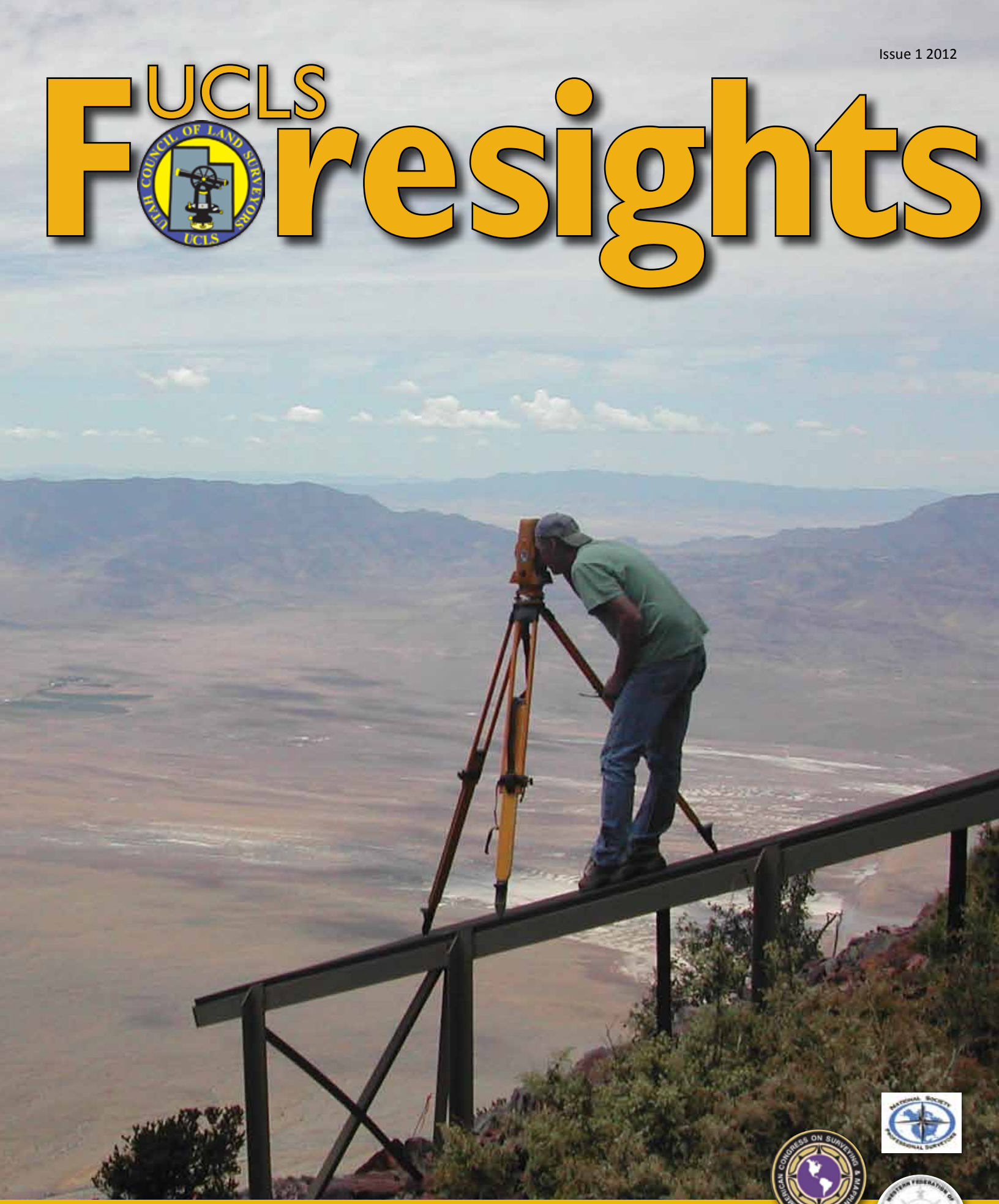
Issue 1 2012

UCLS Foresights



OFFICIAL PUBLICATION OF THE UTAH COUNCIL OF LAND SURVEYORS

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5226 W. Ashland Rose Dr.
Herriman, UT 84065
(801) 569-1315
mnadeau@merid-eng.com

State Chair Elect
Brad Mortensen
3268 S. 930 W.
Syracuse, UT 84075
(801) 363-5605
bmortensen@classoc.com

Past State Chair
Jerry Allred
PO Box 605
Duchesne, UT 84021
(435) 738-5352
jdallred@ubtanet.com

NSPS Governor
Steven Keisel
604 S. Blossom Circle
Fruit Heights, UT 84037
(801) 468-2043

West Fed Representative
Ronald Whitehead
1801 N. Wittwer Lane
Santa Clara, UT 84765
(435) 634-5780
ronw@washco.state.ut.us

Book Cliffs Chapter President
David Bronson
PO Box 416
Monticello, UT 84535
(435) 587-3234
dabronson@sanjuancounty.org

Book Cliffs Chapter Representative
David Kay
85 S. 200 E.
Vernal, UT 84078
(435) 789-1017
dkay@uintahgroup.com

Color Country President
Scott Bishop
1593 W. Southern Homestead Blvd.
Enoch, UT 84721
(801) 369-3221
sbishop@horrocks.com

Color Country Chapter Rep.
Kenneth Hamblin
59 N. 2120 E. Circle
St. George, UT 84790
(435) 673-3075
khamblin@infowest.com

Golden Spike President
David K. Balling
198 E. Shadowbrook Lane
Kaysville, UT 84037
(801) 295-7237
dkballing@msn.com

Golden Spike Chapter Rep.
Dallas Buttars
4646 S. 3500 W. Suite 300
West Haven, UT 84401
(801) 731-4075
isurveying@aol.com

Salt Lake President
Mike Withers
8886 S. 2700 W.
West Jordan, UT 84088
(801) 243-2671
thecornerfinder@gmail.com

Salt Lake Chapter Rep.
Jeff Searle
1975 W. 6440 S.
West Jordan, UT 84084
(801) 569-1315
jsearle@merid-eng.com

Timpanogos President
Gary Ratcliffe
695 N. 100 W.
Springville, UT 84663
(801) 851-8669
gary.ucpw@utah.gov

Timpanogos Chapter Rep.
Dan Knowlden Jr.
563 N. 1420 E.
Spanish Fork, UT 84660
(801) 955-5606
danjr@epiceng.net

Administrative Secretary
Susan Merrill
PO Box 1032
Salt Lake City, UT 84110
(801) 964-6192
www.srmerrill@ucls.org

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Committees & Committee Chairs

Legislation
Dale Robinson
drobinson@sunrise-eng.com

Education
Gary Christensen
gary@gc-surveying.com

Publication
Steve Keisel
svkeisel@gmail.com

Standards & Ethics
Matt Clark
mclark@co.tooele.ut.us

Public Relation/Membership
James Couts
james.couts@ecislc.com

Testing
Von Hill
vrhill@hillargyle.com

Workshop & Convention
Scott Bishop
sbishop@horrocks.com

Historical
Kevin Bishop
kevin.oakhills@gmail.com

Construction Survey
Jerron Atkin
jerron.atkin@crsengineers.com

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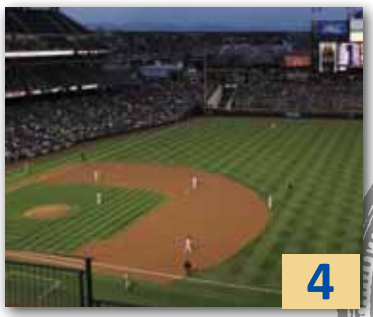

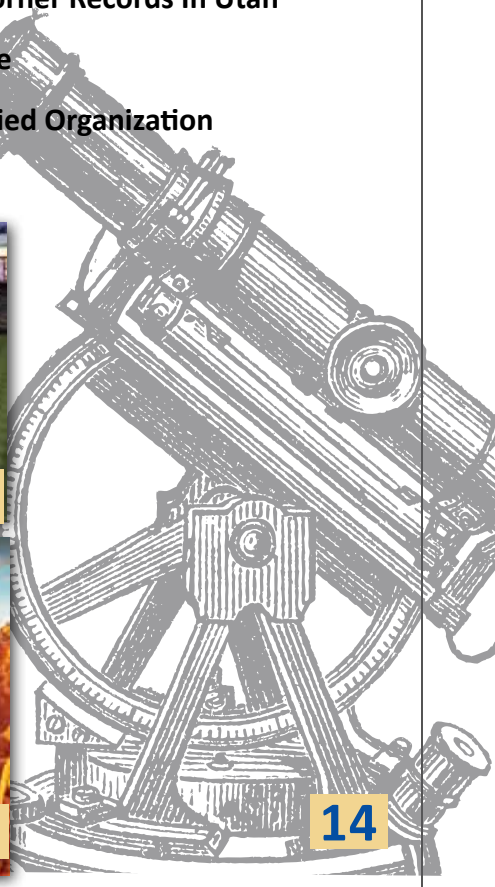

From the Editor

STEVE KEISEL

During a major league baseball game in 2010, Armando Galarraga, a Detroit Tigers pitcher was one out away from throwing a perfect game. With two outs in the ninth inning, the first base umpire called a ground ball hitter safe at first base. It was one of those plays in which the umpire must see two things happening almost simultaneously: the ball in the glove as the foot touches the base.

The benefit of slow motion instant replay, made clear what at least half of the spectators in the ball park already believed – that the throw from the first baseman to Galarraga, who was covering first base, actually arrived in the pitcher's glove an instant before the runner's foot touched the base.

