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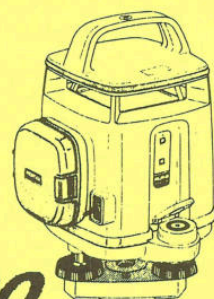
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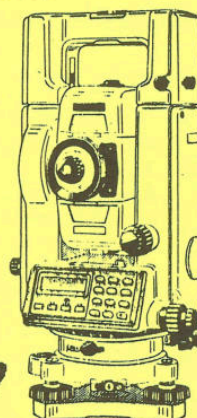


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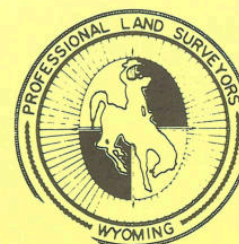
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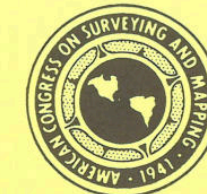
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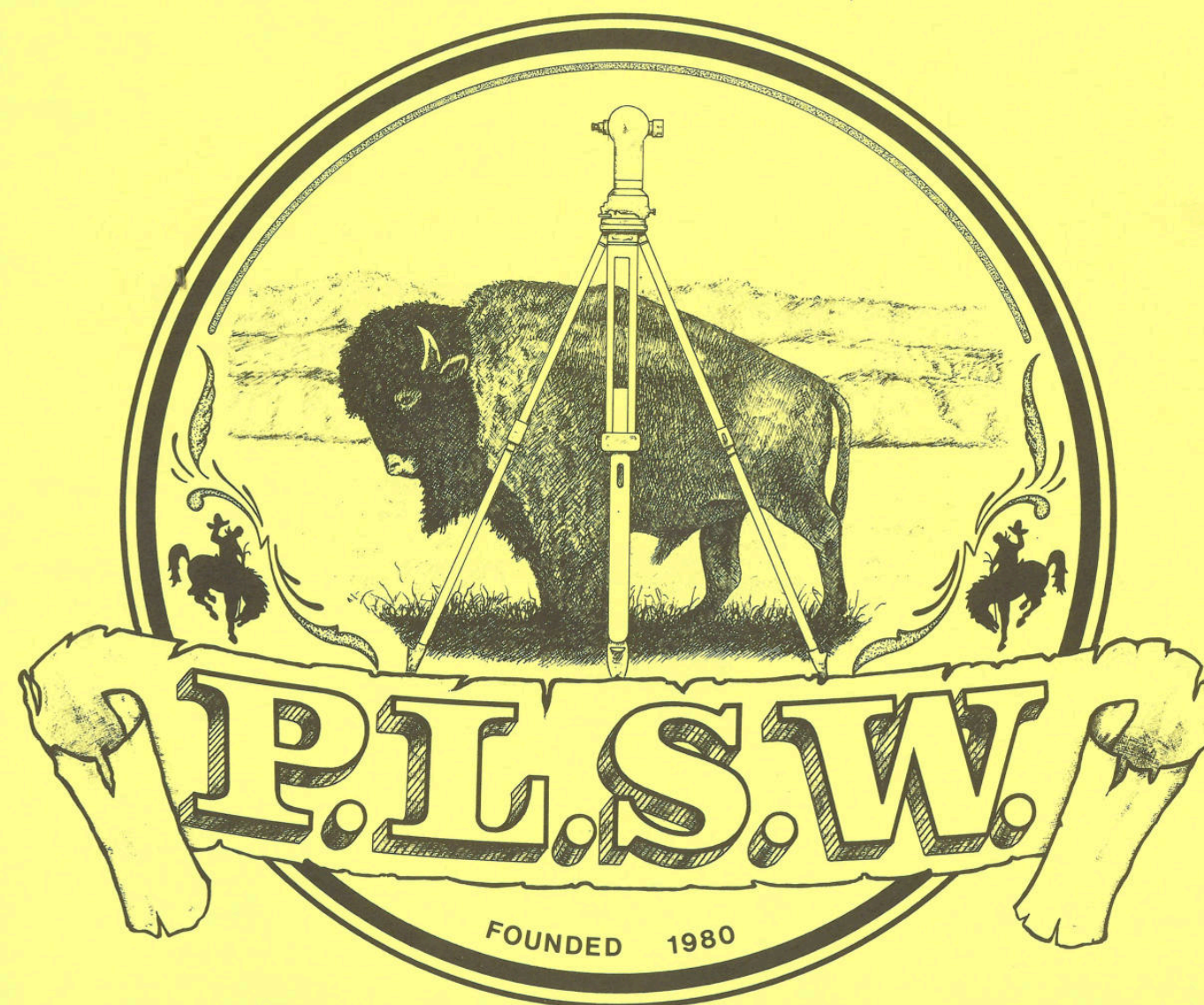
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VOLUME 3 NO. 2

