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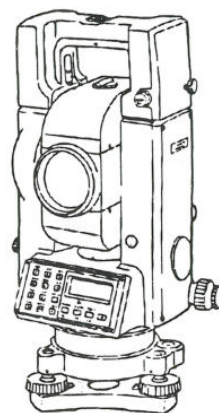
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MEMBER — WESTERN FEDERATION OF PROFESSIONAL SURVEYORS

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VOLUME 5 NO. 1

APRIL 1993

1993



FOUNDED 1980

CONVENTION

ISSUE



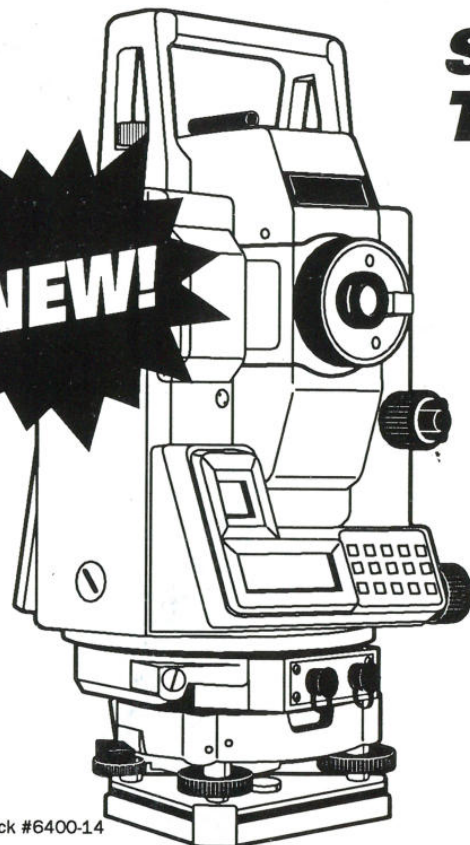


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YOUR TITLE _____

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&LS, in Wyoming.)

AFFILIATE MEMBER

_____ Associate Member, annual dues \$50. (Persons employed under the direction of a PLS and working toward PLS registration in Wyoming.)

_____ Special Member, annual dues \$50. (Not meeting above qualifications but with a particular interest in, or association with, the profession of land surveying.)

_____ Special Member, student, annual dues \$15. (Pursuing a post secondary academic course of study, and currently enrolled.)

_____ 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 TO WHICH I WILL BELONG AND TO SUPPORT SAID ORGANIZATIONS IN THEIR ENDEAVORS.

(APPLICANT'S SIGNATURE)

SPONSOR'S SIGNATURE
(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 R.L. Hudson, Sec./Treas., P.O. Box 784, Thermopolis, Wyoming 82443.



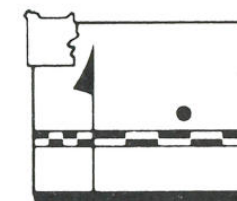
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JIM NELSON – Vice President, Global Positioning System Operations, Navigation Electronics, Inc., Louisiana
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Masters Degree – Geology, University of Utah
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Editorial Potpourri*

• **NEW MEMBERS OF PLSW** – At the Board of Directors meeting in Laramie, the associate membership applications of Robert Westnitzer of Worland and Todd Cedarholm of Jackson were approved. Welcome and congratulations.

• **PLSW MEMBERSHIP** – If you are not a member of PLSW, you do not receive this publication. Join now. We need your support. An application is included in this issue. If you are a member, recruit a new member.

• **SUPPORT YOUR ADVERTISERS** – Have you noticed our newest advertiser and the new advertisements? Advertisers help make this publication possible. Support them.

• **SORRY** – Our apologies to Surveyor Supply Service Company and Land Survey Equipment Rental. Their advertisements were omitted from the last issue.

• **LOCAL PLSW NEWS** – Send us a summary of your chapter's activities for publication. The deadline for the next issue of *Lines and Points* will be 15 May 1993.

• **1993 PLSW BOARD MEETINGS** – The 1993 meetings of the PLSW Board of Directors will be as follows:

1 May 93	Casper
18 September 93	Jackson
4 December 93	Rock Springs

• **ANNEXATION LAW (15-1-406) AMENDED** – Added to the law is the following: UPON COMPLETION OF ANNEXATION PROCEDURES, THE GOVERNING BODY SHALL FILE WITH THE COUNTY CLERK THE MAP OF THE AREA TO BE ANNEXED AS CONTAINED WITHIN THE PETITION FOR ANNEXATION PURSUANT TO W.S. 15-1-403(A)(ii)(D).

• **GIS IN THE ROCKIES: REAL WORLD SOLUTIONS** – This conference will be held September 21-24 at the Colorado School of Mines in Golden, CO. Registration packets will be available in July. Call Steve Ingraham 303-825-1618.

• **LINES & POINTS FAX** – The *Lines and Points* fax number is (307) 235-5604.

• **KELLY TOWNSITE RESURVEY** – Scott Scherbel will present a one hour discussion of his resurvey of the Kelly Townsite at the Central Chapter meeting of PLSW on May 11, 1993 at 7:30 pm in the Dubois Town Hall.

• **NORTHWEST CORNER REVISITED** – Wyoming surveyors plan to visit the northwest corner of the state located in Yellowstone National Park in August of 1993. The corner was last recovered in 1958. All are welcome. For more information contact Paul Scherbel 307-276-3347.

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PLSW (Professional Land Surveyors of Wyoming) is a state-wide 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: John Hibsman, Steve Strang, Don Davis.

Lines and Points subscription \$50/year

Advertising Information

Camera ready advertisements with payment should be mailed to *Lines & Points*, PLSW, Box 904, Casper, WY 82602.

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Message From Robert L. St. Claire, President

We face several issues in the coming year that affect PLSW and our profession. We are in a critical transition period from a trade that was based upon an apprentice type program to an education based profession. It has been painful for us at times but in order to complete this transition, these issues need to be addressed.

One of the more important items we need to focus on is continued liaison with the State Board of Registration. I attended the Board meeting of March 8th and presented our resolution asking the Board to retain the take home exam. They indicated that they will retain the test for the time being, but they may review the issue again at a later date.

They are very willing to work with us on legislative issues and other matters that affect our profession. This was the first Board meeting that I have attended and I was very impressed with the willingness of the Board members to work with us on these critical issues. They face a tough task enforcing the new rules and regulations and are very willing to be fair and just in their decisions.

Our Legislative Committee has been hard at work in the past several months. During this past legislative session the State Plane Coordinate bill was passed. Unfortunately, our Record of Survey bill died in the general file. It was met with some opposition from the Wyoming Land Title Association.

We are currently trying to work with the Title Association to find out why they are opposed to the bill. In order for us to get this very important bill presented and passed during the next session, we need to start work now. The State Board of Registration has stated that they will support us in this endeavor.

Another important issue we are facing is membership in PLSW and the dues that we pay. One common complaint we hear is that the dues are too high. We are a small organization that has certain fixed expenses. The only way to offset these expenses is to increase the membership in PLSW. The PLSW Board is working on several ideas. One is to offer free membership for one year to new registrants in order to introduce them to PLSW. Another is to contact Professional Land Surveyors who are not members of our organization and to let them know what benefits we can provide to them. Please let us know of any other ideas that you may have.

Many members don't mind paying more so long as they receive something for their money. If you don't attend the PLSW Board meetings it is difficult to see how, or more important, why we spend your money. The Board feels your money is spent equitably but we are always open to new ideas on how to save money and provide more benefit for your dollar.