Unfortunately, major league baseball's rulebook does not allow a correction of an umpire's mistake and therefore the record will show that Galarraga threw a one-run shutout instead of a no-hitter. One can only guess whom must have been most disappointed - the pitcher for failing to achieve the no-hitter or the umpire who mistakenly deprived the pitcher of the no-hitter?

In your professional and personal life, are you a pitcher trying to achieve a no hitter, an umpire controlling the outcome of a game, a spectator wondering what just happened, or a popcorn vendor who is working three jobs to pay his kids' orthodontist bill? I must confess that during different times and circumstances of my life, I have been all of the above. However with the benefit of hindsight, I really wish I would have spent less time being an umpire or spectator and put more effort into pitching a no-hitter.

In case you haven't noticed, it has been nearly two years since a hard-copy edition of the *UCLS Foresights* magazine was last published. Attempts to produce a digital copy were both positive and negative and UCLS received both good and bad comments about it.

Supporters of a digital publication included Those Against Tree Killing Organizations (TATKO), The Portable Club (PC), The Carry it Around group (CIA), and the Email it on to Others Club (EIOTOC), while negative responses originated from the Hard Copy Holdouts (HCH), Postal Service Supporters (PSP), the don't have a computer (DHAC) crowd, Read it when the Power is Out (RIWPIO), and the I can take my hardcopy to the bathroom and read it while you can't do that with your desktop PC club.

Nevertheless, UCLS will persevere and try to accommodate all of its membership. In this edition of *UCLS Foresights*, the outgoing chair, Michael Nadeau offers words of wisdom, Sean Fernandez and William Stone provide valuable technical insight, Dan Webb reminisces on the birth of his son, Gary Ratcliffe reflects on the history of the Utah County Surveyor, Von Hill updates us on the pending requirements of a four year surveying degree, and UCLS acknowledges Monsen Engineering as its only sustaining member.

The UCLS *Foresight* contains articles, advertisements, and editorials that may not be time-sensitive while the UCLS Newsletter provides a venue for members to express themselves and inform their constituents about current activities, events, successes, and changes. If you are a member of UCLS – you are a member of the UCLS Publication Committee. Your involvement and contribution will determine the success or failure of the Newsletter. Please join us in pitching a no-hitter.◀

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Chairman's Message

MICHAEL NADEAU, PLS/CFEDS

"And in the end, it's not the years in your life that count. It's the life in your years."

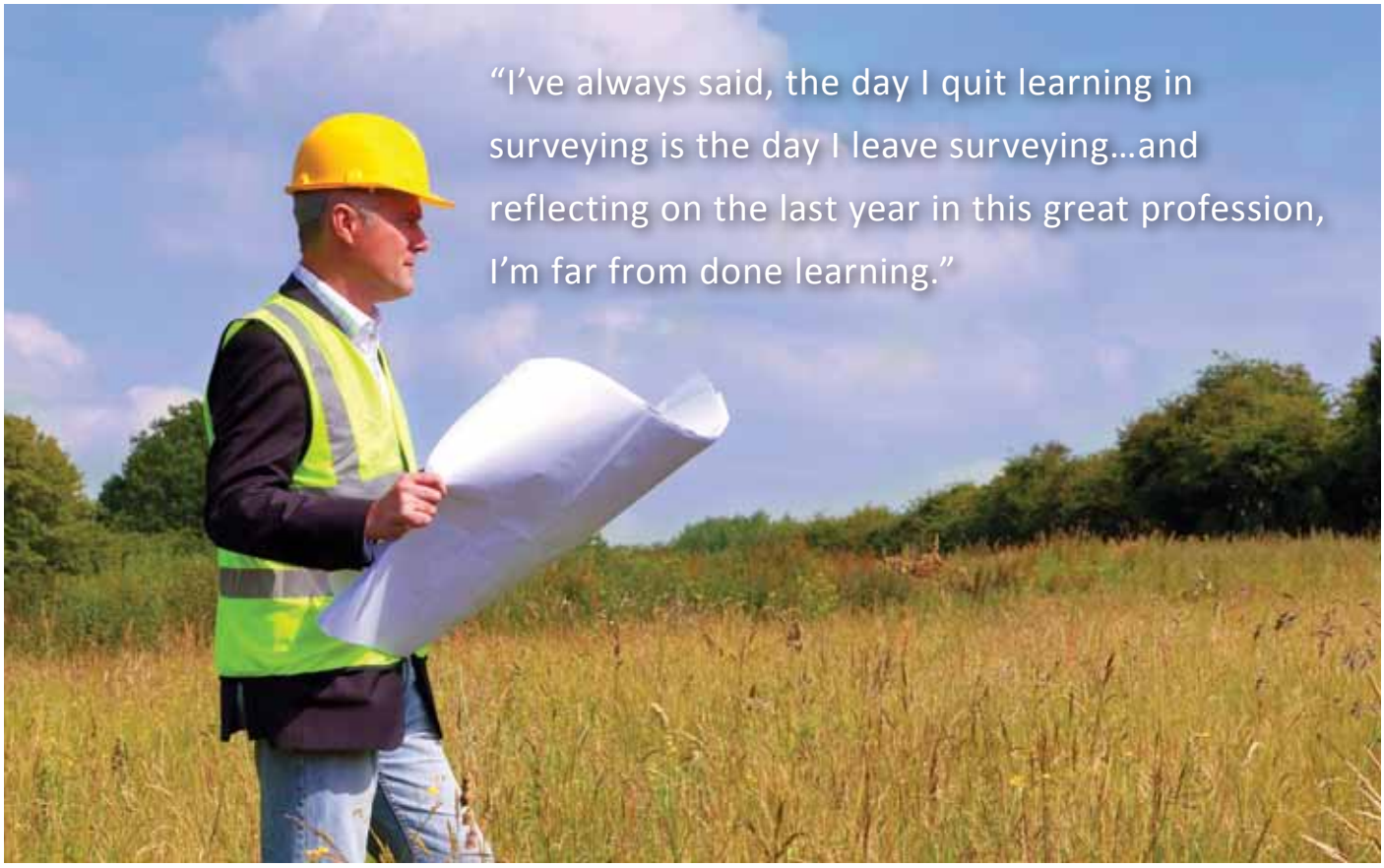
Happy New Year! Can you believe it is 2012? My hope is that everyone has recovered from the holidays and that your New Year's resolution is in full effect…

As I write my final chairman's message for the year, I can't help but look back on 2011, and what has been accomplished in just one year. One of my goals when I became the State Chairman was to help move this profession forward. I feel that has happened, but certainly not because of me, my goals, or my agenda. There is an entire membership and executive board of surveyors in the UCLS that is committed to the same goal, not only this year, but every year. Thinking one person can move a profession forward is selfish thinking on my part, but tell me one surveyor who doesn't have an ego that follows them around like an 800 pound gorilla. Pushing my 800 pound gorilla out of the way, I can see what we have accomplished this year. Here is a small summary of 2011:

- We contacted the Division of Occupational and Professional Licensing (DOPL) Board regarding a licensed geologist performing tasks that should be done by a professional surveyor. The UCLS stands united in protecting our profession from unlicensed people (whether a person holds another professional license or not) doing work that should be done by our profession. The task in question, and services provided by the licensed geologist, not only hurt our profession as a whole, but was possibly detrimental to the public. The duties of being a licensed professional (whether a surveyor or a geologist) is to protect the public. In this case, it is our resolve that not only was our profession affected, but many landowners, farmers, and business owners also become affected in the community where this survey was done. Actions have now been taken, and a professional land surveyor in Southern Utah is currently correcting and/or re-doing work in this area. For more information, a copy of the letter sent to DOPL can be found in the 2011 fall edition of Foresights at www.ucls.org.

- The UCLS has been working closely with the County Surveyors from the Utah Association of Counties (UAC) on a couple different issues. One of those issues is the discussion of revising or updating the Utah State Code 17-23-17. 17-23-17 is inherently the County Surveyors code in Utah, but it is really productive when the County Surveyors in Utah and the UCLS Legislative Committee can sit at the same table and discuss the code and what the needs are of all surveyors in the state (as well as the public). The second issue that the UCLS and UAC have been working closely on is a guideline for the preparation of corner records in the State of Utah. Right now, per 17-23-17.5, the only requirement for filing a corner record is a stamp and a signature. This will not change 17 23 17.5, but rather give a guideline that all surveyors can use when preparing corner records in the State of Utah. There are hopes that a draft of the guidelines will be sent out to the general membership of the UCLS in time for the annual convention. If you would like to comment on either of these issues, feel free to contact the Legislative Committee Chair or the Standards and Ethics Committee Chair. Contact information for these individuals can also be found at www.ucls.org.

- The UCLS Membership and Public Relations Committee has also been busy this year. This committee is currently working on a membership incentive drive that you will get to see in part at this year's annual convention, with the full incentive drive being in full swing the following year. This incentive drive includes winning lucrative prizes just for being an involved member throughout the year. Being involved could mean something as simple as going to the annual convention or attending monthly



luncheons to something a little more complicated like writing an article that gets published in Forsights. Even attending and helping with committee meetings will get you points toward prizes. In theory, there will be a point system, monitored by each chapter secretary, then a final raffle type competition at the end of the year (culminating at the annual convention). More details to come this February at the convention!

- Another item that has been looked at closely here in Utah, and is finally coming into the line of sight (pun intended) is the adoption of a 4 year degree being mandatory for professional licensure in Utah. Once again, just like a few years ago when Utah made the 2 year degree mandatory for licensure, our state is behind the 8-ball again as the majority of the surrounding states are now requiring 4 year degrees to be a professional land surveyor. Some states won't even consider a licensed surveyor from Utah for reciprocity unless he or she has obtained a 4 year degree. Knowing this is the future of our profession, I'm very excited about this and I am personally pursuing my 4 year Bachelor of Science Degree at Utah Valley University (UVU) in Geomatics (even though I'm already licensed). If you want more information on the degree offered at UVU, feel free to check out http://www.uvu.edu/geomatics/.

