



LINES & POINTS



PROFESSIONAL LAND SURVEYORS OF WYOMING

AFFILIATE — AMERICAN CONGRESS ON SURVEYING AND MAPPING

MEMBER — WESTERN FEDERATION OF PROFESSIONAL SURVEYORS

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MARLOWE A. SCHERBEL, SEC.-TREAS.

VOLUME 18, NO. 3

JANUARY, 2008

William A. Richards: Surveyor to Statesman



Figure 1. W.A. Richards, assistant commissioner of the General Land Office, circa 1902. (Photo courtesy Wyoming State Museum)

See *The Crew's View* on Page 3 and Richards' diary of the 1873 survey of the southern boundary of Wyoming Territory, which begins on Page 11.

Their job was to determine where on the ground the designated boundary latitude fell, and place posts to mark it.



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A (Very) Short History of RTK GPS

by

Dr. Lon G. Toody, Geodesist

October 1995 -

We were toting around an RTK rover backpack that weighed 36 pounds - not including the rover GPS antenna which weighed another three pounds.

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THE CREW'S VIEW

In the comparatively peaceful period that followed the agony of the Civil War, the American people focused their interest on the West. By 1867, Andrew Johnson was President of the United States. The rails of the Union Pacific were being extended westward while those of the Central Pacific already reached from the east to the high Sierras. Cattle were being raised in Texas, and soon they would be driven north to feed upon the Great Plains where, as yet, only buffalo grazed. The time was right for experienced geologists, explorers and surveyors to take advantage of the situation. A handful did: F. V. Hayden, John Fremont, Alonzo Van Ness Richards and his brother William Alford Richards, and friends H. B. Carpenter and Oscar McClellan. Hayden's detailed report of 1872, William H. Jackson's photographs and Thomas Moran's paintings aided in convincing Congress to set aside Yellowstone as America's first national park.

Well-outfitted parties under Hayden's leadership explored and mapped the legendary Yellowstone area and the splendid Teton Mountains. It gave easterners a new, vital and more accurate pictures of the western scene while full filling its basic function of mapping the West and providing the foundation for a good deal of our knowledge of the natural history and topography of the region.

On September 13, 1872, a contract was made with Alonzo Van Ness Richards, astronomer and surveyor, for an original survey of the south and west boundaries of the Wyoming Territory. Accompanying him as a general assistant of the survey party was his younger brother Will. General assistants were sworn employees of the contractor, usually responsible for such specific duties as cornerman or front or rear chainman. William Alford Richards (Will), kept a journal which described many trials and tribulations of daily activities and camp life. One hundred and twenty-seven years after Alonzo V. Richards and his brother William Alford Richards and the rest of the crew completed the survey of the southern and western boundaries of Wyoming, the actual stones set during this survey can still be found.

Lola Cazier's book, *Surveys and Surveyors of the Public Domain 1785 - 1975*, the Dedication of Lola's book reads: *Over the years since 1785 there have been perhaps a few thousand public land surveyors — each worthy of his own story. The names of many of them appear in these pages. Yet, the story of all those who are not mentioned is here too, for it took all of them — the many unnamed no less than those written about — to mark the lines and corners of the public lands. They are the people who have done, and are still doing the work upon which rests the title to the public lands.*

This year, the Editors of Lines & Points want to take you on an incredible survey trek with the Richards brothers while they with their young crew survey the southern and western boundaries of this great State of Wyoming. While reading imagine yourself as a chainman on this early crew ...Enjoy!

Linda Abell and Vickie Hudson

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PLSW (Professional Land Surveyors of Wyoming) is a statewide organization of Registered Land Surveyors licensed to practice in the Equality State of Wyoming. PLSW is dedicated to improving the technical, legal, and business aspects of surveying in the State of Wyoming. PLSW is affiliated with the American Congress on Surveying and Mapping and the Western Federation of Professional Land Surveyors.

Editorial Staff: Linda Abell, Vickie Hudson

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President's Message

Dear Members,

2008. Too soon for some, too late for others. Sometimes it's hard to believe time passes at the same rate. Regardless, here's hoping all of you had an enjoyable holiday season, and that the time away from work brought a refreshed attitude towards being in the middle as I wrote in my last message. My apology to those of you who are still celebrating the myriad of other holidays I can no longer keep track of. For most of my family and me, it's still as it used to be: Thanksgiving, Christmas and the New Year, though annually, I feel less and less successful in repelling the expanded and compounded holiday season: Christmas-Halloween, Christmas-Thanksgiving, Christmas-Veterans' Day, Christmas Eve Day, Christmas Past, Christmas Present, Christmas Future, to name a few.

Since continuation of that line of thought is unlikely to satisfy either your desires or the desires of our editors, I instead ask you to apply that seemingly unwavering progression of change to the operational evolution of a professional organization. As a stakeholder with an official duty, I'll use the Professional Land Surveyors of Wyoming (PLSW) as my focus. How do such seemingly important principles become altered? Is it through apathetic allowance, thoughtful guidance, or unyielding control?

For my specific example, I'll recount an interesting exchange that occurred during the most recent meeting of your Board of Directors. At the time, it may have been a challenge, a warning, a complaint, or some other moniker. I recognized it then, and choose to recognize it now, as a realistic and thoughtful concern for the PLSW, a concern I consider to be founded on the desire and need for an individual voice as a member of an organization. "Lock step." Like a vehicle appearing out of the snow cloud behind a semi on I-80, it caught me by surprise. Was it possible that the PLSW was viewed as an organization that, if projected on a screen, looked like rows of goose-stepping members? "Lock step." The

concern expressed was a response to my opinion that members of an organization should strive not to belittle the organization to others outside of the organization.

As I replied then, I encourage you now. While the principles and purposes of the PLSW are not intended to, and should not be used to stifle or snuff individuality, I remain steadfast in honoring my sworn charge as your president to uphold the organization, not the individual member. I believe the rotation of officers and directors precludes the formation of pacts amongst the leadership and the ability to control the organization. I believe that as a member of an organization, you should try to foster understanding and cohesiveness of the basic stated principles of the organization. If you don't or can't agree to those premises, and are unwilling to work internally, at the lowest level of conflict, to resolve disagreements about those principles, then you should be willing to join or create another group that more closely fits your beliefs and needs. To me, that includes perceiving one's membership as a license or authority to express individual opinions in the name of the organization contrary to its administrative body.

As I previously stated and encouraged, if the membership doesn't care for the principles and purposes of the organization, change the organization through its means of representation. Don't destroy the organization's standing by giving conflicting, personally motivated opinions. Apathetic allowance; thoughtful guidance; unyielding control? You need to decide. You are the PLSW.

Regards,

/s/ Kevin D. Jones, P.E., P.L.S.



