvania*

2. California has a voluntary Professional Development Hours (PDHs) program, similar to those mandatory programs in adjacent states, Oregon, and Nevada:

*Legislation was recently passed in the house, which will make continuing education mandatory beginning in 2011. The legislation is pending approval by the senate.

- a. 30 PDHs are required for a two (2) year period.
- b. PDHs may come from a variety of sources.
 - i. Seminars and workshops
 - ii. College courses
 - iii. Active participation in a professional association
 - iv. Presentations as lecturer or instructor
 - v. Published paper/article/book/licensing examination item
- c. Of course there are restrictions and limits to what you may and must claim, and I encourage you to look into these at: <http://www.californiasurveyors.org/files/profdev.html>

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3. Application to sit for LS Exam has minimum qualifications that need to be met.
4. LS Exam is to test for minimum competence.

Let us examine each fact, shall we?

1. Ordinarily I am not one to want to do something just because someone else is doing it, and this case is no different, but I do have to ask the question, why do the majority of the states require Continuing Education? Could it be the simplest way to ensure a higher competency within the profession? Let us keep that thought in mind and move on.

2. CLSA has enacted a voluntary program which we are all invited to join; it is a good model to examine what types of things you can do or should do to maintain your professional edge. I think most surveyors feel like they do not have time or the desire to go back to school; however, while that is one method to get credits it is certainly not the only one. If you just attend two, day long seminars every year you will meet the requirement (and then some). Should you attend the annual convention, you would knock it all out in that one week; should you attend the accompanying workshops as well, that's just icing on the cake. I would like to point out if PDHs were required, you would have more leverage with your employer to let you attend seminars and the convention; "I have to go to fulfill my PDHs." Just for writing this article, I would be entitled to five credits. So not having time is not a viable excuse for not wanting Continuing Education.

3. While you may claim education to sit for the exam and use it as part of your experience, it is not an absolute requirement. Current requirements are:

a. Graduation from a four-year curriculum with an emphasis in land surveying approved by the board or accredited by a national or regional accrediting agency recognized by the United States Office of Education at a postsecondary educational institution and two years of actual broad based progressive experience in land surveying, including one year of responsible field training and one year of responsible office training satisfactory to the board.

b. Actual broad based progressive experience in land surveying for at least six years, including one year of responsible field training and one year of responsible office training satisfactory to the board.

c. Registration as a civil engineer with two years of actual broad based progressive experience in land surveying satisfactory to the board.

So these are the minimum requirements just to sit for the test; can someone be that knowledgeable in such a short amount of time? I know I have learned a whole bunch more since I sat for the exam, but then I have forgotten some as well; hum... maybe continuing education helps with things we might not do regularly and may forget because of lack of exposure. No one forced you to go to college in order to get your license, and no one is forcing you to go to keep your license; you would only be asked to prove you are being a professional and keeping up with any changes that are occurring within our field while expanding your knowledge.

4. The exam tests your minimal knowledge of surveying; while we may think the test is hard while we are studying for and taking it, it is nothing compared to the challenges we face with everyday surveying issues. The difference is the amount of time you have to think about the problem(s).

All right, crunch time: the majority of surveyors in other states has seen a clear need for Continuing Education, and has put systems in place to ensure that it is met within their state, bettering their local profession. A voluntary system is currently in place here in California, demonstrating the ease and unencumbered ways you can fulfill the requirements of a continuing education provision. We only needed minimal experience to sit for the Exam, the Exam is geared toward making sure we have a minimal understanding of surveying, and we only need 70% of a minimal understanding to pass. As my old boss would say if you just squeaked by at 70%, "so you don't know what you are doing 30% of the time," is that a fair assessment? Don't think about yourself for a moment; think about the people sitting around you when you took the Exam, some of them you may have known, while others you may not. Of those you did not know (and maybe some you did) how comfortable do you feel about them just meeting the minimum requirements? Would it be nice to know they are still bettering themselves, improving their skills, and making our profession stronger? Continuing Education is the logical course in our development as a profession; it is time for a course correction that is long overdue. ❖

Closing Argument For CE

William J. Wilson, PLS,

We have been asked to provide a brief closing statement for this discussion. I would like to take the opportunity to say thank you to Annette Lockhart for asking for my input, and for providing the chance to address my peers and colleagues, on what I believe is a pertinent topic. This

summer's issue of *California Surveyor*, published a 1972 quote by Chuck Wooldridge, Jr., LS, (submitted by Dave Woolley, PLS) *Compulsory continuing education!* Nineteen hundred and seventy-two, you have got to be kidding me, this subject should have been figured out long ago. We surveyors are certainly slow to change, at least here in California.

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I would also like to thank Ian Wilson for his informative views and counter points. I appreciate any opportunity to share my thoughts, throw out ideas and get feedback. I feel this is what continuing education is all about. Any teaching/training that is thought-provoking to the recipients, as well as the teacher, is a benefit to our profession. I have had the honor of mentoring several individuals over the years who have gained their licensure. My biggest wish for each of them is that they impart some of what I have shared with them, from those that taught me, with others. For I found I learned the most when I was teaching them, it gave me a fresh perspective on a subject I may have thought I had down pat. I hope that they may continue to learn in all that they do and share.

Lastly thank you, the readers, for indulging my personal ranting. Ask anyone who knows me, if you have a soapbox for me to stand on, I will not shy away from the opportunity. And remember, if your traverse is off course ten feet in a mile, then you are off one-hundred feet in ten miles. Now think about it, there was a call for a course correction in 1972, how far off course are we now, thirty-seven years later? I hope it is not too late to correct the ignorance of 37 years.

Closing Argument Against CE

Ian Wilson, PLS

In my opinion, what we're talking about here is not about surveyors continuing to improve themselves. The better surveyors will always strive to learn and to improve their abilities. The issue is whether or not this ought to be legislatively mandated. To me, it should not be mandatory. There simply is enough variety in seminars and real learning opportunities that can be measured. The imposition of such mandatory programs has not been proven to be effective in reducing complaints against licensees. The cost of the mandatory programs constitutes a hidden tax on those of us who are licensed. In short, the mandatory program does not deliver.

Learn. Continue to learn, and continue to improve yourself as a surveyor. That's what being a "professional" is all about. Let's not make it a mandatory thing. ❖

The More Things Change...

Quotes from the near and distant past that prove the point:
the more things change, the more they remain the same.

The following quote was taken from "Land Surveyor, Technician or Professional", by Gurdon H. Wattles, 1974. For the full content of the article, see California Surveyor No.33 at www.californiasurveyors.org/files/cal-surv.html.

"Because the development of coordinates falls into an easy-to-use formula-ized method of procedure, it is fun to play with them; and once you get started, it is hard to draw the line as to where to stop using them.

Coordinates are a wonderful tool for mapping; also they are excellent for checking positions by photogrammetry to approximate any ground locations in searching for previously established survey corners. Furthermore, there is no question of their value in triangulation and correlatively for checking time related positions, (i.e. before and after earthquakes, landslides, etc.).

However, the procedure of simply applying coordinates is NOT the answer for legal property line and corner establishment.

The mathematically formula-ized derivation or assignment of points on the earth is not compatible with the creation of legal descriptions of property ownership which has been upheld by the processes of law and decrees of courts of our land ever since the founding fathers began their bartering of the soil.

The insertion of a cliché here would be illustrative, "It may be accurate but it may not necessarily be correct."

A practitioner of accurate land measurements is a Technical Surveyor.

A Professional Surveyor is one who gathers facts of measurements and physical conditions, applicable rules of law, and facts of record with past and present information for comparative analysis. He also considers the method of creation of the situation at hand, endeavors to "follow in the footsteps" of the creator surveyor, analyzes the "majority probability" status, and arrives at a conclusion based upon mature judgment of all the involved facets. This, of course, is far more intricate than assigning coordinates, but a "Professional" is recognized for his over-all consideration of the problem rather than a simplified short-cut method.

To cure a disease, one should work on the cause instead of the effect.

In conclusion, if the now licensed surveyors are to uphold their professional status not only currently but also through the upcoming embryonic aspirants and those in

actual preparation to becoming registered, it behooves them (the now licensed ones) to be concerned. Toward that goal, it would be well to make extra effort to correct the insufficiency of education in this discipline.

By the operation of intelligently planned programs, forthcoming surveyors will be prepared to demonstrate professionalism. "

Commentary by David E. Woolley, PLS:

Mr. Wattles captures the essence of a professional land surveyor. At the time he could not have imagined today's world of coordinates on a stick. He may have scoffed at the thought of practitioners that run RTK exclusively, no practical capacity or interest in post processing or measurement analysis. It would seem crazy that coordinates would be collected in the field and plotted, which 35 years later results in minimal redundancy and no adjustments. Gone are the chains, transits and most importantly the procedures that made the surveyor the exclusive expert in measurement. These, of course, are broad brush strokes that are not all encompassing. For those that fall within this category, ask the question, why can't a contractor, grader or engineer do these simple tasks? Before we point to the law, understand the law is to protect the public, not our jobs. We must remember engineers, then and now, are perfectly capable of measurement.

In reading his conclusion, he expresses the need for educating those licensed in the discipline. The challenge of the day was not a question of the need for education but the availability of programs, seminars and instructors. The active members of the profession discussed education of the land surveyor as though it were a forgone conclusion. In 1974 engineers were able to practice surveying; CLSA had been working on changing this for eight years at that time. The primary justification for separation of the professions was that the engineers were not educated in land surveying and land surveying issues, their training focused on clinical constants which are very separate from the evaluation of evidence, case law and mapping. Percentage-wise, one wonders how many surveyors actually produce maps.


The engineer's license has been prohibited from the practice of land surveying for 27 years. Through attrition we're seeing the last of them. Education programs and seminars now exist throughout the state with more being

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added via the internet. Yet, 35 years later, we are still undecided about continuing education or professional development or whatever term is finalized to make it more palatable for the masses. Attending one of the seminars is similar to attending a class reunion, excluding test-taking hopefuls, it is the same people, just a little older and a little fatter. The folks that began this CLSA in 1966 would be proud of the number of members and the great work done by the many chapters and committees. It has come a long way from a coffee shop in Sonoma (or Marin) County. I cannot help but wonder if they would be disappointed in our unwillingness to maintain our professional separation from engineering through education and training. CLSA and the Board have expended a tremendous amount of effort trying to escalate the number of professional land surveyors. Considering that the exam cut score is less than 50% to be professionally licensed and considered minimally qualified, it is arguable that additional education is warranted. If we continue to collectively reject the idea of education, we should welcome the engineers (all 35,000 or so) back into the practice. After all, we are only separated by their 130 units of education and our unwillingness to maintain 24-48 hours every couple of years. ❖

David E. Woolley, PLS, is the CLSA Orange County Chapter Legislative Chairman, Chapter Representative, State PPC Member, and owner of D. Woolley & Associates, Tustin, California.



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Chapter Feeds Survey Examinees

Sacramento Chapter CLSA members Annette Lockhart, Bill Jackson, Bill Telling, and Rob McMillan teamed up once again to feed the October surveying candidates at Cal Expo. On Friday, October 23rd, they provided lunchtime sandwiches to those taking the NCEES Professional Surveyor's Examination, and they did the same on Saturday for the Fundamentals of Surveying examinees. What a great example of sharing the benefits and camaraderie of CLSA. -Editor





By: Robert M. McMillan, PLS

Rob McMillan is Chief of Survey Standards, Division of Right of Way and Land Surveys, California Department of Transportation. He is also Chapter Representative for the CLSA Sacramento Chapter.

Creating the Footsteps for Tomorrow's Surveyors

A Report on the 2009 NASME/SaGES Conference



Every two years, the North American Surveying and Mapping Educators (NASME) Conference is held to discuss the status of surveying and mapping education, and the direction of the profession. During the 2007 Conference, the NASME voted to become an official organization and create by-laws, which included a re-branding of the fledgling organization; a name change to the Surveying and Geomatics Educators Society (SaGES). The 2009 Conference, held July 8th through 10th, was hosted by Marian Clark, PhD, assisted by Jerry Taylor, both of East Tennessee State University (ETSU).

ETSU (N 36° 18' 02", W 82° 22' 13") is in the beautiful Tennessee mountain town of Johnson City. Although that might make you think of some place quaint or "back woodsy," Johnson City, a former railroad depot, has been the center of tourism and business in Northeastern Tennessee for two centuries. With a population over 60,000, the thriving community ranks in Forbes Top Ten Small Metropolitan Areas. Depending on your preference of airline or desire for a road trip, Johnson City is a four-hour drive East from Nashville, or a 20-minute trip from the Tri-Cities Regional Airport.