This is a small sampling of what is moving our profession forward. I'm grateful and humbled that you, the membership of the UCLS, voted for me to lead the UCLS this year. Serving as your State Chairman this year, has been an amazing eye opening experience, a year of personal growth, as well as a very educational experience. From serving on the Utah Engineers Council Board to serving on the Western Federation of Professional Surveyors board, I take with me knowledge that I've never had until this year. I've always said, they day I quit learning in surveying is the day I leave surveying…and reflecting on the last year in this great profession, I'm far from done learning. So I guess you are all stuck with me. Thank you UCLS for this opportunity to serve you and educate myself.

Sometime between the 9th and 10th of February, I will stand proudly in front of the membership and hand the official UCLS gavel over to Brad Mortensen, as your next State Chairman. Just as Robert Jones did in 1960, and the 40 or so surveyors before myself and Brad, this organization will stay diligent to this profession and continue to protect the public long into the future. As I hand the gavel to Brad, I have high hopes of his leadership abilities, unwavering professionalism, and heart for this profession in 2012. I look forward to working with Brad long into the future. As with all of my chairman messages, I want to leave you with my contact info. Please don't hesitate to contact me for any reason. Even if I'm not the State Chairman after February 10th, we can still just "talk shop". I can always be reached at mikenadeau.ucls@gmail.com.

Thanks again for giving me this opportunity to serve you as your State Chairman. Words cannot describe how great this year has been for me…even if I am just an "illustrious potentate" (Thanks Jerry Allred and Ray Stevens for this one).

For my final Chairman's quote, I leave you with president and surveyor, Abraham Lincoln. "And in the end, it's not the years in your life that count. It's the life in your years". ◀

Utah Control Survey Site

BY SEAN FERNANDEZ AND STEVE GOURLEY OF STATE OF UTAH AUTOMATED GEOGRAPHIC REFERENCE CENTER (AGRC) AND NANCY VON MEYER, FAIRVIEW INDUSTRIES

The Utah Public Land Survey System (PLSS) application showcases many of Utah's Automated Geographic Reference Center's (AGRC) development efforts. These efforts were created with the public in mind and are intended for the public to freely use in their own projects and websites. AGRC is eating it's own dog food so to speak with this application by using its tiled base maps, Javascript widgets, and web application programming interface (API).

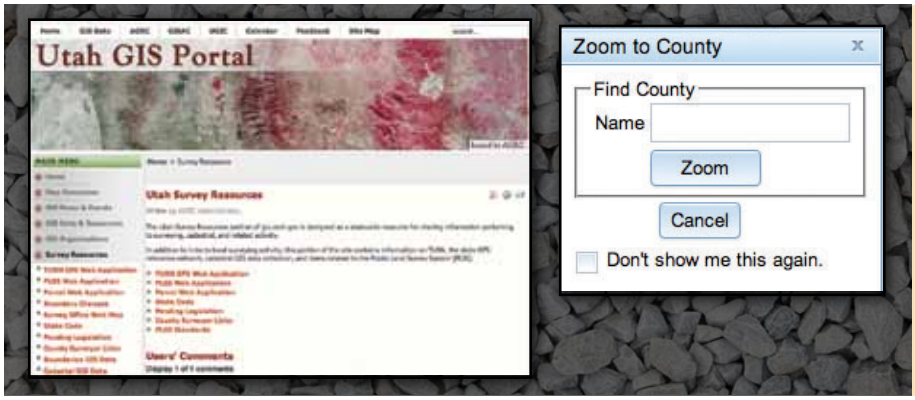
AGRC actively maintains 7 tiled base maps, Terrain, Topo, Imagery, Hybrid, Streets, Lite, and Hillshade. The base maps can be viewed at http://mapserv.utah.gov/cacheviewer/. These base maps can also be used as a part of an Esri ArcMap canvas or embedded in web pages using the Esri REST point services. All of the search functionality and base map goodness is baked into a Javascript widget library. AGRC hosts this widget library on a content delivery network (CDN) with the intention that the public will embed the widgets in their own websites enjoying all of the work that AGRC has put into them. The widgets utilize AGRC's web API making web requests to query AGRC's State Geographic Information Database (SGID) and display the results of queries, zoom to places of interest, and other uses.

The PLSS application is special since it lets surveyors register with the site. Once registered, surveyors are then allowed to increase the accuracy of the PLSS data by uploading existing tie sheets or submitting the information necessary to create a new tie sheet for a specific corner point. Once this data passes quality control and assurance review (QA/QC), the crowd sourced data is added to the authoritative dataset. Everything comes full circle when the data is published for all of the public to benefit on the PLSS website and other distribution methods.

This application illustrates the use of the standardized PLSS data in the Cadastral Nation Spatial Infrastructure (CAD NSDI), crowd sourced control data from registered users (land surveyors) and leveraging web services to provide an application.

ENTRANCE AND GETTING STARTED

The PLSS application website (http://gis.utah.gov/surveyresources)



Select the PLSSWeb Application, which then prompts you for the county. The county zoom can be used or dismissed. The first letter presents a list of counties or a complete list of counties can be presented.

APPEARANCE AND CONTENT

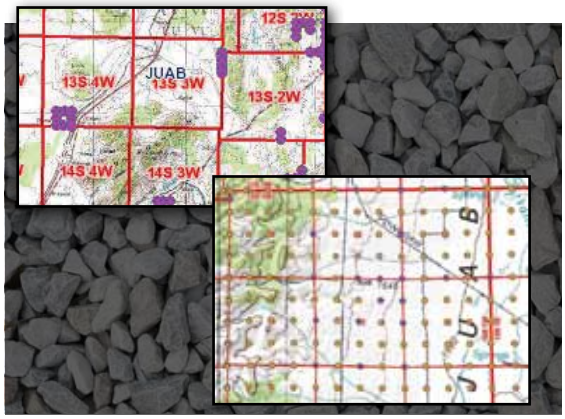
The web site has a very clean and straightforward appearance.

Clicking on the background option control in the lower left can easily change the background.

Select a base map and then zoom in and the PLSS Townships with the corners that have tie sheet information are displayed. The PLSS Townships are from the national standards, the Cadastral National Spatial Data Infrastructure (CAD NSDI) Public Land Survey System (PLSS) data set.

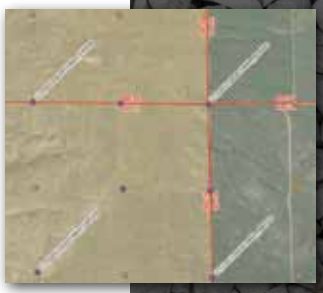
This screen shot is from a portion of Juab County. The purple symbology is corners with tie sheets available.

As you zoom in further additional corners, those without tie sheets and the corners with tie sheets pending become visible as well as section lines, which again from the CAD NSDI.



The township labeling moves from the center of the township to the boundary lines and the section numbers in the center of the section. In this case the section numbers are slightly blocked from the corner symbology.

Switching to the hybrid base map and zooming in further, the labeling for the sections is moved from the center of the section to the section boundary line and the corner is labeled with the Corner ID.



The Corner ID follows the national PLSS point identifier national standard guidance.

STATE ABBREVIATION UT
PRINCIPAL MERIDIAN CODE 26
PLSS TOWNSHIP NUMBER 12S (0120S) the trailing zero is for fractional township
PLSS RANGE NUMBER 1W (0010W) the trailing zero is for fractional range
DUPLICATE TOWNSHIP CODE 0
PLSS CORNER ID NUMBER 560600 leading underscore (__) and on township boundaries the smallest PLSS Corner ID is used for the primary ID.

The PLSS divisions below the first division (section) are not shown on this view of the data because the corners can be used to infer the divisions. The townships and first division of the PLSS (sections primarily) provide sufficient context for the corner data.

Clicking on one of the corners with a tie sheet shows the summary information on the right hand side of the screen.

The corner identifier as shown above is listed in the results of the map click.

One important aspect of this site as well as Utah's approach to data stewardship for this data set, is all corners have a primary unique identifier that allows related information such as tie sheets and monumentation to be assessable through a single link. Alias identifiers, such as corners on township lines, can also be accessed through this approach because the aliases are tied to the primary corner ID.

Available Tie Sheet information can be found through the Tie Sheet hyperlink. In this case the selected corner has a tie sheet as shown in the next figure. If there are multiple tie sheets for the corner, such as multiple coordinate observations, updates from various land surveyors, or multiple monumentation for the same corner these are all provided in the view, organized by date with the most recent at the beginning.

The tie sheets are scanned and bar coded for entry into the system.

SURVEY SITE continued on page 10

SURVEY SITE continued from page 9

Another feature that is important to land surveyors is locating pubic lands, both federal and state. In the figure below the base map is switched to the topographic map view.

The land ownership layer from the layers list on the right hand side adds federal and state managed lands.

The right side of the screen provides content navigation and searching.

Users can search by county, by PLSS Township specific corner ID or latitude/longitude or state plane coordinate and PLSS Township.

The right side of the screen provides content navigation and searching.

Users can search by county, by PLSS Township specific corner ID or latitude/longitude or state plane coordinate and PLSS Township.

SUBMITTING CONTROL

Land Surveyors can easily register with the site and obtain permission to post recovered corners and coordinates added to the site.

Once registered and logged on directions for submitted control are easy to follow.

There are two ways to proceed to submit corner data. The preferred way is to find the corner using the zooming tools and click on it. From there you can click submit corner data.

The other method is to be used only if the corner data you are trying to submit is not shown on the map. If this is your case, you will have to fill out additional information. Please refer to this document.