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PLSW Quarterly Meeting Minutes, 25 October 2007

- 1) Call to Order: 6:30 p.m. by Kevin D. Jones, PLSW President
- 2) Roll call:
 - a) Kevin D. Jones, President [present]
 - b) Mark D. Rehwaldt, Vice President [present]
 - c) Marlowe A. Scherbel, Secretary/Treasurer [present]
 - d) Cevin C. Imus, Director Northeast Chapter [present]
 - e) Bruce W. Frederick, Director Northwest Chapter [present]
 - f) Paul N. Scherbel, Director, West Chapter [present]
 - g) Randall S. Stelzner, Director Central Chapter [present]
 - h) William R. Fehringer, Director, South Central Chapter [present]
- i) Cotton D. Jones, Director, Southeast Chapter and Governor, NSPS [Dennis Dawson present for Cotton]
- j) Mark D. Rehwaldt, Director Laramie Chapter [present]
- k) Jon L. Anderson, Director, Upper Platte Chapter [present]
- l) Donald M. Schramm, Director, Southwest Chapter [Olian Shockley present for Don Schramm]
- m) Richard T. Muscio, Immediate Past President [present]
- n) Paul A. Reid, Wyoming Delegate, WFPS [absent]
- o) Jeffrey B. Jones, Area 7 Director, ACSM [present]
- 3) Agenda Revision and Adoption of Revised Agenda:
 - a) No revisions.
 - 4) Introduction:
 - a) Officers and Directors
 - b) Honorary Members
 - c) Guests:
 - 1) Lloyd Baker
 - 2) Mark Corbridge
 - 3) Scott White
 - 4) Anita Morris
 - d) Memorials: John Dolinar and Art Hipp (Colorado)
 - 5) Minutes: Paul Scherbel moved to approve the minutes from the 25 August 2007 Board of Directors meeting; seconded by Bill Fehringer, motion carried.
 - a) Mark Rehwaldt moved to ratify business items for 12 May and 25 August 2007 Board of Directors meetings; no challenges made. Seconded by Bruce Frederick and the motion carried.
 - 6) President's Report: President Jones asked for everyone to read over his report, enclosure no. 2, with the agenda.
 - 7) Vice President's Report:
 - 8) Secretary's Report:
 - a) Marlowe Scherbel to prepare list of members to suspend due to lack of dues payment for the May Board of Directors meeting.
 - b) Active Membership role was Members – 142: Associate

– 58: Other – 13: Total – 213. Questioned why there was such a difference in numbers since the last meeting? Numbers had changed because the Secretary/Treasurer has been working to have a more accurate membership list. An accurate count should be determined by the May Board of Directors meeting.

1) Up coming election discussed. Marlowe Scherbel to work with Elections Teller to determine who can vote.

9) Treasurer's Report:

a) Treasurer's report was reviewed. Richard Muscio moved to approve the expenses for the 2007 budget and expenses, seconded by Cevin Imus. Discussion took place about making changes to the 2007 budget for the 2008 budget. Paul Scherbel motion to increase Lines and Points budget to \$10,000 and the Delegates budget to \$4,500, Randy Stelzner seconded, and the motion carried.

b) It was suggested that the deficit be paid for out of the General Funds Reserve. Motion to approve made by Dennis Dawson; seconded by Randy Stelzner, motion carried.

c) Dennis Dawson moved to approve Treasurer's report and ratify expenditures over \$100.00 from the August through September Statement of Expenditures, Cevin Imus seconded, motion carried.

10) Committee Reports: Made at Annual Meeting

a) Chris Hamilton reported that Scholarship donations are being received and deposited by the Treasurer. As of the meeting, raffle income was \$570.00.

c) Still need a new chairman for the By-Laws Committee.

d) WES is at the Holiday Inn at Cheyenne on 31 January and 1 February 2008 – Southeast Chapter in Charge.

e) Bill Fehringer reported that Fall Tech Session was in process and going well.

g) Jon Anderson gave the investment report. After discussion it was decided that Marlowe Scherbel is to work with Jon Anderson to update all of the Investment tracking.

h) Legislative Committee - It was reported that the Legislature is preparing for the 2008 Legislative session. Special attention should be made to the intentions of the SBRPEPLS, and changes to the 35-acre parcel exemption (Title 18)

j) Still need a new chairman for the Membership Committee.

k) Mark Rehwaldt and Bruce Frederick gave a progress report on Lines & Points.

l) Dennis Dawson recommended that the current officers be re-elected for the 2008 year.

o) Paul Reid reported the 2007 SOS competition will be conducted during the 2008 WES Annual Convention in Cheyenne. Three (3) entries have been received.


p) Anita Morris reported that the Scholarship Committee has recommended that Heather Hamilton receive \$1000.00 scholarship for the 2008 Spring Semester. Jon Anderson moved to approve the scholarship, seconded by Bruce Frederick, motion carried.

r) Jeff Jones is appointed as the new Committee Chair for the Trig-Star Committee, with Mark Corbridge to be a member of the committee. Motion made by Mark Rehwaldt, seconded by Dennis Dawson, motion carried.

11) Delegate Reports:

b) Jeff Jones reported (Cotton Jones was absent), on the

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–PLSW QUARTERLY MEETING MINUTES

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CST program state coordinator situation. He also, indicated that NSPS membership is up 10%. The insurance program is helping to attract members. NSPS is pushing Federal law to require all railroads to monument right-of-ways or main track of abandoned railroad right-of-ways. Marlowe Scherbel is to look at the NSPS websites policy and to send it to the Board of Directors for review.

c) The Board reviewed the 2007 September Board minutes from the Western Federation of Professional Surveyors.

12) Old Business:

a) CLSA DVD and Robert Jack Smith & Associates' monetary offer for funding was discussed. Dennis Dawson moved to accept the offer from Robert Jack Smith & Associates to fund the CLSA DVD, seconded by Randy Stelzner. Discussion continued. It was decided to table the motion while PLSW investigates the cost of the CLSA DVD and confirm that Robert Jack Smith & Associates will cover the cost to produce the master DVD, with a net zero cost to PLSW. President Jones is to make contact to determine if the CLSA DVD is viable and whether or not Robert Jack Smith & Associates will cover the costs.

b) Questions as to whether PLSW should generate a position on the education requirement legislation prior to next years Legislature, 2007 and 2008 was discussed. Dennis Dawson was assigned to email the new legislation to Marlowe Scherbel who is to then forward it on to the Chapter Directors. A decision needs to be made. Directors are to take the forwarded information to their individual chapter to approve or disapprove. Motion made by Mark Rehwaldt for PLSW to generate a position on the Education Requirement Legislation, seconded by Dennis Dawson, motion carried.

d) PLSW's website and advertising policy was discussed. It was decided that the website is for PLSW members and is generally not accepting any advertising on the website. Mark Rehwaldt moved to approve the website advertising policy, Dennis Dawson seconded, motion carried.

13) New Business:

a) Motion made to approve the following new member

applications made by Randy Stelzner, seconded by Richard Muscio, motion carried.

1) Ben Scherbel

2) Chad Washburn

3) Brian Schmalz

4) Cody A. Schatz

5) Gary L. Conner

6) Alan K. Roberts

7) Doug Shinaver

8) Nathan Bishop

9) Salena Nicole Vieyeh

b) Style and Length of the 2008 Annual Meeting was discussed. It was decided that the Annual Meeting will be from 2:00-3:00 p.m., and the Board of Directors meeting will be from 3:00-4:00 p.m. Richard Muscio moved to approve the above times, Randy Stelzner seconded, motion carried. President Jones to notify Joe Lord of the Annual Meeting times.

c) Sample 2008 Ballot and By-Laws Change reviewed and motion made to accept amendment to the By-Laws. Mark Rehwaldt moved to approve the motion made to affirm petition to amend By-Laws, Randy Stelzner seconded, motion carried.

d) Reminder to educate the membership that the Annual Meeting will be at 2:00 p.m.

e) President Jones has appointed Rick Hudson as Chairman of the Past Presidents Advisory Group. Their first responsibility is to update the By-Laws.

f) Donations made in behalf of deceased members discussed. New Policy developed, as follows: "After being notified by the Director of a deceased member's chapter, the PLSW Secretary/Treasurer is authorized to donate \$100.00 in the name of said member to a charity or organization specified in the deceased members final wishes. A card is to be sent to the family indicating such donation." Bruce Frederick moved to approve the new policy, seconded by Paul Scherbel, motion carried.