The Surveying and Mapping Science program at ETSU is an ABET (ABET.org, formerly the Accreditation Board for Engineering and Technology) Applied Sciences Accreditation Criteria (ASAC) accredited program. ETSU's program addresses the educational requirements for licensure in Tennessee; a four-year degree in Surveying and Mapping, or a closely related field, and a number of surveying credit hours.

Additionally, the program's geographic location, unique course content, and Southern Regional Education Board Academic Common Market participation allow students from other nearby states to qualify for in-state tuition rates. The Academic Common Market is an interstate agreement among southern states for sharing academically uncommon programs. Because ETSU's Surveying & Mapping Science program is so unique, students from the following states may apply for Academic Common Market status and qualify for in-state tuition rates: Alabama, Kentucky, Mississippi, South Carolina, Virginia, and West Virginia (as approved for the 2008/09 academic year).

In addition to our hosts, participants and institutions included Carlton Brown, University of Maine; Earl Burkholder and Steve Frank, New Mexico State University; Bob Burtch, Sayed Hashimi, and Kurt Shinkle, Ferris State University; James Crossfield, California State University – Fresno; Jim Elithorp, Great Basin College, Nevada; Chuck Ghilani, Sal Marsico, Wes Parks, and Tom Seybert, Pennsylvania State University – Wilkes Barre; David Gibson, University of Florida; Joshua Greenfield and Laramie Potts, New Jersey Institute of Technology; David Ingram, National Society of Professional Surveyors (NSPS); Wallace Johnson, Tyler Junior College, Texas; John Keen and Larry Phipps, Land Surveyors Workshops; Stacey Lyle, Texas A&M – Corpus Christi; Joseph McNichols, Wentworth Institute of Technology; Bob Mergel, Columbus State Community College and The Ohio State University; Jerry Nave, North Carolina A&T State University; Ismael Pagán-Trinidad and Jose Rivera-Cacho, University of Puerto Rico – Mayaguez; Joseph Paiva, Paiva

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Consulting; Dan Perry, Utah Valley University; Bob Schultz, Oregon State University; Curt Sumner, American Congress on Surveying and Mapping (ACSM); Rick Sypolt, Glenville State College; Boudewijn Van Gelder, Purdue University; Rich Vannozi, University of Connecticut; Patti Williams, University of Texas at Tyler; Erika Wilson, National Geodetic Survey (NGS); and John Yu, Evergreen Valley College (CA). Most of them have a PLS or PE and a PhD! Although I felt like the bat boy at the All-Star game, they all treated everyone as equals.

The keynote speaker was David Gibson, PhD. He focused on the state of Surveying and Geomatics education in the United States. There are currently only 21 ABET accredited Engineering Accreditation Criteria (EAC) BS Degree programs in existence today. This alarmingly low number is a result of low enrollment and the loss of stature of Surveying programs at larger institutions, culminating in program closures.

A single track of sessions followed the keynote at half-hour intervals throughout the first day. The focus was on students in the morning and faculty in the afternoon. Student focus topics included distance learning, student advising, recruitment, retention, and the importance of the 2010 NSPS Student Competition in fostering interest in professional organizations. The day-one California connection was Dr. Crossfield's presentation on *Township - The Board Game for Geomatics Student Recruitment*. Instructor focus included sessions on faculty recruitment, program development, ABET accreditation, PLS registration and ethics, and a special session on tips and timelines for hosting this conference in the future. This advice was of great interest to the contingents from the University of Puerto Rico - Mayaguez, and University of Texas at Tyler/Tyler Junior College, the hosts of the 2011 and 2013 conferences, respectively.

Day two began with a welcome from ACSM Executive Director Curt Sumner. He discussed ACSM's interest in education and their desire to support NASME. The program then transitioned into another single track of focus sessions on instructional strategy and the Surveying and Geomatics body of knowledge. Again, there was a California Connection, as Dr. John Yu presented *Development and Implementation of a 3D Laser Scanning Course*. Yu's work in developing the course was funded in part by a National Science Foundation (NSF) grant. The NSF grant included funding for an introduction and training workshop for faculty from other institutions, which was held July 13th and 14th. The afternoon included a panel discussion entitled 'Where do our New Educators Come From?'. This discussion brought to light the critical shortage of Masters Degree and PhD candidates, and the effect of this shortage on existing post-graduate programs, and ultimately undergraduate Surveying/Geomatics programs. As colleges and universities seek PhDs to replace retiring faculty, the lack of candidates could lead to succession problems causing additional program closures. Late afternoon ses-

sions included technical topics and applications of technology. That evening, an excellent Tennessee BBQ banquet dinner was held at our base of operations, the luxurious Carnegie Hotel, across the street from the ETSU campus.

The final day of the conference addressed the organization's business needs. There were committee reports, discussions about creating standing conference topics on accreditation and accreditation criteria, and a review of the new by-laws.. Participants of both the 2007 and 2009 Conferences were given voting rights in the decisions, as the decisions were a result of both events. Electronic ballots were e-mailed for the approval of the by-laws, as well as for the nomination and election of officers. Additionally, two questionnaires were distributed for circulation to all Surveying and Geomatics instructors. One is a student survey, the other an educator survey. (For additional information about these questionnaires please contact this author.)

The 2009 NASME/SaGES Conference was a great opportunity to share ideas on improving existing Surveying/Geomatics programs. It was also an opportunity to showcase the efforts of Dr. Crossfield and California State University, Fresno, and Dr. Yu and Evergreen Valley College, thinking outside the box on recruiting and program development. I can't wait to see what 2011 will bring, and what California institutions will have to brag about! What ideas do YOU have to share?

For information on the 2007 NASME Conference and a brief history of the organization, see *California Surveyor #152*. ❖

Normally, what happens at Conference, stays at Conference, but some things are too good not to share. David Gibson and Curt Sumner provided the keynote and ACSM addresses to the group, but when the local bluegrass band took a break, Gibson and Sumner took the stage for a set of rock-and roll classics during the conference banquet. And, I have a Survey-nerd confession to share. Larry Phipps' Land Surveyors Workshops provided sponsorship, and had an assortment of texts on display. I bought an autographed copy of Ghilani's *Adjustment Computations - Spatial Data Analysis* to add to my professional library.

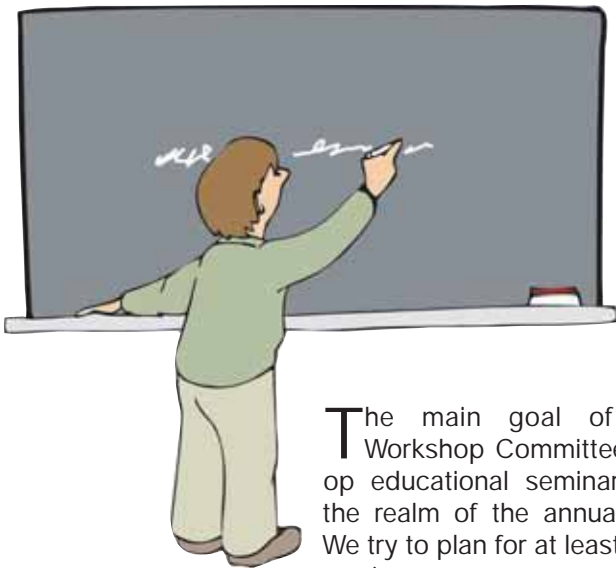


By: Armand Marois, PLS

Armand Marois, PLS, has over thirty years in the surveying and mapping business. He is licensed in California and Arizona. He has been member of CLSA since 1988, was president in 2005, and is Chairman of the Workshop Committee. He is the principal surveyor for BHA Inc. located in Carlsbad, CA.



Weekend Education Warriors



are requested to fill out a survey at the end of each workshop or seminar on how well the information was presented and the effectiveness of the speaker. The committee also utilizes information sent to us by any of CLSA's members and by evaluations of the session presenters at the annual conference.

During the site selection process, the committee and Central Office staff will make use of information from the on-line survey assessment. With an objective to have the same seminar presented in two different places in the state, usually on two consecutive Fridays (one in the northern part of the state and another in the south). Locations like Concord, Ontario, Sacramento and San Diego have worked well in the past, but are not the only places we have used for seminars.

As mentioned before, local chapters can partner with CLSA to have a joint venture in their area. If there is a particular subject or speaker that is of interest to a chapter's membership, the Central Office can take care of locating a place to have the workshop, negotiating the contract with the hotel, setting up the arrangements for the speaker, putting together and distributing the flyer, handling the collection of registration fees and paying the expenses. The chapter's responsibility would be to promote the event at the local level, to have someone at the seminar to take care of on-site registration and to introduce the speaker. Another service the Workshop Committee would provide during a joint venture is to see if another chapter would like to have the same workshop in their locale.

A goal of the Workshop Committee and that of CLSA is to provide workshops and seminars at a cost effective basis. The approach is not one of fund raising but as providing quality educational presentations as a benefit of membership. In fact, these events have become a major recruitment for new members by setting the member rate for registration fees worthwhile for non-members to join CLSA.

The main goal of the CLSA Workshop Committee is to develop educational seminars outside of the realm of the annual conference. We try to plan for at least two different seminars per year, one in the spring and one in the fall. By coordinating with the Central Office, the committee will review all aspects of a workshop/seminar, including determining the topic(s), speakers and/or presenters, site selection, dates and times along with the promotional material.

Among its charges, the committee networks with other CLSA committees such as the Advanced Technologies and Education Committees in order to help provide opportunities that meet the current educational needs of the surveying community. In addition, the committee works with each Chapter's workshop coordinator in assisting that chapter in creating their own seminars or as a joint venture with the state office. This year the committee was given the additional task of determining the viability of presenting workshops called "Webinars", utilizing the internet, along with what types of topics that would lend themselves to this type of event.

To help gauge appropriate topics, the committee usually has the Central Office send out an on-line survey every other year. Currently, there is an on-line survey being conducted by CLSA. A link to the survey can be found on the CLSA website at www.californiasurveyors.org. This survey will help setup next year's schedule of workshops, and your participation is greatly appreciated.

Speakers are chosen by past performance and by their expertise in a particular subject matter. Attendees

Continued on next page

Past seminars have included topics on ALTA Surveys, Boundary Evidence & Procedure, Easements, Land Surveyor's Act, LSIT Review, Legal Principles, Public Land Surveys, Real Time Networks, Subdivision Map Act, Survey Conflicts and Water Boundaries. Our most recent seminar was "Railroad Surveying 101", presented by Charlie Tucker of AREMA (The American Railway Engineering and Maintenance-of-Way Association) in Concord and Ontario this past October. This course was designed to introduce the non-railroad surveyor to the basics of railroad surveying and mapping. If you have any ideas for a seminar or would like to become a member of the Workshop Committee, please contact your local chapter's Workshop Coordinator or the Central Office.

Of course, most of what the committee does could not be accomplished without the dedicated staff at the Central Office, more specifically Crissy Willson. She is the driving force that keeps the committee on course and makes sure that the seminars run as smooth as possible. The Chair of this committee is appointed annually by the President of CLSA and announced at the first Board of Directors meeting of the year. Volunteers are recruited from the ranks of the directors and Chapter Representatives. Currently, the committee has consists of four members that include Armand Marois (Chair), Jim Drenon (Riverside/San Bernardino Chapter), Anne Hoppe (San Diego Chapter) and William Telling (Sacramento Chapter). ❖



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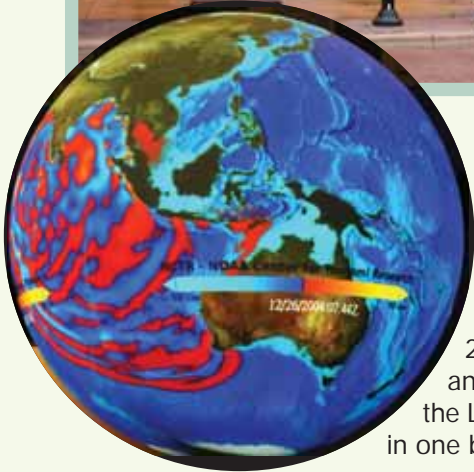
The National Museum of Surveying

By: Julia C. Langfelder Associate Executive Director
Illinois Professional Land Surveyors Association

Albert Einstein once said, "Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world." Imagine a museum dedicated to the profession of land surveying. The goal of the National Museum of Surveying (NMoS) is to become a unique destination where students, individuals, families and groups can come to learn about the past, present, and future of surveying.