One important item that we need to get to the members is a completed PLSW Handbook. At the annual meeting the new Rules and Regulations of the State Board and a paper on Polaris Observations in Wyoming were distributed to the membership through the Chapter Directors. If you haven't got your copies, please contact your Director. I'm making the completion of the Handbook one of my main projects.

We now have a Handbook Guidelines Committee that is co-chaired by Don Davis and Rich Greenwood. They are setting up guidelines for the composition and printing of the book. I'm sure

they would appreciate any help or advice that you can give them. We have a few members who have volunteered to work on updating the WACES portion of the book. Others are working on the history portion, construction staking and GPS portion but we still need more volunteers to help us on this project.

Another goal of mine will be improving the program at the annual meeting. The programs in the past few years have been getting better but with the inevitable enactment of continuing education we hope to have a program that will satisfy most, if not all, of the continuing education requirements. This, coupled with presenting meaningful programs at the chapter meetings, should more than fulfill those requirements.

We can be proud that Wyoming is getting more than its share of representation at the national level. Past President John Steil was elected as an area director of NSPS. Past President Dr. Herb Stoughton was reelected as a director of the ACSM and Past President Becky Braman has volunteered to continue as our NSPS Governor. Past President Scott Pierson will continue as a WESTFED delegate and Past President Paul Reid has volunteered to replace John Steil as the other WESTFED delegate.

In order for the PLSW Board to better serve its members, I have prepared a questionnaire to give you, the members, a chance to voice your opinions. I am distributing it at the chapter level and it is being printed in this issue of *Lines and Points*. Please turn it in to any Chapter officer or Board Member before our May 1st meeting. The results will be tabulated and distributed to all members.

One item that I forgot at the annual meeting was to honor Becky Braman, the outgoing President. Becky was our first woman President, our first President to serve two terms and she also chaired several of our annual meetings as Vice President. I tried to make it up to her by attending the March meeting of the SE Chapter and presenting her with her Past President's plaque and my apologies. She deserves a special thank you for all of the work she has done for PLSW.

On a personal note I want to thank the members of the SE Chapter who set up a meeting and photo opportunity with Governor Sullivan to witness the signing of the State Plane Coordinate bill. I also want to thank them for giving me a cook's tour of the State Capital while the legislature was in session. It was a very exciting and educational experience for me.

In closing please keep in mind that PLSW is your organization and one sure way that you can get your money's worth is to be an active member. Please attend your chapter meetings and plan on attending the PLSW Board meeting when we are in your area. The schedule for this year is: May 1st in Casper, September 18th in Jackson and December 4th in Rock Springs. See you there.

PLSW BOARD MEETING
PLAN TO ATTEND
SATURDAY, MAY 1, 1993
CASPER, WYOMING

South Central Chapter...Continued

General has agreed with investigator Paul Reid and forwarded his opinion to the Board, which has moved to hearing and testimony from Mr. Abrahamson will apparently follow. Stay tuned as this soap opera is not over.

The attendees voted on a motion by Don Davis and seconded by Jim Jones to purchase a 3'x5' P.L.S.W. Banner.

Some discussion followed and it was voted 5 to 2 to purchase said banner if they are still available. The order was placed at the W.E.S. Convention.

NEW BUSINESS

Brad Clow displayed a map and tabulation of coordinate positions now available through the City Engineers Office. This map shows all positions surveyed and values for the seventeen primary positions. It is available for \$14.00.

Election of Officers, always an exciting and hollow time, followed. It was moved that the officers remain as installed in 1992, ie. Director, Jim Jones; President, Bill Fehringer; Vice President, Joe Popp; and Secretary-Treasurer, Don Davis. Jim Jones inferred that one year as Director does not allow time to fully understand the operations of the board and requested one more year. All other officers succumbed to the fact that nobody wants to be installed or railroaded into office.

Chapter dues are now delinquent.

Meeting adjourned by common consent at 9:00 PM

1993 CHAPTER OFFICERS

NORTHWEST CHAPTER		
Director	Paul Blough	Cody
President	Alan B. Cormier	Worland
Vice President	Stanton J. Abell, Jr.	Worland
Secretary/Treasurer	Kevin Jones	Cody
NORTHEAST CHAPTER		
Director	Jeffrey Lewis	Gillette
President	Jeffrey Lewis	Gillette
Vice President	Don Oakley	Gillette
Secretary/Treasurer	Joel T. Ebner	Gillette
CENTRAL CHAPTER		
Director	Open	
President	Richard W. Greenwood	Wilson
Vice President	Brad N. Shaw	Riverton
Secretary/Treasurer	Mike Quinn	Riverton
SOUTHWEST CHAPTER		
Director	Craig A. Shauers	Rock Springs
President	Donald W. Schramm	Rock Springs
Vice President	Joseph W. Manatos	Rock Springs
Secretary/Treasurer	Randy J. Rowley	Rock Springs
SOUTH CENTRAL CHAPTER		
Director	James F. Jones	Casper
President	William R. Fehringer	Casper
Vice President	Joseph W. Popp	Glenrock
Secretary/Treasurer	Don A. Davis	Casper
SOUTHEAST CHAPTER		
Director	Peter J. Hutchison	Cheyenne
President	John Lee	Cheyenne
Vice President	James E. Greer	Wheatland
Secretary/Treasurer	Bill Braman	Cheyenne

Herb's Corner

By Dr. Herb Stoughton

Question: What is the expected error in the length of a line being reduced to seal level, for an error in elevation of the line?

Answer: The formula to reduce ground distances to sea level distances is:

$$S = \frac{R}{(R + h)} S$$

Where:

s = sea level distance (also called the geodetic distance).

R = radius of the earth (20,906,000 feet, Clarke 1866).

h = elevation of the survey line.

Differentiating:

$$ds = \frac{S dR}{(R + h)} + \frac{R dS}{(R + h)} + \frac{RS dR}{(R + h)^2} + \frac{RS dh}{(R + h)^2}$$

But, for this problem, R and S are constants. Then:

$$ds = \frac{RS}{(R + h)^2} dh$$

Rearranging:

$$ds = \frac{S}{R \left(1 + \frac{h}{R} \right)^2} dh$$

$$= \frac{S}{R} \left[1 - 2 \frac{h}{R} + 3 \frac{h^2}{R^2} - 4 \frac{h^3}{R^3} + \dots \right] dh$$

$$= \left[\frac{1}{R} - 2 \frac{h}{R^2} + 3 \frac{h^2}{R^3} - 4 \frac{h^3}{R^4} + \dots \right] S dh$$

Substituting the numerical value of R (which is for the Clarke 1866 ellipsoid), yields:

$$ds = \left[4.7833158 \times 10^{-8} - 4.576022 \times 10^{-15} h + 3.28328 \times 10^{-22} h^2 - 2.094 \times 10^{-29} h^3 + \dots \right] S dh$$

Because h will not exceed 30,000 feet (Mt. Everest), all terms containing h are insignificant for average survey work. Then:

$$ds = 4.7833158 \times 10^{-8} S dh$$

The table below lists the expected error, ds, for various errors in elevation, dh, per 1,000 feet in length of ground distance.

Table
Error in Geodetic Length / 1,000 feet
for an Error in Elevation (dh)

dh	ds
10	0.000478
20	0.000957
25	0.001196
40	0.001913
50	0.002392
80	0.003827
100	0.004783
200	0.009567

From these data, it can be stated, that the scaling of elevations from USGS or similar topographic maps or trigonometric leveling will provide adequate information to reduce ground distances to sea level distances or sea level distances to ground distances.

