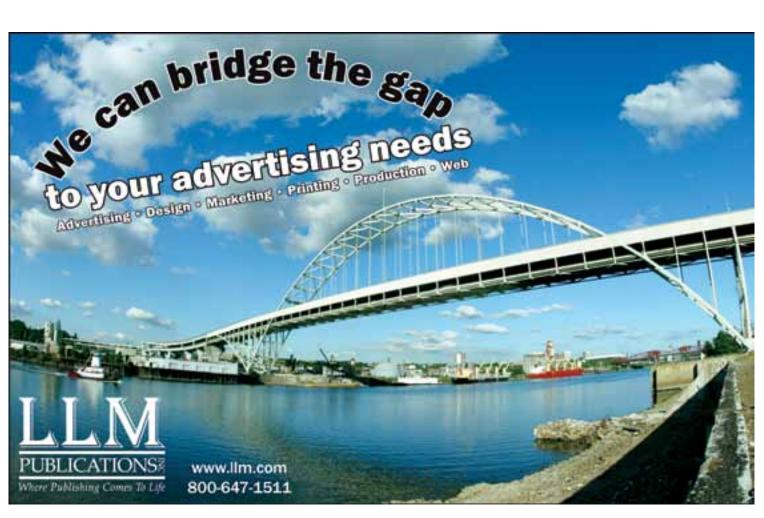
THE

OREGON SURVEYOR

A PUBLICATION OF THE PROFESSIONAL LAND SURVEYORS OF OREGON

Harvest time...
What have you produced for your profession









THE OREGON SURVEYOR

Volume 32 No. 4 August/September 2009

Professional Land Surveyors of Oregon

Executive Director

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CONTENTS

From Your Chair	3	Articles	
Editor's Note	4	Economic Value	
View from the PLSO Office		of NOAA's Geodetic Services at \$2.4 Billion	
Reports		Ten Geospatial	
PLSO Board Meeting Minutes—July 2009	7	Organizations Endorse IFTN	
2009 Legislative Session	11	Control Points	
ACSM Government Affairs Update 15		Corn Squeezins	
		Just Four Lines	
News from the Chapters	31	The Life and Times of	
Announcements		Bert Mason, Jr.—Part 33	
Rogue Chapter Seminar: A River Runs Through It— Surveying Riparian & Littoral Water Boundaries	10	Why We Need a National Museum of Surveying	
Scholarship Auctions: A Fun and Exciting Way to Donate to your Cause	30		

Historical Marker

The gravesite of Col. Joseph L. Meek, born Feb. 9, 1810 and died June 20, 1875.

The top plaque says:

TO HONOR THE LEADER OF THOSE PATRIOTS WHO ON MAY 2, 1843 AT CHAMPOEG SAVED THE OREGON COUNTRY TO THIS NATION

Location is the subject of our Lost Surveyor on the back cover. Do you know where this is?



16

17

18

20

23

26

28

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From Your-Ghair

■ By Gary Johnston, PLS, 2009 PLSO Chair

However, I look forward to the fall as it is my favorite time of the year. I hope your summer has been enjoyable, and that you are looking ahead to the coming months as well. For some of you, it may be the time for a special hunting or fishing trip. Others relish the onset of football and other fall sports. Of course, fall brings a return to school and school-related events. With that, I am reminded that PLSO will also resume a regular schedule of activities, including chapter meetings, committee work, and individual endeavors. Our PLSO efforts should include an extension of our outreach programs.

Outreach is identified as one of the Strategic Directions in the PLSO Strategic Plan. It can entail a large variety of activities for our diverse PLSO membership. To me, outreach can be applied to any individual or group endeavor that promotes the surveying profession and the PLSO to the public. It is one of the most worthy and rewarding ventures we can undertake as an organization. Outreach can educate the public about the value of professional surveyor services. It can also help recruit future surveyors by informing them about career opportunities in surveying. I would like each person to consider how they might participate in an outreach activity. Some brief examples follow to illustrate possible opportunities. Individuals can consider how these or other ideas might fit their interests and schedule.

- Participate in discussions or meetings of other professions and perhaps present a guest program about surveying. A noteworthy example is Scott Freshwaters, with the Central Chapter. He has prepared and delivered a short program about surveying at several real estate businesses in the Bend area. This began as a request from one real estate firm interested in an educational topic that would also count for credits as part of ongoing education requirements. That first group gained a fuller understanding about the value of a licensed surveyor, and Scott found it beneficial to hear questions and thoughts from the real estate group. Since then, Scott has attained at least a small level of local notoriety and has been invited to speak to other similar gatherings in the Bend area. This kind of speaking engagement could be useful to other groups, such as attorneys, planners and a variety of civic groups.
- If public speaking is not something you're comfortable with, you may prefer demonstrating surveying to limited groups at a school or a scout activity. The Boy Scouts of America (BSA) award a merit badge for surveying. The badge is one of the original merit badges

dating back to 1911—the year the BSA was formed. Pat Gaylord, from the Pioneer Chapter, and Rick Jones, from the Willamette Chapter, have been very involved with Boy Scouts as leaders and also as trainers



for scouts seeking the surveying merit badge. In addition, Pat Gaylord is volunteering to attend the National Scout Jamboree in Virginia in 2010 as part of the NSPS staff that will train scouts in the surveying merit badge.

- TrigStar is a well-established outreach program that can always use more support at our local high schools. The program gives surveyors the chance to speak with teachers and students and provide a general overview of surveying. Students in each school can compete in a test on trigonometry to vie for cash prizes sponsored by PLSO. Joe Ferguson, from Pioneer Chapter is the PLSO chair of the TrigStar program and is seeking individuals to assist him by contacting local high school teachers. There are several PLSO members who have presented TrigStar at one, two or more schools for several years, but last spring only 12 Oregon schools participated in TrigStar. With over 160 high schools in Oregon, there is a huge potential for increasing this outreach effort.
- Career days and job fairs represent another opportunity for outreach. Members can participate as individuals or as part of a team to present information about a career in surveying or about services that a surveyor provides. Several opportunities exist around the state. I am aware of participation by most chapters throughout the state at a variety of evening or weekend events. Some events involved hosting an exhibit booth, while others hosted and entertained prospective students at a dinner program. These events can use more volunteers at nearly every occasion.
- A fairly new outreach program is **TwiST** (**Teaching with Spatial Technology**). PLSO members can recruit middle and high school teachers for the 2010 Summer Session. TwiST is a one-week class presented by faculty from OIT and other survey programs to as many as 25 teachers at the Chemeketa Community College campus in Salem. It provides training in basic GPS, mapping and surveying. This training can be utilized by teachers to present basic mapping and GIS techniques to students during the school year.

Continues on page 5

THE OREGON SURVEYOR

The Oregon Surveyor is a publication of the Professional Land Surveyors of Oregon (PLSO). It is provided as a medium for the expression of individual opinions concerning topics relating to the Land Surveying profession.

ADDRESS CHANGES & BUSINESS

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Editorial matters should be directed to Oran Abbott, Editor, 503-253-3198; oranabbott@gmail.com

CONTRIBUTIONS OF MATERIAL

The Oregon Surveyor welcomes your articles, comments and photos for publication. PLSO assumes no responsibility for statements expressed in this publication. Send prospective materials to Lisa Switalla, lisa@llm.com.

EDITORIAL DEADLINE

All editorial copy must be submitted by the first of the month preceding publication.

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Editor's Note

■ By Oran Abbott, oranabbott@gmail.com



Treceive at least ten surveying magazines each month from associations throughout the United States and Canada. I go through each one and look for articles that may be interesting to Oregon surveyors, but often I do not read the editor's comments (except for Oregon and Washington). LSAW's magazine, *The Evergreen Surveyor* is quite good and I also am a member of LSAW.



In Oregon I write the Editor's Note. So in this issue I will relate something interesting—which you may or may not notice depending on whether you read the Editor's Note. Can you name anybody who has lived the entire 20th century? There was one man who was four years old when the 20th century started and lived nine years past it into the current century (see the article about him in this issue). He was around when the car and the space age came into existence, he could have served in both World War I and World War II, he went through the Depression, and he went from chain link to satellite surveying. Covering more than a century is a lot of history to be in one person. How much historical knowledge would you remember if you were as old as Methuselah (969 years)? If your wife could bear children for 300 years and only your relatives could show up, how many would be at your funeral? In the next issue I will print the answer.

Speed and accuracy have changed the way we do surveying, but not the reason we get our licenses. There are some articles in this issue describing why we become surveyors.

If you are interested in the political realm in Oregon be sure to check out the article on our legislative updates. There are also important initiative petitions circulating around the state for signatures that you may want to respond to regarding taxes/issues in a response to the most recent Oregon Legislative Session.

Also, next time you're in Illinois, check out the National Museum of Surveying as you cannot be side tracked by a coast or mountains there. Whether in person, or through monetary means, the museum needs your support.

Do not forget to call or send me an email if you want to be on the Publications Committee. I will either keep it "hush-hush" or broadcast it—whichever you want.

Have fun reading. •

View from the PLSO Office

■ By Mary Louise VanNatta, CAE; PLSO Executive Secretary

A little surveying history

recently completed a tour of Washington, DC with 30 middle school students. A highlight of the tour was Thomas Jefferson's home, Monticello, in Charlottesville, Virginia. Called an "essay in architecture," this beautiful plantation and home, was designed and built in 1796 by Thomas Jefferson and rebuilt over a 40 year period. This theorist of the American Revolution drafted our Declaration of Independence and, of course, was a famous surveyor (mentioned just in case you slept through the PBS miniseries) known for his drive to learn (owning over 10,000 books), innovations, theories, and writings which have made an indelible mark on the history of the world.

One of the most famous surveyors in the US, Thomas Jefferson was the Surveyor General for Virginia and was also appointed County Surveyor for Albemarle County, Virginia on October 14, 1773. During his tenure as Secretary of State (under President Washington) and as President, Jefferson's instructions and selection of surveyors helped the United States create an orderly land settlement system.

As a graduate in political science from Willamette University, my former professors, the late Dr. Theodore Shay and Ed Schillings, would be disappointed in my retention of American history. On this trip I have been overwhelmed with the extent to which the ideas of Jefferson and his colleagues set the course for government and industry today.

As I wandered through the Monticello gift shop, I came upon a framed copy of *Jefferson's Ten Rules*. Our third President was a man of habit and discipline and he com-



piled this list of rules for his namesake, Thomas Jefferson Smith. It is good to review these timeless words of wisdom. They need so little explanation—they can stand alone.

- 1. Never put off until tomorrow what you can do today.
- 2. Never trouble another for what you can do yourself.
- 3. Never spend money before you have earned it.
- 4. Never buy what you don't want because it is cheap.
- 5. Pride costs more than hunger, thirst and cold.
- 6. We seldom repent of having eaten too little.
- 7. Nothing is troublesome that we do willingly.
- 8. How much pain the evils have cost us that have never happened.
- 9. Take things always by the smooth handle.
- 10. When angry, count to ten before you speak; if very angry, count a hundred.