14) Announcements:

a) Next meeting, 3:00 p.m., 31 January 2008 at Cheyenne in conjunction with WES Convention.

15) Adjournment:

Adjourned at 10:45 p.m.

State Board of Registration Meeting Minutes, 30 July 2007

OPEN MEETING ITEMS

BOARD MEMBERS PRESENT: David L. Whitman, Stanton J. Abell, Jr., Peter J. Hutchison Scott R. Pierson, Roger L. Jacobson.

BOARD MEMBERS ABSENT: John "Mike" Ballard, Patrick T. Tyrrell.

BOARD STAFF PRESENT: Christine Turk, Executive Director, Troy Niesen, Licensing Officer, Ken Nelson, Senior Assistant Attorney General, Bill Pilger, Assistant Attorney General.

VISTORS PRESENT: Representative Pete Jorgensen, Steve Winders.

APPROVAL OF MINUTES: A motion was made by Peter J. Hutchison, seconded by Stanton J. Abell, Jr., and carried to approve the May 21, 2007 Minutes with the corrections noted at the meeting.

APPROVAL OF TREASURER/BUDGET REPORT: Mr. Winders from the SEO Accounting division announced that there would not be a Treasurer's/Budget Report due to the close proximity to the end of year biennium. A copy of the Treasurer/Budget Report will be mailed out once the report is completed. Christine Turk

distributed an updated version of the proposed 2009-2010 Budget Report. There are four (4) exceptions listed in the Budget that will need to be justified with written statements that will be sent along with the budget to the legislature. The exceptions were: Out of State Travel, Data Processing Equipment, Investigative Services and Exam Writing and Grading.

LEGISLATION DISCUSSION: Roger L. Jacobson and Peter J. Hutchison lead the discussion about what changes were made to the proposed Board Statutes at the June 25, 2007 Meeting. The Board received by email a copy of the proposed changes. Roger L. Jacobson announced the meeting was very productive and thinks the changes made will be beneficial in getting approval from the Legislature. The Board went over the proposed changes and gave their comments and made additional changes. A motion was made by Stanton J. Abell, to leave the date of implementation of the LSIT educational requirement at July 1, 2017, however, the motion died due to a lack of a second to the motion. A motion was made by

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—SBOR MEETING MINUTES

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Roger L. Jacobson, seconded by Scott L. Pierson to change the date of implementation of the LSIT educational requirement to July 1, 2015. The motion carried and the date of implementation for the LSIT educational requirement will be changed to July 1, 2015 in the Board's proposed changes to the current Statutes. The Board voted 6-1 in favor, with Stanton J. Abell, Jr. voting against supporting the year July 1, 2015. The Board asked Christine Turk to find out when the last Associates in Surveying degree was awarded by Laramie County Community College. Christine Turk informed the Board that the date of the last Associates in Surveying degree was in 2002. A motion was made by Scott L. Pierson, seconded by Roger L. Jacobson to adopt the changes made during the July 30, 2007 Board Meeting.

CORRESPONDENCE REGARDING MAPPING OF CONDOMINIUMS: The Board Office received a letter from Surveyor Scherbel, LTD. asking for guidance whether the mapping of condos can be done by an engineer or surveyor? Ken Nelson, reviewed the Board's statutes and stated that the mapping of condominiums can be done by engineers or surveyors in accordance with the Board Statutes. The Board asked Christine Turk to write a letter to Surveyor Scherbel, LTD. advising them that the Board felt that the mapping of condominiums can be done by either a professional engineer or professional land surveyor. Scott L. Pierson will work on drafting a letter that should be sent out to the County Clerks and County Engineers pertaining to the mapping of condominiums.

ACTION BY ILLINOIS PE BOARD/FERRIS STATE UNIVERSITY: The Board Office received correspondence from the National Council of Examiners for Engineering and Surveying informing all Boards that the Illinois Board of Professional Engineers has recently ruled that the Surveying Engineering curriculum at Ferris State University is not an acceptable degree for the pursuit of licensure as a Professional Engineer in Illinois. The Illinois Board has notified officials at the Ferris State University and ABET of their decision since this is an accredited program. The question for the Wyoming Board is do they want to follow Illinois' action? The Board has decided not to follow Illinois and will continue to accept the Surveying Engineering curriculum.


NCEES' POLICY ON COLLECTION OF SOCIAL SECURITY NUMBERS: The Board received a memo from the NCEES informing all Member Board Administrators that they have decided to stop collecting social security numbers after the recommendation made to the Board of Directors at the 2006 Annual Meeting. This issue came up after the Council's decision to develop a National Registry

system to track repeat exam takers. Ken Nelson informed the Board that they are required to collect the social security numbers pursuant to W.S. 33-29-114. The Board will continue to collect the social security numbers until W.S. 33-29-114 is amended.

DISCUSSION ON RE-INSTATEMENT/RE-REGISTRATION OF EXPIRED LICENSES: This issue came up when a registrant whose license had expired was attempting to file the appropriate re-registration papers. Christine Turk and Bill Pilger had a discussion of the procedure the Board staff uses when a registrant has let his license expire. Mr. Pilger feels that a registrant whose license has expired only needs to file a new application and pay the \$100 filing fee. They would not need to report the required 30 CPC's and pay the \$265 reinstatement/re-registration fee. The Board's policy has been to require a registrant whose license has been expired for two (2) years or more to file a new application, provide updated references and submit the Continuing Professional Competency Reporting form which requires them to report at least 30 CPC credits that were earned in the past two (2) years. Christine Turk distributed a handout that showed how the Board of Nursing handles expired licenses. The Board has decided to continue the policy that has been used by the Board staff in the past. The Board will address this issue when the Rules & Regulations are revised.

DISCUSSION ON ADDITIONAL EDUCATION AFTER THREE EXAM FAILURES: Christine Turk received a phone call from an examinee that is now in the position of having to take the required twelve (12) semester credit hours of course work before he will be allowed to take the Professional Engineering Exam. The questions that arose were: 1) Do we check all comity applicants to see how many attempts they took to pass an exam? The answer was we don't have to check because they are applying by comity

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–SBOR MEETING MINUTES

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and have passed the National Exam. This would only apply if an individual was applying to the Board by Exam and had not successfully passed the Principles and Practice of Engineering Examination. 2) When taking the additional twelve (12) semester credit hours does it matter what institution you take the classes from and must it be a senior level coursework? The Board determined that the individual can make the determination of what area they need to take the additional courses in and from what institution. The courses do not need to be at a senior level of coursework.

EXAM RESULTS APRIL 2007: David L. Whitman talked about the results of the April 2007 Examination. He distributed samples of how the University of Wyoming uses the exam results in recruiting potential students into the College of Engineering Department. The graphs indicate how Wyoming has done against the National Level since 2002. Wyoming Fundamental of Engineering examinees have a passing rate of between 75 – 80% since they University of Wyoming has implemented the requirement of taking the Fundamentals of Engineering exam in order to graduate. Wyoming has seen the passing rate drop from 90% to the current rate since they require all students to take the exam. The overall passing rate still looks to be at or above the National level.