Northeast Chapter News

The Northeast Chapter has recently become involved in a joint effort with the South Dakota Society of Professional Land Surveyors and the Bureau of Land Management to restore the Northeast Corner of Wyoming and the Southeast Corner of Montana. The Montana Association of Registered Land Surveyors will also be invited to join in the effort.

On November 5, 1992, a group of surveyors from the Bureau of Land Management, along with surveyors from the Northeast Chapter visited the sites of these corners to determine the ground evidence available for possible remonumentation. The Northeast Corner of Wyoming is monumented with a red quartzite monolith, 6 feet long, 1 foot square, lying loose alongside a fence extending East and West, plainly marked N.E. COR. WYOMING on a face. The Southeast Corner of Montana is monumented with a red quartzite monolith, 1 foot square, firmly set, projecting 3 feet above the ground, plainly marked S.E. COR. MONTANA on the Northwest face.

At this time, the plans are for the Bureau of Land Management to execute the field work required for the project during this year's field season, with the dedication being held during the summer of 1994. If you have any further questions or suggestions, or would like to become involved in the project you can contact Bryce Rumph, chairman of the Remonumentation Committee for the chapter, or Jim Claflin, the BLM representative for the project.

In other NE Chapter news, we were again involved in the Industry in Education Expo held in Gillette on March 18-20. The theme for this year's expo was robotics. To fit in with the theme, we had a Geodimeter 4000 robotic instrument set up to demonstrate to the school children. There were an estimated 4,000 school age children that came to the expo.

On December 4 and 5 the Northeast Chapter, PLSW, sponsored a continuing education seminar entitled "Basic Geodesy for GPS Users" at the Holiday Inn in Gillette, Wyoming. The seminar was presented by Mike Londe, geodesist from the Wyoming State Office, Bureau of Land Management. The 39 attendees included land surveyors and engineers from the private sector and from local, state and Federal agencies. Mr. Londe was well-received by his audience and his presentation was informative and entertaining.

The Northeast Chapter originally conceived the idea of a seminar as a fund raiser for our scholarship fund. And, with past president Jim Claflin heading the committee, it succeeded far beyond our expectations. Along with another successful rifle raffle (with kudos to associate member Bruce Mortimer, raffle ticket salesman "extraordinaire"), the chapter was able to more than double the size of its fund. We wish to thank all those who attended for their support.

As more states adopt continuing professional development requirements and as technology accelerates ever more rapidly, the Northeast Chapter looks forward to sponsoring future seminars - opportunities to improve communication between common interest groups and to fund a worthwhile endeavor.

South Central Chapter P.L.S.W.

January 21, 1993

Summary of Meeting Minutes

The meeting was held in the Cooper Room of the Natrona County Library, and was called to order by President Bill Fehringer at 7:38 PM. In attendance were Messrs. John Hibsman, Steve Strang, Joe Popp, Jim Jones, Steve Castle, Don Davis, and for a short time Brad Clow who had other obligations.

Meeting minutes of our last meeting held November 12, 1992 were read and unanimously approved. Please note that the chapter sponsored a Christmas dinner on December 16, 1992 at the Hilton inn, but no structured meeting was held. The dinner was well attended and there was much interest in making this an annual event.

The chapter Secretary-Treasurer, Don Davis read the Treasurers report, noting a present balance in the chapter account of \$633.94.

Director Jim Jones gave his report of the December 1, 1992 board meeting in Thermopolis, also attended by *Lines & Points* Editor John Hibsman. Topics discussed were as follows:

- Election of Board of Directors officers for the 1993 years.
- Seminars topics and locations, presumably through the Education Committee.
- Final ballot language for the Certified Land Corner Recordation Certificate.
- Attendees received the Manual on Construction Layout as provided to our director, for the P.L.S.W. Handbook. Please be sure to contact Director Jones for your reference.
- Memorandum of Understanding between the Wyoming Transportation Department and the Board of Registration of Professional Engineers and Professional Land Surveyors. Some discussion followed.
- Status of Paul Scherbel's Save Our Surveyor Honorarium. This is intended to award the filer of the best annual CLCR with a honorarium of \$100.00, to be presented at that years General Meeting.
- John Steil, Cheyenne, will no longer be P.L.S.W.'s representative to WESFED. If anyone is interested, please notify Jim Jones.

John Hibsman gave a report on the Newsletter, generally noting the support we are getting from the board, and the additional \$400.00 the newsletter will receive annually.

OLD BUSINESS

It was reported by Don Davis that the chapter complaint against Merrick & Company, has been terminated. This misinformation has been reversed. It appears that the Attorney



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Surveyors standing (l. to R.): John Lee, John Steil, Herb Stoughton, Bob St. Claire, Jack Studley. Seated; Governor Sullivan.

President's Questionnaire
Copy, complete and return to
your Chapter Director.

1) What are the most important issues that need to be worked on by the PLSW Board of Directors? For example: handbook, dues, State Board liaison, legislation, national issues, etc. Please list your priorities in order of importance.

A: _____

B: _____

C: _____

D: _____

E: _____

F: _____

2) Do you think we need a professionally presented seminar at our annual meeting or do you think we have enough talent within the organization to present a successful program ourselves?

3) Would you be willing to pay if a professional seminar was presented? If yes, how much more? _____

If no, would you teach a course? _____

4) Would you be willing to help with the PLSW Handbook? If yes, which section? _____

5) Would you be willing to serve on a committee or help PLSW in any other way? _____

6) Any other comments or suggestions. _____

Optional – Name, Address, Phone: _____

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- Units – from feet and inches to millimeters for all building dimensions and to meters for large site plans and civil engineering drawings; meters are always carried to one, two or three decimal places.
- Drawing scales – from inch-fractions-to-feet (e.g. 1/2" = 1'-0") to true ratios (e.g., 1:20)
- Drawing sizes – to the ISO "A" series – AO (1189 x 841 mm, 46.8 x 33.1 inches); A1 (841 x 594 mm, 33.1 x 23.4 inches); A2 (594 x 420 mm, 23.4 x 16.5 inches); A3 (420 x 297 mm, 16.5 x 11.7 inches); A4 (297 x 210 mm, 11.7 x 8.3 inches). Of course, metric drawings can be made on any size paper.

What will stay the same

- Drawing contents

Never use dual units (both inch-pound and metric) on drawings. It increases dimensioning time, doubles the chance for

errors, makes drawings more confusing, and delays the learning process. Centimeters are not used in construction.

SPECIFICATIONS

What will change

- Units of measure – from feet-inches to millimeters for linear dimensions, from square feet to square meters for area, and from cubic yards to cubic meters for volume (except use liters for fluid volumes).

What will stay the same

- Everything else

Do not use dual units in specifications except when the use of an inch-pound measure serves to clarify an otherwise unfamiliar metric measure; then place the inch-pound unit in parentheses after the metric. For example, "7460 W (10 horsepower)." All unit conversions should be **checked by a professional** to ensure that rounding does not exceed allowable tolerances.

Federal Metric Projects Keep Growing

The **Army Corps of Engineers** has over \$50 million in pilot projects under way and more large-scle projects are about to be announced. Corps metric overseas projects total about \$525 million.

The **General Services Administration** now has about \$1.5 billion in metric projects in the planning, design, or construction stages. All work designed after January 1994 will be in metric.

Most of the **Department of Energy's** \$8.2 billion Super Collider project is being constructed in metric.

Two new **Smithsonian Institution** facilities with a toal cost of over \$150 million will be built in metric.

The **Air Force, Office of the Secretary of Defense, NASA,** and the **Public Health Service** are conducting over \$30 million in metric pilot projects with significantly more work in planning. All Air Force work designed after January 1994 will be in metric.