From Your Chair, continued

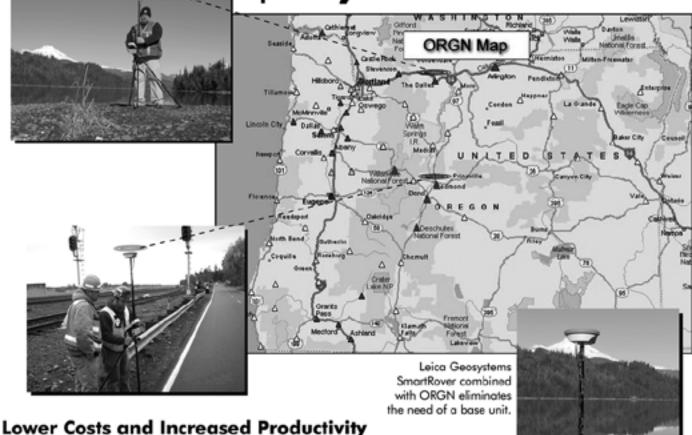
This past June, the TwiST registrants totaled 19, but included only two teachers from Oregon! We really need members to help advertise this program by contacting teachers at local schools. More information about the 2010 session will be made available through future announcements. If you would like further information, contact Tim Kent in the Pioneer Chapter or Joel Smith at Chemeketa Community College.

My last outreach example is meant for everyone who
is a professional surveyor—whether you work in the
public or the private sector. You can be part of outreach
in the course of conducting your daily business. You
may be approached by someone interested in knowing
more about surveying. A client may want a better
understanding of what you do or how the equipment

works. Someone walking by your project may be curious and express an interest in knowing more. If possible, take some time to answer the questions. If you do not have the time immediately, perhaps you can arrange to explain later, receive a telephone call or respond to an e-mail. These are small actions, but they may be very meaningful to those who are asking.

There are certainly additional ways to conduct our outreach efforts. Perhaps you have an idea that would be more suited to your area and could be presented at a chapter meeting. Select what is most fitting for your time, talent and interest. The most important thing is to get involved and participate. Good luck this fall. I hope to see many of you at a chapter meeting yet in 2009. \circ

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PLSO Board of Directors Meeting Minutes

July 27, 2009 — Deschutes Co. Road Department, Bend

DRAFT MINUTES (To be approved at the Sept 2009 board meeting)

ATTENDEES

Officers

Chair Gary Johnston
Chair-Elect Tim Fassbender
Executive Secretary Mary Louise VanNatta

Board Members

CENTRAL (1)

Brian Reeves, President

Scott Freshwaters, President-Elect

MIDWEST (2)

Kent Baker, President

Harvey Christensen (Proxy Renee Clough,

Pres-Elect)

PIONEER (3)

Joe Ferguson, President-Elect

ROGUE RIVER (4)

Herb Farber, President

Craig Claassen, President-Elect

SOUTH CENTRAL (5)

Mason Marker, President Elect

SOUTHWEST (6)

Edith Forkner, President

Clyde Mulkins (Proxy Walter White, Pres-Elect) UMPOUA (7)

David Beedle, President

Romey Ware (Proxy Randy Smith, Pres-Elect) WILLAMETTE (8)

Dave Malone, President

Tyler Parsons (Proxy Jack Burrell, Pres-Elect)

BLUE MOUNTAIN (9)

Bob Butler, President-Elect

Committee Chairs

Bob Neathamer, Professional Practices Tyler Parsons, Website Gary Anderson, EGAC/OSBEELS Liaison Tim Kent, Conference Dan Linscheid, Geocache & Legislative

Guests

Jean Ferguson, Christopher Maples

Absent

J. Edward Henricks, Past Chair; Lloyd Tolbert, ACSM/NSPS; Brent Bacon, Bylaws; Logan Miles, Awards; Renee Clough, MidWest President; Bert Mason Jr., Historian; Oran Abbott, Oregon Surveyor; Roger Galles, Archives; Shaun Fidler, Pioneer President; John Nemecek, Finance; Greg Crites, WESTFED; Steve Haddock, Scholarship; Walter White, Southwest President-Elect; John Minor, GPS Users Group; Paul Galli, OACES Liaison; Pat Gaylord, OACES Liaison; Tom Hamilton, Geocache; Wendell Harness, Website; Evelyn Kalb, President South Central; Jack Burrell, Willamette President-Elect; Sue Newstetter, Oregon 50/150; Tim Simmons, Blue Mountain President; Randy Smith, Umpqua President-Elect

CALL TO ORDER

liaison to OSBEELS.

Meeting was called to order at 10 AM by President Gary Johnston. Attendees made self-introductions.

Review and Approve Agenda
Agenda for meeting was reviewed and
approved. (Out of agenda order) VIII i.
Linscheid would cover the PLSO

Minutes of the March 14, 2009 Review and approval of May 2, 2009 minutes.

MOTION: It was moved by Farber to approve the minutes as published. MOTION PASSED.

REPORT FROM THE EXECUTIVE SECRETARY

Financial

The PLSO accounts stand as of June 2009 as follows: Total Assets: \$146,696.43. Total Membership is 733.

- VanNatta Public Relations is finalizing forms for the online membership renewal process for 2010, which would work in conjunction with registration for the annual conference. The pilot for this should be available late summer.
- The VanNatta staff is also helping the conference committee. Meeting site arrangements have been made and the staff is assisting the committee with various tasks as directed, including budgeting/coding, on-line registration, etc. A conference "Save the Date" advertisement is running in *The Oregon Surveyor* and they are working with the committee to design more ads and distribute postcards to membership.
- Information was provided to our accountant in a timely fashion. The accountant filed an extension for 2008 and taxes have been filed.

- VanNatta staff completed and printed an updated "Consider a Career in Surveying/Geomatics" brochure to reflect changes made in Oregon education programs.
- The PLSO tradeshow booth is being used regularly and is available by reservation on the Google calendar or through contacting the office. The original tradeshow booth will be sent to the Rogue River Chapter for use in the southern part of the state.
- VanNatta staff helped with Oregon 50/150 Celebration at the Willamette Stone with press, event planning and follow up thank-you notes for the many organizations and individuals who made the event a complete success. Legislators, city officials and VIPs were invited to the event.
- Various office tasks: processing of checks, membership data updates, promoting sales of logo merchandise, reorganization of the storage unit, secure recycling and shredding of documents.
- OSBEELS registrant list has been received, and will be distributed to chapters in the near future.

REPORT FROM THE CHAIR

- Johnston attended the Blue Mountain and Southwest chapter meetings for the purpose of visitation and addressing the strategic plan. He will continue outreach visits to the chapters in the fall.
- During June, Johnston testified at the SB 344 hearing, spoke at the Polk County Historical Society on the history of surveying, and delivered a presentation about PLSO at the OACES conference.
- Ed Henricks' wife passed away from cancer and she was honored. Shaun Fidler was unable to attend because

Continues on page 8

his father was having open heart surgery.

- Clyde Mulkins stated that Gary Smither passed away after a fight with cancer. The board will send a card.
- PLSO made a request to OSBEELS to get a written attorney generals' opinion on right-of-entry notifications. OSBEELS will not respond until after their board meeting in July.
- Review of renewal for the Executive Secretary contract will commence in July. The review committee will consist of Fassbender, Johnston and another member of the selection committee.

REPORT FROM THE CHAIR-ELECT

Fassbender reported that he was looking at the travel policy. Discussion around how the GIS community relates to surveyors was held. He had observed situations where GIS practitioners were possibly engaged in the practice of surveying. He would follow up on this issue by providing written examples to OSBEELS.

CHAPTER ACTIVITY REPORTS

Central (1): Reeves reported that there was a Right-of-Entry presentation by Dan Linscheid and Pat Gaylord at their latest meeting.

MidWest (2): Harvey Christensen was introduced as proxy from MidWest. The Midwest Chapter cancelled their scheduled workshop, but will reschedule. Only four had signed up.

Pioneer (3): Anderson reported that there will be a picnic for the Pioneer Chapter on August 15 at Cook Park in Tigard. Ferguson reported on the picnic and he would request that Paul Galli send an e-mail out about the event to other PLSO chapters.

Rogue River (4): Farber reported that Rogue River had its last chapter meeting of the season. A workshop is planned September 11 on Water Boundaries.

South Central (5): Marker reported the South Central Chapter is in recess for the season. They did a refurbishment of the baseline as a service project with involvement of OIT students.

Southwest (6): Forkner reported it was quiet in the Southwest Chapter.

Umpqua (7): Beedle reported that the Umpqua chapter was in recess. They got together to look at the live streaming video on SB 344 and thanked Johnston for his testimony.

Willamette (8): Malone reported that the Willamette Chapter hosted surveying students at a chapter meeting for the 10th consecutive year. They had double the number of students vs. the number of members. They listened to a presentation from David Evans on mobile scanning.

Blue Mountain (9): Butler reported that they were having trouble getting people together for the Blue Mountain chapter meetings. They appreciated Johnston's visit.

OLD BUSINESS

Common charity efforts for PLSO in 2009. Discussion for a charity that would be a central one for PLSO. There was no broad support expressed for this effort and the topic was closed. A benevolent fund was discussed. Fassbender said this was considered in the past, but it was difficult to determine criteria or administer it.

BOD Operating Manual and Travel Policy. Fassbender worked on the travel policy keeping most aspects the same, but adding mileage calculation using Google maps and updating reimbursement amounts for lodging and meals to be referenced to the current U.S. GSA.

MOTION: Farber moved the Travel Policy be accepted with the words "or submitted odometer reading" be submitted after "portal to portal" in Section E and the words "destination with a rate of \$70 for

lodging and \$39" be removed from paragraph three of section F and be replaced with the word "rate."

Motion seconded.

MOTION PASSED.

Other BOD Operating Manual Drafts. The conference committee is working with a comprehensive draft of different functions. The manual

working with a comprehensive draft of different functions. The manual will continue development through this year. The financial policy is in the works. Nemecek was absent.

PLSO tradeshow booth. The old trade show booth will be provided to Farber.

NEW BUSINESS

Dues relief for members. Ferguson suggested no further action be taken.

Next Board meeting. Johnston proposed we move the September 12 meeting to Eugene and November to OIT. Fassbender recommended that travelers make hotel reservations early because of the college football game scheduled in Eugene that night.

Strategic Planning Session. Farber wanted to review the action plan and put names with the actions. He sought input on the document. Anderson volunteered to put his name under Strategic Direction #1 and Fidler would be assigned to Direction #1. Claassen asked to be assigned to outreach. Charting progress was discussed. Reporting at the board meetings was encouraged to monitor what is happening on the chapter level. Freshwaters shared an example of outreach he has provided by presenting an informational program about surveying to real estate agents and other professionals for them to get CE's.

Presentation by Christopher Maples, PhD, President of OIT. (Presentation will be made available on the PLSO website.) He talked about OIT and the support he pledges for the geomatics program. The program is strong and is looking to expand its curriculum.

COMMITTEE REPORTS

Finance Nemecek was not present. Conference

Kent provided a final report for the 2009 Annual Conference. He reported that the single largest problem was the extra cost and separate registration for the Thursday dinner. This issue will be handled differently in 2010. There were 529 total attendees at the conference including several VIPs, 7 charter members, 35 exhibitors and 42 speakers. The conference net income was \$52,338.42. The group wants to stay with Action Registration for registration. The conference hit the mark on a lot of areas. Kent complimented VanNatta on the behind the scenes work with the venue.

For 2010 the group has been meeting in Wilsonville. The theme is "Invest in the Future, Invest in Yourself." A discussion about having the conference for two years at the same location was suggested. Kent explained why a meeting two years in a row may be a good idea. Malone added that the permanent committee helps prevent the group from re-creating the wheel and brings continuity to the committee. There were concerns that chapters in other parts of the state may want the opportunity to sponsor or contribute to the conference. Farber said that the last conference the Rogue River Chapter did was in Corvallis. The biggest challenges are the facilities themselves. Location doesn't keep other chapter members from being involved. Signing a date commitment with the SCC would not require any funds at this time; it would just hold the date. Baker and Butler said they wanted to run it by their chapters.