SCHEDULE NEXT BOARD MEETING: The next Board Meeting will be November 19, 2007 at 8:00 a.m., in Cheyenne at the Board Office.

NEW MEXICO RESOLUTION: The New Mexico Board is going to present its reasons for wanting to remove Engineering Surveys from the current Model Law Language. This issue was brought up at the Western Zone Meeting in April. David L. Whitman advised the Board that this issue will most likely again be brought up at the Annual Meeting in Philadelphia, PA in August. The Board decided they do not support the motion and will be voting no on this issue.

APPLICATION REVIEW: A motion was made by Stanton J. Abell, Jr., seconded by Scott L. Pierson and carried to approve the following individuals to sit for the October 2007 Professional Engineer Examination: Lucas D. Albrington, Ross A. Benson, Jason M. Buenemann, Sara L. Cherry, Joel D. Finch, Christopher D. Hill, Jennifer A. Hoffman, Lukas L. Klemke, Craig A. LaVoy, Hanns W. Mercer, Will A. Myers, Matthew L. Pierson, Joseph R. Sinner and Erik J. Smith.. Also approved to sit for the October 2007 Professional Engineer Examination: Christine R. Johnson, Isaish D. Rodolph and Robert W. Thoman on the contingency that the Board receives an updated verification of employment no later than the end of July 2007.

A motion was made by Stanton J. Abell, Jr., seconded by Scott L. Pierson. and carried to approve James A. Clancy, Jonghyub Lee, Donald E. Stehler and Alex Takahashi to be registered as a Professional Engineer by comity.

A motion was made by Roger L. Jacobson, seconded by Scott L. Pierson to approve Adam E. Deschler, Dean G. Scott and Kent E. Sielbach to sit for the Land Surveyor State Specific Examination and Wyoming Take Home Examination.

A motion was made by Peter J. Hutchison, seconded by Scott L. Pierson and carried to approve Gary S. Jackson to sit for the October 2007 Fundamentals of Land Surveying Examination, however no EIT number shall be issued until he has completed 6

hours of engineering coursework at the senior or graduate level.

A motion was made by Roger L. Jacobson, seconded by Scott L. Pierson and carried to approve Michael Lock to sit for the October 2007 Fundamental of Surveying Examination.

A motion was made by Scott L. Pierson, seconded by Roger L. Jacobson and carried to move into Executive Session to discuss disciplinary actions, application review, CPC audits and complaints.

DISCIPLINARY ACTIONS IN OTHER JURISDICTIONS & COMPLAINTS: A motion was made by Roger L. Jacobson, seconded by Peter J. Hutchison and carried to approve all recommendations made in regards to the complaints which occurred in the Executive Session of the meeting.

PROFESSIONAL ENGINEER BY EXAM:

11300	Travis C. Brockie, Sr.	11308	Kevin D. Hoff
11301	Shirley C. Brown	11309	Drew W. Johnson
11302	Eric C. Christensen	11310	Andrew S. Klingenberg
11303	Ryan R. Christensen	11311	Jason A. Mead
11304	Matthew R. Epp	11312	Michael S. Mieyr
11305	Stephen E. Green	11313	Brian A. Mitchell
11306	Rhett D. Hines	11314	Amy S. Ormseth
11307	Jack T. Hoffman	11315	Lawrence J. Reinmann

PROFESSIONAL LAND SURVEYOR NUMBERS ISSUED:

LS 11432 Steven J. Hyde – Registered by comity. Passed the Wyoming 2-Hour State Specific Land Surveyor Examination 4/20/2007, passed the Wyoming Land Surveyor Take Home Examination 9/25/2007.

Edited for the purpose of PLSW magazine inclusion. Complete report site engineersandsurveyors.wy.com

Brad “Bronco” Shaw PLS #5301

November 1, 1957 – November 30, 2007

Services were held Wednesday, January 3, 2008, at Davis Funeral Home in Riverton, Wyoming. He died due to complications of diabetes at Valley Hospital in Las Vegas, Nevada.

He was born November 1, 1957, in Riverton, the son of Charles W. and June (Cunningham) Shaw. He graduated from Riverton High School in 1976. While in high school he excelled in the golf program and was described as “an outstanding golfer”. He also took advantage of the James H. Moore Career Center, studying drafting under the direction of Keith Boyd, teacher and friend.

He began working for Inberg Surveying under Bruce Hughes, and earned his land surveying license. He stayed with the company 13 years. In 1989, he went to work for High Plains Power as manager of the surveying/mapping dept. He also maintained a family surveying business in his spare time. He moved to Ventura, CA in 2001, working for Jensen Surveying then later moved to Mesquite, NV where he was employed by Bush and Gudgeon Engineers.

He was an avid golfer and loved attending the Annual Mesquite Invitational since 1996. The tournament has now been re-named the “Bronco Shaw Memorial Golf Tournament”, in his memory. He was a fan of the “World of Outlaws” and the NHRA. He enjoyed fishing, camping and was a devoted Denver Bronco fan.

He is survived by his former wife and friend, Susan; daughter, Stacy Vargas of South Carolina; son, Charles “Chuck” Shaw of Mesquite, NV; mother, June Alaniz of Thermopolis, WY; brother, Rod Shaw of Riverton and 5 beloved grandchildren.

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William A. Richards: Surveyor to Statesman

Dennis D. Bland

ABSTRACT. William A. Richards was an acknowledged American pioneer and leader whose roots can be found in his experiences as a cadastral surveyor. It was these surveying experiences that gave him the understanding of the lands he was to later manage.

William A. Richards was born March 9, 1849, in Hazel Green, Grant County, Wisconsin, where he attended the district schools. At 16 he attended the high school at Galena, Illinois, for one year "standing at the head of my class the entire year." In 1863 Richards moved to the East Coast where he drove an ambulance for the Signal Corps in Georgetown Heights, Washington, D.C., through 1864. While in Washington he attempted to enlist in the Union Army. Told he was too young to enlist, he returned to Wisconsin and taught school for one summer and three winters.