The \$400-\$500 million **Defense Medical Facilities** program for FY 95 is scheduled to be in metric.

Indications are that the massive \$1 billion **Pentagon** renovation will be conducted in metric.

The **Department of State** continues to build in metric with current projects totaling \$275 million.

METRIC FACTS: Volume

How much does it hold? In metric, the unit for volume is the cubic meter (m³). Cubic meter is a multiple of the base metric unit, meter. The cubic meter is the volume enclosed by a cube with 1 meter sides. This is a large volume, equal to 35.3 cubic feet.

The more popular metric unit for fluid capacity is the liter (1 liter = 1.06 US quarts). A liter is equal to exactly 1 cubic decimeter. A milliliter is equal to a cubic centimeter.

In technical work, the cubic millimeter (mm³) should be used for small volumes. One m³ = 10⁹ mm³ and 16.387 mm³ = 1 in³.

Problem: A rectangularly shaped tank measured 6 ft x 7 ft x 4 ft. How many cubic meters of liquid will it hold when filled?

Solution: (6 ft) x (7 ft) x (4 ft) x 1 m³/35.3 ft³ = 4.75 m³

By Oscar Fisher; used with the permission of the American Society of Mechanical Engineers.

B.L.M. Information
Schedule of Available Records and Publications
P.O. Box 1828 • Cheyenne, WY 82003-1828

Type of Record	Charges	PUBLIC LAND STATUS MAPS	
LISTS FOR OIL AND GAS LEASING		1:1,000,00 State of Wyoming Surface only or Minerals only	\$4.00 each
Competitive parcel list	\$5.00 each	1:500,000 State of Wyoming Surface only or Minerals only	\$4.00 each
(Over 250 pages)	\$10.00 each	1:100,000 Topographic Available in Suface and Surface & Mineral	\$4.00 each
Competitive results list	\$5.00 each Plus postage	1:500,000 State of Nebraska Surface and Minerals	\$4.00 each
PLATS		PUBLICATIONS	
Master Title: Use: Supplemental	\$2.75 each	“Surveys and Surveyors of the Public Domain” (1976) by Lola Cazier	\$8.00 each
Historical Index pages	\$2.75 each	“Finding the Law” (1983) by Al Coco	\$8.50 each
Survey Plats	\$1.10 each	“Manual of Surveying Instructions” (1973)	\$22.00 each
Protraction Digrams (unsurveyed)	\$1.10 each	“Specifications for Descriptions of Tracts of Land” (1979)	\$3.50 each
RECORDS		“Land & Survey Records (1970)	\$3.50 each
Case file copies	\$.13 per page	“Opportunity and Challenge: The Story of BLM” (1988)	\$12.00 each
Serial register pages (computerized)	\$.75 per page	ADDITIONAL SERVICES	
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Paner copies available	\$1.10 per page

1993 Annual State Meeting Summary

The 1993 annual state meeting of the Professional Land Surveyors of Wyoming was held in conjunction with the 73rd annual Wyoming Engineering Society convention in Laramie.

The meeting was held in the Happy Jack Room of the Holiday Inn on Thursday, February 4th, 1993.

President Becky J. Braman called the meeting to order at 1:22 P.M. asked for agenda revisions, and introduced the officers in attendance.

The signed attendance list indicates 46 persons were present including three honorary members, Paul Scherbel, Joe Popp and Wes Reed, 38 members, three affiliates and two guests.

Copies of the minutes of the 1992 annual state meeting were distributed and discussed by Secretary/Treasurer Rick Hudson. The minutes were approved, as submitted, by motion, second and voice vote.

Copies of the treasurer's report were distributed and discussed. The report consisted of the current bank statement, updated to February 2nd, the 1992 itemized expenses and the 1992 balance sheet. Motion was made, seconded and carried to accept the report as presented.

Committee reports were presented orally and intentionally kept short. Written versions were available, on the front table, at the mid-meeting break. Reports were given as follows: Audit-Finance, 1991 and 1992, oral and written; Membership, oral and written; Nominations and Election, oral; Standards, Ethics and Professional Practice, oral; Education, oral and written; Legislative, oral and written; Professional Awards, oral; Public Relations and Publications, oral and written; GPS "Supernet", oral; Manual of Practice Revision, oral; PLSW Handbook, oral; newsletter "Lines & Points" oral; and "SOS" honorarium, oral and written.

Stan Abell, co-chairman of the Education Committee, discussed the report dated 15 March 1992 as it was being distributed to attendees. The report lists eight courses which are currently available, by PLSW, at a chapter level. Paul Scherbel, as a member of the State Board of Registration for Professional Engineers and Professional Land Surveyors, commented on the voluntary reporting form, concerning continuing professional development that registrants had received last year. A general discussion, dealing with the general topic of continuing education, followed.

John Steil, chairman of the Legislative Committee, reported on the status of Senate Bill 082 - Wyoming Coordinate System, and House Bill 180 - Recording of Surveys. He emphasized the importance of PLSW members contacting their legislators in support of both bills.

Becky, as chairman of the Professional Awards Committee, announced that John W. "Jack" Donnell, is the 1992 PLSW Honorary Member. Sherman Allred accepted the plaque on behalf of Jack who was unable to attend this

The possibility of "National Surveyor's Week" was discussed by Don Schramm. After a general discussion, it was agreed that the week including May 20th would be appropriate since that date, in 1785, marked the passage of the ordinance creating the public land survey system as we know it today.

Martin Pedersen discussed the possibility of expanding the current \$500 PLSW annual scholarship into a \$2000 four-year award. The 1992 recipient, Ike Dolinar, was acknowledged by Martin and the attendees. Congratulations, Ike.

The Certified Land Corner Recordation Certificate Committee report was given by Harvey Copeland. His report recapped the activities of the committee, which is made up of the Northwest Chapter members. Harvey stated that input from the general membership has been solicited for the past year and that the "final" version of the form appears as a ballot item on the 1993 PLSW ballot.

Herb Stoughton reported for the GPS "Supernet" Committee by stating that the NGS field crew will be in Wyoming during June to make GPS observations of the "Supernet" stations throughout the state. Final published values should be available by the end of 1994, according to Herb.

Herb continued with a report concerning manual of practice revision. He stated the Polaris Observation paper, delivered at Sheridan last year, has been printed and will be distributed as part of the PLSW Handbook. He also indicated that NAD 83 projection tables, including UTM tables, will be published sometime in the future.

Continued on page 8



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E.D.M. - Transits - Levels

1993 Annual State Meeting
Summary...Continued

Don Davis gave a brief report concerning the newsletter "Lines & Points" and requested material for publication from members and chapters.

Pete Hutchison, chairman of the "SOS" Honorarium Committee, read from the report originally presented to the Board of Directors in December. He stated that the board had voted to accept the recommendation and proceed with the establishment of the annual honorarium, initially in the amount of \$100 for outstanding examples of Certified Land Corner Recordation Certificates. A general discussion followed and a follow-up report will be presented at the May board meeting in Casper.

The Western Federation of Professional Surveyors delegate report was presented by John Steil. Copies of his written report were distributed to attendees and he briefly discussed the topics covered in the report. All PLSW members are urged to attend the 1993 conference, at Lake Tahoe, from April 19th through the 23rd. John also encouraged members to solicit applicants for the WFPS scholarship program.

The National Society of Professional Surveyors (NSPS) report was presented by governor Becky Braman who attended the Board of Governors' meeting last November in San Jose, California. She stated that numerous topics were discussed at that meeting including funding cutbacks by Congress of NGS "user services". A second topic of concern deals with ongoing railroad abandonment. She also mentioned concerns with the quality of FEMA flood plain mapping. She concluded by mentioning the upcoming ACSM convention in New Orleans, February 14th through the 20th, and acknowledged John Steil as having been recently elected NSPS Area 7 Director and Herb Stoughton as ACSM Director, both of whom are PLSW members.