In 10,000 square feet, the NMoS will be a place where people can learn about the important role surveying played in the development of our nation. Among other things, we will enlighten the public on the careers of our presidential surveyors: George Washington, Thomas Jefferson and Abraham Lincoln. Our visitors will learn about the role surveying played in the explorations of Lewis & Clark. We will focus on the present and future of surveying as well. The NMoS will feature state-of-the-art interactive exhibits where our visitors will see first-hand how the instruments of yesterday have evolved into the technology of today, with a peek at where it is headed tomorrow. One way this will be done is through its Science on a Sphere exhibit. With the use of high-speed computers, projectors and advanced imaging techniques, this exhibit houses more than 200 data sets that display



a wide range of pictures – all taken from satellites. This awe-inspiring presentation uniquely ties surveying to the tools and techniques used in the field. We expect it will attract visitors from all over, as there are currently only 36 such spheres in the world.

Will people come to visit? We think they will. The museums and historic sites in downtown Springfield, Illinois had over 1 million visitors last year. In 2008, 349,000 individuals visited the Abraham Lincoln Presidential Library and Museum, 100,000 people visited the Old State Capitol, and 25,000 toured the Lincoln Herndon Law Offices. All these tourist destinations are located within one block of the National Museum of Surveying.

We Need Your Help

Construction is now complete on this \$1.5 million project and the museum has received its occupancy permit. Unfortunately, due to changes that needed to be done to the historic building to meet safety codes, the NMoS hit a \$200,000 shortfall. This monetary amount needs to be met to pay the remaining construction bills, ensure proper cases are purchased for the exhibits, and provide general operating support for a portion of the year. The museum was thrilled in June when it received notice that the Board of Directors of the National Council of Examiners for Engineers and Surveyors (NCEES) granted the museum \$75,000 for education purposes, including the installation of a mini-theater and curriculum packets for teachers in grades K-12. Local fundraising has brought in \$13,000 which will be used for general operating support for the NMoS. But we need your help.

Please visit the museum's web site www.nationalmuseumofsurveying.org. Here you can view photos of the NMoS, read updates, donate securely online and read articles about the museum. We are also looking for people to donate their time - helping with exhibit planning, volunteer coordination and any other items that may come about getting this museum ready to open. We can be reached at info@nationalmuseumofsurveying.org or at 217.523.3130. ❖

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By: Roger K. Hanlin, P.L.S

Roger K. Hanlin, PLS, is a second generation California surveyor, licensed in 1988 and member of ACSM and CLSA since 1986. He has worked as professional surveyor for MHM, Inc. in Marysville, California for the past 20 years and is currently the Managing Senior Surveyor. Roger has served as the contract City Surveyor for the City of West Sacramento since 1997 and is currently the Vice President of the Northern Counties Chapter and Chapter Representative.

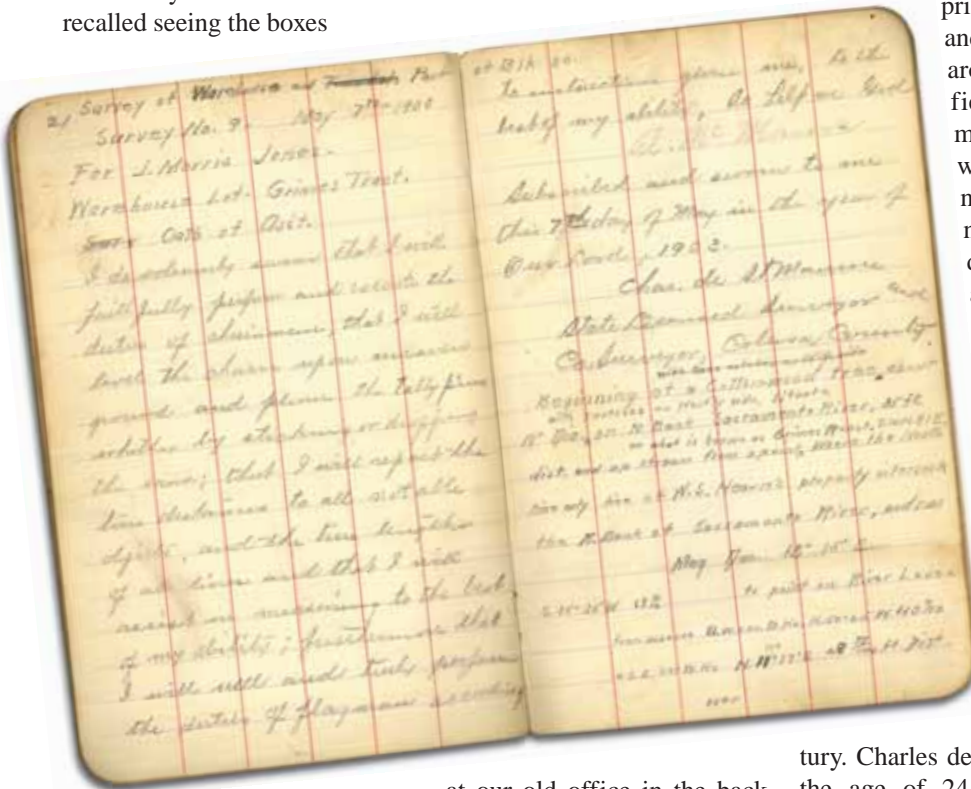


Field Book Gemstone – The Oath of the Assistant

The other day while organizing the company archives, I came across a field book gemstone that left me in admiration of our company founder, a young surveyor of many years ago. Sitting on the shelf, along with over a thousand field books was a series of yellow boxes labeled Colusa field books. I recalled seeing the boxes

surveyors know, with archived survey records, it is extremely important to look in every box, file or drawer before any item is thrown away.

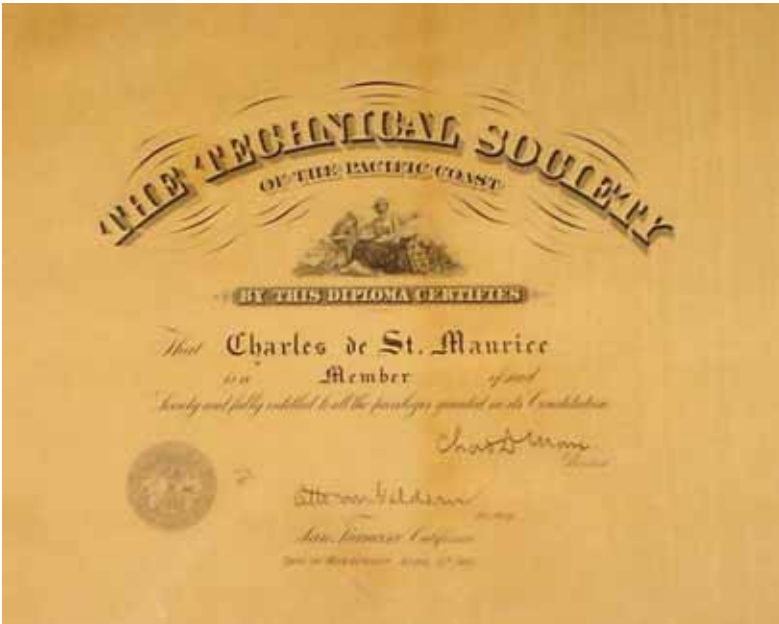
Upon opening the box, there was no initial surprise, just more old-field books with taped bindings and faded numbers. Since our company has been around more than 100 years it is common to see field books, peg-notes and loose leaf pages from the mid 1940's. Of course, as most curious surveyors would do, I opened the first book to look at the notes. I could tell the book was a little older than normal but nothing special was immediately evident with the neatly written angles and distances and other typical survey data until I noticed the date on page 11 of the first book was September 4, 1902. I quickly became excited and opened all the other yellow boxes full of the old well-worn leather field books. Realizing the historical interest of the discovery, I forgot about work for a while and took the time to sort and organize the books, browsing through each one looking for dates and trying to find the oldest one.



at our old office in the back surveying room on a shelf of miscellaneous survey manuals, out of date calculators, dirty rolls of flagging and other useless items that always seem to collect in back surveying rooms. Since our company had recently relocated to a new office, after 47 years at our old location, I have taken on the project of maintaining the integrity and organization of the archived survey records as well as purging useless items to save space in the new office. As most sur-

The field books documented the work of our company's founder Charles de St. Maurice who resided in Colusa County in the late 1800's and was the County Surveyor for Colusa County at the turn of the twentieth century. Charles de St. Maurice was licensed on October 1, 1896 at the age of 24 pursuant to the Act of the California State Legislature on March 31, 1891 and his original framed certificate still hangs in our new office along side his certificate of membership of the Technical Society of the Pacific Coast. Although the certificates can be viewed as a testament of his professionalism during this period of American survey history, surveyors are judged by the quality of the work they leave behind as maps, documents and notes.

Continued on next page



"I do solemnly swear that I will faithfully perform and execute the duties of chainman, that I will level the chain upon uneven ground and plum the talley pins whether by sticking or dropping the same; that I will report the true distances to all notable objects, and the true lengths of all lines and that I will assist in measuring to the best of my ability; furthermore that I will well and truly perform the duties of flagman according to instructions given me, to the best of my ability, so help me God. (signed Al Mc Mains)

Subscribed and sworn to me this 7th day of May in the year of Our Lord, 1903. (signed Chas. De St. Maurice, State Licensed Surveyor and County Surveyor, Colusa County)"

After reading that oath, I was impressed with the level of responsibility that this young California surveyor represented as a professional. Even more, I was impressed with his intention, as a mentor, to transfer the same responsibility to his assistant that day in May 1903. In the final analysis, Charles de St. Maurice, State Licensed

Land Surveyor and mentor, could never have realized that on that day in May 1903, he would pass the same responsibility to another California surveyor 106 years later. ❖

One such note that clearly demonstrated the responsibility that Mr. de St. Maurice held as a professional surveyor was inscribed in a field book entitled "Note Book No. 1, Surveys Colusa County" on page 21. The entry had the heading "Oath of Asst." and was a hand written oath as follows:

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J.V. Hogan is an attorney in the Commercial Transactions and Corporate Practice Department of Collins Collins Muir + Stewart LLP.

Robert H. Stellwagen is a partner at Collins Collins Muir + Stewart LLP actively engaged in trial practice and representing design professional in mediation, arbitration, trials, and appeals. If you would like more information with regard to this article, please do not hesitate to contact J.V. or Robert at (626) 243-1100. Nothing contained within this article should be considered the rendering of legal advice. Anyone that reads this article should always consult with an attorney of their choice before acting on anything contained in this or any other article on legal matters as facts and circumstances will vary from case to case.

Liens By Design Professionals: Do They Really Exist?

We recently had a conversation with a design professional who has been practicing for over 25 years. He had a project on which he was owed a considerable amount of money and we were discussing his options for getting paid. The project, like many others, had completed designs, but the construction was stalled as a result of financing problems and other related issues. When I suggested that he record a lien against the property to secure the debt, he looked at me as if I was crazy. He continued to adamantly deny that any such lien existed for he would have surely known of its existence after practicing for over 25 years. His position is not shocking as we have had many conversations with design professionals over the years who have had similar positions.

Although design professionals probably do not want to admit it, most design professionals are not aware that design professionals even have a right to lien a project. Given the current state of the economy, it is imperative that design professionals begin to have a deeper understanding of what types of liens they are entitled to and how they can preserve and enforce their lien rights.

The inherent problem with design professionals preserving their lien rights is that they have historically failed to do so. As a result, design professionals are now finding themselves on projects where they are owed money and they have no lien rights. This means that the design professionals then fall to the end of the line, after the secured creditors, with regard to getting paid. Unfortunately, this often results in not getting paid at all or, if they are lucky, getting paid a portion of the amount owed.

While design professionals are beginning to inquire more into what they can do to preserve and protect their lien rights, design professionals must first understand that they do indeed have lien rights.

Design Professionals Can, In Fact, Record Liens

Prior to the start of construction work, pursuant to *California Civil Code* sections 3081 et seq., design professionals are actually entitled to a type of lien called a design professionals' lien.¹ For purposes of those code sections, the term "design professional" is defined to include certified architects, registered professional engineers, and licensed land surveyors.

So, what can design professionals do to protect and preserve their design professionals' lien rights? First and foremost, design professionals must understand that there are numerous requirements that must be met, in addition to very strict timing requirements, in order for design professionals to preserve and ultimately enforce their design professionals' lien rights. Falling short of just one of the requirements will likely extinguish any design professionals' lien right that the design professionals may have had.

Now that you know that design professionals' liens actually do exist, how do we know when they arise?

When Do Design Professionals' Liens Arise?