PROCEED TO THE FORM

The submission form is completed through an online pdf file form. If a corner is selected when the form is opened the Corner ID, township range and county are populated based on the selected corner.

APPLYING CONTROL

The State Cadastral Surveyor, Sean Fernandez, who is also the state cadastral contact and the statewide support data steward, evaluates the control information submitted by land surveyors. This eliminates and filters any unreliable or non-authoritative source data getting posted to the site.

Control observations are integrated into updates of the standardized PLSS on a regular basis. This process is currently about twice per year. The Bureau of Land Management (BLM) Utah State Cadastral Survey, led by Steve Hope, is also in the process of updating and improving the PLSS data on federally managed lands. The control observations from this site are combined with the BLM's efforts to produce a single authoritative standardized PLSS for the state of Utah.

Over time it is expected the PLSS will stabilize and updates will be less frequent. Because so many applications depend on the standardized and updated PLSS having a means to maintain corner monument information and control measurements on those corners will increase the reliability and accuracy of the PLSS. Sharing the stewardship for the maintenance among state agencies, local governments private surveyors and the federal government eliminates redundancy, building a common authoritative source for all users. ◀

Four-Year Degree

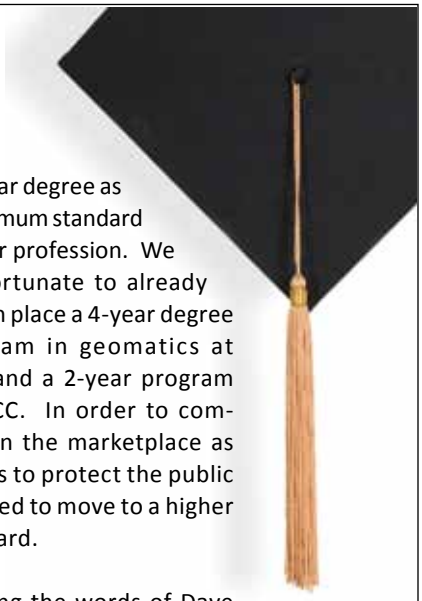
BY VON HILL

Recently I was talking with an acquaintance about the requirements to license as a Professional Surveyor. He seemed puzzled when I told him of the 16 hours of tests that must be passed. He then asked me if the tests were all practical. I was then puzzled that he thought our tests would only involve operation of surveying equipment. I had never thought of that being part of the licensing process. It was then I realized that this individual and most people don't understand what we do as Professional Surveyors. Our image isn't all that great.

The body of knowledge that is required to effectively do our job is expanding tremendously and unfortunately other related professions such as lawyers, geographic information system and title people are taking over responsibilities that have traditionally been a surveyor's. Some of this encroachment into our profession as well as our image problem is of our own making. There are too many people who represent themselves as surveyors that discredit our profession.

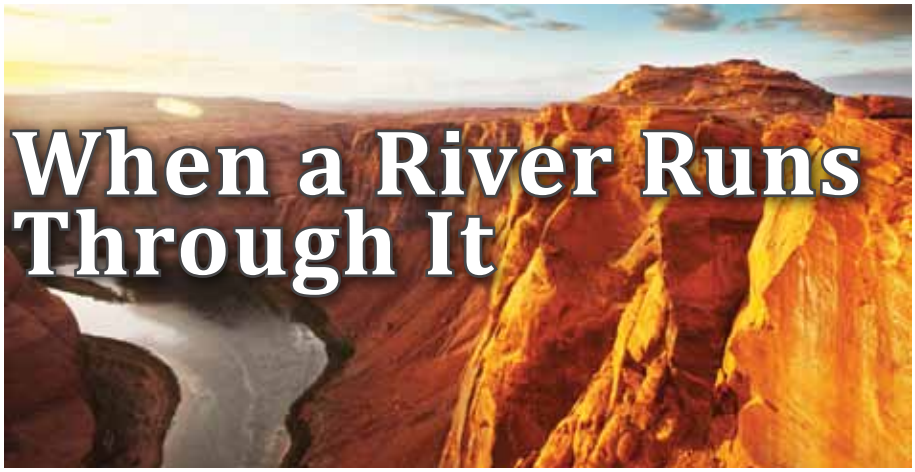
During the past 8 years as I have served on the Licensing Board I have seen the number of complaints against surveyors decrease, however complaints against surveyors are still far out of proportion to what our numbers represent. Surveyors constitute about 10% of the total number of licensees yet over a third of the complaints are against surveyors. I believe that a large part of the reason for this disparity is because of the lack of education of many surveyors.

Currently 19 states require a 4-year degree to license as a Professional Surveyor. Nevada, Idaho and New Mexico are in that group of 19. Other states are currently moving in that direction. It is interesting to note that in past years state courts have ruled that surveying is not a profession because of a lack of a 4-year degree standard. Recently in the State of Maine the U.S. Department of Labor decided that Maine Surveyors were not part of " learned profession" because of a lack of a 4-year degree standard. Licensure is designed to protect the public. It is now time to take another step in our profession and require a 4-year degree as a minimum standard for our profession. We are fortunate to already have in place a 4-year degree program in geomatics at UVU and a 2-year program at SLCC. In order to compete in the marketplace as well as to protect the public we need to move to a higher standard.



Quoting the words of Dave Gibson, "A learned professional must have the ability to speak confidently, write authoritatively, research published information, analyze issues and apply math and science when needed. These things cannot be learned entirely on the job. Public protection also comes from completion of a college program—not only by passing an exam."

Ours is a noble profession. The time has now come for a 4-year degree requirement for licensure as a Professional Surveyor. ◀



When a River Runs Through It

BY KELLY WILLIAMS, ATTORNEY, VAN COTT

As the thirteen original colonies came together to form the Union, they succeeded to the British Crown's ownership of all navigable waters within their respective boundaries. Each state that entered the Union after that, including Utah, did so under the doctrine of equal footing, and "received title to the beds of navigable lakes and rivers" within their respective territories. Title to land underlying nonnavigable bodies of water remained in the United States. Federal law governs the issue of navigability, and it is determined as of the time of the respective state's admission to the Union. Also, in the case of rivers, the determination of navigability for one portion of a river does not extend to the entire river.

In Utah, natural boundaries formed by rivers and lakes often serve as property boundaries between owners. In circumstances where the surface and mineral estates are severed and riparian ownership of the land abutting the boundaries of navigable bodies of water differs from ownership of the lands underlying the body of water, the issues of accretion and reliction can become problematic. A mineral estate is severed from the surface estate "when the surface and subsurface portions of a piece of property are not held by a single owner." The law of reliction is that lands exposed by the movement of a water body, thus becoming "dry lands," become the property of the riparian owner (in other words, the riparian owner acquires the relicted or "dry" lands). This result is based on the policy premise that riparian owners intended to have, and therefore should have, access to the body of water abutting their property. When the mineral and surface estates are severed, boundary changes resulting from accretion or reliction can result in significant disputes by and between the owners of either estate who may assert an interest in the portion lost or gained as a result of the shifting boundary.

The Utah Supreme Court has not addressed the issue of whether enlargement as a result of accretion or reliction applies to severed mineral estates. Under Utah law in general, however, the doctrine of accretion states that where a waterway forms a boundary between property owners, the movement of the boundary over time, through the erosion process, effectively changes the boundary. When a waterway suddenly (as opposed to slowly, over time) abandons its previous channel, and establishes a new channel through manmade or natural causes, the doctrine of accretion does not apply, and the previous boundary remains the same. Accurately establishing ownership of riparian lands often comes down to getting an updated survey of the property in question. If no survey exists, or the existing survey is inaccurate, it might be necessary to get a new survey. A riparian survey may be employed to identify, quantify, or locate the boundaries of land. Although there is some disagreement regarding whether surveying can be used to establish boundaries of a severed mineral estate, in general, "[i]t is not really in question that surveying may establish the boundaries of a mineral estate."

Whether the doctrine of accretion is held to apply to severed mineral estates in Utah, "the surveyed boundaries of the former surface estate would nevertheless accurately delineate the boundaries of the underlying mineral estate." Consequently, an accurate riparian survey still often serves as the best starting point for establishing boundaries in circumstances where a river, or other body of water, serves as a property boundary. Thomas M. Cooley, the late chief justice of the Michigan State Supreme Court from 1864 to 1885, stated in "The Judicial Functions of Surveyors," that "[s]urveyors are not and cannot be judicial officers, but in a great many cases they act in a quasi-judicial capacity ... and it is important for them to know by what rules they are to be guided in the discharge of their judicial functions." The late Justice Cooley's words may ring particularly true in the context of riparian surveys conducted in Utah. ◀

Sustaining UCLS Member
Monsen Engineering

Roger P. Monsen

Monsen Engineering has been supplying the design/build industry in the Intermountain West with quality products and services since 1974. The 3rd generation Monsen family is proud to carry on the business ideals of their founder, Roger P. Monsen. Roger believed that a company had to add value to every product and service they provided. At Monsen Engineering they strive to continue that legacy.

Through their offices in Salt Lake City, Utah, Reno and Las Vegas, Nevada, Monsen Engineering has catered to the GIS, GPS, Large Format Printing and Scanning, Construction Layout and Mining markets. Trimble, FARO, Seco, HP and Canon are among the manufacturers that rely on Monsen's to distribute their high quality products.

Throughout this 38 year period Monsen Engineering has been a sustaining member of the UCLS association. They have enjoyed the benefits of giving back to the industry through an education scholarship in the name of Roger P. Monsen since his passing in 2004. The family understands the value of education and proudly provides scholarships for land survey students in both Utah and Nevada.