MOTION: Farber moved that the Conference Committee sign a commitment at the Salem Conference for the date for 2011. Motion seconded.

MOTION PASSED. Butler voted no.

For 2012 conference planning, GIS in Action has approached the committee to partner with them and have an event in Portland. Farber said it is a great idea. Kent will pursue conversations.

TrigStar

The Oregon state winner was Rafael Castrejon from Phoenix. The original statewide test was cancelled because it contained one problem that was unsolvable. A revised test was reissued with a new solvable problem added. The national test has been received. The award winners at each high school receive \$50-\$150, depending on which chapter administered the test. Ferguson will review this issue and make recommendations for standardizing awards. We touch 300-400 students with the program. Ferguson recommended a TrigStar workshop at the conference.

TwiST

Kent reported that the TwiST program for 2009 finished on July 26. Twenty one spaces were filled; three TwiST registrants from Oregon. The evaluations proved that the program hit the mark. All the teachers received "Choose Your Path" DVDs and heard about OIT. A discussion about budget investment in TwiST was held.

Scholarship

Haddock did not attend, but a summary report was circulated. There were 13 survey scholarship applicants and two Pete Maring applicants.

Legislative

Linscheid discussed SB 344 that would make the County Surveyor an appointed position. SB 274 related to administrative law judges by making it an administrative appointment. This bill is ready for signature. Freshwaters reported that there have been legislative updates on the website. He sent out information on Surveyor-L about solicitation of website. There were some comments on the lobbyist

and the value of the contract. Farber noted that it is important that we have a lobbyist. He recommended we open an RFP and review the position. Ware suggested the contract be terminated. Freshwaters said some investigation should be done first. Other comments were considered. Freshwaters and the Legislative Committee will review the current lobbyist agreement and performance. Recommendations will be prepared for the board in the next few weeks. The committee will also begin reviewing possible legislative topics for the next session.

Education Goals and Actions

Anderson said that there is supposed to be a contact from each chapter on the committee and we will need to get those people identified. BLM will be giving 10 total stations to schools. Anderson arranged for those donations. Anderson asked that the board support the Tualatin Historical Society by renaming/double naming of the Meridian baseline with a letter.

MOTION: Claassen moved that the board support the renaming/ double naming of roads along the Willamette Meridian and Baseline to Meridian or Baseline.

Motion seconded.

MOTION PASSED.

Johnston asked Anderson to go back to the chapters to get feedback on having an outreach person, like LSAW. Nemecek and Marker would serve on a task force with Anderson.

Oregon 50/150

Newstetter was not available. Anderson thanked those involved with planning and presenting this program. Nearly 200 people attended.

Webmaster

Parsons said that Chapter officers should use the Google Calendar to show meetings, workshops and other activities that are scheduled.

Continues on page 10

PLSO to OSBEELS

Linscheid reported that the Governor would be considering in special session or 2011 session pulling OSBEELS in with architects. There is an effort under way to consolidate multiple boards under four "super" boards to provide additional revenue to the general fund. License fees would most likely be increased.

Membership No report.

Professional Practices

Neathamer had no report, but supported the OIT President in his attendance.

OSBEELS to PLSO

Linscheid said the machine control issue would be discussed at the next meeting.

WFPS No report.

NSPS

Tolbert was not in attendance. Anderson said NSPS was working on preservation of railroad right-ofway monuments. DeFazio is on this committee.

PLSO Liaison to OACES No report.

Oregon GPS Users Group No report.

Constitution and bylaws No report.

Publications

Abbott was absent. Johnston reported that Chuck Wiley volunteered to assist with *The Oregon Surveyor*.

Awards No report.

GOOD OF THE **ORDER**

Johnston asked the board's guidance regarding sale of a directory to a non-member. It was emphasized that PLSO does not permit public distribution of its directory.

Meeting adjourned at 3:05 PM. © Respectfully Submitted,

Mary Louise VanNatta Executive Secretary, PLSO

A RIVER RUNS THROUGH IT

Surveying Riparian & Littoral Water Boundaries

A Primer for Land Surveyors

SPONSORED BY

Professional Land Surveyors of Oregon, Rogue River Chapter

Friday, September 11, 2009

City of Grants Pass, City Hall • 101 NW "A" St., Grants Pass, Oregon

Riparian Water Boundaries are "dynamic", and unlike fixed Land Boundaries, are a continuously moving target. This workshop is a primer to help understand the basic principles, complexities and nuances that combine "art" with the "science" that we use in conducting typical land surveys, and what procedures are necessary to determine the line of Ordinary High Water. Discussion will also include the many pitfalls that commonly result from underestimating the nature of the complexities that are often involved in these determinations. An overview on Littoral Water Boundaries will also be given which is less complicated than Riparian Boundaries because of the predictable nature of tidal action, with the exception of the transition area at the mouth of rivers that are within the zone of tidal influence.

RIPARIAN BOUNDARIES

- Navigability—Who Owns the Submersible Land?
- Necessary Research and Analysis of Historic Evidence
- Principles of Accretion, Erosion, Avulsion & Reliction
- Determining the Ordinary High Water Line
- · Meander Lines: Fact and Fiction
- · The Vegetative Method
- · Hydrology & Geomorphology
- · Legal Principles and Case Law
- · Tips and Tricks

LITTORAL BOUNDARIES

- Understanding Tidal Datums
- Establishing Tidal Benchmarks
- · Time & Height Corrections
- · Tidal Calculators
- GPS derived height issues
- The Oregon Beach Act
- Tips and Tricks

PRESENTERS

Shawn Kampmann, PLS is a professional land surveyor licensed in Oregon & Alaska and is the owner/manager of Polaris Land Surveying LLC in Ashland, Ore., with experience performing Ordinary High Water surveys for Oregon Dept. of State Lands and for private landowners on the Rogue River and Chetco River in southwest Oregon.

Jeff Kroft is the Senior Policy Specialist for the Land Management Division at the Oregon Department of State Lands in Salem, Ore. where he has worked for 22 years. Jeff received a Ph.D. in Mineral Economics-Applied Earth Sciences from Stanford University, and both a M.S. in Economic Geology, and B.A. in Geology and Political Science from the University of Washington.

For information, contact Cael E. Neathamer: 541-732-2869 or cael@neathamer.com

2009 LEGISLATIVE SESSION



emocrats were once again in charge of both chambers of the Legislature and the Governor's office. During this session, however, Democrats came in with a plan to be in the majority and with super majorities in both chambers that allowed them to pass virtually any legislation they wanted. Super majorities mean the party in charge can raise taxes without needing votes from the other party. And raise taxes they did. This legislative session was marked by falling state revenues and a flurry of tax increases that ultimately raised more than \$2 billion in new taxes and fees. Corporate taxes, income taxes, gas taxes, title fees, health insurance taxes and others were all increased or created.

Democrat constituencies such as public employee unions, environmental groups and labor organizations reaped the rewards of Democrat control to the detriment of the business community. The term "business friendly Democrat" quickly evaporated this session as proclaimed "pro business" legislators voted in support of leadership positions and their traditional campaign allies. Although they downplay their success, environmental organizations, trial lawyers and unions such as OEA and SEIU were very successful this session.

The budget situation, while exaggerated in part by Democrats, was serious. A main problem with the budget this session was the massive expansion that occurred in the 2007-2009 budget, with many 2007 programs and employee pay increases "backend loaded". This means there were significant rollup costs in the 2009-2011 budget. Democrats based the "Essential Budget Level" (EBL) at 14% above the 2007–2009 Legislatively Approved Budget. The \$4 billion budget gap was based on this level of increase and Democrats used this budget gap as an excuse to increase the corporate minimum, corporate taxes and income taxes for "high income" Oregonians. With this new tax money, tapping into reserves, and the windfall of federal stimulus money, "cuts" to the budget were primarily cuts to the increases the programs were expecting. Democrats have said they cut \$2 billion out of the state budget, but again, this amount was based on the EBL. The state will face major problems in the future when federal

stimulus money dries up and the expansion of the budget no longer has that targeted money. In the Department of Human Services alone, an additional 1,100 full time employees will be hired with federal stimulus money that will not be available in the next budget.

While the federal stimulus money will be temporary, taxes passed by the Democrats are not. For years now Democrats have pointed to the \$10 corporate minimum to illustrate their belief that businesses in Oregon are not paying their "fair share". Using the budget crisis as an excuse, the Democrats raised the corporate minimum to a level that far surpassed what any business organization could accept. The new minimum ranges from \$150 to \$100,000 based on Oregon sales, regardless of a C-corps' profits. Democrats also increased the corporate tax rate for companies with income over \$250,000. While the tax rate decreases in subsequent years, the corporate minimum is permanent and a higher tax rate will continue to be in place for companies with net income over \$10 million. Democrats also targeted what they termed "high income" Oregonians with the establishment of two new tax brackets for those who make over \$125,000 on a single return and \$250,000 on a joint return. While the rate will decrease in 2012, one higher bracket will permanently remain in place.

Business groups were incensed by the tax increases passed by the Legislature. The aggressive anti-business rhetoric by the Democratic House leadership, the disregard of legitimate arguments on bills like SB 880, the determined turning of votes by the Senate and House leadership on key votes like HB 2186 and the permanence of the tax increases laid the groundwork for intense business opposition. For the first time in a long time, all major business groups united around their opposition of these measures and are attempting to refer the tax legislation to the ballot.

PLSO Legislation

The PLSO legislative committee did not recommend any legislation this session. However there was some significant legislation affecting members of the association.

Continues on page 12

The State Board of Examiners for Engineering and Land Surveying (OSBEELS) passed three bills that were signed by the Governor in June.

SB142

Gives the Board definitions and authority over photogrammetric mapping.

SB143

Exempts plans for small out buildings and garages from the practice of engineering.

SB144

Allows the Board to recognize results from standardized examinations administered

by national organizations in evaluating applicants qualifications.

County surveyors did not fare as well.

HB2737 Would have eliminated the \$10 cap on Public Land Corner Preservation
Funds set up by counties. This document fee increase was supported in principle by the House Agriculture and Natural Resources Committee but another document fee increase of \$15 dedicated to low income housing had already passed and the bill was opposed by the Home Builders and Title companies. After a complicated negotiation between the interest groups, the bill failed in committee.

Made County Surveyors appointed rather SB344 than elected. The legislation began as a way to protect a county surveyor who was term limited under a county ordinance, but that situation was fixed locally and the bill turned into a "good government" bill when the Chair and members of the committee decided that county surveyors were more of a professional position than a political one and that voters would be better served by appointing qualified individuals subject to review by the Board of Commissioners than by an election. The PLSO objected vigorously to this bill and the House Chair agreed to let the bill die in committee. But because of the relating clause, the House Majority leader used this bill to carry an amendment allowing 75 year old Multnomah County Sheriff Bob Skipper to avoid having to return to the police training academy for additional training. They left the surveyor appointment language in the bill to insure concurrence in the Senate.

SB955 A bill brought by the engineers and architects to limit the liability of professional groups in civil litigation. The bill included surveyors in the protection. It was opposed by the trial lawyers and dies in committee.