JUNE 1991





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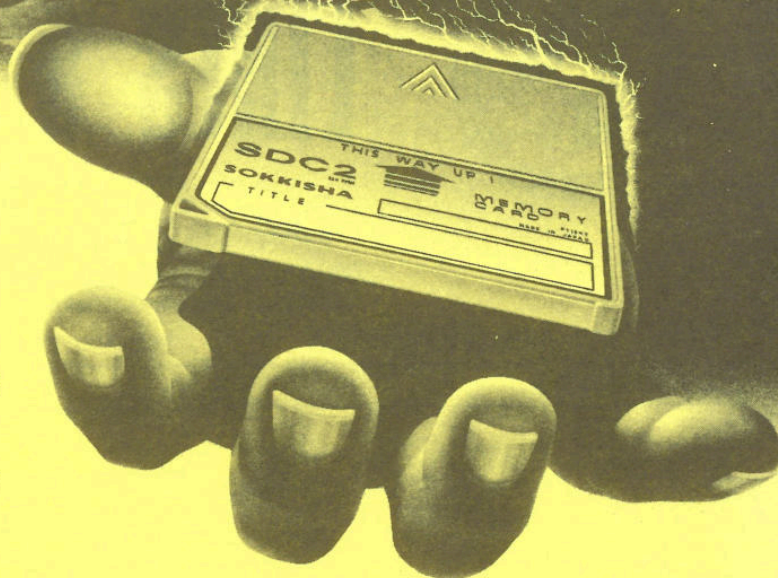
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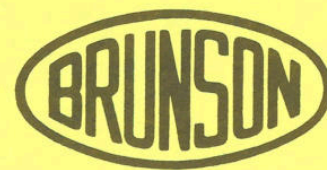
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## MEMBERSHIP APPLICATION

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BUSINESS ADDRESS: \_\_\_\_\_

STREET OR BOX \_\_\_\_\_

TOWN/CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

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&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 with the exception of Fremont, Teton, Sublette and north Lincoln Counties which are designated as Area 3. 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.

## BLM News

This letter is to inform you of official cadastral surveys in Wyoming and Nebraska that have been accepted from January 1, 1991, through March 31, 1991, and are now available in the Survey Records Office, Wyoming State Office, Bureau of Land Management, 2515 Warren Avenue, Cheyenne, Wyoming 82001.

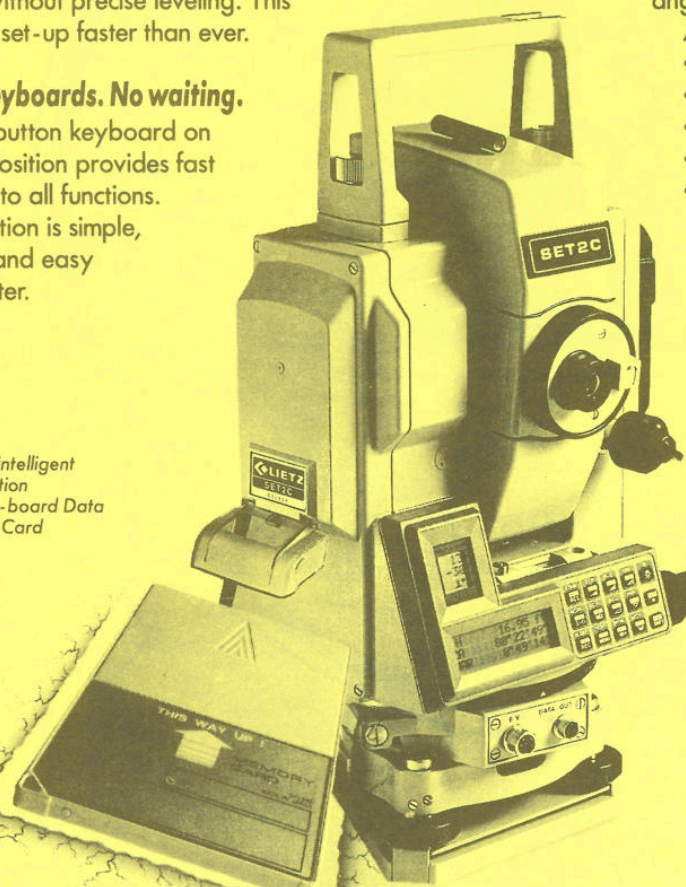
The accepted surveys are listed below by township, range, meridian, and acceptance date.

| Township and Range |                    | Meridian | Accepted   |
|--------------------|--------------------|----------|------------|
| T. 44 N., R. 77 W. | Dependent Resurvey | 6 P.M.   | 03/12/1991 |
| T. 44 N., R. 78 W. | Dependent Resurvey | 6 P.M.   | 03/12/1991 |
| T. 44 N., R. 78 W. | Supplemental Plat  | 6 P.M.   | 03/12/1991 |
| T. 43 N., R. 69 W. | Corr. Dep. Res.    | 6 P.M.   | 03/12/1991 |
| T. 31 N., R. 4 W.  | Dependent Resurvey | 6 P.M.   | 03/12/1991 |
| T. 32 N., R. 5 W.  | Dependent Resurvey | 6 P.M.   | 03/12/1991 |

As other surveys are completed, I will advise you of their acceptance. You may circulate this letter among the membership of the Professional Land Surveyors of Wyoming.

John P. Lee, Chief, Branch of Cadastral Survey

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1991 is the centennial of the first state (California 1891) to require licensing of land surveyors. As a result, Don Bender, ACSM Past President is writing a paper titled "The Centennial of the Licensing of Land Surveyors, Standing on the Shoulders of Giants". This paper will address the history of licensing land surveyors, the act from each state requiring licensing, the year each state required licensing, etc. Wyoming was the third state (1907) to require licensing, New Hampshire was the last (1974) and District of Columbia does not license to this day.

Much time was spent discussing the relationship between ACSM and NSPS. I have always supported NSPS and had hopes that they would gain autonomy from ACSM as was attempted in the late 70's and now again. The continual battles with ACSM over the financial situation, surveying issues and NSPS's destiny are exhausting and non-productive. We can either continue with the existing ACSM/NSPS relationship and try to pull it out of the present financial crisis, if possible, or expend our energy and financial support for a new national organization to represent land surveyors. As a result, a resolution was passed by the WFPS BOD to create a dedicated fund in each state to receive monies to support a national society whether it be NSPS or a new organization, should NSPS not be able to gain autonomy from ACSM. The resolution is attached hereto.