Design professionals' liens can be helpful on projects where the design professional has contracted with the owner of the property, the design professional has provided some or all of his or her services, a building permit or other governmental approval has been obtained in furtherance of the work of improvement in connection with or utilizing the services of the design professional, and work on the project has not yet commenced. Although there are other requirements that also need to be met in order for the design professional to have a valid design professionals' lien right, the above is the typical situation when the design professionals' lien right often arises.

¹Although not discussed in this article, design professionals are also entitled to mechanics' lien rights pursuant to *California Civil Code* sections 3109 et seq.

Continued on next page


However, the most common problem that design professionals run into in this typical situation occurs before they have even commenced their services. So for purposes of this article, rather than going through the many requirements for preserving design professionals' lien rights, we will look at the most common mistake that many design professionals make on the front end of a project, which often results in the design professionals losing their design professionals' lien rights before they have even commenced any services.

Failing to Contract with the Real Owner of the Property

While there are many requirements that must be met in order for design professionals to preserve and maintain their design professionals' lien rights, one of the biggest and most common mistakes made by design professionals, even before they have commenced any services, is not contracting with the real owner of the property. In order to preserve a design professionals' lien, a design professional must contract with the real owner of the property. If the design professional does not contract with the real owner of the property, then the design professional will lose his or her design professionals' lien rights. Now, there are often

times when design professionals are hired by other design professionals and therefore cannot contract with the owner of the property. Unfortunately, in this scenario, the design professionals will not have any design professionals' lien rights. However, there are often situations where the design professionals have the opportunity to directly contract with the real owner of the property or someone they believe to be the real owner of the property. It is in these types of situations where design professionals must think about their design professionals' lien rights and take the necessary steps in order to preserve those rights. One of the most common mistakes that many design professionals make is that they contract with an entity or person who they think is the owner of the property, when in fact, that entity or person does not hold title to the property. The most common scenario when this comes up is when a developer has various entities set up for a development, with one entity owning the property and another entity doing the contracting for the various services and construction related to the property. Under this scenario, the design professional often ends up contracting with the entity that manages the services and not the entity that actually owns the property. The following diagram illustrates such a scenario:

Continued on next page



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Liens By Design Professionals: Do They Really Exist?



In the above diagram, all three entities are separate and distinct legal entities. It is under this scenario that the design professional often finds himself or herself contracting with ACME Development II, LLC, mistakenly believing that ACME Development II, LLC is the owner of the property. It is not until later, after the design professional has not been paid and further research is done to determine actual property ownership, when the design professional discovers that he or she has failed to contract with the actual owner of the property. In this situation, the design professional has usually lost not only his or her design profes-

sionals' lien rights, but also his or her mechanics' lien rights as a result of the mistaken belief. This illustrates the importance of contracting with the real owner of the property as one important step toward preserving all lien rights.

The design professional must remember that contracting with the real owner of the property is just one of the many requirements to preserve the design professionals' lien rights. This should serve as a good reminder that the preservation of liens rights, whether its design professionals' lien rights or mechanics' liens rights, begins on the front end of projects when design professionals first enter into a contract for their services.

So now that you have been armed with the knowledge that design professionals are, in fact, entitled to design professionals' lien rights, in addition to mechanics' lien rights, it is in your best interest to learn more about both liens and begin to think about preserving your lien rights at the front end of projects before it is too late. By protecting and preserving your lien rights on the front end of the project, you can put yourself in a better position to get paid on the back end of the project. ❖

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GEOID09 & USGG2009

Geodetic Models for California Orthometric Heights

Since the computations and analysis to go from over three million gravity measurements, a global digital terrain model and 19,000 bench marks, to a one-arc-minute gridded surface are enormous, we are all to be thankful for the recent efforts of the National Geodetic Survey and the GEOID09 project team. If you are not inclined to perform your own six-parameter transformation, least squares collocation, and Helmert condensation of surface free-air gravity anomalies, proceed immediately to <http://www.ngs.noaa.gov/GEOID/GEOID09/> and download your very own copy of GEOID09. This latest version of the national geoid model, released in September 2009, comes in two flavors:

USGG2009 is the gravimetric geoid to convert ITRF ellipsoid heights to heights above the national geoid surface.

GEOID09 is the hybrid geoid used to convert NAD83 ellipsoid heights to NAVD88 (i.e. California Orthometric Heights)

Now before we get into which model, why and how, it is necessary to once again briefly describe the geophysics of the geoid and our national vertical reference system.

- Definitions:**
- 1) The geoid is that equipotential surface that most closely matches global mean sea level.
 - 2) Equipotential means that the force of gravity is the same at all points on the surface.

Imagine your digital level is set up in Monterey at mean sea level. A pleasant image isn't it? The compensator and optics of the level describe a plane that is perpendicular to the gravity vector at that particular location on, and above or below, the earth. As you proceed easterly, burrowing through the ground to remain at mean sea level (Please ignore the disturbing gravitational effects of that rock mass over your head.), you will find an interesting anomaly with your "level" line. The closer you get to the hills around Salinas, mean sea level will get increasingly closer to the mathematically perfect ellipsoid surface 33 meters above you. In a geodetic sense, the level line will appear to bend upward. This trend will continue through the mountains south of Hollister, then going into the central valley and towards Fresno, it will begin to drop away from the ellipsoid. As soon as your compensator starts to feel the gravi-

tational pull of the Sierra Nevada Mountains, the equipotential surface that it describes will tilt upward once again in a very dramatic way. Your digital level, and the geoid model, are similar physical descriptions of relative change in the force of gravity. The gravity vector always points towards the greatest sum total of the earth's mass. The huge mass of the Sierra Nevada Mountains literally attracts the gravity vector therefore bending the geoid surface up and over its mass. The geoid surface then is perpendicular to the gravity vector at every point, and is computed at a distance from the center of mass of the earth such that the resulting surface most closely matches mean sea level. Mean sea level by the way is not an equipotential surface, but that is reserved for a discussion on tidal datum. One more nuance to give you something to ponder: There are an infinite number of equipotential surfaces going outward from the earth's center of mass, and none of these surfaces is parallel. In other words the gravity vector changes as you move in a straight line away from the center of mass (Google deflection of the vertical for some more confusing explanations). That means that the plumb line is curved, and since orthometric heights are distances along the plumb line, they are computed properly along curved lines.

Thanks to high-speed computer processing capability, together with the brainpower of some highly educated scientists, a vastly improved global digital terrain model, and the improved gravity observations from the GRACE satellite mission, our current ability to develop a gravimetric geoid is extremely good. The USGG2009 gravimetric geoid has a standard deviation (67%) certainty of 6.3 cm (0.21'). By the way, state-of-the-art ability to resolve the geoid is better than our ability to resolve the state-wide leveling network. The advent of precise airborne gravimetry for offshore regions made a significant difference for coastal areas such as California. Unfortunately, legacy gravity data in the mountainous regions (again like our home state) contains errors in the estimated measurement heights. These errors propagate into the resulting gravimetric geoid. In California, the USGG2009 gravimetric geoid has a standard deviation (67%) certainty of 12.2 cm (0.40'). (Roman, et. al., 2009). This accuracy is in absolute terms, completely repeatable from any potential data source.

Continued on next page

California Orthometric Heights (CA Public Resources Code, Sec. 8890-8902) are locally derived from the NAVD88 datum. While NAVD88 was designed to closely approximate Helmert Orthometric Heights which are a good representation of equipotential heights, NAVD88 is actually neither of these. NAVD88 is really a continent-wide point cloud linked by observations and more geodetic models (Zilkoski, 1992). There are errors and uncertainties, and blunders, in all of these components; it is practically impossible to recreate the system, or to improve it. NAVD88 will ultimately give way to high-accuracy gravimetric geoid models as the time comes when our vertical reference system is no longer defined by bench marks on the ground. The NGS 10-Year Plan anticipates transitioning to a vertical reference system that is fundamentally defined by the national geoid model. Until such time, we will rely upon hybrid geoid models, such as GEOID09, to act as a place-keeper between ellipsoid heights and our monument-based vertical datum.

GEOID09, the hybrid model, starts with USGG2009 and applies four transformation surfaces to arrive at a model that estimates the distance from the GRS80 ellipsoid realized by NAD83, to the NAVD88 datum realized by bench marks and leveling. First the ellipsoidal transformation accounts for the difference between ITRF2000 and NAD83. The next transformation is a 58 cm (1.90') bias that accounts for the minimal constraint point, Father Point/Rimouski, held fixed in the NAVD88 adjustment. A 0.31 ppm trend between USGG2009 and NAVD88 was modeled, and finally, a conversion surface was computed using points with both observed NAD83 ellipsoid heights and observed NAVD88 orthometric heights. (Roman & Helmer, 2007). It is important to note that while extensive filtering was done to remove outliers, GEOID09 precisely models remaining errors in GNSS-derived ellipsoid heights, and the fundamental errors in NAVD88. The GEOID09 hybrid model is precise, but it is not accurate.

So how good is it? That question is still difficult to thoroughly answer for California. For one, the original NAVD88 was worst in the mountainous regions. (Guess where that is.) Also, the leveling work for NAVD88 went east to west, so like most projects when you run out of money near the end, the scope was reduced to make up some of the deficit. Finally, the sparse leveling that was completed has now been subject to two decades of subsidence, tectonic and volcanic deformation, and areas of seasonal subsidence/rebound. So GEOID09 attempts to filter out the bad from the weak using the uncertain. For the continental United States, with nearly 13,000 bench marks, the model has an RMS of fit of 1.5 cm (0.05'). For California, the uncertainty of the GEOID09BETA model, which included 557 bench marks in the state, increased to 2.3cm RMS. (Roman, et. al., 2009). The final GEOID09 model included 833 GNSS bench marks. GEOID09 improved upon GEOID03 in some significant ways, particularly as noted above in improved gravity and DTM data, and in the pro-

cessing and analysis used. In the California/Nevada area GEOID03 to GEOID09 averages -6.0 cm with a standard deviation of 6.6 cm (-0.20' & 0.22' respectively). As is illustrated on the exhibit map, much of this difference is found in Northern California where the 2004 Northern California Height Modernization Network added over 200 additional data points (Potterfield, 2008), and in the offshore areas from the contributions of the GRACE satellite data. With the concentration of GNSS bench marks in the Los Angeles region, thanks mostly to the Post-Northridge work of Metropolitan Water District of Southern California, the difference between GEOID03 and GEOID09, and NAVD88 is sub-centimeter. The blue patch in the middle of the State, in an area Pat Tami calls "the Mendota fishbowl", shows the largest differences from GEOID03 to GEOID09, as much as -37 cm (-1.21'). While analysis for this article was insufficient to attribute the cause, it seems likely that undetected subsidence was erroneously modeled in GEOID03. In the southern San Joaquin Valley, leveling surveys performed by Caltrans crews and a near-simultaneous GPS Height Modernization survey by Condor Earth Technologies in 2004 under contract with California Spatial Reference Center provided current and correct orthometric and ellipsoid height differences in this area.

The GEOID09 hybrid model did not make use of all of the available GNSS bench marks. The California Spatial Reference Center has completed several other Height Modernization networks that provide both observed ellipsoid heights and observed orthometric heights for specific passive and active control points. Over 500 combined-height points are in this database. Several have questionable ellipsoid heights, such as those from the original HPGN when accurate antenna height models were not available. Others have questionable orthometric heights, because of crustal deformation, and... well, NAVD88 is just questionable. Perhaps because of these questions, updating the database with GEOID09 makes little improvement to the sample. The entire data set has a standard deviation of 6.6 cm (0.22') for both GEOID03 and GEOID09. Looking at more discrete samples with better controlled data sources, specifically the CORS Leveling project (CSRC, 2004), and the Real-Time GPS-Derived Orthometric Height project (CSRC, 2006), both in the Southern California area, GEOID09 provides a moderate improvement. Standard deviation for these two projects using GEOID03 is 5.2 cm (0.17'), and applying GEOID09 is reduced to 3.9 cm (0.13').

Even if working in areas such as Los Angeles, where both hybrid geoid models are known to replicate NAVD88 in the centimeter range, it is poor practice to design a GNSS control network with a single bench mark tie. Remember your geometry lessons: three points define a plane and the fourth and fifth provide redundancy. Most of us would insist that level loops and traverses are closed. The same logic holds for geodetic control surveys.