The next agenda item was old business and various matters were brought to the floor, most of these having been carried over from last year's annual meeting. Regarding honorary membership, Becky stated that PLSW adopted two policies this past year (1992) one concerning use of the PLSW logo the other setting forth a procedure for nomination and acknowledgement of honorary members. These policies have been printed in "Lines & Points" and also available at the front table.

Larry Perry voiced his concern regarding GIS legislation, in particular to our lack of input toward that subject.

Becky presented the amended Articles of Affiliation between NSPS and PLSW, asked and received approval thereof, and stated she will deliver same to NSPS at the New Orleans meeting.

Stan Abell, of the Teller's Committee gave a last call for sealed ballots and left the meeting to tabulate the results of the 1993 ballot.

A break was called for at 3:38 P.M. wherein the members socialized and otherwise discussed the state of the economy; the meeting being reconvened at 4:24 P.M.

Stan presented the Teller's Report by announcing that the 1993 officers are as follows: Robert L. St. Claire, president, Chris D. Hamilton, vice president and R.L. Hudson, secretary/treasurer.

Additionally, he reported that the proposed format of the Certified Land Corner Recordation Certificate had been approved by a large majority and that the matter concerning allocation of dues found the majority in favor of continuing education funding in the amount of \$10 per member, rather than a rebate to chapters.

Chris Hamilton was invited to take a seat at the front table with the other officers and Becky turned the meeting over to Bob, who acknowledged her outstanding service to PLSW as president for the past two years.

In his acceptance speech, Bob mentioned various goals for PLSW to consider in the coming year including his concern regarding the possible elimination of the "take-home" portion of the land surveying test. This resulted in a general discussion wherein Bob will deliver, in person to the State Board of Registration, the following resolution that was carried by unanimous vote:

"WHEREAS; the profession of land surveying is the practice of science, mathematics, law and other disciplines, and,

WHEREAS; the means of evaluation of professional competence is by means of examination,

BE IT RESOLVED; that the take-home examination for the practice of land surveying be retained.

The resolution was authored by Herb Stoughton.

A special committee will investigate the possibilities of standardizing the format of the PLSW Handbook and will report to the board at the May meeting. Persons interested in assisting should contact co-chairmen Rich Greenwood and Don Davis.

Various items of new business were presented from the floor; including mention of the PLSW raffle items, possible changes in the nomination and election committee, and expansion of the scholarship program.

The passing of four Land Surveyors, during 1992, was acknowledged by a period of silent tribute: Elmer N. Johnston, William H. Smith, J. F. "Jack" Hart and Malcolm D. Martin. The Southeast Chapter presented a cash honorarium in memory of William H. Smith.

Announcements included Herb's presentation on least squares adjustments tomorrow morning, a re-adjustment of the NAVD 88 values and a seminar in Rock Springs on April 16th and 17th concerning AutoCAD.

The meeting was adjourned, by unanimous vote, at 5:11 P.M.

Dated this 1st day of March, 1993.
R.L. Hudson, Secretary/Treasurer

PLSW Key Rings are for sale. Send \$5 to:
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Continued...from page 16

(b) The position of any survey control point in the Wyoming Coordinate System NAD 1983 shall be as marked on the ground by horizontal control stations established in conformity with standards adopted by the Federal Geodetic Control Committee, or its successors, using first-order, second-order or higher-order accuracy survey work, whose geodetic positions have been rigorously adjusted on the North American Datum of 1983 and whose coordinates have been computed on the system herein defined. Any such station may be used for establishing a connection with the Wyoming Coordinate System NAD 1983.

34-24-105. Recording coordinates; use of satellite survey techniques. No coordinates based on the Wyoming Coordinate System NAD 1983, purporting to define the position of a point on a land boundary, shall be presented to be recorded in any public land records or deed records in the office of a county clerk unless a record and report of survey of the actual survey to establish the plane coordinates of the point has been filed with the county surveyor, the county engineer or the county clerk and in conformity with the standards prescribed in W.S. 34-24-104. When acceptable satellite survey techniques are employed, a minimum of two (2) independent observing sessions shall be executed and shall agree to not less than one (1) part in one hundred thousand (100,000) of the distance between the points. The procedures and results shall conform with the standards in W.S. 34-24-104.

34-24-106. Reference to system on maps, etc. The use of the term "Wyoming Coordinate System NAD 1983" on any map, report of survey or other document, shall be limited to plane coordinates based on the Wyoming Coordinate System NAD 1983 as defined in this chapter.

34-24-107. Description in other surveys; conflicts. Wherever coordinates based on the Wyoming Coordinate System NAD 1983 are used to describe any tract of land which in the same document is also described by reference to any subdivision, line or corner of the United States public land surveys, the description by plane coordinates shall be construed as supplemental to the basic description of such subdivision, line or corner contained in the official plats and field notes filed of record, and in the event of any conflict the description by reference to the subdivision, line or corner of the United States public land surveys shall prevail over the description by plane coordinates. Every recorded map, survey or conveyance, or other instrument affecting title to real property which delineates, describes or refers to such property or any part thereof by reference to coordinates based upon the Wyoming Coordinate System NAD 1983 shall also describe the property by reference and tie to a controlling corner monument of the United States public land surveys, if applicable.

34-24-108. Application. Nothing contained in this chapter shall require any purchaser or mortgagee to rely on a description, any part of which depends exclusively upon Wyoming Coordinate System NAD 1983.

BLM News

The official cadastral surveys in Wyoming that have been accepted from January 1, 1993, through March 31, 1993, and are now available in the Survey Records Office, Wyoming State Office, Bureau of Land Management, 2515 Warren Avenue, Cheyenne, Wyoming 82001.

The accepted surveys are listed below by township, range, type of survey, meridian, and acceptance date.

Sixth Principal Meridian, Wyoming			
Township and Range	Type of Survey	Meridian	Accepted
T. 42 N., R. 104 W.	Dependent Resurvey	6 P.M.	03/04/1993
T. 42 N., R. 105 W.	Dependent Resurvey	6 P.M.	03/04/1993
T. 21 N., R. 88 W.	Dependent Resurvey	6 P.M.	03/04/1993
T. 29 N., R. 100 W.	Dependent Resurvey	6 P.M.	03/04/1993
T. 49 N., R. 78 W.	Dependent Resurvey	6 P.M.	03/04/1993
Mile Posts 71 & 72 (Wyoming/Colorado State Boundary)	Remonumentation	6 P.M.	03/04/1993
T. 30 N., R. 99 W.	Mineral Survey No. 743	6 P.M.	03/09/1993

ORIGINAL SENATE
FILE NO. 0082

ENROLLED ACT NO. 29, SENATE
FIFTY-SECOND LEGISLATURE OF THE STATE OF
WYOMING 1993 GENERAL SESSION

AN ACT to create W.S. 34-24-101 through 34-24-108 relating to land surveying; adopting a system of plane coordinates for designating the position of points on the surface of the earth within the state of Wyoming; and providing for an effective date.

Be It Enacted by the Legislature of the State of Wyoming:

Section I. W.S. 34-24-101 through 34-24-108 are created to read:

CHAPTER 24

PLANE COORDINATES SYSTEM

34-24-101. System of plane coordinates adopted; zones.