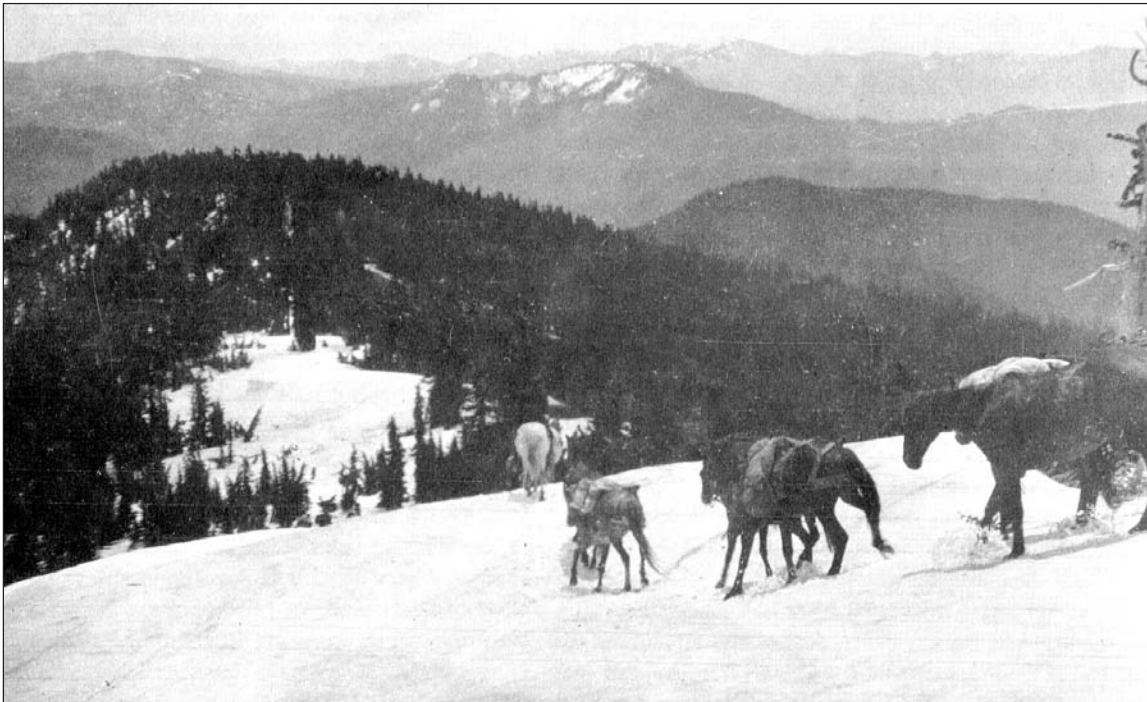
In 1869 westward opportunities led Richards to Omaha, Nebraska. After various employment in the Omaha area, he joined a government surveying party working in southwestern Nebraska. This area was "a territory then infested with hostile Indians," an interesting beginning to his instruction in the art and science of surveying.

Shortly thereafter, his brother, A.V. Richards, received a General Land Office contract for the original survey of the south and west boundaries of the Wyoming Territory. Richards was employed by his brother as a general assistant during the execution of these surveys from 1873 to 1874. General assistants were

sworn employees of the contractor, usually responsible for such specific duties as cornerman or front or rear chainman. Richards' diaries, written while executing these surveys and now located in the Wyoming State Museum, described many trials and tribulations of daily activities and camp life.

After completing the surveys in late 1874, Richards moved to Oakland, California, and married Harriet Alice Hunt. The following year, they moved to nearby San Jose where Richards was elected county surveyor of Santa Clara County. Unfortunately, health complications required Richards to move again, this time to an arid climate. In 1881 he and his wife found their favorable climate in Colorado Springs, Colorado, where Richards served as city engineer and as El Paso County surveyor. With his health restored in 1884, Richards and his wife homesteaded in the Big Horn Basin, Johnson County, Wyoming.

Richards soon began an active role in politics; he was elected commissioner of Johnson County in 1886. The significance of this era was the long-standing conflict between large and small cattle operations during the 1880s, culminating in the Johnson County War in 1892.



Steep slopes such as the one shown caused Dandy Pat the mule to "turn another sommersault down a cliff."

Photo was used to illustrate the 1874 diary in the *Annals of Wyoming*. It is probably not from that survey, but it certainly shows the rugged terrain. The diary doesn't indicate this much snow.

The Diary of **William A. Richards: Surveyor to Statesman**

Compiled by Lucia McCreery

SUNDAY, JUNE 1ST, 1873

Just as we were ready to start this morning learned that the Judge was almost here on a freight train. Waited for him. Gave him a warm (cold) breakfast and moved on. Teams all stuck crossing a slough just out of the station. Delayed an hour. Camped for dinner on Lodge Pole. Had a good meal with cakes and bread furnished by Mrs. W. and antelope steak. Reached Sidney at 5:00 p.m. A three Co. post [Cavalry post?] is here, an eating house and quite a little town. Water runs through the street brought from Lodge Pole two miles west. The Judge left for home. At depot saw Meachem, Captain Jack's intended victim, on his way East. A tall fine looking man. Saw Laughton, Sith Cole and Johnny Warner on train. Sixty-three miles to Pine Bluff, must make it in two days—

TUESDAY, 3RD

Dinner a mile east of Bushnell—Reached Pine Bluffs at 5:30—Found Lon and MacConnell in waiting. Got in ten minutes ahead of us. Camped a mile north on Lodge Pole—Put up the new tent. Lon and Mac—Bob & I occupy it.

THURSDAY, 5TH

Took three men and a team and cut a load of posts on the bluff, took them 6 miles west and left them. Dug a well on Muddy Creek three miles west of camp. Good cold water. Weather hot—Reached camp at 7:00 p.m. tired and hungry. Killed an antelope coming in—Campbell did do [sic]—Reorganized guard duty, putting three men on each night. Bob, Arthur and I on first night. Lon and

Mac worked until 1:30 a.m. taking observations to test this initial point. So Lon took my "chance" and part of Bob's. Weather fine and warm—Lon rode the pony to Pine Bluffs for mail but got none

FRIDAY, 6TH

Went to the station on a mule—Sent the old Winchester in to be repaired, ordered axes and grindstone from Edgar, to Cheyenne. Got dinner at a section house—Bought a pick. Reached camp at 6:00 p.m. Lon ran four miles of line. Dick killed an antelope, and Patterson do [sic]—Cloudy—No observations tonight. Wrote to Miss H., Judge W. and Aut

SUNDAY, 15TH

Ran line three miles west. Camped at a beautiful spring just east of Lone Tree Creek. Summit Siding is just south of us and Terry Bros. cattle ranche near us on the west. Hay and Thomas Surveyors under Reed. Now cattle and sheepherders are two miles N. of us. The herds of this Co. start a Round-up tomorrow. Each ranch sends a man, they scout the country, get up all the cattle. Then each man picks out his stock and drives them in—35 men start this time and they expect to pick up 50,000 head of cattle. Did some washing. Read Kenelm Chillingly and Harper's for June. Slept some and wrote to Alice and the home folks. Now at sundown, will close—Tomorrow, Lon and I go to Cheyenne to get supplies, and send out and get mail—No rain last night—Weather beautiful. Thermometer 90 degrees at noon. Bar. indicates 6,275 feet—

(Continued on Page 12)



Lining up for dinner

—RICHARDS DIARY

(Continued from previous page)

WEDNESDAY, 18TH

With Arthur and Texas and a span of mules started for town. Changed teams at Thomas' Rancho to try one he had to sell. Too small and too high, \$275. Arthur went to the post with his cousin Capt. Wessels who sent him to camp in wag. with an escort of cavalry.

FRIDAY, 20TH, 1873

Went to town with a team and Scott, Campbell and Pattison. Rode a black pony of H. & O. Like him pretty well. Price \$60. Got caught in a hail storm. Reached camp at sundown. Brought in large stone for Astronomical station—a foot square, seven ft. long, price \$12.50. On 19 Campbell and Pat killed antelopes.

FRIDAY, 11TH

Lon with the party who run the line left camp at 7:00 a.m. to proceed with the line. Lon will run to next station and I run camp. Crossed the Laramie 1-1/2 miles north of camp, got the team upon the level by doubling and camped at 12:00 M. for dinner on small stream running east. The boys ran three (3) miles before dinner and 1-1/3 in p.m. returning to the camp at night. Storm of wind and rain at sunset. Killed an antelope.