Regardless of how you consider it, GEOID09 is a significant improvement to our national height system and for California as well. The fundamental data and processing procedure establishes a vastly improved foundation for a sustainable vertical reference system. Real-time positioning networks such as CRTN (see <http://sopac.ucsd.edu/projects/realtime/>) derive their full capability only with a fully-implemented spatial reference system, including accurate and reproducible heights from models such as GEOID09 and USGG2009. ❖

Acronyms:

CORS	Continuously Operating Reference Station
CRTN	California Real Time Network
CSRC	California Spatial Reference Center
DTM	Digital Terrain Model
GNSS	Global Navigation Satellite System
GRACE	Gravity Recovery and Climate Experiment
HPGN	High Precision Geodetic Network
ITRF	International Terrestrial Reference Frame
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NGS	National Geodetic Survey
RMS	Root Mean Square
USGG2009	United States Gravimetric Geoid of 2009

References:

CSRC. (2004). "Differential Leveling to CGPS Stations". Retrieved 2009-Oct-22 from:

http://csrc.ucsd.edu/input/csrc/heightMod/CSRCleveling_V1.doc

CSRC. (2006). "Performing GPS-Derived Orthometric Height Surveys and Related Work for NAVD88 Stations". Retrieved 2009-Oct-22 from:

<http://pgm-server01.ucsd.edu/cgi-bin/pgmGetReport>

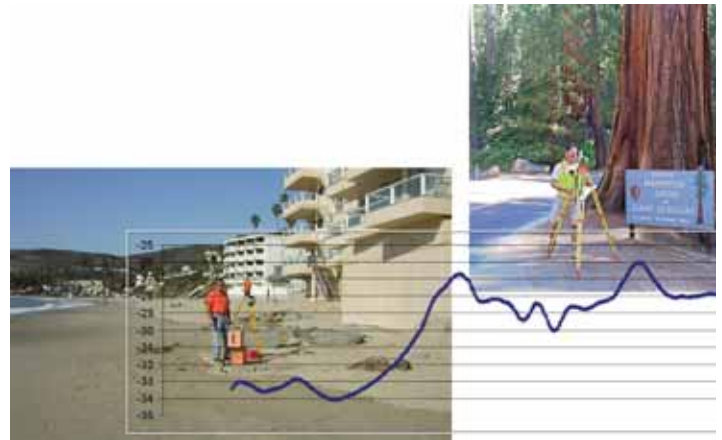
CampaignStatus.cgi?campaign_code='SCHM2006'

Potterfield, Mike. (2008). "Combined Adjustment of GEOID03, Northern California. California Spatial Reference Center, California Department of Transportation". Retrieved 2009-Oct-22 from: http://csrc.ucsd.edu/input/csrc/campaigns/norcal2004/CombineAdj_GEOID03_NoCalif.pdf

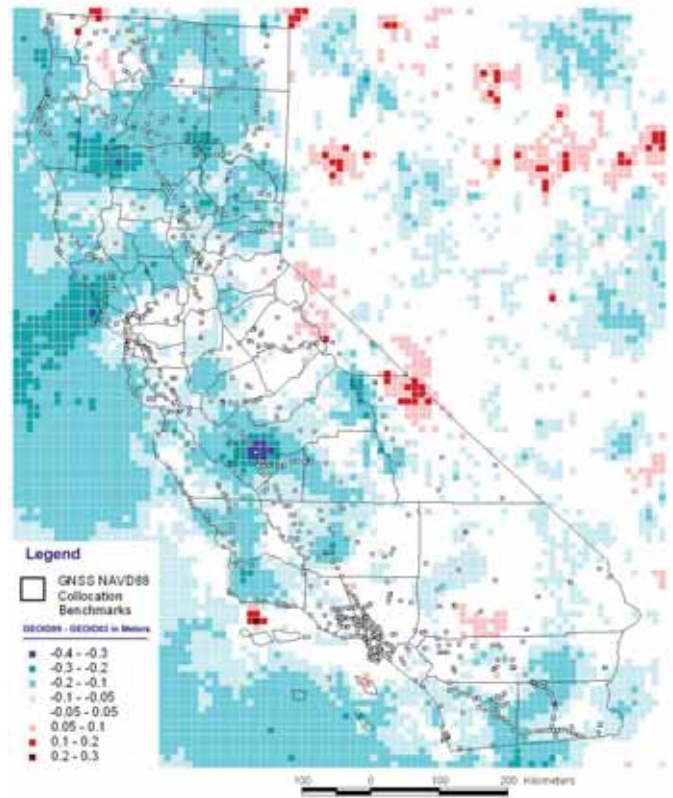
Roman, Daniel, & Gregory A. Helmer. (2007). "Advanced Geoid Modeling for the National Height Modernization Program". ACSM Conference 2007. St. Louis. Retrieved 2009-Oct-15 from: <http://www.acsm.net/sessions07/helmer312.pdf>

Roman, Daniel R., Yan Ming Wang, Jarir Saleh, & Xiaopeng Li. (2009). "National Geoid Height Models for the United States: USGG2009 and GEOID09". ACSM-MARLS-UCLS-WFPS Conference 2009, Salt Lake City. Retrieved 2009-Oct-15 from: [http://www.wfps.org/files/AMUW09/Handouts/Friday%20-%20Wang%20\(Roman\)\(75\).pdf](http://www.wfps.org/files/AMUW09/Handouts/Friday%20-%20Wang%20(Roman)(75).pdf)

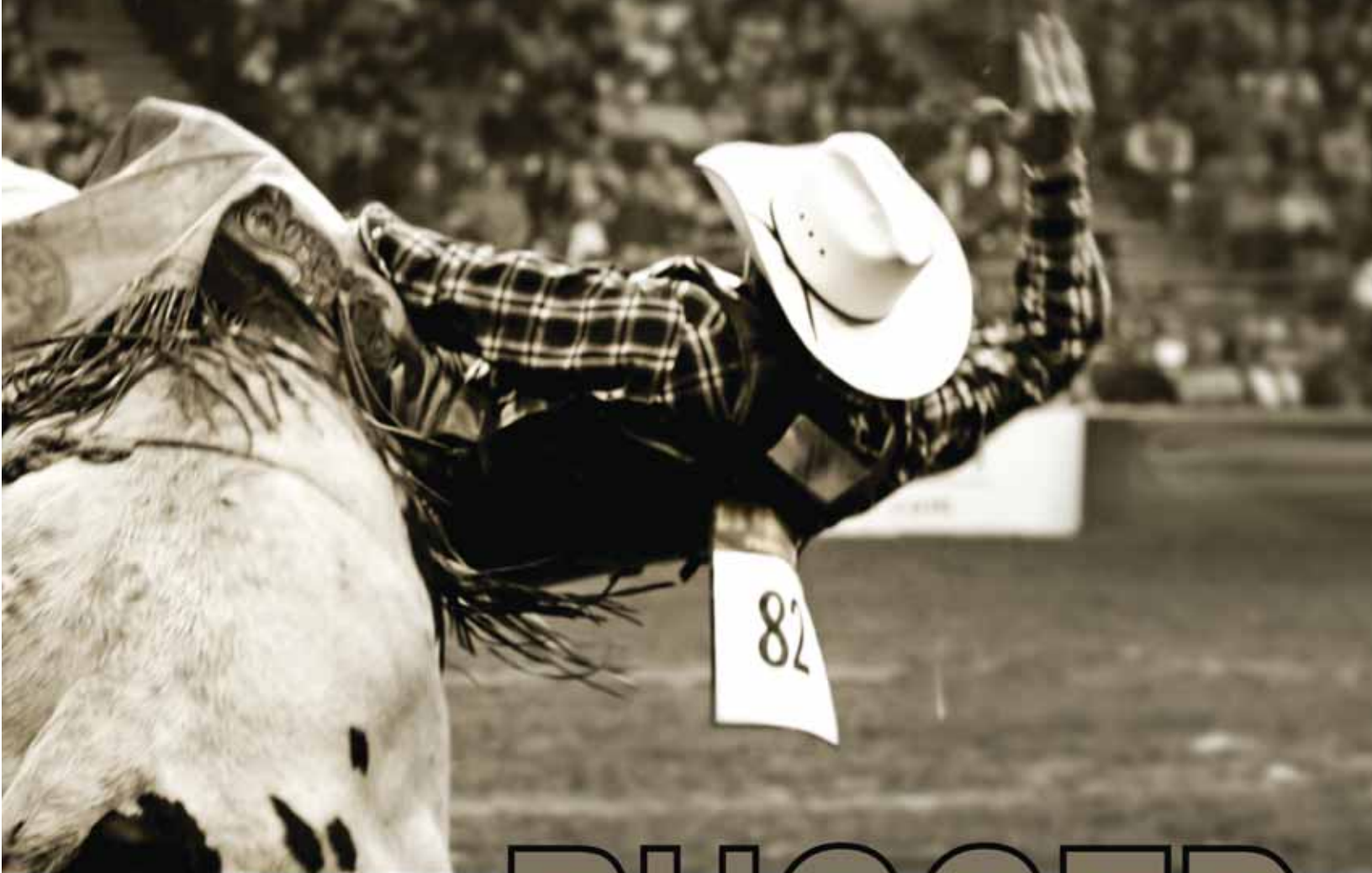
Zilkoski, David B., John H. Richards, & Gary M. Young. (1992). "Results of the General Adjustment of the North American Vertical Datum of 1988". *ACSM Surveying and Land Information Systems*, Vol. 52, No. 3, 1992, pp. 133-149.



From the coast in Monterey (Ok it's really Laguna Beach) to the Sierra Nevada Mountains, the geoid rises about 7 meters (20 feet), then undulates to the border with Nevada, due to the relative change in the earth's mass.



The above 10 kilometer pixels depict the change from GEOID03 to GEOID09 in meters. The 833 collocation bench marks plotted on this exhibit are the final data points used to compute the GEOID09 conversion surface. Average difference over this region is -6.0 cm (-0.20') with a standard deviation of 6.6 cm (0.22'). Subsidence in the central valley appears to have been erroneously modeled in GEOID03. Improvements in gravity observations may be the reason for the interesting positive features offshore of Santa Barbara and east of Bishop.



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RISK MANAGEMENT FOR LAND SURVEYORS



More Insurance Market Forecasts *and Other Items*

Big Picture

A three broker panel from AON, Marsh and Willis gave their Insurance Market Forecasts at an October 22, 2009 Risk and Insurance Management Society Meeting in San Francisco at Le Meridien Hotel. In spite of the difficult market conditions, they predicted that rates, in most cases, would remain stable and range from small decreases to flat.

Some of the factors driving the market are the economy, broker marketing, 51% lower investment income, and new underwriting and capital capacity. Other items mentioned were the uncertainty of health insurance reform, the changing political environment and underwriter caution. Big picture worries continue to be credit, terrorism, natural perils creating big losses, climate change and merger and acquisition activity. Losses in 2009 have been moderate compared to 2008. Hurricane season has been a non-event, they said.

Overall, the US, London and Bermuda markets have remained competitive.

What Can You Do?

To keep your insurance and loss costs in line, use your best risk management techniques by analyzing your business exposures to loss possibilities. Once you've identified your risks decide if you want to avoid them by walking away, or control them with careful loss controls, including solid contracts. You can retain the risk by self insuring it if permissible. You can also use high deductibles. Use insurance or contracts to transfer the risk away from your business. In obtaining or renewing your insurance, be sure revenues and values reported to your underwriters are accurate. You should also consider higher deductibles and limit adjustments that could save you some money.

Don't Have Losses

Watch your equipment in these tough times. We're seeing many thefts of total stations and GPS equipment from trucks and in the field. Avoid owners with bad reputations. Watch your boundaries.

Negotiate with Owners and General Contractors

Talk to them about required limits and coverage. You might not need Workers Compensation if you are a sole proprietor. Your auto limits may not need to be as high as they ask. Explain your work and how (with the exception of professional liability) you do not present the kinds exposure that a majority of their contractors have. You're the first at the site and usually out of there before the bulk of the activity begins.

Read Contracts Carefully

Know what you are getting into in regards to owners' and contractors' insurance requirements, indemnification and hold harmless requests. Use CLSA contracts to protect your business.

Health Insurance

What's happening with health insurance reform? It's moving too fast. A 1900 page bill is full of unintended consequences that will only show themselves after implementation. Close reading and understanding should be required of our legislators. Health insurance costs are too high but a careless fix and heavy losses could definitely affect all kinds of insurance coverage because most of our property and casualty insurance companies write some form of health insurance. As for the government running health insurance, I think of the DMV and the Post Office, Workers Compensation, Flood Insurance and Medicare which are all government run programs. Some of them are good and some of them are bad, but they are needed by the people. Proper resolution of this health insurance issue is important for all of us, especially if we are required to provide it and pay for it for everyone.

Finally, it's best to keep healthy. Watch out for Swine Flu and Other flu. Wash your hands and keep them away from your eyes, nose and mouth. Good luck. ❖

Creating Opportunities, Providing Support, Sustaining Land Surveying Education

Dear Fellow Professional,

I am writing you today to ask for your support of the California Land Surveyors Association Education Foundation. One of the primary functions of the CLSA Education Foundation is to provide scholarship aid to students of Land Surveying.