URGENCY RESOLUTION

WHEREAS:

The national situation within the American Congress on Surveying and Mapping and the National Society of Professional Surveyors relative to land surveying issues is very confused, AND

WHEREAS:

A continuing national voice for land surveyors is imperative to the practitioners of the land surveying professions, AND

WHEREAS:

Strong land surveyor associations in each state will benefit the individual land surveying practitioner, NOW THEREFORE

BE IT RESOLVED THAT:

The WFPS recommends that its member land surveyor associations and other land surveyor associations create a dedicated fund in each state to receive monies to support national and/or regional professional land surveying activities, AND THAT

The state land surveying associations are further encouraged to promptly inform their members and non-members of this opportunity to continue funding of national and/or regional land surveying activities, AND THAT

Expenditures from these dedicated funds should only be directed to national associations in a coordinated effort with other state land surveyor associations, AND THAT

The existing regional land surveying groups should promptly develop communication that will support this Resolution.

Adopted unanimously by the WFPS Board of Directors at

"RFP"

There was a time when my blood ran cold  
At the sound of these letters three.  
Try as I might, I could not dispel  
the Terror of RFP.

Vast folders stuffed with past project facts,  
254's and 5's;  
Staff resumes both short and long  
tracing professional lives.

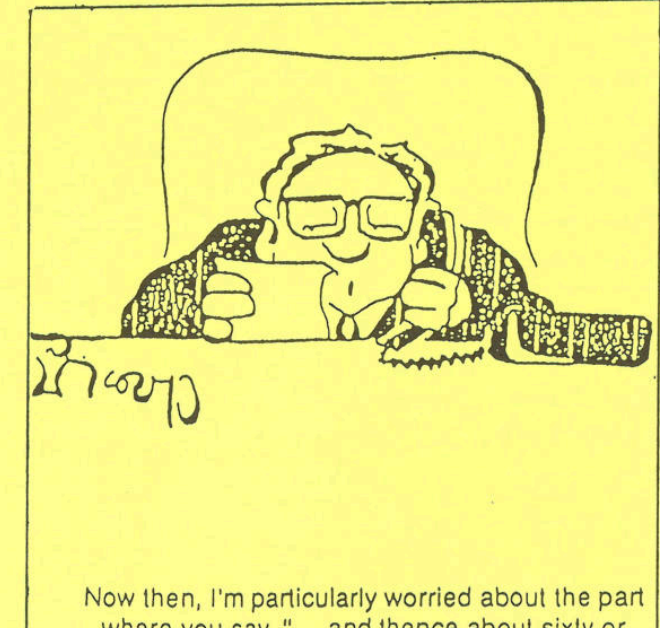
Then add proposed project solutions,  
Neat figures depicting the cost;  
Charts in 5 colors showing who's who.  
(Make sure that nothing gets lost.)

All of this must come together  
Before the date that it's due.  
And then at the very last minute  
We change a sentence or two.

But now the process is different.  
The computer has come to our aid.  
We key it all in and we store it  
And changes are easily made.

We retrieve what we need and we print it,  
(The laser printing looks grand.)  
We laminate covers and bind it  
And carry it carefully by hand.

Though the work is still time-consuming  
The proposal is something to see.  
I think we've finally conquered  
the Terror of RFP.



Now then, I'm particularly worried about the part where you say "and thence about sixty or

Editorial Potpourri\*

• Chapter Minutes – Other chapters can benefit from hearing about your activities and maybe even help your organization. Send us a summary of your organizations activities by September 15. Summaries need not be typed.

• Join PLSW Now – If you are not a member of PLSW, you will not receive *Lines and Points*. Only PLSW members, advertisers and other state newsletters will receive this newsletter. Join NOW. An application is included in this issue. If you are a member, recruit a new member. Part of PLSW membership dues makes this publication possible.

• Support Your Advertisers – The advertisers in this issue help make this publication possible. Support them.

• PLSW Board Meeting – The next meeting of the PLSW Board of directors is tentatively scheduled for early September 1991 in Rock Springs. Make sure you are represented.

New Members of PLSW–

|                               |              |   |
|-------------------------------|--------------|---|
| Richard Inberg                | Riverton     | M |
| Harold O'Malley               | Lander       | M |
| Roy Holm                      | Cody         | M |
| Corey Short                   | Rock Springs | A |
| Terry Zenk                    | Riverton     | A |
| Louis Pence                   | Riverton     | A |
| Bruce Johnson                 | Lander       | A |
| Brian Hauschild               | Gillette     | A |
| Carl Chadzuitko               | Gillette     | A |
| Geotronics of North America   |              | S |
| Aero-Metric Engineering, Inc. |              | S |

Welcome and congratulations to our new members.

• FAX Receiving – *Lines and Points* can now receive your important materials by calling (307) 235-5604.

• DID YOU KNOW – Our State Registration Board is moving rapidly toward continuing education requirements for maintaining your license. Is this really a good idea? Should the Board hold a public hearing before they adopt rules and regulations? Do that many states really require continuing education and what of the Ohio and Iowa experiences? Can you afford to attend several seminars per year or will your employer pay for you to attend? Does the educational community really need the work? TELL US WHAT YOU THINK ABOUT THESE PROPOSED RULES AND REGULATIONS. It is anticipated that our next issue will discuss the pros and cons of this issue.