Monsen's plan for the next 38 years is to anticipate the needs of their customers by introducing new technology, products and services to make them more productive and professional. ◀

MONSEN ENGINEERING

Monsen's plan for the next 38 years is to anticipate the needs of their customers by introducing new technology, products and services to make them more productive and professional.

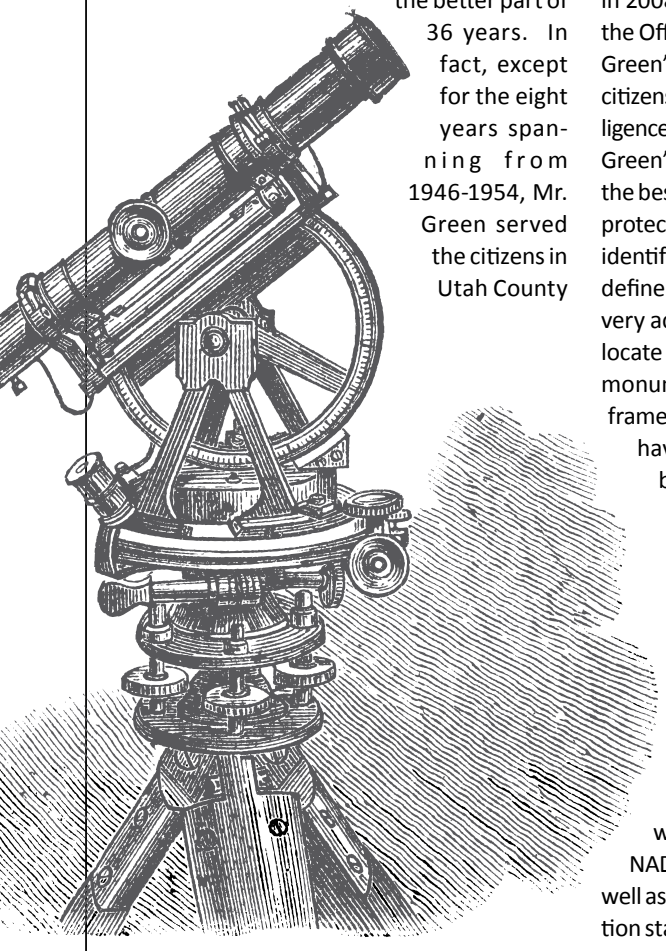
HISTORY OF THE UTAH COUNTY SURVEYOR'S OFFICE (1940s TO PRESENT DAY)

A TRIBUTE TO THE LEGACIES OF TWO COUNTY SURVEYORS

BY GARY RATCLIFFE, UTAH COUNTY SURVEYOR

While it is with a certain element of risk that I attempt to represent certain historical facts that predate my birth I will forge ahead as I have to begin somewhere.

There can be no better a place to start than the 1940s, as this time frame was the beginning of a great amount of assertive effort to recover and restore the monuments of the PLSS within Utah County. It was this county's "GREAT AWAKENING." The County Surveyor at the time was Vern Green. Mr. Green served in this capacity for the better part of 36 years. In fact, except for the eight years spanning from 1946-1954, Mr. Green served the citizens in Utah County with honor and great diligence from 1942 to 1978. For much of this time Clyde Naylor served as Mr. Green's deputy and between the two of them they laid a ground work of information that has helped shape and define surveying in our county for many years. In 1978 Vern Green retired and Clyde ran for County Surveyor. Clyde served as County Surveyor until shortly before his retirement in 2008. I am convinced after "seeing" what the Office had accomplished during both Mr. Green's and Mr. Naylor's time in serving the citizens, that they were men with vision, intelligence, and resourcefulness. It was during Mr. Green's time of service that he realized that the best way he could help parties define and protect their property interests would be to identify and preserve the monuments that define those interests. Mr. Green became very active as a County Surveyor in trying to locate and define the locations of those PLSS monuments. It was also during this time frame that he envisioned a "tool" that would have several benefits, with the largest benefit being a capability of defining and preserving those monuments and at the same time being able to mathematically relate monuments together over distance. What he and Clyde set about doing was a process to establish state plane coordinates on every section corner in Utah County. They would do this by surveying several large baselines between govt. triangulation stations while also incorporating the published NAD 27 state plane coordinates on these as well as other first and second order triangulation stations located on the prominent peaks overlooking Utah valley. After establishing these baselines and utilizing multiple checks and balances, individual loops were surveyed and traverses balanced and thus providing very accurate mathematical relationships between section corners within our county. Every section in every township within the "urban corridor" was traversed and adjusted. However, he didn't stop there. Vern and Clyde envisioned that if large enough towers could be erected directly over these government triangulation points on top of these peaks, hypothetically a surveyor occupying a section corner on the valley floor could use a transit or theodolite (total stations weren't around back then) and have an instant basis of bearing for his survey.



Since starting with the Utah County Surveyor's Office in 1980 I was endoctrinated not only with the importance of the monuments of the PLSS but also with various procedures that were used to help in their location and preservation. Over the years due to technological advances I, like many of you that are a "little older," have seen surveying evolve from transits and theodolites and steel tapes to total stations, GPS, and robotics. Drafting tables have been replaced by computers and plotters. However, many of the procedures and policies used by this office will never be replaced by any technology changes as there are certain things that cannot replace the "eye of

It is estimated that in Utah County we have just over 4,000 PLSS corners that control private and state land. Thanks in large part to Mr. Green and Mr. Naylor we have identified, surveyed and published data on approximately 3,400 over the past 70 years.

the surveyor," particularly when dealing with rules of evidence and each corner having its own unique set(s) of evidence involved. While not replacing the evaluation of facts gathered by the surveyor, GPS has given us the capability to more easily and quickly gather evidence used to assist in making decisions. In 1990 under the direction of Clyde Naylor Utah County made the leap from exclusive use of conventional surveying equipment to the use of GPS technology. It wasn't without some growing pains either. The "hottest" equipment on the market happened to be the trimble 4,000 single frequency receivers. At that time "RTK" was just starting to evolve but hadn't really taken off yet. Dual frequency equipment for private use was just a thought in someone's mind. The catalyst that drove the Utah County Surveyor to consider such a huge investment came with the introduction of NAD 83 coordinate systems that at the time was going to be required by state and federal agencies. In 1990 Utah County began working on a series of several control networks with long observation times utilizing multiple receivers and static gps methodology and adjusting to NAD 83 coordinates. Some of the earliest control networks involved tying township corners together as well as tying these corners to HARN control stations. Also, to complete the survey control in Utah Valley it was deemed necessary at the time to tie the govt. triangulation stations on the primary peaks (those that had survey towers above them as well as those that didn't) to our control network as well. Around the mid 1990s the County Surveyor invested in some of the earliest dual frequency equipment on the market which gave us an opportunity to "co-observe" with the federal govt. in their quest to "upgrade" and densify the HARN network. This allowed us to add several HARN stations in our county. The largest benefit in the acquisition of dual frequency gps receivers was the ability to lengthen baselines to a certain degree but mostly the capability to shorten observation times. Once these static control networks were established we began the process of performing static gps work on every section corner monument throughout the urban corridor area from Alpine to Santaquin, township by township, and adjusting to these control networks. Once adjustments were made plats were published and individual tie sheets were modified adding NAD 83 (HARN) state plane coordinates as published data. Later on the County Surveyor invested in RTK technology which obviously became an integral part of what we use today.

As mentioned above, Mr. Green saw the need early on to identify the corners of the PLSS, and Mr. Naylor continued that effort. It is estimated that in Utah County we have just over 4,000 PLSS corners that control private and state land. Thanks in large part to Mr. Green and Mr. Naylor we have identified, surveyed and published data on approximately 3,400 over the past 70 years. It has long been an objective of mine (for the past 25 years working under the direction of great men before me) to "pick away" at the remaining corner monuments that exist out there. It obviously becomes much easier and practical to identify these monuments before development occurs that would otherwise destroy them. It also helps to identify these corners prior to the installation of occupation lines and prevent future confusion. Each year our office will select an area to focus on. We retrieve all of the data that we can find including past surveys, parol evidence from land owners, in addition to govt. notes. We will work in that area summer after summer until we have completed the project. We try hard not to "qualify" or "quantify" the expression "diligent search." The placing of restrictions on ourselves would limit our capabilities of corner recovery. Each corner becomes very literally it's own unique "entity" and tied to other unique entities surrounding it, each producing its own set(s) of evidence as to its location.

In conclusion it has been a great privilege to work in the shadows of two great county surveyors. It has been humbling to follow them and their work over the years and learn from their examples. It has been equally educational and humbling to work with and rub shoulders with several others who are currently serving as county surveyors in other counties around the state. Two or three times a year I get a great opportunity to meet with them and I always come away from that experience with a greater appreciation of the opportunity that I have to serve in this Office. Every time I start feeling like I may have it all figured out, I quickly find out that there is so much more to learn. Larger counties have problems that are unique only to them, as well as smaller counties having their respective issues. But most issues involving the responsibilities of county surveyors are common across the state. We want to provide the best service possible to the citizens as well as the private surveying community. The singular most important request that I can make of the private surveying community doing work in my county is increased or improved communication pertaining to projects that would obliterate a section corner monument. There are those out there with whom I have worked with over the years who do an excellent job in the notification process, but is certainly an area that needs to be improved on by several others. ◀

Four Corners Monument

How Surveyors Placed it Correctly

Arizona ~ Colorado ~ New Mexico ~ Utah

Why are surveyors' property monuments correct, even though we can make more precise measurements with GPS today?