As you may be aware, training bright young minds to become the next generation of professionals is key to the perpetuation of the historic and diverse profession of Land Surveyors.

Scholarship aid is a vital link in encouraging students to select Land Surveying as their course of study and continue in the various programs. Your donations are needed to continue funding scholarship to help students all over California obtain their goal to become a Land Surveyor.

There are many ways to donate to the Education Foundation. Becoming a Foundation Associate will provide recognition on the Foundation's web page, <http://www.californiasurveyors.org/educ-found.html>. You can even donate thru PayPal on the web page. Many organizations have Employee Charitable Organizations and you can donate via payroll deduction thru these organizations. The Foundation can also be listed as a beneficiary in estate planning.

The CLSA Education Foundation is an IRS 501 (c) 3 charitable organization and can be tax deductible. Consult your tax advisor and please consider donating to the foundation as part of your tax planning this year.

An additional way that you can help the CLSA Education Foundation is to participate in the Auction fundraisers at the annual CLSA Conference, which will be a joint conference with the Nevada Association of Land Surveyors in Reno, Nevada February 27 to March 1, 2010. Donations of new or used items are needed to make this annual event a success. If you have never attended an Auction at the annual conference, I would encourage you to attend, as it is a highlight of the conference and a lot of fun. Of course the funds raised go to a good cause.

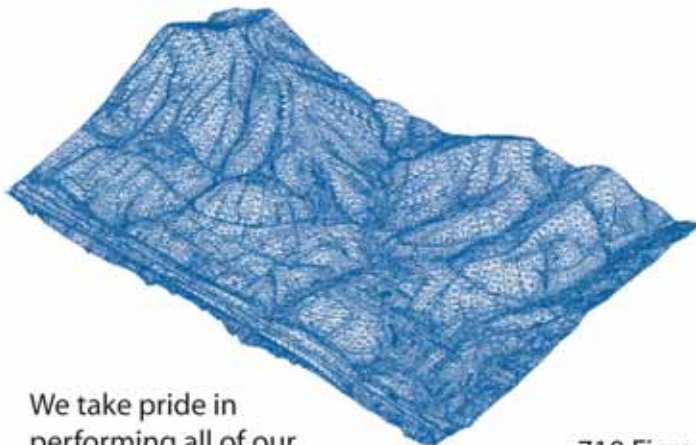
The CLSA Education Foundation expects to award over \$40,000 in scholarships to students of Land Surveying in 2010. A donation or continued support on your part will go a long way in keeping our program of providing scholarship aid to students alive. Thank you for your consideration and support.

Sincerely,
Steven J. Martin, Chairman
CLSA Education Foundation



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By: Carl C. de Baca, PLS

Carl C. de Baca is the owner of Alidade, Inc., Elko, Nevada. He is a past editor of the California Surveyor, and is the current NSPS Area 9 Director.

National Society of Professional Surveyors Area 9 Directors Report, Fall 2009

As usual the Fall NSPS meeting in Gaithersburg was a flurry of activity. There were several committees meeting and sadly it was not possible to attend them all. I attended a smattering of such meetings. Fortunately each committee gives a report to the Board of Governors (BOG) and/or the Board of Directors (BOD). This particular report sums up what I thought the members and prospective members in Area 9 might find of interest. As always feel free to contact me for additional information or to bring up new items for NSPS to consider. My email address is alidade.nv@sbcglobal.net

Membership Development / Public Relations Committee

NSPS membership has declined each of the last two years. From a high of 4236 members in 2007, we shrank to 3938 in 2008 and 3460 in 2009. These two committees, along with the closely related Membership Benefits Committee, are striving to find ways to combat this trend.

At the last meeting, which was held at the annual spring conference in Salt Lake City, John Freemyer, the chair of the Public Relations Committee, started a dialog, which I referred to in my last report as the "Freemyer proposal". The gist of this proposal is that we, the NSPS should make every effort to foster closer ties to the various state surveying societies with the ultimate goal of finding a way to make every member of every state an NSPS member. It is recognized that the states would be wary of such a stance in fear that with these tough economic times, maintaining the current membership is of paramount importance and presenting additional fees for joint NSPS membership could have the effect of eroding states' membership rolls. Our own declining membership is evidence of that possibility. Nevertheless, as NSPS represents itself as the national voice of surveying to a host of governmental agencies, as well as congress, it is imperative that we find a way to bring more, most or even all surveyors into NSPS membership. Freemyer noted that we should explore what things we can offer the states to make it worth considering and significantly, we should determine how low the membership fees could be if we were to capture the estimated 25,000 state society members. It was and still is too early in the process to give an estimate of what those fees might be but clearly huge economies of scale could be realized by going from 4,000 to 25,000 members. Freemyer suggested

that perhaps two tiers of membership could be considered. A lower tier, available to all state members at a nominal fee, could entitle them to NSPS resources and publications. A higher tier at a somewhat higher fee could offer voting privileges and the ability to participate on committees, etc.

Also at the SLC meeting, the Board of Directors voted to have a consultant examine the NSPS (and in fact the ACSM and each member organization) with respect to branding and name recognition within the geospatial community and would be aimed at telling us where our strengths and weaknesses lie, at least as far as peer perception is concerned. This consultant review is phase one of a (hopefully) multi-phased strategic plan directed at making us a more modern and vital organization.

This committee meeting saw that consultant, Kevin Whorton, deliver a report on the perception of the NSPS from others in related fields. Phase one was not supposed to include remedies and strategies for change, as this was to be part of phase two which has not yet been authorized. But Whorton did offer terrific insight into some of our shortcomings and some great food for thought. To me, the most interesting thing was that much of what he talked about resembled Freemyer's proposal. Here are some of Whorton's points:

- The average age of an NSPS member is 56. We need a youth movement (so does the profession, in general).
- Our Joint Government Affairs Committee does many things on behalf of all surveyors, whether NSPS members or not. They watch out for legislation that would adversely affect us. They work to get legislation enacted as in the case of the railroad monumentation issue. They wage wars with government agencies that ignore qualification-based selection as mandated by the Brooks Act. We need to emphasize the effectiveness of this committee.
- A two-tiered membership that includes all state members and which is similar to other organizations such as architects, is desirable.
- An additional level of membership aimed squarely at technicians and discounted accordingly, is needed.

Continued on page 38

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- We should more strongly support member education and training and deliver 'business' benefits to the membership.
- The ultimate goal would be to make NSPS membership a "quasi-credential" thereby developing an internal sense of pride.

After this presentation and to conclude the committee meeting, it was decided that a motion should be brought before the Board of Governors to direct the NSPS president to prepare and send a letter to the president and board of directors of each state society stating that NSPS would like to foster closer relations and better communication with the states and discussing some of the resources available from NSPS. A draft letter was subsequently prepared by committee members and was debated and modified during the BOG meeting.

Western State Governor's Council Meeting

In the two years that California Governor Matt Vernon has served as chair, the WSGC has become a very tight knit and focused group. Matt ran a tight ship and kept the meeting moving while giving everyone a chance to speak and allowing for debate where it was needed. As they went around the table, each governor was encouraged to give a brief report on happenings and issues within his or her state. Visitors such as Ray Mathe, current chair of the Western Federation of Land Surveyors, as well as Area Directors such as myself, the Area 10 director Tim Kent, Area 8 Director Henry Kuehlem and Area 7 director Jeff Jones were all encouraged to address the group and bring up any concerns or issues they might have. Some of the topics discussed included the following:

- Teaching with Spatial Technology (TWIST) a scholastic program implemented in Washington and Oregon and spearheaded by Tim Kent and Oregon Institute of Technology. Kent and OIT run a program in the summer to introduce elementary and high school teachers to GPS/GIS technology and ways to include them in their teaching curriculums. This is a program that every state should adopt and develop alongside Trigstar and the Boy Scout Surveying Merit Badge.
- Railroad Monumentation – the JGAC has developed draft legislative language and is seeking house and senate sponsors at the current time.
- Machine Guidance – the ad hoc committee has seemed to hit a wall with respect to working toward a draft position paper that could be brought up for vote by the BOG. No action anticipated at this meeting.
- Road closures on public lands. This is occurring on many lands in the west administered by the Forest Service and Bureau of Land Management. How this could affect access to remote survey monuments was discussed. No action was taken but this will not be the last time this comes up, to be sure.

Matt Vernon has done a superb job in his capacity as chair of this group and should be commended by one and all. He initiated elections at this meeting and noted that he would serve again if no one stepped forward but that he would prefer not to. Bill Glassey, the governor from Washington threw his hat in the ring and no one stood to run against him. Debra Anderson, the governor from Montana then volunteered to serve as vice-chair. The group remains in capable hands and will continue to be an incubator for good ideas.

Board of Governors Meeting

Your governor will no doubt have addressed this meeting in sufficient detail. I will just briefly touch on the new motions made, some facts that came out of various committee reports and a couple of other details.

The Tulsa (OK) District of the US Army Corps of Engineers has apparently been requiring that a Freedom of Information request be filed before they will release survey data such as boundary, right of way and geometric information. This is a gross misinterpretation of the intent of the FOI act and a motion was made to have the BOD compose and send letter to the Corps' Tulsa office requesting them to stop requiring FOI. The motion passed and was forwarded to the BOD for consideration.

Michigan brought forward a motion for the BOD to enter into discussions with the other ACSM member organizations to develop or update a document that defines when the use of GPS measurement, mapping or services is a 'surveying' service. This came about because they have had instances where unlicensed individuals are purchasing GPS equipment and are offering services that may infringe upon their state licensing laws. This motion passed and was forwarded to the BOD for consideration.

A motion was made regarding the draft letter discussed above in the membership committee meeting. This motion passed and was forwarded to the BOD for consideration. Everyone appears to agree that closer relations between NSPS and the state societies are desirable.

Mike Maxwell, governor from Florida made a presentation regarding an epidemic of instrument theft, some of it at gunpoint that is presently occurring in Florida and Georgia. This is an ominous trend and could spread to other areas especially given the economic times. That there is a market for such stolen survey equipment is vexing indeed.

Maxwell who is also the chair of the ad-hoc committee for Machine Guidance gave a brief report and noted that since construction surveying is not covered by the definition of land surveying in many states, it might not be germane for NSPS to issue a policy statement regarding where the surveyor fits into this technology. There is some level of disagreement with this conclusion and I imagine the work of this committee will continue.

Continued on next page

National Society of Professional Surveyors Area 9 Directors Report, Fall 2009

The NSPS Foundation gives out 15 scholarships annually, totaling \$23,000. Some two-year programs and business-related programs are eligible. In 2008 NSPS only awarded 14 of the 15. Encourage students you know to apply!

Curt Sumner noted that ACSM is starting a new foundation in partnership with the BLM. The new BLM survey manual, available soon will be able to be purchased from ACSM with the proceeds going to the foundation, which can help fund many beneficial projects.

As of this meeting, 678 CST exams have been given in 2009. This program is very successful.

Pat Smith's term as chairman of the Board of Governors expired at this meeting. He graciously offered to serve again and was duly re-elected. Likewise, Tony Cavell's term as Secretary of the Board of Governors expired at this meeting. He too graciously offered to serve again and was also duly re-elected. Pat Smith has done a marvelous job as chairman and the governors are lucky to have him serve another term. Tony Cavell has been very busy bringing NSPS record keeping into the 21st century and it will be good to have him back increasing our connectivity and access to meeting data and reports.

Frank Lenik, the governor from New Jersey was voted Key Governor for this meeting after an impressive and passionate presentation regarding his work with a campaign to have magnetic locators donated to developing countries for use in eliminating land mines- a truly impressive effort and a well deserved recognition.

Board of Directors Meeting

The budget for 2010 was passed. We continue to be in the black, if somewhat austere but as always, optimistic. We are considering proposals from CPA firms for an audit and financial review.

We heard from John Hohol, the conference committee chair regarding a request made at the SLC meeting to give free passes to the exhibitors hall to all governors, directors and committee folks who spend the annual spring conference in NSPS meetings and thus do not otherwise register for the conference. It turns out that the simple request is not so simple since it impacts the revenue of the state partner. Rather than be a permanent policy, it will be requested and considered each year.

The Safety video project undertaken by the NSPS Foundation has now become a lawsuit between the Foundation and the firm hired to produce the video. As legal maneuvering takes place this winter there is nothing of significance to report except that there is no video.

The private practices committee under the leadership of Area 1 Director Robert Dahn is developing a Crisis

Management Manual and a couple of companies have graciously given NSPS copies of theirs for consideration and possible partial incorporation. What to do indeed if the levee breaks...