Front Cover Artwork  
By Ray Blaha – Casper

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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.

*Lines and Points* subscription \$50/year

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| Quarter page  | \$100              | \$30  |
| Business card | \$ 30              | \$10  |
| Classified    | 40¢ per word/issue |       |
| Employment    | Free               |       |

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Summer!



## President's Notes

I am pleased to be serving PLSW as president for 1991. In this column, I would like to express some of my goals for PLSW for 1991. To help in setting these goals, I think it is important to review why someone belongs to this organization. Among the benefits I have identified are business contacts, liaison with the State Board, comradeship, information on surveying activities within Wyoming, representation at West Fed and ACSM and education opportunities.

Professional Land Surveyors of Wyoming will be working toward the fulfillment of these goals through and after 1991. As you are probably aware, the American Congress on Surveying and Mapping (ACSM) and National Society of Professional Surveyors (NSPS) are in a period of transition. PLSW and our representatives will keep our members informed as to this situation, as well as representing our interests through the Western Federation of Professional Surveyors. PLSW is also continuing to keep close contact with the Wyoming Board of Registration for Professional Engineers and Professional Land Surveyors, striving to keep our members informed and to keep the Board informed as to our members' concerns. Among the ongoing projects are a consideration of revising the Certified Land Corner Recordation Certificate and an inquiry into the status of LSIT's. This publication, published through the efforts of the South Central Chapter, has helped PLSW make great strides toward keeping the surveyors informed. Among the upcoming educational activities are a new set of courses about geodetic surveying which may be offered through Laramie County Community College, some possible correspondence courses in surveying through the University of Wyoming, and the possibility of an outstanding seminar on railroad surveying. John Steil attended a very short form of this seminar and was very impressed. It includes valuable information both on surveying of railroads and their right-of-way and on safety while working on or near railroads. This seminar could be offered in October or maybe in the spring of 1992. Please contact me (work phone 632-3138) with your preference as to when to offer this.

Our most important activity for this year will be the preparation of the Wyoming Professional Land Surveyor's Source Notebook. Scott Pierson of Jackson has taken on the guiding of this important task. As an initial phase we have procured the notebooks and tab dividers. This phase will include the printing of information available now including source data on Professional Land Surveyors of Wyoming and its members, registration as a PLS in Wyoming, Wyoming Statutes pertaining to surveying, and resources available to the surveyor. As new chapters are prepared they will be sent to the members. This phase will be available for members by the next annual meeting.

I hope you will all be able to attend a Board of Directors' meeting. We are attempting to rotate these among the chapter areas to help with travel time and costs. It is very helpful and inspiring to spend time with other devoted professionals who are really interested in

improving surveying and in providing the public with fair, careful and accurate work. Too many times, a surveyor follows the lackadaisical, sloppy work that some individuals perform. It is refreshing and helps to rededicate you, to work with a group of individuals each striving for excellence. This is not to say that every meeting goes completely smooth or is just fun and games. As in any group of human beings, personalities and personal wants and needs sometime flare up, but the overall concern and care is really inspiring. Please keep me informed as to your concerns and your goals for PLSW.

Becky J. Braman, PLS

## P.L.S.W. Resolution

### WHEREAS:

The national situation within The American Congress on Surveying and Mapping and the National Society of Professional Surveyors relative to land surveying issues is very confused, AND

### WHEREAS:

A continuing national voice for land surveyors is imperative to the practitioners of the land surveying professions, AND

### WHEREAS:

Strong land surveyor associations in each state will benefit the individual land surveying practitioner, AND

### WHEREAS:

The WESTERN FEDERATION OF PROFESSIONAL SURVEYORS adopted a resolution unanimously at its Board of Directors meeting in Las Vegas, Nevada, on April 27, 1991, recommending that its member land surveyor associations and other land surveyor associations create a dedicated fund in each state to receive monies to support national and/or regional professional land surveying activities, AND THAT

The state land surveying associations are further encouraged to promptly inform their members and non-members of this opportunity to continue funding of national and/or regional land surveying activities, AND THAT Expenditures from these dedicated funds should only be directed to national associations in a coordinated effort with other state land surveyor associations, NOW THEREFORE

### BE IT RESOLVED THAT:

The Professional Land Surveyors of Wyoming create a dedicated fund to receive monies to support the above concept, AND THAT

PLSW pledge an amount equal to \$30.00 per member minimum, the amount may be generated by various methods such as donations, raffles, auctions, portion of dues, budget line item, etc. or any combination thereof, AND THAT The dedicated fund be placed in a separate account until such time the PLSW Board of Directors determines the call has come to disperse all or part of the monies according the above criteria, AND THAT

If the dedicated fund is determined not to be required, the fund will be deposited in the PLSW general fund.

—THIS RESOLUTION HAS NOT BEEN ADOPTED—

of 2 1/2 persons. Studies have been conducted that show ACSM is currently understaffed. You should be aware that the Budget and Finance Committee is working on two new versions of the budget, each with a different level of budget cuts.

13. What is ACSM going to do to replace the income from the \$15 one time assessment?

It may not be necessary in one year if membership increases as a result of everyone pulling together rather than promoting divisiveness and spreading erroneous information. We are also, as you know, investigating various means of increasing non-dues revenue. A task-force will be reporting to the ACSM Board in Baltimore.

14. According to Foster's report beginning in May we are out of cash again and it will last until October. How are we going to survive that period?

With the implementation of the recommendations contained in the Foster report the cash flow will be sufficient.