The Four Corners Monument marks the exact corner of four states because of several laws: The Congressional Act of 1863 signed by Abraham Lincoln was a legal order to set the Four Corners Monument that was carried out faithfully by US Surveyor Chandler Robbins, in 1875. Chandler Robbins was required to terminate the Arizona-New Mexico line at a line previously marked east-west, in 1868, by Ehud N. Darling for the Colorado-New Mexico line. The Four Corners Monument, as originally placed by this legal act, cannot be legally moved by more precise measurements using tools that were not available in 1875.

Since ancient times, societies have sought to establish an orderly system of property identification. Surveyors set property corner monuments with a high degree of skill and accuracy as a means for the public to see and identify property corners. Moving established corner monuments has long been known to be very disruptive, confusing to the public, and illegal. It is impossible to set property corner monuments and make measurements on the land with mathematical perfection, or perfect precision, due to inherent errors in man-made tools and other factors.


Chandler Robbins

When it was discovered, in 1902, that 37 degrees of latitude was approximately 300 feet north of the Four Corners Monument – a negligible distance within the scale of states – efforts were made to change the Colorado-New Mexico line to the more precise location by an Act of the United States Congress, in 1908. The legislation failed because it was not signed by Theodore Roosevelt. In 1925, the United Sates Supreme Court ruled that the existing Four Corners Monument was legally correct, or, legally accurate. The matter of legal accuracy is the ruling consideration of property location over the matter of mathematical precision.

How did surveyors know where to place a property corner monument in 1875?

Surveyors combine the sciences of math, astronomy, navigation, geodesy (measurement of the earth), cartography (mapmaking), and the art of boundary law to pinpoint a location on the surface of the earth. Before the advent of Global Positioning Systems (GPS) and other electronic instruments in the 1970s, surveyors used instruments called "transits" or magnetic compasses to measure bearings and angles, and metal "chains" or tapes to measure distances on the ground.

Surveyors made angular measurements to certain stars, such as Polaris or the Sun, and recorded the time the observations were made. Then, with paper and pencil, completed a complex series of long-hand mathematical calculations to determine the latitude and longitude of where the observations were made.

Once these "coordinates" were known, a compass direction and distance to any desired intersection of latitude and longitude could be calculated, such as the Four Corners, being the previously marked Colorado line at approximately 37 degree Latitude and 109 degrees 03 minutes Longitude. Survey crews then painstakingly used transit and chain to reach, or "stakeout" their destination in small, numerous 66 foot increments of measurement over the open, wild terrain.

Chandler Robbins used the method of triangulation to start from the previously determined coordinates of what is today known as "Ship Rock" in New Mexico.

His crew then skillfully "traversed" 11 miles to the desired longitude of 109 degrees 03 minutes. Then they surveyed north, along this desired longitude, until ending the survey at the previously marked Colorado line, where they set the monument that has been perpetuated in the same position today.

How have modern measuring tools, such as, Global Positioning Systems (GPS), changed the accuracy of surveyors' measurements?

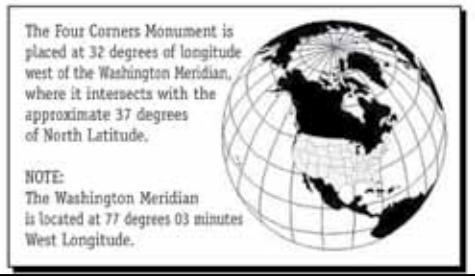
GPS satellites circle the earth twice a day in a very precise orbit and transmit signal information to earth. GPS receivers take this information and use triangulation to calculate the user's exact location relative to true latitude and longitude.

Surveyors use GPS to make measurements of the land with a higher degree of precision and in a much faster amount of time than with the old transit and chain.

Property lines, property rights, and surveyors' monuments are regulated by laws, not by mathematics. Surveyors take great care in protecting property rights by retracing historical property lines where they were originally established on the ground. Surveyors do not move property corner monuments that were set with the old tools. They use modern tools to report more precise positions of existing property corner monuments.

By using GPS to measure the location of the Four Corners Monument, we observe with a high degree of precision that the monument is located at 36 degrees 59 minutes 56.32 seconds North Latitude, and 109 degrees 02 minutes 42.62 seconds West Longitude, compared to the intended 37 degrees North Latitude and 109 degrees 03 minutes West Longitude.

The placement of the Four Corners Monument is a remarkable feat of surveying precision and accuracy accomplished by surveyors in 1875, especially considering the tools that were available and the desolate, rugged, roadless terrain that had to be traversed. The Four Corners Monument was and is – placed correctly. ◀



A SMOKEY MEMORY

February 1987

BY DANIEL W. WEBB, BLM, UTAH STATE OFFICE

The birth of my son brought excitement to my home and tradition to the office place. It was early 1987 in the BLM Alaska State Office. The Federal building was working on a no smoking policy, but still had none.

The east end of the 4th floor was full of land surveyors; the office Review Staff I was supervisor of had about 7 employees. With the looming changes in building, a smoking policy and my excitement of the birth of my first child, the tradition I referenced had to take place. So, late one afternoon, about quitting time, the cigars were pulled out and an appealing fragrance, followed by a wisp of smoke began to filter from the east. The wisp turned into a dense cloud, until the stogies were gone . . .

The office smoking policy has changed, the employee faces have changed, but the friendship and comradely atmosphere among fellow land surveyors has not. ◀

National Geodetic Survey Highlights

BY WILLIAM STONE, NGS SOUTHWEST REGION GEODETIC ADVISOR

The National Oceanic and Atmospheric Administration's (NOAA) National Geodetic Survey (NGS) is involved in several efforts impacting the National Spatial Reference System (NSRS) – the Nation's system of latitude, longitude, elevation, and related models and tools. These efforts include recently implemented changes and ongoing developments that will be delivered in early 2012, and preparations are underway for a major NSRS modernization makeover, to be delivered in a decade. These changes are all designed to improve the accuracy and accessibility of the NSRS, to the benefit of a broad range of geospatial professions and activities.

The NGS Web site provides a great deal of information about the aforementioned efforts, and it also serves as a portal providing access to a variety of geodetic data, software, publications, and information about NGS products and services. I recommend users of the NSRS refer to the following sites for information about some of these NGS activities, resources, and programmatic developments:

1. **National Geodetic Survey home page: http://geodesy.noaa.gov/**
   Starting point for information about NGS and its products and services
2. **Continuously Operating Reference Stations (CORS): http://geodesy.noaa.gov/CORS/**
   Data access, metadata, and miscellaneous site information for the network of permanent GNSS sites
3. **Online Positioning User Service (OPUS) http://geodesy.noaa.gov/OPUS/**
   Automated processing of your GPS observations (note: Until the early 2012 release of the NAD83(2011) epoch 2010.00 realization for the passive control network, users can choose between two NAD83 realizations – NAD83(2007) and NAD83(2011) epoch 2010.00 – for their solutions)
4. **Published CORS Coordinates: http://geodesy.noaa.gov/CORS/coords.shtml**
   Detailed information about published CORS coordinates and reference frames, including the recent release of NAD83(2011) epoch 2010.00 and IGS08 epoch 2005.00 coordinates for all sites, along with the corresponding IGS08 GNSS antenna calibration models
5. **Multiyear CORS Solution (MYCS): http://geodesy.noaa.gov/CORS/coord_info/myear_FAQ.shtml**
   Questions/answers about the recent five-year effort to compute a new set of CORS coordinates, resulting in the latest nationwide geometric datum realization – NAD83(2011) epoch 2010.00
6. **National Adjustment of 2011: http://geodesy.noaa.gov/web/surveys/NA2011/**
   Detailed information, including FAQs, about the in-progress effort to adjust the GPS-observed passive control network to the NAD83(2011) epoch 2010.00 framework established by the MYCS
7. **The National Geodetic Survey Ten-Year Plan: http://geodesy.noaa.gov/INFO/NGS10yearplan.pdf**
   NGS document that lays out a "mission, vision, and strategy" for NGS and the evolution of the National Spatial Reference System over the 2008-2018 time period (and probably longer), including plans for the national geometric and geopotential datums of the future.

For more information, please contact me – Bill Stone, NGS Southwest Region (UT, NV, AZ, NM) Geodetic Advisor, at william.stone@noaa.gov or 505-277-3622 x252. I will be discussing these topics during my NGS presentation at the UCLS 2012 Convention in St. George. If any of these topics are of particular interest, I suggest you consider reviewing this published information prior to the convention so that you can consider what questions, suggestions, and feedback you might have for NGS. We want to hear from you, and I look forward to seeing you at the convention. ◀

GUIDE FOR PREPARING CORNER RECORDS IN UTAH

PRELIMINARY DRAFT – FOR REVIEW ONLY

This guide supplements the current Corner Perpetuation and Filing Act. 17-23-17.5.

The Utah Association of County Surveyors and The Utah Council of Land Surveyors recognizes the following guidelines as a reasonable expectation of the survey profession conforming to the purpose for which the Corner Perpetuation and Filing Act was created.

Adopted by the Utah Association of County Surveyors on _____

Adopted by the Utah Council of Land Surveyors on _____

PURPOSE:

The corner record was created to provide a simple and inexpensive method of sharing corner perpetuation information with the public and other surveyors. The corner records provide vital evidence to the surveyor which promotes stability in the land cadastre system.

The paramount purpose of the corner record is to perpetuate the corner position by providing specific information about the location, date of field activities, pedigree, recovery, and or restoration of the existent or obliterated corner monument and accessories.

WHY SHOULD A SURVEYOR FILE A CORNER RECORD?

It is required by state law:

17-23-17.5

(2) (a) Any land surveyor making a boundary survey of lands within this state and utilizing a corner shall, within 90 days, complete, sign, and file with the county surveyor of the county where the corner is situated, a written record to be known as a corner file for every public land survey corner and accessory to the corner which is used as control in any survey by the surveyor, unless the corner and its accessories are already a matter of record in the county.