(a) The system of plane coordinates which has been established by the office of National Geodetic Survey, or its successors, for defining and stating the positions or locations of points on the surface of the earth within the state of Wyoming is adopted and hereafter shall be known and designated as the "Wyoming Coordinate System NAD 1983."

(b) For the purpose of the use of this system, the state is divided into an East Zone, an East Central Zone, a West Central Zone and a West Zone:

(i) As established for use in the East Zone, the Wyoming Coordinate System shall be named, and in any land description in which it is used it shall be designated, the "Wyoming Coordinate System NAD 1983, East Zone." The following counties will use Wyoming Coordinate System NAD 1983, East Zone: Laramie, Albany, Platte, Niobrara, Converse, Weston, Crook, Campbell, and Goshen;

(ii) As established for use in the East Central Zone, the Wyoming Coordinate System shall be named, and in any land description in which it is used it shall be designated, the "Wyoming Coordinate System NAD 1983, East Central Zone." The following counties will use Wyoming Coordinate System NAD 1983, East Central Zone: Carbon, Natrona, Johnson, Sheridan, Washakie, and Big Horn;

(iii) As established for use in the West Central Zone, the Wyoming Coordinate System shall be named, and in any land description in which it is used it shall be designated, the "Wyoming Coordinate System NAD 1983, West Central Zone." The following counties will use Wyoming Coordinate System NAD 1983, West Central Zone: Sweetwater, Fremont, Hot Springs, and Park;

(iv) As established for use in the West Zone, the Wyoming Coordinate System shall be named, and in any land description in which it is used it shall be designated, the "Wyoming Coordinate System NAD 1983, West Zone." The following counties will use Wyoming Coordinate System NAD 1983, West Zone: Uinta, Lincoln, Sublette, and Teton; also Yellowstone National Park.

34-24-102. Designation of coordinates. The plane coordinates of a point on the earth's surface, to be used in expressing the position or location of such point in the appropriate

expressed in meters to the nearest millimeter. One (1) of these distances, to be known as the "x-coordinate" or "east-coordinate," shall give the position in an east-and-west direction; the other, to be known as the "y-coordinate" or "north-coordinate," shall give the position in a north-and-south direction. These coordinates shall depend upon and conform to the coordinates, on the Wyoming Coordinate System NAD 1983 of the National Geodetic Survey, or its successors, within the state of Wyoming, as those coordinates have been determined by the survey.

34-24-103. Land extending into a second zone. When any tract of land to be defined by a single description extends from one into a second of the coordinate zones specified in W.S. 34-24-101, the positions of all the points on its boundaries may be referred to either of the two (2) zones, and the zone which is used shall be specifically named in the description.

34-24-104. Definition of zones; horizontal control stations.

(a) For purposes of more precisely defining the Wyoming Coordinate System NAD 1983 the following definition of the zones is adopted:

(i) The Wyoming Coordinate System NAD 1983, East Zone, is a transverse Mercator projection of the North American Datum of 1983, having a central meridian at 105°10' West of Greenwich on which meridian the scale is set at one part in 16,000 exactly. The origin of coordinates is at the intersection of the parallel at 40°30' North Latitude and the meridian at 105°10' West of Greenwich. This origin is given the coordinates: x=200,000 meters and y=0 meters;

(ii) The Wyoming Coordinate System NAD 1983, East Central Zone, is a transverse Mercator projection of the North American Datum of 1983, having a central meridian at 107°20' West of Greenwich on which meridian the scale is set at one part in 16,000 exactly. The origin of coordinates is at the intersection of the parallel at 40°30' North Latitude and the meridian at 107°20' West of Greenwich. This origin is given the coordinates: x=400,000 meters and y=100,000 meters;

(iii) The Wyoming Coordinate System NAD 1983, West Central Zone, is a transverse Mercator projection of the North American Datum of 1983, having a central meridian at 108°45' West of Greenwich on which meridian the scale is set at one part in 16,000 exactly. The origin of coordinates is at the intersection of the parallel at 40°30' North Latitude and the meridian at 108°45' West of Greenwich. This origin is given the coordinates: x=600,000 meters and y=0 meters;

(iv) The Wyoming Coordinate System NAD 1983, West Zone, is a transverse Mercator projection of the North American Datum of 1983, having a central meridian at 110°05' West of Greenwich on which meridian the scale is set at one part in 16,000 exactly. The origin of coordinates is at the intersection of the parallel at 40°30' North Latitude and the meridian at 110°05' West of Greenwich. This origin is given the coordinates: x=800,000 meters and y=100,000 meters.

Board of Directors' Meeting Summary

February 3, 1993

The last meeting of the Board of Directors, before the 1993 annual state meeting, was held in Laramie on Wednesday, February 3rd, 1993.

The meeting was held in the Happy Jack Room of the Holiday Inn at 2313 Soldier Springs Road near the Third Street Exit of Interstate 80.

President Becky J. Braman called the meeting to order at 6:06 P.M. with ten members present. All chapters were represented with the exception of the South Central Chapter. The past president was also absent.

Minutes of the board meeting held on December 12th in Thermopolis, previously sent to board members, were revised and approved.

Rick Hudson presented the treasurer's report which consisted of the bank statement updated to 2 February and the itemized expenses for December. Mention was made of the 1992 itemized expenses and balance sheet which is to be presented at the annual state meeting tomorrow. The report was accepted by formal vote.

Various items of old business were discussed. The first of these was in reference to the flag project. Directors for the Northwest, Northeast and Southeast Chapters were asked to meet later with the secretary/treasurer to finalize the order.

Chris Hamilton mentioned the policy of the Montana association (MARLS) wherein free membership is offered to new registrants. After a general discussion, the board decided, by formal vote, to offer a one year membership, with waiver of dues, to new PLS and LSIT registrants upon receipt of a completed membership application. Chris will be in charge of this project.

Another item was in reference to providing copies of the PLSW Handbook to non-members. A general discussion, concerning various aspects of the handbook, followed. Cost, for the PLSW Handbook, to non-members will be \$75.

A question regarding the education requirement of the Board of Registration, the "30 hours" of formal education, was discussed.

New business began with the approval of two applications for associate membership. Next, the 1993 Budget was presented and reviewed. Secretary Treasurer Hudson stated that the budget was the same as that approved at the December board meeting. A general discussion concerning the agenda for the annual state meeting, to be held tomorrow, followed and the agenda was finalized.

Becky presented the revised Articles of Affiliation, between NSPS and PLSW, with a brief explanation. A motion was carried to authorize the president and secretary/treasurer to sign said document. The matter will be discussed at the meeting tomorrow.

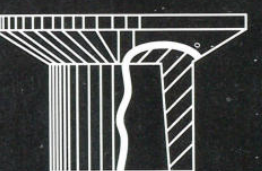
Chris mentioned the PLSW raffle and it was decided that tickets would be sold for \$1 each or 6 for \$5, the same as last year.

The meeting was adjourned at 7:30 P.M.

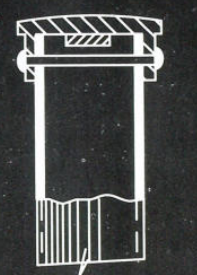
Dated this 1st day of March, 1993.