15. How many members were expected not to renew in 1991 budget?  
550

16. If an incorporated society would seek to be an M.O. would they be required to divest themselves of their Corp?

That is a Board decision. Certainly by the current bylaws their governing documents would be subordinate to ACSM.

17. If ASPRS chooses not to pay the \$30,000 for the Gov't Affairs program what will happen to the program?

That is a Board decision. Obviously if replacement funds are not found the level of activity would be reduced.

18. Did ASPRS buy their share of the building?

ASPRS has a separate agreement with RNRF. We are not familiar with the details.

19. What equipment does ACSM lease for the building?  
Konica and Xerox copiers, postage meter and scale and the computer system for ACSM/NSPS.

20. How does ACSM plan to answer these resolutions that are appearing from the Affiliates?

Individually at the Board meeting.

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## WESFED Board of Directors Meeting

April 1991

The seventh biennial conference was held April 23-27 in Las Vegas. The final numbers are not available as of this date, however, there were approximately 350 paid registrants. The conference should generate approximately \$25,000 net profit with 55% going back to the WFPS states based on attendance.

The various papers presented were excellent, some of the subjects were Least Squares adjustment and analysis, railroad surveying and safety, surveyors liability, positional tolerance, sun observations for azimuth and conversation to state plane grid direction, marketing, GPS, and GIS/LIS.

A auction was held for the scholarship fund. Approximately \$5,400 was generated from the auction. All the items auctioned were donated by exhibitors or state surveying societies.

The following guests were in attendance: Dave Ingram, ACSM Director; James Boyer, NSPS President; John Thalacker, NSPS Treasurer; Frank Fitzpatrick, NSPS Area 9 Director; Sam Best, NSPS Area 10 Director; Jud Rouch, Arkansas Society of Professional Land Surveyors; Don Bender, Past ACSM President and numerous WFPS State Society Presidents.

### Hawaii Becomes Member

The By-Laws were revised to allow other state surveying societies to become members of WFPS. Upon adoption of the revised By-Laws, the Hawaii Association of Land Surveyors submitted an application according to the proper procedure. The Board voted unanimously to accept HALS as a member of WFPS.

The Texas Society of Land Surveyors is also interested in becoming a member of WFPS. The Chairman has been invited to their May BOD meeting.

### Scholarship Fund

A policy on scholarships was adopted. The policy includes publicity, investment of the funds, objective, authority, duties, guidelines, eligible institutions, application procedures, selection, award, term and disbursements.

### 1992-1993 Officers

The following officers were elected:

|                 |                            |
|-----------------|----------------------------|
| Chairman:       | Sam Best - Alaska          |
| Chairman Elect: | John Abenroth - Washington |
| Secretary:      | Susan Jensen - California  |
| Treasurer:      | Jerry Tippin - California  |

### 1992 Budget

The 1992 Budget was adopted. The total budget amount for 1992 is \$18,300.

### Other

A motion was passed as follows: "The President of NSPS direct the Granger committee to complete its draft report on NSPS restructure and submit to NSPS Board of Directors and Executive Committee prior to July 1, 1991".



## National Society of Professional Surveyors Board of Directors Meeting Baltimore, Maryland

SUMMARY REPORT By John Steil, proxy for Arthur Hipp, NSPS Area 7 Director

On Sunday, March 24, 1991, the ACSM Board of Directors met and the following motion was approved:

1. Establish separate bank account for each Member Organization requesting an account; deposit current revenues into account.
2. Establish procedure for (and execute as needed) 90-day agreements with any Member Organization with separate account for the loan of cash as needed to maintain necessary ACSM cash flow; interest tagged to prevailing U.S. Treasury rates.
3. Ensure Member Organization Secretary-Treasurer authorizes all payments from Member Organization funds.
4. Identify pre-approved Member Organization authorized expenditures for such categories as photocopying, postage, shipping charges, and staff compensation; such expenses do not require specific Member Organization authorization before payment of combined bills out of ACSM account.
5. Continue to distribute monthly financial reports within 3 weeks after end of month.
6. Commit to reestablishment of strategic reserves for ACSM; with a target percentage of overall budget; permanent ACSM budget line item for strategic reserve set-aside; and encourage each Member Organizations to do likewise.

I believe this set the tone for the week as a spirit of cooperation by ACSM and somewhat eased NSPS's concerns as they didn't have to expend energy on this concern the remainder of the week.

## Response To NSPS's 20 Questions As Submitted by Charles A. Taypley, NSPS President

1. Why is ACSM so opposed to NSPS Incorporation?  
Because so far no substantive reason for incorporation has been offered. Segmenting the member organizations would weaken ACSM as a whole and result in additional costs to the membership. The benefits to the individual members are not enhanced by incorporation.
2. What solution does ACSM have to satisfy NSPS request for Incorporation?  
This is impossible to answer for we don't know what will satisfy NSPS short of separate incorporation. and I don't believe separate incorporation is in

3. Why is ACSM resisting the appointment of 4 persons to look into the cost of operating the building?  
This information is already available. It is not apparent why we should appoint another committee when the Budget and Finance committee reviews this as part of its normal function. We, however, are not trying to hide anything, as is implied by your question.
4. Has ACSM considered 4 Board meetings a year to keep better control of the operations?  
Six or eight meetings a year would be better, but few individuals could afford the time away from their individual businesses. Certainly the costs would be considerably higher and these costs would be borne by the individual ACSM members.
5. Why do we need an Executive Director and an Assistant Executive Director?  
Most organizations with annual budgets in excess of \$2M have two (2) individuals authorized to make major decisions. Traditionally, individuals at this level have titles of Executive Director and Deputy Executive Director.
6. Why do we not have any clerks or typists on staff?  
Most staff members do their own typing and filing. Particularly when recessions occur individuals must wear a number of hats and forego the luxury of clerks and typists.
7. How much do we pay for Loan Payments, Insurance, and Condo Assessments?  