Taxation

For several years, Democrats have pushed the idea that businesses are not paying their fair share. Last session, Democrats were unable to pass an increase in the corporate minimum to a level that raised enough money for them to support. This session, with their super majority, they indicated early on that they planned to raise the corporate minimum to a level that raised significant money. Business groups recognized the challenge they faced with Democrats and put forth several proposals that varied from a \$300 dollar corporate minimum to a proposal similar to the Democrats' proposal, but temporary in nature. In the end, Democrats rejected compromises and prevailed. Listed below are general tax increases passed this session. Taxes on health care and transportation are listed in their specific sections.

Corporate minimum: While businesses HB3405 and policymakers alike agreed that Oregon's corporate income tax was in need of an update, how to go about it became another issue. With impending huge revenue deficits, the Legislature implemented a graduated system that meets immediate budget needs with a higher rate of taxation that decreases somewhat in the subsequent biennium. HB 3405 increases the C-corporation minimum tax from \$10 to an amount that ranges from \$150 for corporations with less than \$500,000 in Oregon sales to \$100,000 for corporations with Oregon sales of more than \$100 million. This bill increases the minimum tax on S-corporations from \$10 to \$150. It imposes a \$150 tax on entities filing partnership returns and increases the Secretary of State filing from \$50 to \$100 for domestic corporations and to \$275 for foreign corporations. HB 3405 creates a second marginal corporate tax rate of 7.9% that is applied to taxable income greater than \$250,000 for tax years 2009 and 2010; reduces the rate to 7.6% for tax years 2011 and 2012. For tax years after 2012, the top tax rate of 7.6% applies to net income greater than \$1 million.

HB2649 High Income Tax: This tax is the personal income tax component of the \$800 million revenue package Democrats used to balance the 2009–2011 state budget. Under the proposal, the top personal income tax rate would be raised from 9% to 10.8% for households with incomes of between \$250,000 and \$500,000 (between \$125,000 and \$250,000 for single filers). For Oregonians with joint incomes of over \$500,000 (\$250,000 for single returns), the new marginal tax rate will be 11%. Additionally, the deduction allowed on Oregon tax returns for federal income taxes paid would be phased down for joint incomes between

\$250,000 and \$290,000 (\$125,000 and \$145,000 for single returns). No deduction would exist for federal income taxes paid on joint returns showing income over \$290,000 (\$145,000 for single returns). Oregon now has the highest personal income tax in the nation.

A coalition of business groups has been formed to refer both HB 3405 and HB 2649 to the ballot, and a Special Election will be held on January 26, 2010, assuming these measures qualify for the ballot. The Legislature already plans to meet in Special Session next February, and will deal with the fall out if their tax increases are referred and do not pass at that time.

HB2414 Referral Date: In the end, HB 2414 simply sets the date for an election if the tax increases are referred. A form of the bill adopted by the Ways and Means Committee late in session would have been one of the most egregious bills of the session if passed. Referred to as the "Yes means No" provision, the language would have changed how voters vote on a referral. This was targeted at the likely referral of HB 3405 and HB 2649, the tax measures, and meant to confuse voters to undermine the potential vote. If the language had been adopted, a voter who voted "no" on the tax measure referral would have actually been supporting the Legislature's tax increases and a voter who voted "yes" would have been voting against the Legislature's tax increases. Ultimately, the language was taken out of the

bill, and the date for the potential tax election was set for January 26, 2010.

HB2067 Income and Corporate Excise Tax Credit Sunset: HB 2067 assigns most income and corporate excise tax credits one of three effective sunset dates—January 1 of 2012, 2014, or 2016. This excludes the personal exemption credit, the credit for taxes paid to another state, the claim of right income credit, and the corporation surplus refund credit. This bill also allows taxpayers claiming the rural medical credit at the time of sunset to continue claiming the credit for an additional ten years. Democrats have railed against the number of tax credits in Oregon and the amount they "cost" state government. This is their first step in an effort to phase out these tax credits without requiring a super majority vote of the Legislature for each credit they want to end.

The PLSO legislative committee will begin meeting to review the session and prepare legislative concepts for membership review. The legislature is moving toward its annual session and will come back into session in February of 2010 to deal with budget issues and some substantive legislation. In the meantime, a large group of businesses has formed to refer the corporate minimum and high individual tax measure to the ballot in January of 2010. We will be following all these issues. \circ

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AMERICAN CONGRESS on SURVEYING and MAPPING National Society of Professional Surveyors, Inc.

Annual Map/Plat Competition

Phoenix, Arizona

OFFICIAL ENTRY FORM

The 2010 ACSM/NSPS Map/Plat Design Competition is now open for entries.

This will be a juried contest. A maximum of five maps per style and category will be selected and exhibited at the Annual Conference in Phoenix. No more than two entries per category should be submitted by the state surveyor association affiliates of the National Society of Professional Surveyors, Inc. (NSPS). Map/Plat entries may be: (1) Black and white (halftone/shaded) or blueline; (2) Color; or (3) A high-resolution JPEG or PDF on CD-ROM. Entrants need not be members of NSPS, however a member of NSPS must sponsor the map or plat. The member's name must be noted on the form. Maps or plats must have been completed after 6/30/08 and may not have previously been entered in this contest. The entry may be freehand, machine drafted, or computer drafted.

Submit SIX PRINTS for each entry with a maximum map size of 34" by 44". Or 6 CDS with a high resolution PDF or JPEG (multiple entries by the same entrant can be on the same CD.) Submissions must be a single drawing; it may originate as a set but must be entered as a single sheet. All entries must be received by 5 p.m. on November 13, 2009. Use one entry form per document submitted. An entry fee of \$30 must accompany each form. Winners will be asked to send a print for display at the conference. Non-surveying map entries should be directed to the CaGIS Map contest - see details at http://www.cartogis.org/awards/mapdesign/.

All entries will be judged on adherence to the minimum standards as set forth by NSPS. The judges will consider interpretability, content and layout of data shown, presentation, innovation, applicability to typical client or persons using this type of map, and correctness. Neatness and accuracy of scale will also be considered. Prizes will be given in categories where three or more entries are received. The decisions of the judges are final.

Categories	State Affiliate entering Map:			
1. Subdivision Plats	Entrant's Name:			
2. Boundary/Cadastral Maps	E-Mail (required):@			
3. Topographical Maps	Address: State: Zip:			
4. ALTA/ACSM Survey Maps	Phone: (work) () (home) ()			
5. Miscellaneous Maps	Employer:An entry fee of \$30.00 must accompany this form.			
(Only one category may be checked)	(Make checks payable to NSPS, Inc.)			
Submit entries with this form to:	Title of Entry:			
	Description of Project:			
NSPS Map/Plat Contest Attn: Dawn James 6 Montgomery Village Avenue Suite 403 Gaithersburg, MD 20879	Name and address of Nominator if other than entrant. Name:			
(Use one entry form per document submitted)	Address:			
This form may be reproduced for use in submitting additional entries	City: State: Zip: Phone: (home)			
I give my permission for this entry to be placed on display at any ACSM or NSPS sanctioned exhibit on cartography or map design. Also, I understand that entries may be reproduced in any ACSM or NSPS sanctioned publications, that winning entries may be duplicated, reproduced, or copied and sold by ACSM or NSPS, and that the winning contest entries may be placed in the map collection of NSPS at the Library of Congress. No entries will be returned. The decisions of the judges are final.				
Signature:	Date:			
For office use only: Map/Plat Contest Entry Number:				

ACSM News



ACSM Government Affairs UpdateJuly 2009

Preservation of Railroad Monumentation Update

We are continuing to meet with legislators regarding the Preservation of Railroad Monumentation legislation. The main question, and issue, that comes up again and again at all of our meetings is "How does this issue affect the people in my District?" Members of Congress want to know how it affects them personally. We've received a number of letters from surveyors describing the problem, but we need more. We need your help to get out the word of how important this issue is. We have a White Paper that describes the issue in detail which you can download from www.nspsmo.org/documents/ railroadmonumentationwhitepaper.pdf. If this issue is important to you, meet with your Member of Congress and let them know!

ACSM Lobby Day is Coming!

Speaking of meeting with your Member of Congress, ACSM Lobby Day 2009 is right around the corner, and we once again need your help. We have several important issues that we are working on, including: 3% withholding tax legislation, funding for TrigStar for FY 2010, National Cooperative Mapping legislation, and of course our Preservation of Railroad Monumentation legislation. So plan to join us on September 24 for Lobby Day. We will be sending out an e-mail with full details shortly.

COFPAES News

COFPAES staff recently held a meeting to discuss, among other things, legislation that COFPAES is looking to propose. At the Spring Delegates meeting, the delegates proposed legislation tentatively called the "High Performing Communities Act of 2009." The federal legislation would create a program, led by the A/E community, to move toward clean energy; reducing the causes of global warming and climate change; design cleaner, less energy consuming buildings through sustainable and energy efficient building envelope design and construction; integrate land use and transportation to cut commuting times, reduce pollution, and lower energy

costs; and continue to contribute to cleaner air and water. The legislation shall provide for enhanced contracting with private design professionals through an updated, expanded use of the qualifications based selection (QBS) process through an amendment to the Brooks Act that provides a new definition of services, use of QBS by all federal grant recipients, as well as for selection of subcontractors and prime contractors.

Subcommittee Hearing on HR 2489 the AmericaView Geospatial Imagery Mapping Act

A hearing was recently held on HR 2489, the AmericaView Geospatial Imagery Mapping Act. Several witnesses spoke of the need to expand the nation's geospatial imagery and mapping program. In his opening statement, the Chair of the Subcommittee, Rep. Jim Costa recognized the National Spatial Data Infrastructure (NSDI) and questioned whether we need to reevaluate how the federal government manages geospatial data. Karen Siderelis, the Geospatial Information Officer and Acting Chair for the FGDC, highlighted several achievements of the NSDI and listed three goals:

- 1. Engage the nation in a dialog about its geospatial future by holding a "National Geospatial Open Forum", using new media to garner input from all corners of the country to seek out the best ideas for enhancing the National Spatial Data Infrastructure.
- 2. Bringing creative energy to making Imagery for the Nation (IFTN) a reality by listening to the non-Federal stakeholders.
- 3. Bolstering the geospatial governance structure that we now have in place and ensuring that the FGDC is successful in providing unprecedented leadership to meet the geospatial needs of the Federal government and of the nation in the 21st century.

John Palatiello, of MAPPS, discussed the failure to achieve one of the goals of the NSDI, which is to coordinate Federal mapping and geospatial activities by compiling the data "under one roof", and

the proliferation of new geospatial initiatives to complete the work that was not done by the NSDI.

While no decisions were made at this hearing, it certainly opened the door for more discussions. ACSM will play a role in helping Congress and the Federal government understand and coordinate its mapping and geospatial activities. \circ

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Economic Value of NOAA's Geodetic Services at \$2.4 Billion

Proposed Modernization Program to Net Additional \$522 Million

he NOAA-managed National Spatial Reference System (NSRS), the official U.S. government source for precise latitude, longitude and elevation measurements, provides more than \$2.4 billion in potential annual benefits to the U.S. economy, according to a new independent study. Refining and modernizing the system for measuring elevation has the potential to net an additional \$522 million in annual economic benefits

Conducted by Leveson Consulting, Jackson, N.J., the study analyzed the total economic value of all revenue generated from private surveying and mapping as well as from related services in the government and nonprofit sectors. It also assessed the potential cost savings due to improved accuracy of position and elevation data.

"For more than 200 years, surveyors, mapping professionals, and engineers have used the NSRS as the foundation for establishing property boundaries, constructing buildings, roads, bridges, creating accurate maps, and much more," said John H. Dunnigan, NOAA's assistant administrator for the National Ocean Service. "The nation is built on this framework."