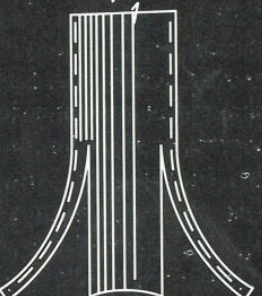
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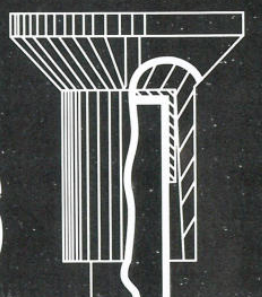
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13. Standards Committee - NSPS BOD approved the "Manual for Construction Surveying Standards" and the committee was instructed to print 1,000 copies to be made available through ACSM at a recommended price of \$10 for members and \$15 for non-members. A motion was made to rescind the 1979 standards or guidelines for property surveys and the committee was instructed to develop new standards and guidelines for property surveys, develop standards for use in applying state plane coordinates of property corner identification and to work with AAGS on the proposed GPS certification.
14. NGS Funding - A forum was held with NGS to discuss the proposed five-year strategic plan and the changes due to funding shortfalls. The room was filled with surveyors and interested persons (175) to voice their concerns. With the excellent turnout it appears NGS will continue to fund the State Geodetic Advisors Program.
15. Survey Safety Committee - NSPS has formed a Safety Committee to prepare survey safety standards, provide programs and present information to the membership.
16. NSPS Think Tank - NSPS established a committee to set up another Think Tank similar to the one in Albuquerque to be held during the 1994 meeting in Phoenix.
17. Ethics Committee - The committee was instructed to prepare frameable copies and plaques of the creed and canons adopted at the San Jose meeting.
18. NSPS BOD approved the following motions not mentioned previously herein as follows:
 - Authorize the NSPS president to appoint a committee to furnish articles for ACSM/NSPS publication.
 - Authorize the NSPS president to appoint a committee to develop technical programs for all ACSM meetings oriented to Land Surveyors.
 - NSPS BOD establish a policy whereby it will not adopt deficit budgets. In the event that the Reserve Fund exceeds 50% of the proposed budget, the excess 50% may be able to be utilized to fund special projects not a part of the regular budget, or may be used to supplement extreme financial shortfalls resulting from extraordinary circumstances.
 - NSPS BOD instruct Nancy Parke to talk with Federal Banking Officials about strengthening existing regulations for survey requirements relative to Mortgage Insurance Surveys.
 - The NSPS Board of Directors recommend that the ACSM Board of Direction charge the "Balloon Note Advisory Task Force" commence an immediate and continual study of the Headquarters Building situation and devise a acceptable, financially sound, long term plan to meet the building financial requirements, including but not limited to a Building Fund, alternative financing, an alternative Headquarters location, etc., and that the task force be allowed to expand its membership to include individuals from the ACSM membership

well versed in Real Estate concerns, or outside consultants, if the committee's evaluations show the need for it, and that detailed reports be submitted to the ACSM Board of Direction at each of its meetings, and that the ACSM Board of Direction direct the ACSM staff to cooperate in a timely manner by furnishing all necessary information required by the Task Force for their investigations.

- NSPS BOD allow the purchase of Trig Star packages at twice the member cost by non members of ACSM/NSPS.
- That NSPS join as an "Affiliate Organization" to the National Association of County Surveyors. The president appoint a delegate and that NSPS approve partial travel expense to the NACS Conference.
- Adopt goals of NSPS, Inc. as follows:
 1. To promote required licensure as a surveyor.
 2. To raise the consciousness of the surveyor.
 3. To promote education in surveying.
 4. To promote recognition of the description of surveying.
 5. To monitor legislation.
 6. To promote successful business practices.
 7. To enhance the professional image of the surveyor.



SCHERBEL ON SURVEYING
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PLSW Legislative Report

John Steil, Legislative Chairman
3-2-93

Senate Bill 0082, Wyoming Coordinate System, passed both houses and was signed by Governor Sullivan on February 24, 1993. The bill is now Senate Enrolled Act No. 29, Chapter 70. A copy of the signed bill is attached, note that it is effective January 1, 1994.

House Bill 0180, Recording of Surveys passed House Committee No. 9, (Minerals, Business & Economic Development) with a DO PASS as amended, however, the bill died in general file as it was not brought on the House Floor. There was opposition from the title industry.

National Society of Professional Surveyors Board of Directors (BOD) Meeting

February 16, 1993, New Orleans, LA

Prepared by John A. Steil, NSPS Area 7 Director

Two days prior to the NSPS BOD meeting the NSPS Board of Governors met using the task committee format that was approved at the 1992 Albuquerque meeting. All motions to be considered were brought forward and assigned to one of four task committees. During a breakout session each committee heard discussion on motions assigned to it and returned to the full board of governors with a recommendation for action. The system worked well, resulting in completed motions that required less debate. These motions are then presented at the NSPS BOD meeting for action. It was suggested that the NSPS BOD sit in on the task committee meetings at future meetings.

At the NSPS BOD meeting the following are some items that were discussed or acted upon.

1. BLM - Francis Eickbush, Chief, BLM Cadastral Survey Division, reported that BLM is working with the ACSM Joint Government Affairs Committee on proposed legislation for Boundary Line Agreements in special problems areas. The draft of the update of the manual will be completed by September. The revised NSPS/BLM MOU was signed at the San Jose meeting which includes NSPS states surveying affiliates to provide joint seminars, forums, and exchange of training, information and software.
2. NCEES - NSPS has been accepted as a POLC member of NCEES, William Karr of Michigan has been appointed the NSPS representative, he is a past president of NCEES and served on the Michigan Board of Registration. A model law for continuing education, minimum standards for property surveys and definition of professional land surveying are the initial tasks to be jointly prepared.
3. ACSM Joint Government Affairs Committee (JGAC) - The committee reviewed actions taken on the ACSM petition to ICC to initiate a rulemaking on railroad abandonment concerns to the surveyors and mapping community, congressional funding shortfalls for National Ocean Service (NOS) geodetic programs affecting user services, and congressional advocacy to improve the quality and accuracy of FEMA flood insurance rate maps.

4. NSPS Scholarship - Preparing material to set up foundation as a non-profit organization with a separate board from NSPS and ways of funding scholarship. presently reviewing existing scholarship policies.
5. Free Trade Agreement - The committee will be divided into two subcommittees to study the northern (Canadian) and southern (Mexico) boundaries. Trying to identify who in Mexico are the surveyors and how to get in contact with them so that discussion can begin.
6. Consultant Selection Guidelines - The private practice committee to prepare manual of guidelines for selecting a professional surveyor as a consultant on surveying projects.
7. Railroad R/W Abandonment - ACSM president and NSPS president wrote letters to ICC supporting a requirement that monumentation be mandatory when railroad right-of- ways are abandoned. The NSPS board requests that NSPS governors spearhead a letter-writing campaign supporting the requirement.
8. Certified Technician Program - The committee is presently preparing Level IV. These are currently 350 certified survey technicians in the program with a 50% passing rate.
9. Mines & Minerals - Strong sentiment in congress to change the mineral patent process, a by product is to change or eliminate mineral surveys. A motion was passed to support the efforts of the Mine & Mineral committee to retain and/or strengthen the position of the mineral surveyor. This action shall be limited to the duties and responsibilities of the mineral surveyor.
10. Boy Scout Merit Badge - The Boy Scout Merit Badge Book has been revised to include a surveying merit badge. Contact has been made with the Girl Scouts to make a similar change. NSPS Boy Scout committee will be at the National Jamboree in Virginia. John Manley to do the Administrative functions. Curt Summer and others to run the NSPS booth.
11. ALTA/ACSM Committee - This committee has been assigned to NSPS. The NSPS BOD adopted the 1992 "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Survey 1992". A subcommittee is to review, rewrite or revise the Measurement Section.
12. Additional Membership Category - The committee established and a motion was passed to establish different categories to allow for contributions to NSPS for the betterment of the profession. The categories are as follows:

Contributor	\$ 0 - 249
Supporter	250 - 499
Benefactor	500 - 999
Patron	1000 - ?