|           |   |           |                      |
|-----------|---|-----------|----------------------|
| Loan      | = | \$102,696 | per annum (mortgage) |
| Insurance | = | \$ 26,701 | per annum            |
| Condo     | = | \$ 6,788  | per annum (1990)     |
8. Some believe they can prove that ACSM paid the accountant \$140,000 for the software. Is this correct?  
No.
9. Has the accountant been told when we will stop payment to him?  
Payment for what? Question must be more specific.
10. Why hasn't a part time person been hired to work on the certification program? Our money has been used.  
The certification program is currently running fine at the current staffing level.
11. What is the time frame for replacing the M.O.'s funds?  
As surpluses are generated, the funds will begin to grow. A separate line item has been designated in the budget for this purpose. We will continue to include this item in our budgets as we rebuild our financial stability.
12. How is ACSM going to show good faith in reducing expenditure of funds? They need to do more than 2 1/2 persons off of staff

Hunsaker & Associates . . .

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Hunsaker & Associates,  
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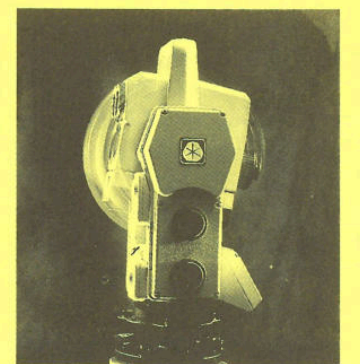
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## BOARD OF DIRECTORS' MEETING SUMMARY

The Board of Directors met in Casper on Saturday, May 11, 1991, at the Casper Inn. The meeting was hosted by the South Central Chapter and whose officers made the arrangements for the time, place and format of same.

The actual meeting was preceeded by a luncheon at noon with eleven members present.

President Becky Braman called the meeting to order at 1:12 P.M.; all board members were present with the exception of the Director from the Southwest Chapter.

Secretary / Treasurer Hudson asked for input from the board regarding the preferred format for meeting minutes. Since last December a summary has been prepared and submitted to "Lines & Points" within a week of each meeting and these summaries will now become a part of the formal minutes which are submitted to the board at a later time for approval.

The Treasurer's Report was presented and approved.

John Steil presented a written report concerning the NSPS Board of Directors meeting, March 28 and 29, in Baltimore, in conjunction with the annual ACSM convention.

John and Scott Pierson reported on the WFPS board meeting and conference held on April 24 and 27 at Las Vegas. The written report, prepared by John, was distributed.

No written report was available from our NSPS Governor, Ray Connin.

A resolution, originating at the WFPS meeting, was presented and adopted unanimously by our Board of Directors, wherein a dedicated fund will be established to support national and/or regional professional land surveying activities. This results from the ongoing financial uncertainties within ACSM and NSPS.

Committee reports were presented from Membership, Elections, Ethics, Education, Scholarship, GPS and Handbook Committees.

Scott, chairman of the Handbook Committee, presented samples of binders and a proposed table of contents. Estimated costs for production of 250 three-inch binders, with our logo, and 21 printed tabs is approximately \$2850 and it was agreed to purchase the compilation of statutes from Surveyor Scherbel. A target date for delivery of the tabbed and partially filled binders has been established by your board as the annual state meeting, to be held in Sheridan in early February of next year.

Plaques for past presidents and honorary members were presented and President Braman stated that letters of appreciation had been received from the new honorary members.

Applications for new membership were approved for several members, associate members and two sustaining members.

The members within Area 3, which consists of Fremont, Teton, Sublette and north Lincoln Counties.

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submitted a petition and supporting documents to establish the Central Chapter. This matter was approved by unanimous vote with acknowledgement being given to Director Chris Hamilton for his efforts

Other new business included a request from Director Jim Claflin regarding the status of LSIT's under the new PLS requirements. President Braman will write a letter to the Board of Registration asking for clarification of the matter.

In another matter, Director Harvey Copeland expressed his displeasure with the copywork fees increase by the BLM office. A meeting of PLSW officers with John Lee of the BLM in Cheyenne is planned.

In other business; discussion of the organization and function of chapter Practice, Welfare and Ethics Committees led to acknowledging the need to include, within the new handbook, a section setting out "standard operating procedures" for PLSW at state and chapter levels.

John Steil also mentioned the NSPS model law titled "Required Professional Development", and distributed copies to the board members. Since the Board of Registration will be holding a hearing on the matter of "continuing education" next month, President Braman instructed board members to review the proposed model law and respond as soon as possible so that PLSW will have a unified input at the hearing.

Various other matters were presented and discussed; mention was made of the next board meeting to be held in Rock Springs on September 7 and hosted by the Southwest Chapter; and the meeting was adjourned at 4:45 P.M. Dated this 16th day of May, 1991.