SUNDAY, 13TH

Very cold last night. Mercury only 28 degrees above half an hour after sunrise. Boys left camp at 6:15. Took bay pony and started west to scout the road. Went nine miles from which could see the North Platte bottom—Summit of Medicine Bow Mts.—four miles west of here. Reached camp again at 10:00 a.m. Had a

good ride. At 11 took dinner to men on line. Cannot move camp nearer to the line than we now are, so will remain here. Men made 1-3/4 miles on line. Very heavy timber. Ben killed a deer.

TUESDAY, 15TH

With Billie left camp at 6:20—mounted on mules—took old road south through a little valley; eight miles from line entered North Park, which is simply a large basin or open park, without timber. Surrounded on southeast and west with snow capped mountains and bare Mts. on the north. The North Platte rises in the Park which is about 15 miles in diameter I should think. We found a pass out of the Park over a Mt. to the Platte and a crossing over the river. After which we returned to camp over the mountains. Each killed a black tail deer coming in. Reached camp at 3:00 p.m. Too late to move camp. So sent Fred out to find the men and pilot them in. He got lost in woods, and but for meeting Bob the whole party would have slept out. It was impossible to get camp much nearer the quitting place for the men—they made about three miles of line.

WEDNESDAY, 16TH

Packed two mules and the bay pony with provisions and blankets and sent them on the line, as the men will sleep out tonight. With the camp started at 10:00 a.m. to go south into the Park. Reached and crossed the Platte before 5:00 p.m. Drove north two miles and camped on small stream, using sagebrush for fuel.

FRIDAY, 18TH

Broke camp at 8:00 a.m. Drove north and crossed the Mt. A rough road and hard work. Camped at 3:00 p.m. 3 chs. north of line

(Continued on next page)

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—RICHARDS DIARY

(Continued from Page 11)

and 10 chs. west of 130th mile post on small swift stream running north. Saturday, Aug. 2nd Broke camp at 7:30 and started down the Mt. Met Lon about 11:00 a.m. Reached Snake River at noon, crossed it twice and at 2:30 reached the other camp. Quite a reunion, having been separated a week. Our pass over the Mts. was a rough one and long to be remembered and now we can sing "out of the wilderness." An old miner named Duickl stayed with Lon's party last night. The first man we have seen for over a month. Two other miners with us tonight. They are at work 22 miles south of here on Henz peak or what used to be the Bear River diggings [?]. Not much gold, about wages. We apparently have an open though broken country ahead of us and hope to make better time hereafter. We will run another day and then put in a station. Are now camped on Snake River. Lon and I scouted ahead a few miles this p.m. and Lon killed an antelope. Campbell did also. "Ain't I glad I'm out of the wilderness." Karner, a miner working at Henz Peak, went east to the divide on south end of North Park prospecting with Perkins. Both young men. About July 25th accidentally shot himself through the leg. His companion returned to camp for help and upon returning found him dead. These facts given us by James Carroll, a miner and friend of Karner's.

SUNDAY, AUG. 3RD

Moved camp west about 5 miles, crossing the Snake River twice and driving up a steep mountain side camped on line at the 163rd mile post on plain near Sheep Mt. and a few miles S. E. of Battle Mt. where the Utes and Arapahoes or the latter and trappers—[? had a fight] which lasted ten days. Nothing definite about it. Erected post for observations as we will put in a station here. Lon and Texas caught a fine string of trout and Pat killed a goose.

MONDAY, AUG. 4TH

Trout and cornbread for breakfast. Silent the greater portion of the day hunting a stone suitable for the monument at this place. Found one and got it to camp all right. Max went out in the morning on Sheep Mt. just west of here and killed a mountain sheep and an antelope. Lon went out in p.m. after supper and killed a sheep and a black tailed buck. Professor got some pretty fair observations last night. Cloudy and rainy at dark. Boys caught lots of trout.

FRIDAY, 8TH

McConnel completed his observations last night. Today we will set the stone and move on—Weather fine—Wrote home—Later. As we couldn't get started today, it being late when Mr. McC completed the reduction of his observs. We concluded to do nothing until tomorrow. Cloudy at sunset.

SUNDAY, 24TH

Since the last entry as above much has transpired out of the usual routine of our monotonous life but nothing serious or very alarming. Upon reducing the observs. of Sunday night it was found that the instrument was out of adjustment, therefore another night's work was necessary. On Tuesday these observs. were reduced. We found the line 92 ft. south. Set the monument at the 223rd M. C. A. stone 12 x 14 in. 10 ft. long. Corrected back and made ready for a start. On Wednesday, left camp at daylight line and teams. Shot two young sage hens as we were starting. Even these are a delicacy in this barren and desolate country. The men made 17-1/2 miles on the line stopping on high bank of Vermillion Creek which I visited last Saturday. I took dinner to men on the line, and the campmen

misunderstood my instructions and went three miles too far west on a road running three miles north of the line. Came back and down to line which we reached two hours after dark. Had supper at 11:00 p.m. Went on guard at 2:30 a.m. On Thursday morning left camp at daylight on pony to try and find crossing over the canon before us. No description can give an idea of the magnitude of these canons. Returned at noon without finding a pass. In p.m. the men ran the line ten miles west. Mr. McC accompanying them. We took team back to the road. I proceeded, then about an hour crossed Vermillion Canon and on the road two miles west of it discovered a troop of some kind galloping toward me about two miles farther west. From close observations thought they were Indians; rode back and corralled teams on east side of canon—Sent Fred out to tell the men where camp was, though we had previously intended camping on the canon and having the men walk up to camp. Billie and I went out again on the road but saw no signs. The men on line had seen elk signs and probably the troop I saw were elk. Mr. McC did not come in with the line men and we feared he would lie out. After supper Bob took a light and went to pilot him. Found him at 12:00 m. about five miles S. W. of camp in a canon containing good water. Had a fire and was comfortable but hungry. Would not come in, fearing to carry his chronometer through the brush at night. Bob reached camp at 3:30 a.m. Friday. After breakfast, Bob took some provisions and coffee and went back to find Mac as he had intended remaining where he was until the line men came out—We moved west about four miles on road; then turned south, and at 11:00 a.m. struck stream, the Vermillion running E. then S. high steep banks. Built a bridge. Just as we finished dinner, McC hove in sight on the trail. Had not waited for Bob but went to our old camp and followed us in—twenty four hours without eating and laying out in a rainstorm. Had not seriously affected him. In p.m. the line men went south and E. to where they quit work and ran few miles of line. Could not move camp, so they walked in three miles. Saturday the 23rd crossed on our bridge. Moved camp S. W. across from Big Creek on the S. side of which we camped at the 249th M. C. Took an Azimuth. Saw and wounded an antelope. Ran him three miles with a mule but did not get him. Good grass and water near and quite a change from the desert proper, though we are hardly out of it Sunday the 24th broke camp early. Got teams to top of bluffs on west side of creek at 10:00 a.m. The men ran the line three miles and at noon were stopped, or rather the teams were, by a huge canon. Suspended work and went south around it. All hands except Dick. He followed along the line and killed two antelope and now at sundown we are anxiously expecting him in. Are camped about a mile south of the line and probably about 254th M.C. A mountain lies to the west of us and we don't know what the country is beyond it to Green River. Hope for the best though, for provisions are very short. Sugar gone several days ago. Saw many deer and antelope today. Also mountain sheep.

FRIDAY, SEPT. 5TH

Breakfast at 7 a.m. A beautiful morning but rather cool last night as I found on guard. Mac C. got sufficient stars last night to determine our location and now as soon as he has reduced his observations we will correct back as far as necessary, cross the river and propel. We are now camped on the 289th mile, leaving but 80 miles to run and good assurances of an open country half way at least.