Area 4 Director Wayne Hebert is still looking for some staffing help at the upcoming Boy Scout Jamboree and I'm sure that any financial donations would be greatly appreciated.

The Mines and Minerals committee requested a budget item of \$5400 in order to send two representatives to an international conference in South Africa next year. Given the scarcity of reporting from previous such conferences and the lack of clear benefit to NSPS of sending two representatives, much debate ensued. It was unanimously decided that two reps was out of the question and that we would cut the requested amount in half and authorize only one rep but with conditions that this committee prepare a comprehensive written report including how participation in the international mining organization is beneficial to NSPS and consider putting on a workshop on mine surveying hopefully in time for the 2010 ACSM conference in Phoenix. In the meantime I have been charged with recruiting additional individuals to serve on this committee in order to bring some domestic relevance to their work.

The two motions brought forward from the BOG asking for letters to be composed and sent were considered and all passed unanimously with the caveat that the draft letters could be wordsmithed a bit as needed.

The motion from the BOG to develop a document defining when the use of GPS measurement, mapping or services constitutes a 'surveying' service was considered and Jerry Goodson, past NSPS president and current ACSM delegate (and 2010 chairman) noted that the latest version of the NCEES model law for surveying has very succinctly defined exactly that which the motion requested. We took a brief recess while he had copies of the model law language made and distributed. The maker of the motion, Michigan governor Craig Amey was present and was satisfied with the language. The motion was tabled and considered satisfied. The meeting was adjourned shortly thereafter. ❖



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SPOUSE (if attending - See Spouse Registration Below)

REGISTRATION

CLSA OR NALS STATE ASSOCIATION MEMBER REGISTRATION

	BEFORE Jan. 27	AFTER Jan. 26	AMOUNT
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BLM Workshop <small>(PreConference 8 hrs. - February 27th)</small>	\$135	\$185	\$ _____
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Conference Only <small>(Includes Conference Registration (Sun.-Wed.), Monday & Tuesday Luncheons, IceBreaker Reception & Scholarship Auction. Does not include BLM Workshop or LS Review Workshop)</small>	\$365	\$415	\$ _____
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Conference/Workshop & LS Review <small>(Includes Conference Registration (Sun.-Wed.), BLM Workshop (Sat.), LS Review Workshop (Sat.-Wed.), Monday & Tuesday Luncheons, IceBreaker Reception & Scholarship Auction)</small>	\$425	\$475	\$ _____
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Conference One Day <input type="checkbox"/> Sunday <input type="checkbox"/> Monday <input type="checkbox"/> Tuesday <input type="checkbox"/> Wednesday	\$155	\$205	\$ _____
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NON-MEMBER REGISTRATION

	BEFORE Jan. 27	AFTER Jan. 26	AMOUNT
--	-------------------	------------------	--------

BLM Workshop <small>(PreConference 8 hrs. - February 27th)</small>	\$185	\$235	\$ _____
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Conference Only <small>(Includes Conference Registration (Sun.-Wed.), Monday & Tuesday Luncheons, IceBreaker Reception & Scholarship Auction Does not include BLM Workshop or LS Review Workshop)</small>	\$415	\$465	\$ _____
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Conference/Workshop & LS Review <small>(Includes Conference Registration (Sun.-Wed.), BLM Workshop (Sat.), LS Review Workshop (Sat.-Wed.), Monday & Tuesday Luncheons, IceBreaker Reception & Scholarship Auction)</small>	\$475	\$525	\$ _____
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Conference One Day <input type="checkbox"/> Sunday <input type="checkbox"/> Monday <input type="checkbox"/> Tuesday <input type="checkbox"/> Wednesday	\$205	\$255	\$ _____
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OTHER

Spouse Registration <small>(Includes ticket to Icebreaker Reception & Scholarship Auction)</small>	\$ 65		\$ _____
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Extra Monday Lunch Ticket	\$ 35 x _____		\$ _____
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Extra Tuesday Lunch Ticket	\$ 35 x _____		\$ _____
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Student Conference Registration <small>(Must attach copy of current Student ID - Lunches not included)</small>	\$ 95		\$ _____
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Continuing Education Certificate	\$ 25		\$ _____
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Student Assistance Donation	\$ 10		\$ _____
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OPTIONAL ACTIVITIES AMOUNT

Snow Outing - Snow Shoeing or Tubing \$ 79 x _____ \$ _____
(Sunday, February 28th, 7:00 AM - 12:30 PM. Includes transportation & lunch)

Snow Outing - Snowmobiling \$ 149 x _____ \$ _____
(Sunday, February 28th, 7:00 AM - 12:30 PM. Includes transportation & lunch)

Dinner with Comedy Hypnotist Chris Cady \$ 48 x _____ \$ _____
(Tuesday, March 2nd, 6:00 PM. Includes dinner & show)

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CANCELLATIONS: To receive a refund on registration fees (less a \$35.00 cancellation fee), all cancellations must be received in writing no later than January 26, 2010. Substitutions welcome - additional fees may apply, contact the conference office at : (707) 578-6016 for more information.

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Questions?
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Michael P. Durkee, a partner in the Walnut Creek office of Allen Matkins, represents developers, public agencies and interest groups in all aspects of land use law. Mike is the principal author of Map Act Navigator (1997-2008), and co-author of Ballot Box Navigator (Solano Press 2003), and Land-Use Initiatives and Referenda in California (Solano Press 1990, 1991). 415.273.7455 mdurkee@allen-matkins.com

Q&A SMA Expert

Question

I recently performed a title search on property I own. The search turned up a 1915 grant deed between a previous seller and buyer, which deed references several parcels shown on a subdivision map, properly recorded in 1911. The map is still on record and the surrounding properties (and homes) reflect the parcels shown on that 1911 recorded map. Were those deed-referenced parcels created by that 1915 deed conveyance?

Answer

Good question! And the expert answer is – it depends!

Most land use practitioners now understand that California courts have determined that pre-1893 subdivision maps do not in and of themselves create legal lots. (*Gardner v. County of Sonoma*, 29 Cal. 4th 990 (2003).) In addition, the First District Court of Appeal has determined that subdivision maps recorded between 1893 and 1929 also do not create legal lots. (*Abernathy Valley, Inc. v. County of Solano*, 173 Cal.App.4th 42 (2009); *Witt Home Ranch, Inc. v. County of Sonoma*, 165 Cal.App.4th 543 (2008).) This article does not deal with these issues of lot creation by the recordation of older subdivision maps. Instead, the question asked concerns the conveyance of contiguous parcels where the deed refers to an older subdivision map and separately references the lots on that map.

It is widely agreed that the conveyance of a single parcel by a deed that identifies the parcel by reference to an older subdivision map, such as a map recorded in 1911, establishes that parcel as a legal parcel under the Subdivision Map Act today. (See, e.g., *Gardner v. County of Sonoma*, 29 Cal. 4th 990 (2003); *Gomes v. County of Mendocino*, 37 Cal.App.4th 977 (1995).)

Moreover, most practitioners also agree that if the conveyance deed refers to multiple parcels, and those parcels are not contiguous, then those parcels also are legal under the Subdivision Map Act today. (See, e.g., *Lakeview Meadows Ranch v. County of Santa Clara*, 27 Cal.App.4th 593 (1994); *John Taft Corporation v. County of Ventura*, 161 Cal.App.3d 749 (1985).) Therefore, if the parcels described in your 1915

deed are not contiguous, then those parcels were each created by the 1915 deed conveyance.

However, practitioners disagree on whether those parcels are legal if the parcels are contiguous on the subdivision map. Some would argue that contiguous parcels cannot be individually created unless they are separately conveyed (apart from each other). They argue that recent judicial decisions have, in dicta, spoken to the issue. However, each such case did not have a deed conveying parcels from a post-1893, Subdivision Map Act-compliant, properly recorded map!

I submit that as long as the parcels are shown on a post-1893 map (properly recorded), and the parcels are separately identified in the deed (with their map/lot reference), they need not be separately conveyed (through separate deeds). Although this is a very complicated issue and could be the subject of a much longer writing, the following is a brief description of my reasoning.

The Supreme Court has concluded that the modern Subdivision Map Act originated in 1893. (*Gardner v. County of Sonoma*, 29 Cal. 4th 990 (2003).) If one accepts that beginning in 1893 the Subdivision Map Act had "some purpose" (other than creating parcels through recordation), then that purpose was to ensure a proper and legal "coordination" between the conveyance document (the deed between landowner seller and buyer) and the official "data" that was placed into the hands of the neutral recorder's office - which data was the map recorded pursuant to the Map Act. This allowed the buyer to avoid being defrauded: He could go to the recorder's office (a neutral), affirm that the seller was in fact the owner of the mapped land, affirm that the map was properly recorded, affirm that the parcel was in fact shown on the face of that properly recorded map and that it was the same parcel referenced in the deed, and affirm that the parcel had not yet been sold to someone else. The deed conveyance upon being perfected (recorded) created the parcels shown on the recorded map and referenced in the perfected deed.

In other words, when a seller referenced parcels in a deed beginning in 1893, the Map Act required that the parcels be shown on a properly recorded subdivision map (see 1893 Map Act § 4). The recorded conveyance then created those map-

Continued on next page

described parcels. If the deed expressly conveys more than one parcel, then by the express terms of the deed we must conclude that the grantor intended to convey more than one parcel. If the seller intended to convey only one parcel, then he would have either had to use a "metes and bounds" description describing the exterior boundary of the one large parcel, or he/she would have used the recorded map as a reference but would have expressly shown his intent to convey them as one parcel, not more than one, on the face of the deed (see, e.g., Cal. Civ. Code § 1093).

Any other interpretation would ignore the purpose of the Map Act and the plain language of the deed. Clearly, one of the primary purposes of the 1893 Map Act was to make property conveyances more reliable, accurate, and efficient, which would allow a grantor to efficiently and accurately grant more than one parcel in one deed. In fact, any claim at that time that only one parcel was conveyed when more than one is referenced (from a map properly recorded under the Map Act) would have been a violation of the 1893 Map Act.

For the foregoing reasons, I would argue that, assuming your 1911 map was properly recorded and your 1915 deed expressly references the map and expressly identifies more than one parcel on that map, the conveyance of those parcels in the 1915 deed "created" them as legal parcels.

Mike wishes to thank Tom Tunny, Senior Counsel at Allen Matkins, for his contribution to this article. ❖

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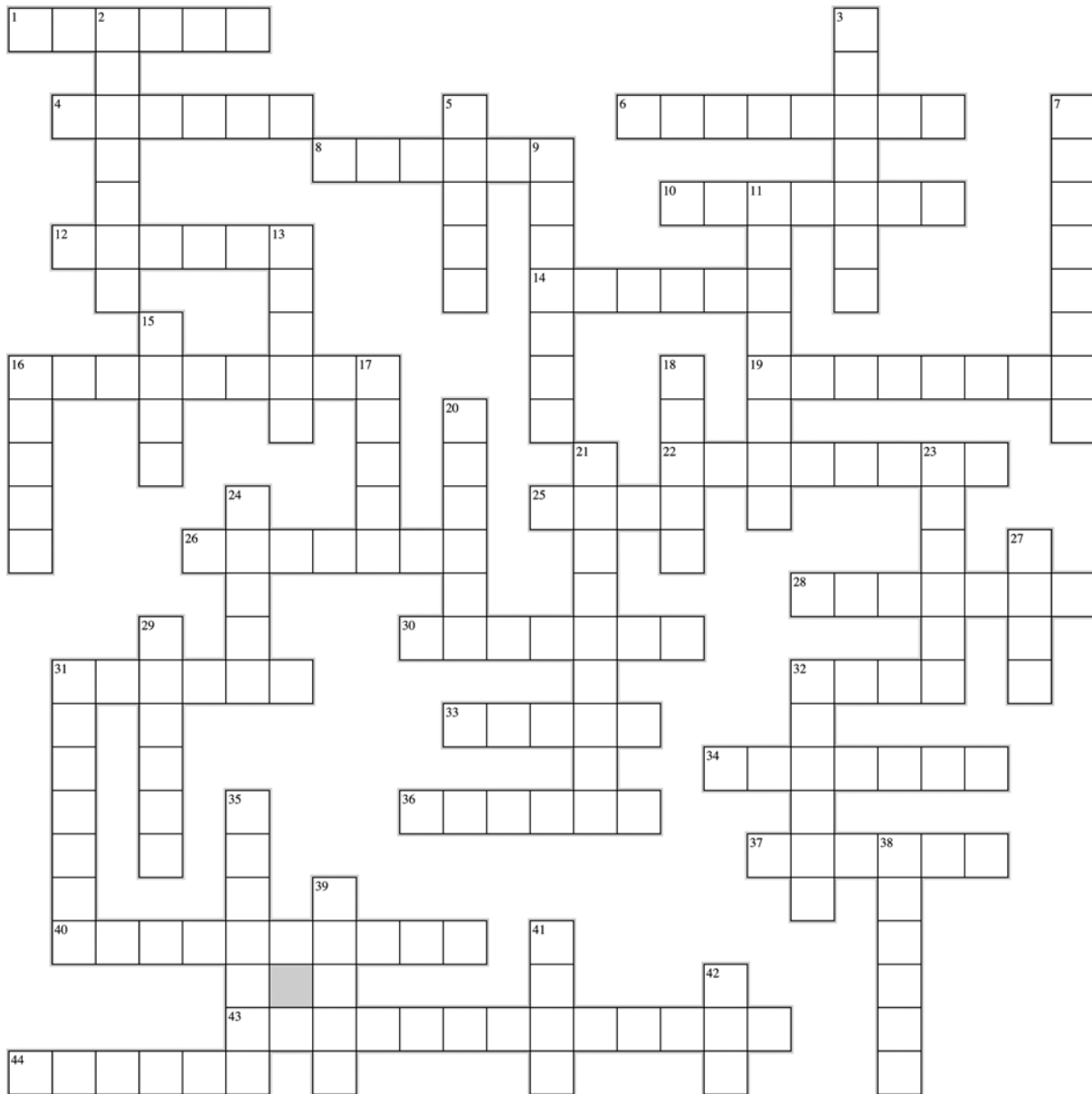
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Crossword Puzzle