The study finds that NOAA's Continuously Operating Reference Stations (CORS) network—part of NSRS—provides an estimated \$758 million per year in benefits. This advanced system marries the concept of reference stations on the ground with GPS technology to provide more precise positioning delivered via the Internet. Scientific, military, and engineering activities usually require accuracy of a few inches versus typical commercial GPS users requiring accuracy of a few yards.

GPS will soon supplant passive markers on the ground, which currently determine precise elevations under the North American Vertical Datum (NAVD88). The initiative, "Gravity for the Redefinition of the American Vertical Datum" (GRAV-D), will reduce elevation measurement errors from a range of 16 inches to six feet, to under an inch.

Improving vertical data will reduce elevation errors in floodplain mapping. This could affect the placement of building structures, highways, and public safety requirements, including levee construction and evacuation routes and subsequently impact insurance rates. GRAV-D will also help users anticipate the potential damage associated with coastal storms, river flooding, sea level rise, and climate change that a home, road, or other structure might incur. Approximately \$240 million in costs could be saved annually through improved floodplain management.

"GRAV-D is the future foundation of all height-related activities in the U.S. ranging from determining where

The CORS system continually collects GPS signals and provides these data to GPS users via the Internet for precise positioning activities. (Credit: NOAA)

This CORS station is a continuously operating GPS receiver that determines accurate elevations quickly, inexpensively, and in places where traditional methods are impractical, such as this marsh. (Credit: NOAA)



water will flow for irrigation purposes to identifying potential floodplains," notes Juliana Blackwell, director of NOAA's National Geodetic Survey.

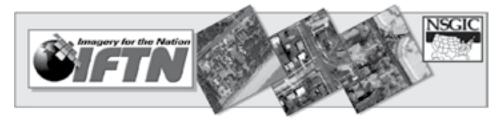
President Barack Obama requested \$4 million in the FY2010 budget to begin collecting data to improve elevation information as a foundation for better commerce, economic efficiencies, and to better protect the public from coastal hazards and flooding. This funding, if approved by Congress, will support the development of GRAV-D.

Since 1807, NOAA's National Geodetic Survey and its predecessor agencies have partnered with surveyors in both the public and private sectors to place hundreds of thousands of survey marks throughout the U.S., determining positional information

for each mark. Each survey mark is published with accurate horizontal and/or vertical information such as latitude, longitude, and/or height. The National Geodetic Survey coordinates and enhances the NSRS comprised of this collection of more than 1.5 million survey points along with 1,300 CORS.

NOAA understands and predicts changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and conserves and manages our coastal and marine resources. •

Ten Geospatial Organizations Endorse IFTN



he leadership of ten geospatial organizations has jointly agreed to support a simple resolution in support of a national digital imagery program:

Be it resolved that the undersigned geospatial organizations support the funding and establishment of an operational program consistent with Imagery for the Nation (IFTN) within the U.S. government with the responsibility for acquisition of high resolution digital imagery over the United States.

The leadership of these organizations met in a conference call on July 22 to discuss the resolution and voted via e-mail over the following day in order to have a position in place for the July 23 Congressional oversight hearing on Federal Geospatial Data Management.

The following organizations agreed to support the resolution:

 American Congress on Surveying and Mapping (ACSM)

- American Society for Photogrammetry and Remote Sensing (ASPRS)
- Association of American Geographers (AAG)
- Cartography and Geographic Information Society (CAGIS)
- Geospatial Information Technology Association (GITA)
- GIS Certification Institute (GISCI)
- International Association of Assessing Officers (IAAO)
- National States Geographic Information Council (NSGIC)
- University Consortium for Geographic Information Science (UCGIS)
- Urban and Regional Information Systems Association (URISA)

Imagery for the Nation (IFTN) is a NSGIC initiative to support the development of a sustainable and flexible digital imagery program that meets the needs of local, state, regional, tribal and federal agencies. •

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Did You Know?

World's Oldest Man was a Land Surveyor



Tomoji Tanabe, formerly the world's oldest living man, certified by the Guinness Book of World Records two years ago, died on June 19, 2009. He was 113 years old.

Tonabe was a former city land surveyor in Miyakonojo, located on the southern Japan island of Kyushu. A statement issued by the city stated that his favorite meals were fried shrimp and miso soup with clams. It also stated that he drank milk, avoided alcohol, was a non-smoker and read the newspaper every morning.

Tanabe, who lived with a son and daughter-in-law, had eight children, 25 grandchildren, 53 great-grandchildren and six great-grandchildren.

It is not known if his profession as a land surveyor contributed to his exceptionally long life, but in these stressful times, it gives the rest of us hope that we made a wise choice of a profession in the interest of longevity. \circ

■ *Reprinted from* Side Shots, *August 2009*

Control Points

■ By Warren Andrews, PLS Reprinted with permission from Side Shots, May 2009

he number that is the ratio between the circumference and the diameter of a circle is a rather odd and peculiar one. It never comes out even in our decimal number system. The first recorded attempt to define it is in the Egyptian *Rhind Papyrus* copied by Ahmes the scribe around 1650 BCE. He wrote, "Cut off one-ninth of a diameter and construct a square upon the remainder, this has the same area as the circle." The area of the square would be $(8/9D)^2$. The area of the circle would be $(D/2)^2$ times some factor which eventually in the eighteenth century in Europe would be called pi (π) . (In Beckmann's book *A History of Pi* is given how the ancients probably approximated the area of a circle by summing up a lot of segments of a circle until the result is close to the area of a parallelogram).

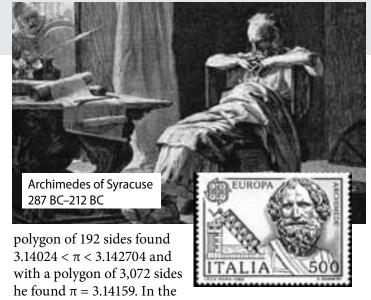
If you equate $(8/9D)^2 = (D/2)^2$ times π then $\pi = 64/81$ D^2 divided by D2/4. Rearranging terms then $\pi = (64D^2/81)$ (4/ D^2). Cancelling out the D^2 leaves $\pi = (64/81)(4)$. Therefore $\pi = 256/81$ which equals 3.16949. Not too bad for 3.14159.

In the *Old Testament* (I Kings vii. 23) π is given as 3. The same verse can be found in II Chronicles 4, 2. It occurs in a list of specifications for the great temple of Solomon, built around 950 BC. The Babylonians, with their number system based on 60, assumed π to be $57/60 + 36/(60)^2$ which is 3.125 but still not as close as the Egyptian.

And he made a molten sea, ten cubits from the one brim to the other: it was round all about, and his height was five cubits: and a line of thirty cubits did compass it about. (I Kings 7, 23)

In India, one of the Siddhantas published in 350 AD, based on much older lost documents, gives π as 3(177/1250) which equals 3.14160. In 499 AD another Hindu document says, "Add 4 to 100, multiply by 8, and add 62,000. The result is approximately the circumference of a circle of which the diameter is 20,000." This gives $\pi = 62,832/20,000$ which is 3.14156.

The Chinese used the decimal system from the beginning (their abacus today is based on double fives.) In 130 AD Hou Han Shu used $\pi = 3.1622$, close to the square root of 10 which is 3.16228. Liu Hui in 264 AD using an inscribed



fifth century Tsu Chung-Chih and his son Tsu Kang-Chih found 3.1415926 < π < 3.1415927, an accuracy that was not attained in Europe until the 16th century. The Chinese had the advantage of using zero (as a space for which the Hindus later used a circle and now we use a 0 as the symbol). This symbolism reached Europe only in the late Middle Ages and Britain in the early Renaissance. (An edict of 1259 AD in Florence, Italy forbade the bankers to use "infidel symbols" which were Arabic numerals including zero. They were supposed to use Roman numerals only without zero.)

The Greek theoretical approach was the same as the Chinese, and Archimedes used the "principle of exhaustion" first put forward by Antiphon (late fifth century BC) to find the circumference of the circle.

Archimedes of Syracuse, born about 287 BC, is credited as being the most brilliant mathematician, physicist, and engineer of antiquity in the Western World. He was arbitrarily killed by a brutal Roman soldier at the sack of Syracuse in 212 BC. He used the convergence of many-sided circumscribed and inscribed polygons outside and inside of a circle to calculate the circle.

Much later European mathematicians used trigonometry and calculus to find π .

Recently the Chudnovsky brothers on a homemade supercomputer calculated π to eight billion digits but it never came out even. It is actually an irrational and transcendental number. For those interested in more about π see A *History of Pi* by Petr Beckmann and *The Joy of* π by David Blattner. \circ



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Corn Squeezins

■ By Stephen Estophinal, PE, PLS
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These stories are true: names and some details have been altered to ensure confidentiality.

land surveying company, Jackson City Surveys, Inc., in Jackson, Mississippi. Much of his business was concentrated around new development and mortgage surveys. Occasionally, there would be the large rural tract survey that added variety to the work week. Jerry also provided intern positions to engineering or surveying students during the summer. He enjoyed watching the bright young students, full of theory and 'book learning', grow in knowledge as reality collided with concepts.

Principle of Proportionate Measurement: New values given to several parts (by re-measurement) shall bear the same relationship to the record lengths as the new measurements of the whole line bear to that record.

One of Jerry's pet peeves was the "Principle of Proportionate Measurement." Because every surveyor's licensing exam has at least one case of restoring lost corners by proportional measurement. Most students who intern at Jackson City Surveys arrived believing that this principle is commonly applied. Jerry made certain that when the interns returned to school, the principle they used to find corners was discovery of evidence. To this end, he set aside one or more rural, regular sectionalized land surveys for the summer so that the investigation and recovery of evidence in a rural setting could be demonstrated.

The summer of 2004 brought Billy Kent into Jerry's intern program. After about a month of topographic, mortgage, and urban surveys, Jerry decided that it was time to introduce Billy Kent to real surveying. The project was the survey of the southeast quarter of Section 12, Township 3 South, Range 12 East in Killkern County, Mississippi.

The first visit to the site was to be what Jerry called a "g-2" trip, G-2 being that branch of a Division head-quarters responsible for intelligence and mapping. The ride was a long one and Jerry filled the time with discussions about "being observant" and "considering all evidence," and other

such topics. More than once, Jerry felt as if he were the preachy old man and Billy the bored apprentice. Upon arriving at Section 12, Jerry pulled over onto a wide spot on the shoulder of

the asphalt roadway that ran along the south line of Section 12. He pulled out a roll of papers and spread them out on the hood of the pickup truck. With Billy looking over his shoulder, Jerry began to think out loud.

"The south side of the highway, Section 13, has two working farms. The surveys I found in the courthouse to each farm indicate the section and quarter corners that are shared by Sections 12 and 13. Our traverse will tie these corners in and we can check them for consistency." Jerry doubted that he'd find a reason to disagree with these reported locations. He continued, "The west side of Section 12 is

bounded by a brand new subdivision and the subdivision plat reports both section corners and the quarter corner. I surveyed Section 1 15 years ago, so I have a lot of information on that line. The only line we need to really investigate is the east boundary of the section."

That being said, Jerry and Billy located the southeast section corner, marked by a railroad spike in the asphalt roadway, and set off in a northerly direction along the remnants of a barbed wire fence. Jerry explained that the quarter section they were surveying had been farmland 50 years ago, and there was a chance that evidence of the quarter corner might have survived. The terrain was very hilly, but Jerry felt that an ATV would be able to navigate it. He made a mental note of the equipment that he needed to tie the quarter corner into the traverse of the Section.