SATURDAY, SEPT. 6TH

Gave Mac C. another night at station all right now. Campbell
(Continued on next page)

—RICHARDS DIARY

(Continued from previous page)

and Billie went back 17 miles to correct. The boys have the monument planted at the 289 mile and we have the team on the west side of the river and will take dinner on the bank.

EVENING, SEPT. 6TH

Got the line across O. K. and made five miles, camping on the line and on the east bank of Henry's Fork. This is a clear, swift mountain stream, running over a gravel bed, skirted with timber and easy to cross. This is the most picturesque and convenient camp on the line thus far, and the only good camp since leaving the Snake River, nearly a hundred miles back.

SUNDAY, SEPT. 7TH

Broke camp at 6 a.m. the line crossing the river near camp. Moved teams up the Fork about five miles and stopped for dinner, or rather to give the cooks a chance to bake bread. On the way up crossed the stream several times, once the first time near the ranch of Charley Davis—(supposed to be)* just south of which the line runs. At 10:30 o'clock took a pail of lunch—canteen of water and one of molasses and mounted on a mule went South to find and feed the men. A Mexican herding for Joe Baker accompanied. We mounted on a stallion to see how it was done. On the way out his horse bucked him off and got away but he caught him and went on his way. Returned to camp and moved up opposite Baker's ranche and then struck South to the line. We men made 11-1/2 miles and we camped at dark one half mile North of the line near a pine mountain. A dry camp. Found dead deer near camp.

FRIDAY, 19TH

We escaped last night with only a slight sprinkling of snow and rain and this morning is clear. Guess that is all we will see of the dreaded equinoctial. The chainmen and Billie went back and chained up. Sent my note to Lon by them, to be stuck upon a post in the road, trusting to the cold charities of the world for its being more properly posted. Pushed on with the line. The timber large and thick. First 1/2 mile through quaking asp, much worse than pine for running. Only made 1-1/2 miles, camping at 340.57 m. c. where I took an azimuth. No water near camp. In hunting for a spring just before sundown, surprised and killed a very large buck. Got Dick to help me load him on a pony and it was hard work for both of us. We estimated the weight dressed at 300 pounds. His horns are 7-pronged, bare of velvet, and very sharp. The country today was ascending to the 340th mile, where I think we reached the summit of the Uintahs on our line. Elevation 9,950 feet. Timber heavy but no snow.

SUNDAY, SEPT. 21ST, '73

Cut through the timber 23 chs. east from camp and set the 343rd post, then ran west through the timber setting the 345th post at sundown near which we camped. The line crossed Black's Fork at 343.15 m. c. Billie and Matt went down stream a mile from our camp of last night to a tie cabin and ground some of the axes. Quite a large number of men employed here getting out [railroad] ties, which are run down stream at high water to the U. P. Last night was the coldest we have had in these mountains. Water froze four inches deep, within ten feet of our camp fire which was burning all night.

MONDAY, 22ND

Rather warmer last night. Slept well beside the camp fire. Made 1-1/4 miles before dinner, but in the P. M. struck some large dry pines "on line" which checked us somewhat. The trees were over four feet in diameter and about 110 feet high and perfectly straight. Heard a steam whistle last night which we suppose to come from a saw mill to the south of us. This is the first indication of civilization that we have seen since leaving Cheyenne. All the people that we have seen in the scanty settlements through which we have passed, seemed entirely destitute of ambition, satisfied with game enough to eat and nothing to do but hunt it. Took an azimuth this evening at the 347th post. Have run 20 miles in eight days, or an average of 2-1/2 miles per day through heavy timber.

SATURDAY, OCTOBER 4

Continued the line and intersected the south boundary about the middle of the 364th mile. Set a post at the point of intersection and Mr. Mac C. began his work of determining the latitude of the

(Continued on next page)

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–RICHARDS DIARY

(Continued from previous page)

bdry at this point. Weather clear.

THURSDAY, 9TH

Weather good. Mac C. got some stars last night. A stranger from Nevada came into camp hunting a team and boy that are at work in the mountains somewhere, asked to stay over night and he gladly accepted, being tired and hungry. Lon and Matt came into camp in time for supper. Couldn't stand it in town any longer. Brought us mail from home.

SATURDAY, 10TH [SIC]

Broke camp at sunrise. Lon and I on ponies went west to build the mounds along the line, the teams and men going on the line to town. We reached Evanston at 4 p.m. and got dinner at a hotel, the teams getting in at sundown. Got letters from Judge W. and Alice.

SUNDAY, 11TH

Took the 2 p.m. train for home with Geo. and Bob. Dinner at camp, supper at Green River.

MONDAY, 12TH

Breakfast at Laramie, didn't feel well, headache, so didn't eat dinner or supper which we stopped for at Cheyenne and Sidney.

TUESDAY, 13TH

Breakfast at Grand Island. Dinner at Fremont. Reached home [Omaha] at 2 p.m. Found election red hot. Voted. With Bob, Arthur, Campbell and Aut had a visit in evening and some oysters.

WEDNESDAY, 14TH

Bob went home. Election good. All Republicans elected.

OAKLAND, CAL., APRIL 24, 1874

Again I open this little history, so long neglected, and will make a few retrospective entries to bring it up to date. At the date of the last entry, I was safely landed at home. My part of the summer's campaign virtually done. Lon remained in Evanston to complete the observations for Long [Longitude?]. Prof. Safford finally came and went on to Evanston to assist McConnell, and in due time the field was finished, and the closing observations showed our work to have been very good.

NOVEMBER 18TH

Lon reached Omaha, the same day of the month that we came in upon last year. He went in to Galena and wrote up the notes. I employed competent draughtsmen and had the maps well made and about first of January, Lon went to Washington with the returns. In eight days after the accounts were taken up they were paid. Lon getting the draft through the U. S. Treasury Department and the hands of 72 men in two hours and fifteen minutes.

Field Notes

To the Editor:

Enjoyed the October, 2007 issue. Thank you.

Paul N. Scherbel

Welcome New Members

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“As my rodman and I put on our packs and started down the mountainside in the lengthening shadows, bearing these rods, I could not help but feel that we held an almost-century-old link with a colorful era of our young Nation’s expansion.”



Original stadia rods and corner monument at the northwest corner of the Wyoming boundary. The rods were left behind at the completion of the 1874 survey and found in 1958, when a crew went back into that very rugged national forest country to relocate the monument and re-mark it.

“Stadia” is defined a device used in calculating distance through measurement of angles; specifically, a surveyor’s transit (right) used together with a graduated rod; or the rod itself. One crewman will hold the stadia rod, which is marked with feet, at a distance while another looks through the telescope on the transit and somehow takes the measurement. Transits are mounted on tripods.

Photo is from an exhibit on surveying at the Washakie County Museum, 2000, which also included the chains and transit.

Rechecking the Boundary

IN 1958, Wyoming State surveyors went on an expedition to check the boundary markers up in the Northwest corner of the state. Since the “terminal monument” (corner post) was in a section of Yellowstone National Park off-limits to the public, the boundary markers had been ignored since the Richards brothers were there in 1874. The surveyors had a job of it just finding the corner post and then were surprised to find the original stadia rods left behind by the 1874 survey crew.