By: Ian Wilson, PLS

CLSA Crossword Puzzle #13



Ian Wilson, PLS is the Director of Survey for WRG Design, Inc. in Roseville, CA. As well as being a licensed land surveyor, he and his wife, Laura, are avid SCUBA divers. They are looking forward to "getting wet" on future trips along coastal California and around the world.

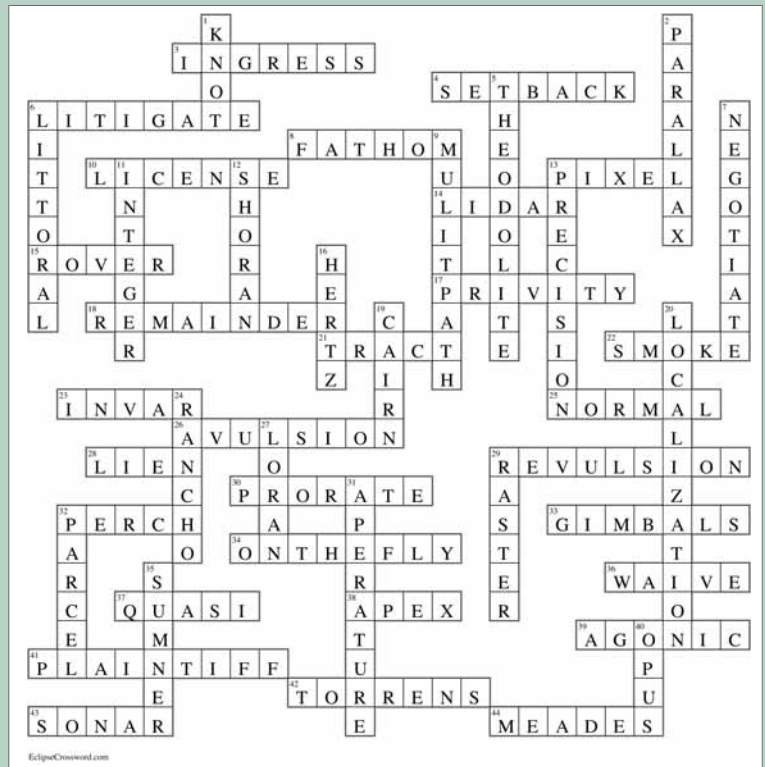
Across

1. CHOICE
4. STRUCTURE SPANNING A DEPRESSION
6. A PROMISE
8. OVER A SURVEYOR'S HEAD
10. OF THE FINGERS IN CAMERA
12. NASME KEYNOTE SPEAKER
14. CHAIR OF THE CLSA WORKSHOP COMMITTEE
16. PERSON OF ACTION
19. CALTRANS CHIEF OF STANDARDS
22. ENFORCEABLE AGREEMENT
25. TWELVE AND A HALF ACRES
26. TYPE OF COMPASS
28. OVERHEARD
30. ANTIQUE SURVEYOR'S INSTRUMENT
31. GREG
32. POINT
33. ATTORNEY AT COLLINS COLLINS MUIR + STEWART LLP
34. INTERNET LEARNING OPPORTUNITY
36. AIM
37. SELLER
40. PARTNER AT COLLINS COLLINS MUIR + STEWART LLP
43. TYPE OF SURFACE
44. OBTAIN LAND-BASED DATA

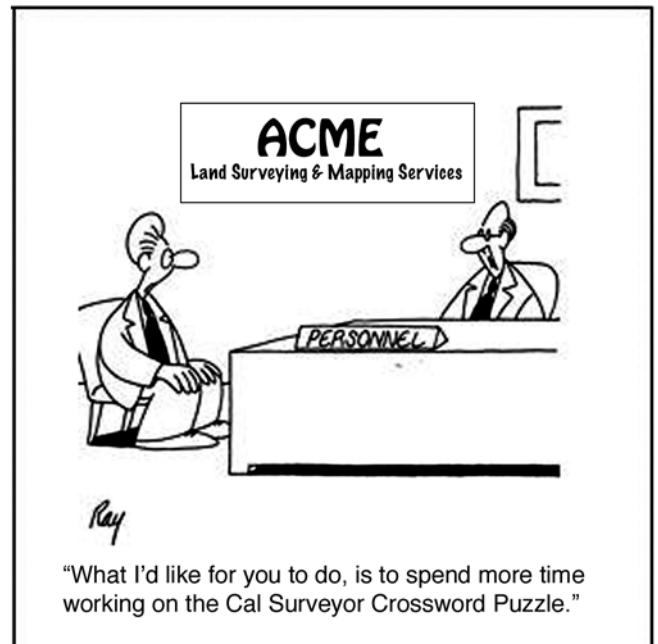
Down

2. TERRITORY
3. ONE FOURTH
5. BASIC PICTURE ELEMENT
7. INTEREST
9. ADJUSTMENT FROM GEOID09 ARTICLE
11. ANGLE BETWEEN GRID MERIDIAN AND GEODETIC MERIDIAN
13. BENEATH A SURVEYOR
15. UN CUT
16. SPINDLE
17. FRACTURE
18. ANCIENT CURVE HOLDERS
20. ACSM EXECUTIVE DIRECTOR
21. RENDER PARALLEL
23. PART OF A DESCRIPTION
24. GRAVITY RECOVERY AND CLIMATE EXPERIMENT
27. WHAT EVERY SURVEYOR WANTS TO BE
29. WASHED GOLD
31. SPANISH EQUIVALENT OF THE ANCIENT ACRE
32. BUYER
35. "WILD" LAND SURVEYOR AND AUTHOR
38. PROFESSION TYPE FOR ARCHITECTS, ENGINEERS AND SURVEYORS
39. GEOMETRICAL QUANTITY
41. SUBMARINE ROCKY RIDGE
42. NOT PITCH OR ROLL

Key to CLSA puzzle #12 (Surveyor Issue # 159)



If you have an idea for a puzzle theme or a clue you would like to include in an upcoming puzzle, email to clsa@californiasurveyors.org





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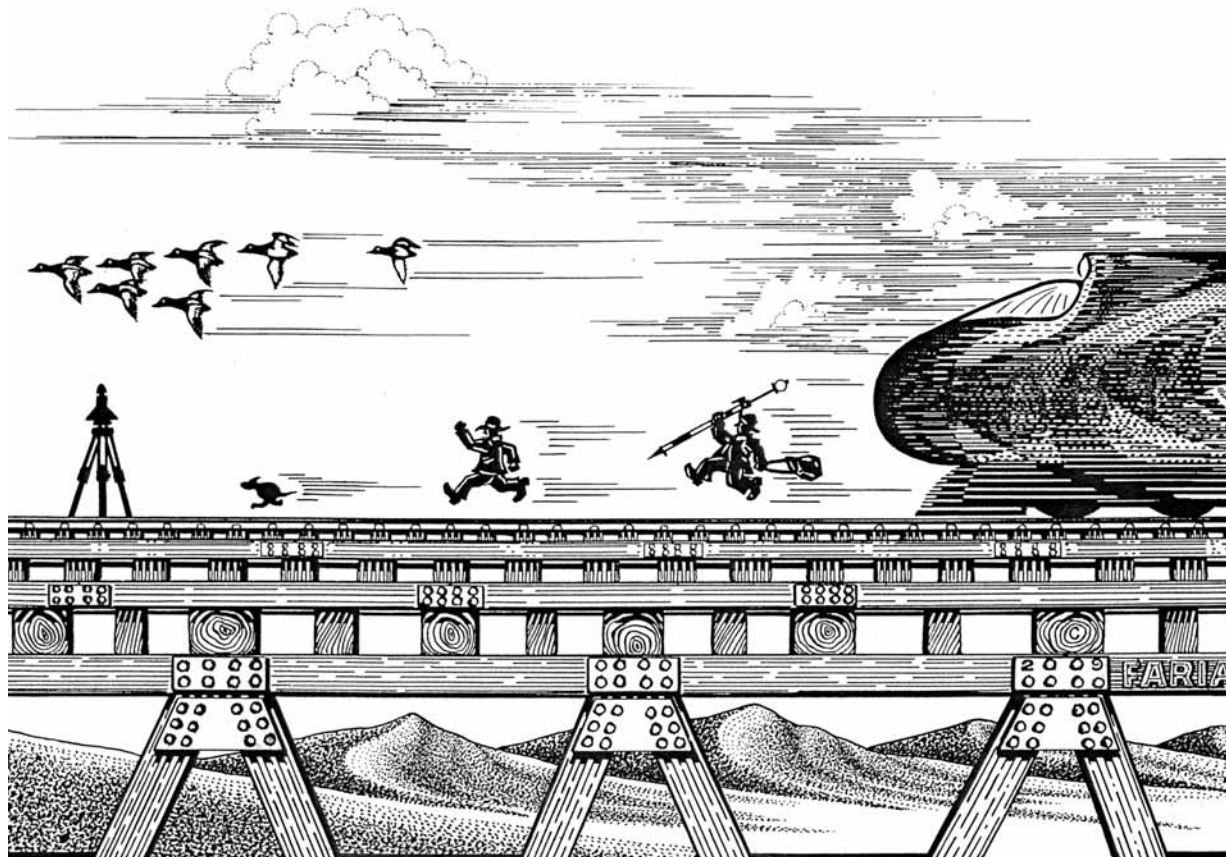
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- Software overview
- Live demo showing VSN, Access Sync, TBC

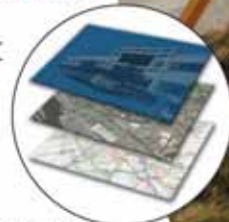
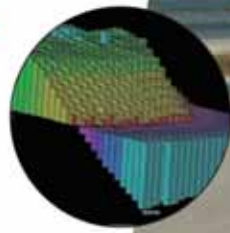
11:30 a.m. 12:30 p.m. - LUNCH

12:30 p.m. Presentations resume

Engineering Applications – Nathan Pugh, Trimble and CSDS
• Monitoring (Access, T4D, TIM) & Tunneling (Access)
• Live monitoring site demonstration

Spatial Imaging – Tim Johnson, Trimble and CSDS
• In depth look at Trimble Access for Spatial Imaging
• Realworks Survey Enhancements

3:00 p.m. Roundtable discussion and Q & A with Trimble personnel



RSVP by Monday, January 11, 2010

Questions may be referred to Matt Johnson at 916.344.0232 x108. Please fax completed form to 916.344.2121 or mail to 4733 Auburn Blvd., Sacramento, CA 95841.

YES

I am planning to attend the Trimble Showcase Event for the cost of \$25.

Please check which event date you plan to attend.

- Tuesday, January 19, 2010
- Thursday, January 21, 2010
- Friday, January 22, 2010

Name: _____

Company: _____

Address: _____

City, State, Zip: _____

Phone: _____ Fax: _____

Email: _____

Select payment option:

Visa M/C AmEx Bill to Account Card #: _____ Exp. Date: _____

Billing address: _____ Signature: _____