(b) Where reasonably possible, the corner file shall include the geographic coordinates of the corner.

(c) A surveyor may file a corner record as to any property corner, reference monument, or accessory to a corner.

(d) Corner records may be filed concerning corners used before the effective date of this section.

17-23-17.

(7) (a) If, in the performance of a survey, a surveyor finds or makes any changes to the section corner or quarter-section corner, or their accessories, the surveyor shall complete and submit to the county surveyor or designated office a record of the changes made.

(b) The record shall be submitted within 45 days of the corner visits and shall include the surveyor's seal, business name, and address.

(8) The Utah State Board of Engineers and Land Surveyors Examiners may revoke the license of any land surveyor who fails to comply with the requirements of this section, according to the procedures set forth in Title 58, Chapter 1, Division of Occupational and Professional Licensing Act.

The surveying profession is charged by society with the responsible maintenance of the land cadastre system. The laws, rules and regulations which govern our profession are designed with the two-fold purpose of perpetuating the positions of existent and obliterated land boundary monuments while also providing a permanent record system which can be relied upon by future generations. An accurate and complete corner record system will promote stability in land boundaries, consistency between surveys, and harmony between neighbors.

Surveyors are remembered by the monuments they erect upon the earth. Corner records are a direct reflection on the professionalism of the surveyor perpetuating the corner. The surveyor should set durable monuments and provide a complete record of the evidence they recover and perpetuate. You may be the last surveyor to utilize the corner for several decades; make certain that your footsteps can be retraced.

CLARIFICATIONS TO THE CORNER PERPETUATION AND FILLING ACT:

Corners of the public land survey system are a matter of record within each County, and the Bureau of Land Management in Salt Lake City. Field notes and plats are available online or upon request. Various other sources of record and historical data are available at the state, county, and local

CORNER RECORDS continued on page 20

levels. Plats, maps, and corner records at the County Recorder and or the County Surveyors office are also available. All of these documents constitute a matter of record.

A filed record of survey map that includes the specific information about the location, date of field activities, pedigree, recovery, and or restoration of the existent or obliterated corner monument and accessories in accordance with this guide to preparing corner records, may also meet the filing requirements of 17-23-17.5

If a corner is determined to be "lost", the restoration method, rational and measurements used for reestablishing the corner may be documented on a record of survey map in accordance with 17-23-17.

There is no standard corner record form as many of the counties have been using a standard form of their own for many years. This guide includes a few sample forms that will comply with these guidelines; however the surveyor should contact the county to inquire about any specific forms they may prefer.

There is no limit to the number of pages for a corner record. Meta data or data about the corner is becoming more important as information is becoming more readily available to the public. Therefore, information about the corner, such as location, pedigree, observation files, adjustment reports, digital photos, etc., may be included on additional pages or attachments to the corner record.

Once the corner record is completed in accordance with these guidelines, the surveyor shall file the corner record with the county or counties in which the corner is located. The state's Automated Geographic Reference Center (AGRC) maintains an additional statewide database for Public Land Survey System (PLSS) corner management. The surveyor is encouraged to submit a copy of the corner record to the AGRC.

WHAT INFORMATION WOULD A SURVEYOR INCLUDE IN A CORNER RECORD?

Name or Designation;

All corners and or monuments should be identified by their proper full name including township, range, meridian, county, and state. Identifiers may include but are not limited to the following list:

- PLSS Corner Name
- GCDB/BLM PID
- National Spatial Grid Address
- NGS Name and PID
- Cross Index or Local PID
- AGRC Corner ID

Record and Historical Data (Pedigree);

The corner record should contain a thorough explanation of the historical evidence recovered during an examination of the record documents. References to or excerpts from existing matters of record forming a pedigree of evidence from the original monument record should be included if possible. The record and historical evidence can prove a vital link between the existent monument and the original monument. It may also provide evidence which quantifies the subsequent reliance made by others upon the existent monument, giving credence to its continued acceptance. Pedigree sources may include but are not limited to the following list:

- Original GLO/BLM Field Notes and Plats
- NGS Data Sheets
- County or City tie sheets or Bench Marks
- State, County, or City Maps of Record
- Title Conveyance Documents
- Right of Way Documents
- Public Utility and Transportation maps
- Parol Testimony
- Subdivision plats
- Record of Survey maps
- Corner Records
- AGRC PLSS Corner Management Evidence Found (Recovery);

Write a thorough report of the evidence you found: composition, size, identifying marks, physical condition, etc. If nothing was found, state it in the report along with the extent of search activities performed. The date of the field work, the last time the corner was visited and the date the corner record was prepared are all pertinent information that should be shown on the document. The recovered evidence may include but is not limited to the following list:

- The character and dimensions of the monument should not be widely different from the record
- Physical condition of the monument and surroundings
- The markings in evidence should not be inconsistent with the record
- The nature of the accessories in evidence should not be greatly at variance with the record
- Picture/Sketch and/or Rubbing of the monument, markings and accessories
- Date of initial visit when monument was recovered
- Date and purpose of any subsequent visits

Description of Monuments and Accessories used to rehabilitate the original location of the corner (Perpetuation);

17-23-17.5

(6) When a corner record of a public land survey corner is required to be filed under the provisions of this section and the monument needs to be reconstructed or rehabilitated, the land surveyor shall contact the county surveyor in accordance with Section 17-25-14.

The county surveyor has the duty to rehabilitate the public land survey corners, however many of the counties in Utah do not have county surveyors and this duty falls to the private professional land surveyor. Corner perpetuation is a privilege and responsibility granted solely to land surveyors throughout

the state. Take the time to rebuild mounds, clear sagebrush or replace a crumbling stone where necessary. You may be the last surveyor to use this corner for several decades. You will be remembered by the monuments you leave in your footsteps. Set durable monuments and provide a complete description of your perpetuation activities. Even with GPS and Google Map, reference ties, bearing trees and reference monuments should not be considered "old-fashioned" or unnecessary.

If the corner monument is determined to be "obliterated," the evidence used to determine the position should be included. If affidavits are used, a copy of the affidavit should be attached to the corner record or a reference to the recorded affidavits should be indicated upon the corner record. Include a picture, a sketch and/or a rubbing of the monument showing its markings and accessories set to perpetuate the corner position.

The perpetuation activities may include but are not limited to the following list:

- Contact County Surveyor
- Rehabilitate the monument
- Rehabilitate and replace any missing accessories
- Picture/Sketch and/or Rubbing of the monument, markings and accessories
- Date of field perpetuation activities
- Date and purpose of subsesquent visits

Courses and distances shown on corner record (Sketch);

"A Picture is Worth a Thousand Words." Courses and distances to adjacent corners if determined in the survey should be depicted by a sketch or narrative. Distances and bearings should be shown to local objects, if available in sufficient detail to allow rehabilitation of the corner monument if it is destroyed. If the monument is in a vulnerable location, reference monuments should be located and tied. It is suggested that the sketch be done first and the text placed around the sketch. Placement and overall size of the sketch are matters of individual choice. Additional sketches, diagrams, coordinate lists, additional narrative, and photographs may be placed on the reverse side or additional pages. The sketch may include but is not limited to the following list of items:

- Courses and distances to adjacent corners
- Tie or accessory distances and bearings
- Witness or Reference corners with distances and bearings
- Scale and north arrow
- Indicate when additional sketches or diagrams are placed on the reverse side or on additional pages.

Geographic Coordinates – Published and Non-Published Systems (Location);

When Latitudes and Longitudes of the corner monument location are shown, the surveyor should indicate the methods and equipment used in the observations as well as the datum and control points used to establish the geographic coordinates.

The following should be observed when using state plane coordinates:

57-10-7. Coordinates required to be based on control stations.

(1) Coordinates based on either the Utah Coordinate System of 1927 or the Utah Coordinate System of 1983 that purport to define the position of a point on a land boundary shall be based on a monumented horizontal control station established in conformity with the standards of accuracy and specifications for first or second order geodetic surveying, as prepared and published by the Federal Geodetic Control Committee (FGCC) of the United States Department of Commerce.

(a) Standards and specifications of the FGCC or its successor in force on the date of the survey shall apply.

(b) Publishing existing control stations, or the acceptance with intent to publish the newly established stations, by the National Ocean Service/National Geodetic Survey constitutes evidence of adherence to the FGCC specifications.

(2) Control stations which have been established by agencies of the state or its political subdivisions may also be used, provided those points are established in conformity with the standards set forth in Section 57-10-6.

57-10-8. Use of terms on maps and documents.

(1) Any document identifying or using a coordinate system shall, in accordance with Section 57-10-9, clearly and completely identify the system used.

(a) The use of the term "Utah Coordinate System of 1927 (North, Central, South) Zone" on any map, report of survey, or other document shall be used to reference the system, the coordinates, and the unit of measure as defined in Subsection 57-10-6(1).

(b) The use of the term "Utah Coordinate System of 1983 (HARN 1994, or the current federal coordinate update used as the basis of the system being used) (North, Central, South) Zone" shall be used to reference the system, the coordinates, and the unit of measure as defined in Subsection 57-10-6(2).

A surveyor should also depict the vertical datum used in addition to the convergence angle, scale factor, and combined factor used in computations for state plane coordinates.

Low Distortion Projections (LDP) should indicate the name of the LDP and the agency that manages and publishes the projection parameters, along with the projection parameters necessary to convert the LDP to a published geographic coordinate system. Additionally a phone number, address and contact person would be good information to include on the corner record.

Local projection parameters used by individual surveyors should include the projection parameters necessary to convert the local projection to a published geographic coordinate system. Any contact

CORNER RECORDS continued on page 22

information of a person who can answer questions about the local projection should be included also.