According to an article by Raymond Hill in the Topographic Division Bulletin, June 1959, for the U.S. Geological Survey, finding the “terminal monument” was a project in itself, requiring a 2.5 hour pack trip just to get to the vicinity of the monument. They worked north from the last previously found monument (marker) on the line using tape, compass and blazed line (tree markers) rather than cumbersome surveying instruments that were difficult to haul through the timber and rough terrain. From the article itself:

The terminal monument was recovered within 30 feet of the measured point and 354 feet north of the 45th parallel. ...

After locating the terminal monument, we proceeded to take several pictures of the post, cairn, and bearing trees. As I was moving to another vantage point, I noticed a piece of finished lumber almost covered by dead branches and pine needles. On dislodging it, I uncovered another beside it—they were the stadia rods used on the original line. The side of each rod which had been against the ground was well preserved. The front of one rod and the back of the other had been laid downward. They were complete except for the level bubbles. The indentations where the small spirit levels had been attached were visible, but the attachments had evidently been removed when the rods were abandoned.

This paragraph is found in Mr. Richards’ description of the equipment used by his party:

“Flagstuffs were made 3 inches wide by 8 feet long, and the face painted in diamonds 1 foot long—or rather half diamonds, the points coming together in the center of the rod. On the back of the staff was fastened a small spirit level, on a level with the flagman’s eyes. This arrangement was found to be much superior to a plumb line.”

As my rodman and I put on our packs and started down the mountainside in the lengthening shadows, bearing these rods, I could not help but feel that we held an almost-century-old link with a colorful era of our young Nation’s expansion. We were aware, too, of the romance and history that is ever present though seldom perceived in our work. Surveyors and engineers in the future, as in the past, will always be an integral part of our country’s development.

Survey Video Tapes Available

TAPE ONE

1. *Professional Land Surveyors & GIS; Mapping the Future*; New Jersey Society of Professional Land Surveyors.
2. *Professional Land Surveying: A Career Without Boundaries*; New Jersey Society of Professional Land Surveyors.
3. *A Matter of Degrees*; American Congress on Surveying and Mapping, National Society of Professional Surveyors (1986).
4. *Surveyors of the Sixth Principal Meridian*; Bureau of Land Management

TAPE TWO

1. Wyoming T2 Center: *Surveying Crew Orientation: Surveying Options, Part I.*
1. Wyoming T2 Center: *Surveying Crew Orientation: Surveying Options, Part II.*

TAPE THREE

1. *Introduction to Legal Research*; by West Publishing (nine chapters).

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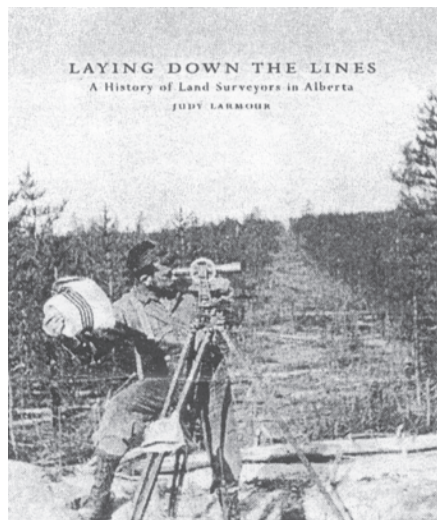
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LAYING DOWN THE LINES

A HISTORY OF LAND SURVEYING IN ALBERTA

BY JUDY LARMOUR



Between the Fourth Meridian and the Continental Divide is a vast land with some of the most varied landscapes, difficult terrain, and treacherous climates in Canada.

The challenge of exploring, surveying and mapping the territory now known as Alberta holds some of the most fascinating stories in the 100-year-old province's history.

From the first excursions of David Thompson and John Palliser to the challenge of laying down the township grid and the ongoing work of surveying for industry and development, from the first hand-drawn maps to modern satellite imaging and computer modeling, historian Judy Larmour captures the fascinating details and the spirit of the hardy surveyors in the dramatic centuries-long struggle to find and mark place.

Chapters include Mastering A Dry Land: Land Surveyors and Irrigation (Chapter 4), The Challenge of Surveying Alberta's North (Chapter 6), and Urban Provincial and Professional Affairs in the Glory Days to World War I (Chapter 8)

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2008 PLSW MEMBERSHIP APPLICATION
PROFESSIONAL LAND SURVEYORS OF WYOMING
AFFILIATE — AMERICAN CONGRESS ON SURVEYING AND MAPPING
MEMBER — WESTERN FEDERATION OF PROFESSIONAL SURVEYORS



NAME _____ DATE _____

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EMPLOYER: _____ YOUR TITLE: _____

States other than Wyoming in which you are registered: _____

Additional information or comments (optional): _____

CLASS OF MEMBERSHIP APPLIED FOR: (check one only and please submit dues with application, prorated for the remainder of the calendar year)

☐ **MEMBER**, ANNUAL DUES \$75 (Persons duly registered, PLS or PE&PLS in Wyoming.)

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☐ **Sustaining Member**, annual dues \$100. (Persons, institutions or corporations desiring to assist PLSW financially.)

I AGREE TO OBSERVE THE CONSTITUTION AND BY-LAWS OF THE PROFESSIONAL LAND SURVEYORS OF WYOMING AND THE CHAPTER THEREOF TO WHICH I WILL BELONG AND TO SUPPORT SAID ORGANIZATIONS IN THEIR ENDEAVORS.

APPLICANT'S SIGNATURE

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(For Affiliate Member applicants only.)

NOTE: All portions of the state have chapters. Chapter dues or assessments may vary in amount. Applications are considered by the board of Directors at quarterly meetings. Send completed application to PLSW, c/o Marlowe Scherbel, Sec./Treas., P.O. Box 725, Afton, Wyoming 83110.

Applicant's Name _____ DOB _____

Telephone: _____: Fax: _____ e-mail: _____

Describe Career Plans: _____

If a full-time student, please list the College or University you are attending: _____

If you will not be a full-time student, please describe on another sheet, how you are obtaining your education.

How many semester/quarters of college have you completed? _____

How many credit hours of surveying curriculum classes have you completed? _____ hours (semester or quarter?)

Current or last available GPA: _____ from: _____ (list school)

Will you be in school two consecutive semesters/quarters? _____. List them _____

Employment information: List employer and annual wage for you and your spouse: _____

Does your employer offer re-imbursement or other assistance for college classes? ____ If so, describe on separate sheet.

If receiving support from parents, please provide the following information:

Father's employer _____ Yearly Salary _____

Mother's employer _____ Yearly Salary _____

List other immediate family members currently in college or university and receiving support from parents:

Please provide proof of enrollment in the college that you are attending.

On another sheet of paper, please document your financial need, efforts you are making to earn the necessary funds, debts or other financial obligations, a budget of expected yearly educational costs, including housing, books, tuition, fees, transportation, entertainment, clothing, food, etc. List other scholarships, grants, loans, etc., that you are applying for or have received. Please include the status of those applications ie,. received, expect to receive, applied for, haven't heard or other appropriate indication of status. Note: please make your application as complete as possible.

Please also include a recommendation from a practicing, professional land surveyor which includes a reference to being familiar with your plans to become a professional land surveyor.

The above information is true and complete to the best of my knowledge:

Applicant

Date _____

FOR COMMITTEE USE ONLY

Date received by scholarship committee: _____

Revised 2/04/04



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