"Some more fence here," Billy called out. He was beginning to learn how to see, not just look. Sometimes the evidence was a crease in the bark of a tree, sometimes a fallen post, or a rusty strand of wire. There was no doubt that they were following a fence line and Jerry began to think the prospect of actually finding something was getting good. Suddenly, Jerry stopped short. "Hold up, Billy," he said quietly. "Let's go back to the truck."

"How come?" Billy said with a quizzical expression on his face.

"Time for lunch," Jerry said. "Come on."

Billy didn't object to a lunch break, even if it was only 10:30 AM. He did

notice that Jerry frequently looked back over his shoulder as they headed to the truck. Once they arrived at the truck, Jerry took a deep breath.

"See anything unusual, Billy?" he asked.

"No, sir," Billy said.

"Well, I noticed that the trees were covered with a black mold," Jerry said.

"Oh, that! Yeah, I saw that. The mold went all the way around the tree, not just on the south side," Billy said.

"Well, that mold was there for a reason," Jerry explained. "The wind was to our backs, so we didn't smell it, but that mold is a dead giveaway. There was a still nearby."

"A still! You mean like moonshiners?" Billy asked. He couldn't believe they really existed.

"Yes, just like that. It is very unwise to walk up to a still uninvited," Jerry said.

"Shouldn't we call the Sheriff?" Billy asked.

Jerry let out a laugh. "The Sheriff probably owns the still or gets a cut of it," he said.

"We could call the Feds," Billy continued.

"You got a badge in your pocket, Billy?" Jerry said.

"I'm here to survey the land, not be an agent for the DEA. Real crimes are different. Making corn squeezin' is a local tradition."

"Hop in the truck, Billy. We have to figure out how to survey this line without getting shot. You for that?" Jerry said as he started the engine. "I remember something I saw that seemed out of place. Let's take a look."

What Jerry remembered was an abandoned and tumbled-down country store in a weed-covered lot a few hundred feet east. He noticed that even though the lot was covered with weeds, there was a worn driveway near the front of the building.

He pulled up into the drive and got out of the truck. Billy did the same and followed Jerry as he walked along a foot path that ended at the corner of the half-fallen porch.

With Billy looking over his shoulder, Jerry peeked around the corner post. Sitting on the porch was an empty and clean Mason jar. Next to the jar, someone had written "5" with a felt-tip marker on the floorboard.

"Please get me that legal pad from the dash," Jerry said.

When Billy retrieved the pad Jerry wrote, "My name is Jerry Spell. I need to survey the line between Mae and McGlen."

He tore the page from the pad and folded it neatly. He placed the note and a five dollar bill under the jar.

"Let's go get that lunch," Jerry said.

While they ate a couple of cold sandwiches at a filling station, Jerry continued his "Corner Recovery" lecture.

"The government surveys in this area were done in the 1830s. There is not a one of them where the original surveyor placed the quarter corner precisely halfway between section corners and on line to boot!" Jerry explained. "A proportional measurement would do just that. The only



thing you can be certain about when proportional measurement is used to re-set a corner is that the location computed is most definitely not where the corner was set."

That almost sounded like heresy to Billy. Science and math were to take a back seat! He listened, but was not fully convinced.

"Time to see if we've got an answer," Jerry said as he finished off his drink. Billy noticed it was a Mountain Dew and he smiled at the irony.

Back at the porch Jerry found the Mason jar, now sealed and full of what looked to be water. Under the jar was a note."Don't come until Monday," was all it said.

"Monday it is," said Jerry. "Time to head to the shop."

Once they were back at the office, Jerry began to go over the plans for the GPS observations, intermediate traverse stations, and recovery plans with Billy. He explained search patterns and techniques and the importance of conducting a deliberate search.

He used the unopened Mason jar as a paper weight as he spoke. Jerry sighed and straightened up when he had finished and walked to the kitchenette next to the conference room.

"Say, Billy," he called from the other room. "How old are you?"

"Made 21 last March," Billy replied.

"That's what I thought," Jerry said as he reentered the conference room with two glasses in his hands. •

Steve Estopinal is a senior engineer and professional land surveyor at CSRS, Inc. in Baton Rouge, LA. He is the former owner of Estopinal Surveying and Engineering, Inc. in Chalmette, LA. Steve has been practicing land surveying for more than 30 years and is the author of A Guide to Understanding Land Surveys 2nd ed., John Wiley & Sons, Inc. 1993.

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The National Society of Professional Surveyors sponsors four Awards of Excellence in the surveying profession

SURVEYING EXCELLENCE AWARD

Presented to a person who performed outstanding service to the surveying profession, this award includes an engraved plaque and a \$500 honorarium.

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Entries should be received by the member organizations administrator by December 15, 2009

Just Four Lines

■ By Andrew C. Kellie, PLS Reprinted with permission by the author. As seen in The Interior Angle, April 2009

The deed to the property was kindly furnished by the client's lawyer so that we could "run out the lines." It was a relatively new deed, drawn just 20 years ago. "The title is okay" said the lawyer, "and it's just four lines. It shouldn't be too much trouble." The client agreed. "My uncle lived out-of-state and held the land as an investment. We need to settle the estate. With just four lines, there shouldn't be any trouble." The description was remarkably simple:

"Beginning at the southeast comer of Scott, thence southerly along state route 61, 100 rods to Wilson Landing Road; thence westerly along Wilson Landing Road 100 rods to the southeast comer of Fox, thence northerly along Fox 100 rods to Bayou de Chien; thence easterly along the bayou and land of Scott 100 rods to the point of beginning."

"Not much to this," my assistant agreed. "I'll work up the coordinates and input them into the GPS. It's just four lines, and square at that."

Why was it that I, the surveyor, was the only one unconvinced that "just four lines" would be a *simple* survey?

I began my work with some research at the county courthouse—not title work, of course, but sufficient research to ensure that my survey would follow the footsteps of the original surveyor on the land. The words "along State Route 61" in the first call caught my attention immediately. I knew that State Route 61 was a primary road, so it seemed reasonable to check for conveyance of a right-of-way to the state. By grantoring out my client's deed I found that there had been an outsale in 1953 which, for some reason, didn't appear in the deed which my client obtained in 1987. The west line of the right-of-way was the east line of my client. Ergo, (since I'm the surveyor) I copied the deed to the state from my client, and obtained a copy of the highway plans from the transportation department, too—even though there were just four lines.

Checking the plans for State Route 61, I was able to identify monumentation (rumored to have been) set (somewhere, sometime) in 1953 that marked the limit of state ownership. Obviously, we would need to search for the monumentation in the field.

The south line of the client was described as "Wilson Landing Road". Despite my intimate acquaintance with the county, I couldn't recall what the road looked like. The name implied a plantation road leading to a steamboat landing on the Mississippi. That would make it a private way. However, it just might have been that the Wilson family was kind enough to allow neighbors and kin to use the road, and what if they had opened a store at the landing for the convenience of travelers? The public would have traveled the road, it might have been graded at public expense, and now the public might (probably would) have rights in it. This looked like another matter to check on the ground.

Next to draw my attention was the call which described the land as running "to the southeast corner of Fox". The person who drew my client's deed just might have been trying to be helpful by listing the name of the adjoiner to the west—or, Fox might be a senior owner and the location of Fox's east line might control the location of the west line of my client. Either way, I needed to find out. A further check of the deeds showed that both my client's predecessors in title and Fox had purchased from Wilson. My client's predecessor purchased in 1923 and Fox's predecessors purchased in 1921. So … the call for the "southeast corner of Fox" was more than a memo as to who owned to the west. Fox's east line was the west line of my client.

Continues on page 24

If Fox's east line was to control, it seemed appropriate to find out how it was described. Fox's deed (from 1921) described the land as follows:

...thence easterly along Wilson Landing Road to a swamp oak with three hacks; thence North 5 degrees East and along the barbed wire fence 100 rods to a cypress with three hacks on the banks of Bayou de Chien... as shown on the plat by Preston Barrett, CE...

Barrett's plat was of record, neatly drawn in three colors of ink on light blue tracing cloth. The swamp oak and cypress were shown as described in the deed at the southeast and northeast corner of Fox. In addition, call-outs on the plat showed pointers at each corner. The east line of Fox (west line of my client) was shown with a series of crosses—apparently indicating a fence. However, it was neatly drawn as N 5 degrees West-and neatly labeled as North 5 degrees East. Obviously, we would heed to search for all this monumentation in the field. Ergo, (since I'm the surveyor). I obtained a copy of the Fox deed and the Barrett plat, too —even though there were just four lines.

Scott's deed described the south line of Scott (north line of the client) as Bayou Creek. This was unremarkable, but the two deeds did call for the same boundary. I copied Scott's deed, too—even though there were just four lines.

The deed research took most of an afternoon, but with that work completed, my assistant and I knew at least part of what we would need to look for when we began the field survey the next morning. We had no trouble finding the parcel. Farmer Scott, who adjoined on the north, was running stock in his land north of the bayou. At State Route 61, Bayou de Chien was marked by a culvert under the highway. Wilson Landing Road was a dirt path considerately supplied with potholes and ruts. The ruts led to a graveled area along the river complete with

a pickup and boat trailer, but no boat. There appeared to be a timber type line at the approximate location of Fox's west line. The parcel was all bottom land, however, and fully furnished with mature oak, gum, cypress, and poplar. My assistant took one look at the trees and left the GPS in the truck.

We began our work on State Route 61. If we found the monumentation, we would use the published bearings on the highway plans for orientation. We recovered the monumentation, undisturbed, and the distances checked. We located the road pavement and ditches. I then told my assistant to locate all of the visible utilities.

My assistant objected. "There were only four lines in this survey," he said. "Why do we need to locate poles, wires, and manholes?"

I adjusted by patient look. "Poles, wires, and manholes," I explained, "all imply the existence of an easement. An easement is a right in land. The function of a plat is show the extent of rights in land. So...easements (or evidence thereof) must be located in the field and shown on the plat." Ergo, (since I'm the surveyor) we located the utilities, too—even though there were just four lines.

Our traverse down Wilson Landing Road was unremarkable, except, of course, for the trailer. This was located on the client's land north of the road. It was a 12x60 model with two tone aqua and white paint. The trailer somehow had developed an affinity for trash.

My assistant was aghast. "Locating houses and out buildings is part and parcel of the field work done for a survey plat, but why must we locate a trailer?"

I adjusted my patient look. "First," I explained, "a survey plat must show real property. Real property includes the land and the structures attached to it. The wheels are off the trailer and it is up on blocks. There is an electric line that goes to a utility pole on State

Route 61. There is a well behind the trailer, and a pipe goes from the well into the trailer. A larger pipe goes out of the trailer and *into* the ground. So, the trailer might be considered to be attached to the land: And since it appears to be attached to the land, the trailer might be considered real estate. Second, the presence of the trailer might indicate a claim of adverse possession against the property. Judging from the trailer's style (Two tone paint? Aqua and white?) the trailer has been around for a long time, but then again mobile homes are (or are supposed to be) mobile. How long it has been on the client's land is unclear, but such is not a question to be answered by a surveyor. Because a claim by adverse possession takes pride of place among the rules of construction for conflicting deed elements, I do not want to be in the position of missing so obvious a claim during a field survey." Ergo, (since I'm the surveyor) we located the trailer, too —even though there were just four lines.