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Board of Directors' Meeting Summary

February 6, 1993

The first meeting of the Board of Directors, after the 1993 annual state meeting, was held in Laramie on Saturday, February 6th, 1993. This meeting is required by the By-laws of our corporation.

The meeting was a breakfast meeting, held in Bacall's Restaurant of the Holiday Inn, during the Wyoming Engineering Society convention.

President Bob St. Claire called the meeting to order at 8:40 A.M. with eight members present. Representatives from the Northwest and Southwest Chapters were absent as was the past president.

A general discussion concerning the resolution, regarding the take-home test, took place and Bob stated that he would write a cover letter and deliver the resolution in person to the board in Cheyenne at the March meeting.

The proceeds from the PLSW raffle, \$420 in cash, was delivered to Treasurer Hudson. Letters will be sent to Allen Mace and Brunton USA.

Don Davis stated that the deadline for the next issue of "Lines & Points" will be March 15th; Bob will have a president's address to them by that date.

Vice President Chris Hamilton mentioned the possibility of compiling data on "unique surveys" within the state and offered his services as chairman of a special committee. Interested members should contact him for additional information.

This led to a general discussion concerning the need for copies of General Land Office survey notes to be available in each of the counties across the state. This discussion, in turn, led into a discussion wherein all members agreed that there is a real need for a County Surveyor's Office in each county.

Herb Stoughton mentioned the activities of ACSM and discussed the possibility of a fourth member organization addressing the needs of the GIS-LIS community.

Bob mentioned that John Steil will no longer be able to serve as WFPS delegate now that he is NSPS Area 7 Director and asked board members to solicit input from their chapters. he stated that volunteers should be willing to serve a three or four commitment.

The meeting was adjourned at 9:45 A.M.

Dated this 1st day of March, 1993.

R.L. Hudson, Secretary/Treasurer

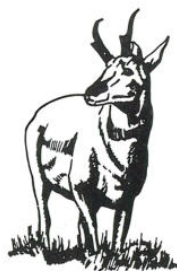


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PLSW – Board of
Directors Meeting

May 1, 1993

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1993 Annual Report To The ACSM Board

Area 7 Activities

Prepared by Arthur W. Hipp, Area Director
January 12, 1993

The General economy, insofar as it affects surveying in the Rocky Mountain States, while still "spotty" in nature is showing some modest and tentative improvement. Most of the surveying firms of my personal acquaintance are busy and there is some movement of surveyors from the East and West Coasts to this area. Most of those coming to Colorado, in particular, were those who left ten years or so ago when New England and California were booming and Colorado was in a severe recession.

I have been involved in several projects with the BLM, e.g. the Four Corners Remonumentation Project, which was dedicated on October 17, 1992 and previously reported. I still maintain a close liaison with the BLM and have been invited to participate in future projects in the Spring of 1993. These have not yet been defined precisely but one will be another State Line Identification for a highway realignment on the Colorado-Oklahoma Border. I have indicated by willingness to participate barring only conflicts with other activities which may take precedence.

I am happy to report that the Advanced Cadastral Survey Course for the Private Sector, originally proposed at the Fall ACSM Meeting in Atlanta in 1991, is off and running. The course is being presented in three intensive weekends of instructions, i.e. Jan. 9-10, 23-24 & Feb. 6-7. The weekend just past was the first of the three and it went off very well. There were 54 registrants including students from Wisconsin, Wyoming, Nebraska, South Dakota and New Mexico in addition to Colorado. Clearly there is considerable interest in this course.

Colorado had a very successful Fall Technical Program in December, featuring James Smith, Geodesist from England who taught Basic Geodesy, followed by David Doyle and Reneé Shields of NGS who spoke on coordinate and datum transformations including GPS applications.

I am also heavily involved in an effort to bolster up the Surveying Program at Metro State in Denver, with the expert assistance of Hugh Brown of Metro State and Prof. David Gibson of the University of Florida. I believe the Surveying Programs in most parts of the country need all the help they

Exactly three meters higher than Mount Everest

A three-meter high survey tripod manufactured in Switzerland is the highest point on earth. It was placed on top of the world's roof on September 29, 1992 by the French mountaineer Benoit Chamoux and his Italian colleague Agostino Da Polenza. Based on present data, the top of the tripod is located 8851 meters above sea level since the summit of the world's tallest mountain is quoted on maps and in reference books as being 8848 meters above sea level. This data will probably have to be updated in 1993, after the results from the greatest survey project ever carried out in the Himalayas has been evaluated by the "EV-K2-SNR" expedition committee.

For the first time, the height of Mount Everest was determined not just from one side, but simultaneously by teams at base stations on the southern (Nepalese) side and on the northern (Chinese) side of the mountain. A further innovation was the use of two different surveying methods. Measurements were carried out by the classical triangulation technique, with Leica surveying instruments that measure angles and distances, and also with the latest GPS global positioning technique. The "Wild GPS System 200" receives and processes the signals emitted by 18 Navstar satellites and produces three-dimensional coordinate data which is accurate to a millimeter.

All survey data is at present being evaluated by Prof. Claudio Marchesini and Prof. Giorgio Poretti, who are in charge of scientific aspects of the expedition. Prof. Poretti, a Trieste mathematician and surveyor, says that one of the major aspects of the work is the precise linking of the base points right down to sea level in the Gulf of Bengal on the south side, and in the Yellow Sea on the northeast side. This task must take into account the national survey networks of Nepal, India and China, and also the fact that the earth is not a uniform sphere but instead a geoid with flattened poles and an uneven weight distribution. Plate tectonics are partly to blame for the continuously changing height values and are responsible for the inexorable growth of the Himalayas and for volcanic eruptions and earthquake-related tidal waves [tsunamis] in the Asian-Pacific belt. More precise survey data will enable these movements to be better understood, contributing to greater protection from potential natural disasters.

This survey target is exactly three meters higher than Mount Everest. It was manufactured by Leica in Heerbrugg, Switzerland. Benoit Chamoux, the French mountaineer, was on Mount Everest on September 29th and placed the 6kg (13.2 lb) tripod in position. Reflector prisms were mounted on both sides of the tripod at different angles. They could be targeted from the various base points around Mount Everest by means of the Wild T3000 theodolite and distance-measuring instruments (Kern ME5000 Mekometer and Wild DI3000).

The prisms reflected the laser beam back to the instruments with high accuracy, enabling distances to be measured with millimeter precision. The small Wild GPS System 200 station's antenna receives the signals from the Navstar satellites.

The results should be published during the first half of 1993, after which we will know whether the top of the tripod is still 8851 meters above sea level and whether the summit of Everest can continue to be entered on maps as being at 8848 meters.

In order to achieve the maximum attainable accuracy with the latest technology, the Italian and Chinese survey teams stipulated instruments having the highest precision and reliability for their resurvey of Mount Everest. This precision was to remain unimpaired even after the instruments had been subjected to weeks of transport to the Himalayas and to intense cold. The experts concluded that the instruments required for classical surveying techniques and for GPS satellite surveys were already available in the standard Leica product range.

The Wild T3000 electronic theodolite was chosen for determining angles; it enables determination of horizontal and vertical displacements down to 0.12 milligon (0.4 seconds), corresponding to 25mm at a distance of 10km.

The Kern ME000 Mekometer was selected (it has a one millimeter accuracy at a range of 10km), along with the Wild DI3000 infrared EDM for the direct laser measurement of distances. These instruments use the path time of the laser signals to determine distance and height differences in a few seconds, automatically correcting the results for the curvature of the earth and for atmospheric refraction.

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