The location data may include but are not limited to the following list of systems:

- Horizontal datum
- Vertical datum
- Latitude Longitude and Height
- State plane coordinate system used
- Realization used (HARN 1994)
- Convergence angle, scale factor and combined factors shown for two or more points in the survey
- LDP name and projection parameters
- LDP Agency contact info
- Local Projection Parameters
- Contact information for Local Projection
- Additional meta data such as observation files and adjustment reports may be included with additional pages or links

Location Diagram (Cross-Indexing);

There are many forms of location diagrams (also called cross-index diagrams) providing methods of identifying each corner by an alphabetical-numerical coordinate for each township. These diagrams help to graphically identify the location of each corner relative to other corners in the township or section. However it is important to remember that corners common to adjoining townships or adjoining counties should be indexed in both locations with the appropriate alphabetical-numerical coordinate. See sample corner record forms for sample location or cross index diagrams in Appendix A. The cross indexing forms may include but are not limited to the following list:

- Location diagram of section
- Cross-index diagram of township
- Alphabetical-numerical corner designation

Surveyors Business Name, address, phone number;

The surveyor's name, business name address and phone number should appear on the first page of the corner record. The surveyor's information may include but is not limited to the following list:

- Business name
- Business address
- Business phone number
- Surveyor's name

Signature and Seal Required;

Seal and signature are required by law and rules:

17-23-17.5. (7) A corner record may not be filed unless it is signed by a land surveyor.

R156-22-601 Seal Requirements.

(1) In accordance with Section 58-22-601, all final plans, specifications, reports, maps, sketches, surveys, drawings, documents and plats prepared by the licensee or prepared under the supervision of the licensee, shall be sealed in accordance with the following:

(a) Each seal shall be a circular seal, 1-1/2 inches minimum diameter.

(b) Each seal shall include the licensee's name, license number, "State of Utah", and "Professional Engineer", "Professional Structural Engineer", or "Professional Land Surveyor" as appropriate.

(c) Each seal shall be signed and dated with the signature and date appearing across the face of each seal imprint.

(d) Each original set of final plans, specifications, reports, maps, sketches, surveys, drawings, documents and plats, as a minimum shall have the original seal imprint, original signature and date placed on the cover or title sheet.

(e) A seal may be a wet Stamp, embossed, or electronically produced.

(f) Copies of the original set of plans, specifications, reports, maps, sketches, surveys, drawings, documents and plats which contain the original seal, original signature and date is permitted, if the seal, signature and date is clearly recognizable.

58-22-603 Seal – Authorized use.

(2) A professional land surveyor may only affix the licensee's seal to a plan, map, sketch, survey, drawing, document, plat, and report when the plan, map, sketch, survey, drawing, document, plat, and report:

(a) was personally prepared by the licensee; or

(b) was prepared by an employee, subordinate, associate, or drafter under the supervision of a professional land surveyor, provided the professional land surveyor or principal affixing his seal assumes responsibility.

A simple statement or certificate such as "This corner record was prepared by me or under my direction and supervision" may be included.

The required signature and seal may include but is not limited to the following list:

- Seal shall be a circular seal, 1-1/2 inches minimum diameter
- Seal shall include the licensee's name, license number, "State of Utah", and "Professional Land Surveyor"
- Signed and dated with the signature and date appearing across the face of each seal imprint
- A simple statement or certificate may be included
- Digital signatures and attachments may be affixed to electronic submissions

Appendix A:

Sample Corner Record Forms

Appendix B:

Sample Corner Records prepared by Surveyors in the State ◀

The Standards and Ethics Committee is currently taking comments from the membership on this draft guideline. If you have a comment or concern please contact a member of the committee or send your comments to ucls@ucls.org, attention Standard and Ethics Committee.

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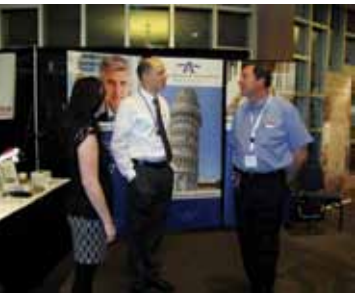
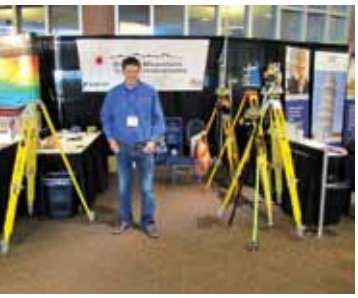
2012 UCLS CONFERENCE

This year's UCLS Annual Conference brought surveyors from across the state to the Dixie Convention Center in St. George on February 9-10. Among the presenters were keynote speaker Dennis Mouland, Assistant Attorney General Charles Stormont, DOPL Investigator Wayne Jeppson, NGS Advisor William Stone, and Charles Tucker. We thank all those who participated in Thursday's Silent Auction, the proceeds of which will greatly expand the ability of our UCLS Scholarship Fund, and congratulations to our Plat Competition winners and to those who received other prizes.





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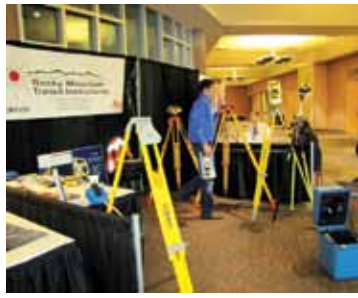






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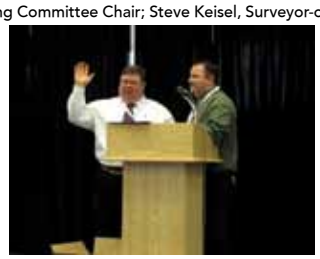
2012 UCLS

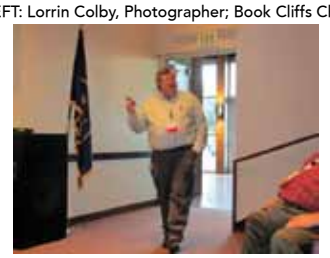



FROM LEFT: James Couts Public Relations & Membership Committee Chair; Von Hill, Testing Committee Chair; Steve Keisel, Surveyor-of-the-year Award; Salt Lake Chapter Officers.



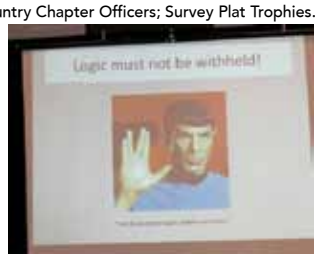

FROM LEFT: Lorrin Colby, Photographer; Book Cliffs Chapter Officers; Dean Hill, Lifetime Achievement Award; Brad Mortensen, UCLS State Chair; Scott Bishop, Convention Committee Chair.


FROM LEFT: Golden Spike Chapter Officers; Charles Tucker;D Kent Withers-Subdivision Plat Winner; Color Country Chapter Officers; Survey Plat Trophies.







FROM LEFT: David Mortensen, Construction Committee Chair; Dale Robinson, Legislative Committee Chair; Dennis Mouland, Speaker; Matt Clark, Record of Survey Plat Winner; Spock.





FROM LEFT: Brad Mortensen, Chair; Kevin Bishop, Historical Committee Chair; Wayne Crow, ALTA/ACSM Survey Plat Winner; Ron Whitehead, WestFED Delegate; Matt Clark, Standards & Ethics Committee Chair.





FROM LEFT: Steve Keisel, NSPS Governor/Publication Committee Chair; Plat Awards; Timpanogos Chapter Officers; Dan Webb, BLM; Mike Nadeau, UCLS Past Chair.





FROM LEFT: Leon Day, Corner Record Plat Winner; Ernest Rowley, UCLS Chair Elect; Kim Leavitt, NSPS Director; Richard P. Sorensen, Lifetime Achievement Award; Bill Stone, Presenter.

Utah Council of Land Surveyors
PO Box 1032
Salt Lake City, UT 84110

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Action Update on Unified Organization

The Member Organizations (MOs) of the American Congress on Surveying and Mapping (ACSM) have been working since the ACSM Congress meeting in San Diego in July, 2011 to develop a unified organization that would represent all geospatial professionals. Over the past four months many discussions have taken place to define membership categories, organizational structure, naming, and finances for the unified organization.

The National Society of Professional Surveyors (NSPS) has worked with the other MOs in an attempt to address their concerns relating to merging into one organization that represents not only surveyors but also fellow geospatial professionals in geodesy, GIS, mapping, photogrammetry, and other related fields.

NSPS and staff have been working with the ACSM accounting firm to obtain financial advice as to the best way of consolidating ACSM with the MOs without endangering the current non-profit status that each organization enjoys. Additionally, NSPS has hired an attorney to represent all parties in providing the necessary legal advice relating to our reorganization.

On November 10th, the presidents of NSPS, AAGS (American Association for Geodetic Surveying), and GLIS (Geographic and Land Information Society) and ACSM Executive Director Curt Sumner met via conference call to discuss some of the membership categories and organizational structure of the proposed unified organization. During the discussions the president of GLIS informed the other participants that GLIS was not interested in joining with the other two MOs at this time and stated that GLIS would handle its affairs beginning in 2012.

NSPS and AAGS agree to continue to work to develop a unified geospatial organization. AAGS has requested to join with NSPS in an affiliate status for 2012, as talks continue for the merging of the two organizations.

Both our legal and accounting council recommend that ACSM and NSPS be merged into a single entity by the end of 2011. The NSPS Board of Directors is working to achieve this goal and create an organizational structure that will represent surveyors, geodesists, mappers, geographic information specialists, and related professions.

Respectfully submitted,

William R. Coleman, PLS GISP

NSPS President