True to the description, the swamp oak at the southeast corner of Fox was waiting for us on the north side of Wilson Landing Road. The three hacks were evident, and there were pieces of rusted barbed wire embedded in the west face of the tree. A reconnaissance to Bayou de Chien resulted in our finding the cypress called for in the deed. Further work resulted in recovering all the pointers at the cypress (northeast corner of Fox) and all but one pointer at the oak (southeast corner of Fox). Because of the discrepancy with the bearing on my client's west line, I reasoned that it might be important at some time to be able to show that the oak and cypress we had recovered were indeed the same oak and cypress shown on Barrett's plat. Ergo, (since I'm the surveyor) we located the oak, the cypress, and all the pointers, tooeven though there were just four lines.

My assistant was ready to run a random traverse on the remainder of our client's tract. Instead, he ran the pin finder. Not that there were any pins to find, but the east line of Fox (the client's west line) was described as running "by and along a barbed wire fence", and barbed wire (even embedded in a tree) makes a pin finder cry with delight.

My assistant was aghast. "What is the point of having bearings in a deed if the bearings don't describe the line?"

I adjusted by patient look. "Consider how the deed is written," I said. "The barbed wire fence is an artificial monument. Monuments are considered superior to bearings. The wire fence is called for in the deed. It is shown on Barrett's plat, and the plat is called for in the deed, so everything on the plat is now included in the deed. From all this work by Barrett, it must have been the intent of the parties to the Fox deed to make the fence the boundary, and they expressed this intent in the writings. Intent, a call for a survey, and a monument are all superior to the call for a bearing. If the fence is described as the boundary, then we need to locate the fence during the boundary retracement. The fence is tangible and, with effort, can be made visible. And for such a purpose was the pin finder invented." He remained inconsolable, but (since I'm the surveyor) we located the barbed wire, too—even though there were just four lines.

I have to admit that my assistant was somewhat disappointed in Bayou de Chien. Somehow, he must have expected to see crowds of tourists, shrimp boats tied up along the waterfront, and some little, shingled buildings with pastel signs where he could get some gumbo for lunch. Instead, the bayou turned out to be a sluggish creek between two banks about six feet high. My explaining that Bayou de Chien (in French) translates as Dog Creek (in English) probably didn't increase the ambience.

It also didn't help when I explained that to retrace the boundary along the bayou, we would need to locate *both* sides of the bank. This required repeated trips up and down the banks to locate the water mark, and it was especially vexing because Farmer Scott, the adjoiner north of Bayou Creek, had fenced his land at the top of the bank.

All this scrambling about made no sense to my assistant. "The bayou is at normal stage, I can plainly see the channel, and locating the center of the channel requires only half as many observations as observing points on both banks."

I adjusted by patient look and explained. "We locate the normal water mark on each bank because the riparian boundary is defined as being the *thread*. The thread, in turn, is defined as that set of points equidistant from both *banks*. If we are going to locate the thread, we need to locate the banks." Ergo, (since I'm the surveyor) we located points on both banks and so defined the thread, too—even though there were just four lines.

It was nearly four in the afternoon when we finished the field work by closing on the control from which we began the survey. The closure was unremarkable, and the only excitement in the remainder of the work occurred when my assistant decided to locate the north side of the bayou from inside Farmer Scott's fence. The "cows" were all black and white, so apparently my assistant drew a hasty conclusion and forgot to make the necessary gender check before climbing over the fence to join the "girls".

For just four lines, the survey just described covered a pretty fair sampling of boundary law. To begin, deed research involved both grantoring out the client's ownership and verifying the existence of senior rights. This disclosed an outsale which materially affected the location one of the four boundaries and showed the existence

of two maps central to the retracement. Potentially, locating the outsale prevented including land not owned by the client in the survey. Locating the Barrett plat showed the existence of pointers which helped resolve a discrepancy in the direction of one of the four boundaries and provided information that assisted in identifying corner monuments.

The work at the courthouse provided a basis for the field survey, but the field work shouldn't be minimized, either. For example, location of utilities during the field survey provides evidence of the ownership of rights by another party in the land being surveyed. That such constitute an interest in land is generally not considered by many (perhaps most) clients. Similarly, the existence of a possible claim of adverse possession against the client can only be determined by an inspection of the land. No amount of work by the title attorney at the courthouse would have shown the trailer on the southeast corner of the tract. Such adverse use may take the form of physical possession (as in the case of the trailer described above) or it may involve a claim of right by use (as in the case of a prescriptive easement). Either way, it is the field survey that discloses the existence of the claim.

In the end, it was just four lines, and it really wasn't any more trouble than I had expected. The crew had returned to the site and set appropriate monumentation; we prepared the plat and a description and submitted the same to our client. I have to admit that while I thought the survey routine, the client, the attorney, and the parties owning the trailer were all somewhat surprised—after all, it was just four lines. •

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The Life and Times of Bert Mason, Jr.

Part 33

1946-47, school year at Syracuse

Al Quinn, Assistant Professor of Photogrammetry, had been a student with Professor Church prior to WWII. He had also been a Lieutenant in the Navy during that fracas. (Some years after his service at Syracuse, he became top dog at Aero Service Corporation, a large photogrammetric company in Florida.) Al was a natty dresser, always in a dark business suit with clean shirt and tie-Prof Church came in wrinkled tan shirts, brown slacks and black slippers that looked as though they had served with him in the Coast Survey. His mind was cluttered with equations, and had little time for appearances.

On this day, Al had shown up in his usual best, but with a beautiful pink shirt of the finest cloth; it must have cost a pretty penny. Before class took up, he regaled us with an enthusiastic description of his new "magic" pen. Astronauts could keep notes in space; deep-sea divers could write on the job; it was absolutely indelible—it could serve on legal documents in lieu of India ink; its point could be pressed with unbelievable pressure and it make a half-dozen carbon copies; five colors could be accessed with the press of a button.

Our glazed eyes and mouths agape induced him to demonstrate this unbelievable instrument. He reached



Bert Mason, Jr. and his wife, Ellen at the 2009 PLSO Conference

under his coat and withdrew it to wave it before our unbelieving eyes. The silence of his audience was broken only by a gasp of horror; followed by a similar gasp from Al as he glanced at his exhibit. His pink face turned white, and his jaw dropped in amazement as he viewed his indelibly blue hand. He tore open his coat and uttered some Navy language which I had never heard in an academic environment, as he hurled that magic pen to the floor. Much of the left side of his beautiful pink shirt was an incredible, indelible blue.

Neither pink shirts nor magic pens were ever, again, mentioned in the Photogrammetry Department.

Al was a sly guy; always able to find a simple solution to a complex problem. One day, after classes, he enlisted my services to assist him in a private survey—(he was a registered engineer in New York). It seems that, for some time, he had been holding rather acrimonious discussions with his neighbor about the location of a common driveway

between their respective residences. They lived in an ancient area, which had been built up in the days before Planning Commissions and Building Ordinances. The separation between the houses could accommodate only a large buggy or a small van. The problem was—who owned enough of the driveway to provide access to his parking area behind the house, and to exclude his neighbor? Apparently, neither had examined his title to learn if the answer lay there.

Al tossed the one-second Zeiss theodolite, a 100-foot cloth tape and a few small items in his car, and away we went to the scene of the crime. At the scene, we unloaded the gear, checked carefully to assure ourselves that a beady eye was peering from behind the lace curtain at a window that covered the operation. Then, we went to the centerline intersection of the sidewalks at the end of the block. We measured down the sidewalk the plat distance, plus Al's estimate of the offset of the sidewalk, plus a

little bit for slope, and we made a mark. Al set up the Zeiss, backsighted up the centerline of the sidewalk, turned a ninety left, and peered through the telescope. His usual jaunty smile turned a little grave. He offered me the telescope, and I saw the crosshairs running directly down Al's side of the tire track on his side of the driveway.

This would never do! We quickly held a brief caucus, while Al appeared to be making calculations in his field book. Then, he sent me up the driveway, armed only with a heavy hammer and a large gutter nail wrapped with flagging. Directly opposite the curtained observation post, he waved me back and forth, then back again until I held the nail exactly in the center of the travelled way. There, he gave me the "down" signal, and I drove the nail flush with the ground.

We quickly loaded up our gear and took off. Apparently, the problem was solved to the satisfaction of all parties, for I never heard the driveway mentioned again.

The rest of that school year remains pretty much a blur; a blur of astronomy, least squares, map projections, psychology, photography, entomology, wood identification and other things the names of which I cannot even remember. And then, there was the dramatic increase in nightly correspondence—Ellen and I had decided (at least Ellen had decided, and I had acquiesced) to be married in the following June.

Now, I was pretty green about this marriage business. I had never participated in a marriage. In fact, I had never witnessed a marriage. I had never even thought very deeply about the subject. It just seemed rather logical that, if two persons felt deeply enough about each other that they wanted to spend the rest of their lives together, they should be able to call in a few friends, declare the fact before the world, have a little party to celebrate, and that was that—it was a very personal thing.

First, we had to have a license? A permit? Surely, one needed a license to shoot the State's deer; a license to catch the State's fish; a license to drive on the State's highways; a license to set up a business affecting the public. But a license—a permit—to live together? What kind of police state was this? Oh, well.

The U.S. Post Office grew fat and prosperous on the nightly flood of mail between Oregon and New York that winter. Every night, my mail contained a vital question, which

required immediate response.

These questions, it turned out, had already been solved and acted upon by Ellen; but my written approval was required in case there should ever be a future disagreement.

The date; the place; the size; the weather; the invitations; the guest list; the Best Man; the Matron of Honor; the bridal gown; my new suit; the preacher; the music; the caterer; the honeymoon; the "going away" outfit; etc., etc., etc...

The wedding was held on June 15, 1947, at the home of Ellen's parents in Oak Grove, Oregon. The planning must have been perfect, for the wedding has endured for more than 62 years, to date, and is still intact.

We enjoyed a week-long honeymoon at the beach; after which I went to work full-time for K. B. Wood Engineers. •

"Learn RTK in One Day"

By: Eric Gakstatter

October 6, 2009

Tualatin, Oregon

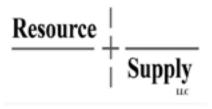
In this one day seminar, participants will learn the basics of RTK (Real-Time Kinematic) for centimeter level GPS. The seminar is aimed at surveyors, contractors, state/local government employees and high-precision GPS users in learning how to use or refresh their memories on RTK operations. Special emphasis will be made on using the Oregon and Washington RTK Networks and radio communications with Pacific Crest radios, spread-spectrum radios and GSM/CDMA modems.



Participants will learn the concepts behind RTK as well as setup, collecting topo data and perform construction staking and collecting high accuracy GIS data using RTK. Call Jon Aschenbach at 503-707-6236 to sign up. Space is limited to 10 participants so please call today. Price: \$395.00

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Why We Need a National Museum of Surveying

■ By Julia C. Langfelder
As seen on POB online, July 22, 2009. Reprinted with permission from the author.



lbert Einstein said, "Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world." When people ask the National Museum of Surveying, "Why a surveying museum? How boring!"—Einstein's statement has become our motto.

I'm not a surveyor. No one in my family is a surveyor. A few years ago, my only knowledge of surveying was driving along the road and seeing a field crew outside, one person halfway down the road while another looked through a device. If someone had asked me what they were doing and why, I wouldn't have been able to say.

However, my perception and knowledge about the surveying profession changed a great deal after I accepted the position as associate executive director for the Illinois Professional Land Surveyors Association in February of this year. Around the same time, the National Museum of Surveying (NMoS) was going through a leadership transition and needed an individual who could focus on the business aspects, such as fund raising and marketing. I decided to volunteer my assistance; after all, that was where my experience lay. As a tenant in their building, it was the least I could do.