R. L. Hudson, Secretary / Treasurer

## PLSW 1991 Corporate Officers

|                             |                                                                                                             |
|-----------------------------|-------------------------------------------------------------------------------------------------------------|
| PRESIDENT .....             | Becky J. Braman, P.L.S.<br>1816 Central Avenue<br>Cheyenne, WY 82001                                        |
| VICE-PRESIDENT .....        | Robert L. St. Claire<br>P.O. Box 2366<br>Gillette, WY 82717                                                 |
| SECRETARY / TREASURER ..... | R.L. Hudson<br>P.O. Box 784<br>Thermopolis, WY 82443                                                        |
| PAST PRESIDENT .....        | Bryce E. Rumph<br>209 Stocktrail<br>Gillette, WY 82716                                                      |
| DIRECTOR, NW CHAPTER .....  | J. Harvey Copeland<br>P.O. Box 883<br>Cody, WY 82414                                                        |
| DIRECTOR, NE CHAPTER .....  | James D. Claflin<br>721 Rodeo Street<br>Gillette, WY 82716                                                  |
| DIRECTOR, AREA 3 .....      | Chris D. Hamilton<br>P.O. Box 309<br>Hudson, WY 82515                                                       |
| DIRECTOR, SW CHAPTER .....  | Dick R. Griffin<br>P.O. Box 1059<br>Rock Springs, WY 82901                                                  |
| DIRECTOR, SC CHAPTER .....  | John H. Hilsman, Jr.<br>135 North Ast, Suite 100<br>Casper, WY 82601                                        |
| DIRECTOR, SE CHAPTER .....  | William D. Braman<br>1816 Central Avenue<br>Cheyenne, WY 82001                                              |
| OFFICIAL PUBLICATION .....  | LINES & POINTS<br>Professional Land Surveyors<br>of Wyoming, SC Chapter<br>P.O. Box 904<br>Casper, WY 82602 |
| PRINCIPAL OFFICE .....      | 1816 Central Avenue<br>Cheyenne, WY 82001 (President)                                                       |
| REGISTERED OFFICE .....     | 419 Broadway<br>Thermopolis, WY 82443 (Sec./Treas.)                                                         |

## Killer Deer?

A sixty-one-year-old man was gored and trampled to death in Texas last fall by a 160-pound eight-point whitetail deer, authorities said. Charlie Jackson Coleman of Caldwell, Texas, was attacked while collecting bottles along a rural road near his home, Burleson County deputies reported.

The deputies said the buck was still standing over the body when they arrived. The deputies shot and killed the deer when it charged.

"It was the most unbelievable thing I've ever seen," Chief Deputy Tom Randall said. "It was more of a massacre than an attack." An autopsy showed that Coleman died from a crushed skull and that he suffered more than 100 hoof and puncture wounds over his back, stomach, and face.

Wildlife officials were immediately suspicious about the buck, because its action was so out of character for the species. They were right. Sheriff's deputies determined later that the buck had been fed at various times by different people, and once had been someone's pet.

Wildlife researchers say that deer kept in captivity can become very aggressive toward humans during their rutting period.

Four days earlier in another part of the state, near Beaumont, three surveyors reported that a buck had charged them and knocked one of them into a creek. One of the men said he wrestled the deer to the ground and his partner slit the buck's throat with a machete.

## The Mid States Survey Scholarship Fund Bar-B-Que Cook Off

KSLS: CEU Seminar – October 18, 1991

Cook Off & Fun – October 19, 1991

Wichita, Kansas

Committee Chair – Mike D. Clifford, P.L.S., (316) 262-5332, 303 S. Topeka, Wichita, KS 67202  
If you state has a cooking delegation please contact Mike with number of expected people.

### Rules for Cooking:

- 1) Team leader must be P.L.S.
- 2) No more than 6 persons per team
- 3) No ground cooking
- 4) Must cook one piece of beef for judging
  - a) May cook anything you wish thereafter but must have  $\pm$  50 lbs. uncooked meat.
  - b) NSPS Ex-Com will judge and award Traveling Trophy
- 5) This Cook-Off will be on a bi-annual basis; location to be at winners choice.
- 6) BYOB & drinks for team and guests
- 7) Each team should get sponsor for costs.  $\pm$  \$5.00 per person, kids under 12 free

*Endorsed By: Professional Surveyors of the 6th P.M.*



Miss Becky J. Braman  
President, Professional Land Surveyors of Wyoming  
1816 Central Avenue  
Cheyenne, Wyoming 82001

Dear Miss Braman:

I am indeed honored and thrilled to be elected an Honorary Member of the Professional Land Surveyors of Wyoming. My full time surveying employment began in the Big Horns in the Spring of 1954; it hardly seems possible that my involvement in the profession covers nearly four decades.

Please extend my thanks to the individual(s) responsible for my nomination and to all those who voted for my election. I am looking forward to receiving the plaque, and you may be sure I will display it prominently.

At the recent NSPS Governors meeting in Baltimore, I made three general announcements to the assembly. The first dealt with the Cadastral Survey software which was distributed free to each State (Governor). The second was my election as an Honorary Member of PLSW. The third was that this was my last appearance before them as Surveyor General of the United States.

Again, my most sincere thanks for the Society's recognition and honor. My best wishes go to you and all the folks back there in Wyoming.

Sincerely,  
Bernard W. Hostrop  
Surveyor General  
WYO PLS No. 334

## N.S.P.S. Wyoming Visitation Report

On January 31, 1991 I traveled to Cody, Wyoming to represent NSPS at the 71st Convention of the Wyoming Engineering Association in response to an invitation by Bryce Rumph, the current President of the Professional Land Surveyors of Wyoming, which is a constituent member of the Wyoming Engineering Association.

I was met at the Cody airport by Mr. Scott Pierson of PLSW, who escorted me to the site of the Convention at the Cody Holiday Inn.