Little did I know that this museum would completely change my appreciation and respect for professional land surveyors.

I now know that seven signers of the Declaration of Independence

were land surveyors, and that Mount Rushmore is actually three surveyors and one other guy. I've learned that Jefferson devised the rectangular system to lay out the land west of the Appalachian Mountains, and that a portion of the land sold was used to pay for the Revolutionary War. I can tell you why a mile is 5,280 feet, and I can list numerous reasons why it is important to have your land surveyed.

And that's simply a minuscule glimpse of the impact the profession has had on our country, shaping its growth, and the key role it has played, and continues to play, in the development of our nation. Now, is that boring?

There is definitely a gap between academic, public and professional interpretations of land surveying and the history of the profession. The National Museum of Surveying has the opportunity and the responsibility to help narrow this gap by presenting multifaceted historical narratives while showcasing vivid explanations of the present and future of land surveying.

For the majority of individuals, it is hard to fully grasp everything that is said in a lecture. It is challenging to imagine what every word in a text book means or how an actual piece of surveying equipment featured in an exhibit is (or was) used.

NMoS is a unique destination for students, individuals, families and groups—a place where history, math and science meet the real world. In 10,000 square feet, the NMoS will take people on the journey of Lewis and Clark; become enthralled by the story of the former deputy surveyor of Sangamon County, Illinois, Abraham Lincoln; experience Washington's and Jefferson's surveying careers; take part in interactive exhibits and activities in and around the museum that encompass surveying techniques while educating them about mathematics and science; and be taught how the instruments of yesterday have turned into the technology of today.

One way this will be done is through the museum's 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 aweinspiring presentation uniquely ties surveying to the tools and techniques used in the field and will attract visitors from all over, as there are only 36 such spheres in the world. The museum also hopes to become an online and interactive resource in addition to being a physical museum.

The hammering and drilling have fallen silent. The construction is now complete on this \$1.5 million endeavor, and the museum has received its occupancy permit. Unfortunately, due to changes that needed to be made to the historic building to meet safety codes, the museum hit a \$200,000 shortfall. This monetary amount needs to be met

"Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world."— Albert Einstein

to pay the remaining construction bills, ensure that the 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 designated for education purposes, including the installation of a mini-theater and curriculum packets for teachers in grades K–12.

Local fund raising has brought in \$13,000, which will be used for general operating support for the NMoS. But more is still needed.

There are approximately 26,000 professional land surveyors across the U.S. If each professional surveyor donated \$20 (thank you to those who have already contributed quite a bit more to this endeavor), we would have \$520,000. If each state association contributed, \$2,000, the museum would have \$100,000.

We can display antique surveying instruments donated and on loan to the museum, but is that the way we want land surveying represented? With the great presidents who helped shaped this profession to the issues today of property fraud, misuse of land and talk of individual's buying property in outer space—aren't there better ways to show why we need professional land surveyors? We need to educate people that as individuals, we strive to own land, and without boundaries we'd be a world of chaos.

So, we built it—now will people come? 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. Downtown Springfield's museums and historic sites had over one million visitors last year alone.

If this museum could get this 31-year-old communications professional who had no previous ties with this profession intrigued, who's to say there is no market?

I encourage you to visit the NMoS web site at www.nationalmuseumof surveying.org. You can view photos

of the NMoS, read updates, donate securely online and read other articles about the museum. We are also looking for people to donate their time to help with exhibit planning, volunteer coordination and other tasks that may come about in the process of getting this museum ready to open.

With those who have supported us, we have come this far. Just think about the possibilities of tomorrow. •

Julia C. Langfelder is associate executive director of the Illinois Professional Land Surveyors Association. She can be reached at info@nationalmuseumofsurveying.org or at 217-523-3130.

National Museum of Surveying Progress Update

Business Committee

The NMoS invited business leaders to tour the museum's space, listen to future plans and view "Science On a Sphere." Ten of these individuals were then extended an invitation to join the NMoS' Springfield Business Committee. The purpose is to help promote the museum locally, identify needs and assist in opening the facility. Members of this committee can be viewed online at: www.nationalmuseumofsurveying.org/aboutus.html

Business Plan

The NMoS completed the first version of its Business Plan. If you would like to receive a copy, please contact the museum at info@national museumofsurveying.org. It will be updated regularly as questions and requests are made for additions and edits. Input is always welcome.

Grant

The NMoS submitted a grant proposal to the Illinois Department of Commerce & Economic Opportunity for a Tourism Attraction Development Grant. The request is for assistance in purchasing materials to install the exhibits in addition to classroom and presentation materials. The NMoS will be contacted in 30 days and notified if the proposal was accepted or declined.

Coming Up

The NMoS is working with Omni Communications, a Springfield communications firm, to implement the education portion of the NCEES designated grant in addition to working with a local vendor to install the mini-theater.

If you have any questions or need addition information, please contact the museum at info@nationalmuseumofsurveying.org or by calling 217-523-3130.

Supporting Youth through PLSO Scholarship and Fund raising

Scholarship Auctions: A Fun and Exciting Way to Donate to your Cause

■ By Tierney Dutcher, PLSO Staff

Annual Conference in Salem, we will hold our Annual Scholarship Auction. Each year, a volunteer group of committee members puts together this charitable event. All money raised is put into the Oregon Community Foundation Scholarship Fund. Through the Foundation we are able to reach out to Oregon students in the various survey programs and help support continuing education efforts.

This year presents an extra challenge in reaching our scholarship goals. The downturn in the economy has placed additional financial pressures on companies and families trying to stay afloat. It is important to remember that these are the times when our philanthropic efforts can make the biggest difference. Surveying and mapping students are facing increased tuition at schools around the state, and even part-time jobs are hard to find.

The Scholarship Auction is the primary fund raiser for student scholarships all year. The PLSO has averaged about \$5,000 annually with these auctions, and we look forward to your support in continuing that trend. You may be thinking that you would like to help, but aren't sure where to start. Here are a few ideas to get your local chapter thinking about things you can do to contribute to the future of the profession. (see list to the right)

Please start a discussion at your local chapter meeting and create a strategy to approach local businesses for donations. With a little effort on the part of our strong and involved membership, we can continue to support this worthy cause. \circ

AUCTION IDEAS

- Vacation packages donated/discounted from travel companies or donated by vacation home or timeshare owner. Ask local hotels to donate a weekend stay or a one-night stay with dinner
- Golf packages with lunch or a round of golf and a basket of golf accessories
- A wine tasting package or wine tour at local vineyards
- · Ski package
- Tickets to local shows or attractions
- · Restaurant gift certificates
- Movie tickets or movie-themed basket with DVDs, candy, popcorn, etc.
- Airplane or hot air balloon ride donated from a business
- · Fishing or boating-themed trip or basket of goods
- Survey equipment and old survey instruments that are of value
- · Pictures and paintings from local artists or galleries
- Electronic games or game-themed basket with a variety of goods
- Yard and office décor—ask local nurseries for trees or container plants, garden supplies, mulch and soils or landscape materials like patio stones, etc.
- Handmade goods and home-made gifts; try farmers markets or craft fairs
- · Books or other survey-related materials
- Beach-themed package with attractions at the coast or various beach-themed goods
- Party packages with catering services
- Inquire with web-based vendors within the survey field for gift certificates or donations
- Anyone with whom you write a check gives you ideas for solicitation; house cleaners, pool services, gardeners, house painters, plumbing and rooter services, fireplace sweepers, bathtub reglazers, and electricians can donate services in hopes of creating a new client.
- Regift! Take a gift you have received (but have no use for) and pass it along. This is your chance to regift in an acceptable way, while helping others!



News from the Chapters

Willamette #3

■ By John Wise, Secretary/Treasurer

April 20, 2009

Chapter President: Dave Malone

Location: Sizzler, Salem

Called to Order: 7:00 PM Adjourn: 9:00 PM

Attendance: 3 officers, 9 members, 2 guests, 2 students

Business Meeting

Minutes from the March 2009 meeting were approved.

Presentation

Cliff Bentz, House Representative from District 60, gave a presentation on how bills become laws in the House of Representatives. He also covered the state budget and shortfalls in the 2009–2011 Budget Session and how it relates to the Willamette PLSO Chapter.

Committee Reports

PLSO 2010 Annual Conference: As host to the 2010 Conference, the chapter is responsible for the theme. Anyone who has suggestions, please contact Dave Malone.

Membership: Jamey Montoya stated at last month's meeting that he will check on the status of delinquent members.

Welfare & Ethics: Leonard Rydell presented a scenario in which a surveyor has surveyed a block and had not tied an existing monument on his plat.

OSBEELS: Dan Linscheid mentioned a few instances in which a surveyor has set wooden stakes as approximate property corners. There have been complaints to OSBEELS regarding this.

Geocaching: Bill Lulay, Ray Wilson and Joel Smith have geocaches in their area. Tom Hamilton and Dan Linscheid will list guidelines for geocaching on the PLSO website.

New Business

Willamette Chapter 10th Annual Student Banquet:

The dinner will be held May 18 at 5:30 PM at LaSells Stewart Center in Corvallis. It will include students from Chemeketa Community College, OSU and Linn-Benton Community College. Door prizes will be drawn from David Evans and Associates.

MOTION: Leonard Rydell motioned to adjourn at 9:00 рм. Chuck Gibbs seconded the motion. ©

May 18, 2009

10th Annual PLSO of Oregon, Willamette Chapter, Student Appreciation Dinner

Chapter President: Dave Malone

Location: LaSells Stewart Center, Corvallis **Called to Order:** 6:30 PM **Adjourn:** 9:00 PM

Attendance: 3 officers, 13 members, 9 student members

28 students/guests

Business Meeting

Minutes from the April 2009 meeting were approved.

New Business

TwiST: Joel Smith, Surveying Instructor from Chemeketa Community College suggested PLSO Willamette sponsor two seats for the TwiST program. LSAW has already filled 18 seats. This would leave four seats still available for other chapters. The cost is \$500 per teacher. After taking part in TwiST, teachers will report back to the chapter, sharing what they learned.

<u>Joel motioned for approval, Tyler Parsons seconded.</u> MOTION APPROVED.

Committee Reports

PLSO 2010 Annual Conference: One summer meeting for the Conference will be scheduled in June.

Presentations

Numerous door prizes provided by David Evans and Associates, and the PPI Group were awarded to the students.

OSU Professors Darwin Adams and Michael Wing talked about the Forestry program. Frank Sherkow and Bob Schultz spoke about the Civil & Construction Engineering program.

Joel Smith, Chemeketa Community College, discussed the two-year entry level curriculum offered to students.

David Kidd, Linn-Benton Community College, discussed their program.

A presentation on "The PPI Fund for Survey Instruction" was put on by Paul Rydell. He discussed how the PPI Group helps students achieve their goals in the surveying industry.

James Griffiths, PLS, Senior VP, David Evans and Associates, introduced two of his colleagues, Marcus Ready and Jon Warren, and their presentation, "Highway Surface Scanning On-the-Fly". They also gave a demonstration of their truck, equipped with multiple scanners and GPS—it is capable of collecting 10,000 points per second.

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The Lost Surveyor

From the back cover

LAT 45°34'22"N LONG 122°59'27"W

Answer: This is the Tualatin Plains Presbyterian Church and Cemetery on NW Scotch Church Rd just south of Highway 6.

The second obelisk from the left is the gravesite of Col. Joseph L. Meek, Feb. 9, 1810–June 20, 1875.

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