On Thursday afternoon (the 31st) I addressed the General Membership Meeting of the PLSW. I emphasized the progress that NSPS/ACSM has made in recent years and months, particularly in the area of government affairs. I touched lightly on the current financial difficulties of ACSM in response to numerous questions from the floor. I acknowledged that though there are serious problems in the short run, that I believed these would be appropriately addressed and that NSPS in fact was proposing a number of actions that we believed would contribute to those solutions. I made a plea for new membership and encouraged any current members who might not have paid their dues to do so promptly in order to maintain a satisfactory cash flow.

The Wyoming Engineering Society had an excellent presentation by Jack Dozzi of Horizon Aerial Surveys out of Rapid City, SD on the ongoing aerial survey of the flood plain of the Grand Canyon of the Colorado River. There were also excellent concurrent programs on the Redesign and Enlargement of the Buffalo Bill Dam and Reservoir Site just west of Cody, by the Bureau of Reclamation; a detailed technical program on the conduct of GPS surveys by Trimble Navigation; another on Indian Water Rights Issues by the Wyoming State Engineer's Office; a program on the Shoshone Municipal Water Project by Banner and Associates; an updated program on Geographic Coordinate Data Base Activities by the BLM; a report on the Western Undergraduate Exchange Surveying Program at Metropolitan State College in Denver by Prof. Hugh Brown and a report on proposed mandatory continuing education by the Wyoming Board of Registration.

On Saturday morning there was an interesting series of presentations on issues related to the Wyoming Highway Department programs and the morning session concluded with a report on the planned future of the University of Wyoming Engineering Department.

Saturday afternoon was devoted to concurrent tours of the Shoshone Water Treatment Plant and the Buffalo Bill Dam and Reservoir Site.

During my entire stay I was afforded the utmost in courtesy and hospitality. I thank the membership of PLSW and the WES for their thoughtfulness and generosity.

Arthur W. Hipp, PLS  
Area 7 Director  
February 11, 1991

## WHD Supernet

I've finally received the minutes of our last meeting on January 16, 1991. Since then we have met with Don Carlson of the Wyoming Highway Department to go over a request for funding. I would like anyone who wants to send me a letter of support for the project so that I can show Mr. Carlson that other people want to use the network also. It looks somewhat promising that we can get some FY92 funding through the Highway Department, but we are still going to need volunteers help to get elevations to the points and to do other work. Letters of support and for volunteering to help can be sent to me at Wyoming Highway Department, Photogrammetry and Surveys, P.O. Box 1708, Cheyenne, Wyoming 82002-9019.

Thank you,  
Ron Regan

**Recruit a New Member!**

## Letter To The Editor

Dear Editor,

I must take exception to Mr. Connin's article in your February 1991, publication on "Adjoining Parties and the Wyoming Surveyor". Mr. Connin quotes Wyoming Statute 18-3-704 on the establishment of a DISPUTED corner, but then clouds the issue in his interpretation to claim that this statute is applicable in the case of a "simple lot survey"

BLACK'S LAW DICTIONARY defines dispute as "a conflict or controversy; a conflict of claims or rights; an assertion of a right, claim, or demand on one side met by contrary claims or allegations on the other. The subject of litigation; ....

A "simple lot survey" in which a corner is obliterated or lost does not fit these criteria. It is simply a missing corner that you have been hired as a professional to replace. The corner may very well become disputed when you set it and the adjoining owner sees where it lands, but until it becomes disputed, the requirements of W.S. 18-3-704 do not apply. Not the notice to be given, not the methods, not the recording of a plat, and not the ability to collect from all interested parties. Mr. Connin does not take into account the word disputed in the rest of his article, but tries to fit these requirements to any survey reestablishing a monument or boundary. His exploration of the contents of the statute simply do not apply without the words "disputed location" being attached.

One of the charges given to us as Professional Land Surveyors is to prevent problems and conflicts whenever possible by exercising proper judgement and using correct techniques in establishing or reestablishing boundaries and monuments and by ensuring that each party to the survey is treated equally. If we abide by this philosophy, we will see very little need to use Wyoming Statute 18-3-704.

Sincerely,  
Martin A. Pedersen, PLS  
Box 1104  
Rawlins, Wyoming 82301



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## R.E.A. Notes

Recently an incident occurred which violated the integrity of our pole line along state highway. Railroad spikes were driven into our poles which threatens to

shorten the life expectancy of those poles.

When poles are treated they are heated for about two days to sterilize them. This removes any fungus that is normally present, in particular the group of decay fungi and bacteria. The exterior, sap wood portion, of the pole is then treated with an oil carried fungicide which forms a barrier to prevent future reentry of decay. However, by driving railroad spikes into the pole this barrier has been breached. This breach thus provides the decay fungus a path into the heart of the pole. A path for moisture entry, necessary to sustain the fungus, is also provided. In summary, the life expectancy of the pole is decreased, thus requiring pole replacement more often, which increases our cost of providing electrical service.

We have consulted a pole specialist in Ft. Collins about the best way to proceed from this point. We have two main options. The first is to remove the spikes, treat the holes with a fungicide, and then plug with a treated plug. The second is to leave the railroad spike in the pole and hope that provides sufficient protection in itself. This second option will require future inspection for decay. However, this second option is the recommendation of the specialist since the spikes were above ground line and because of the arid climate in this area.

Therefore, we ask that the spikes be left in the poles and more importantly that this practice of driving railroad spikes into our power poles be discontinued immediately.

Lloyd Sisson, Director of Engineering

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## Chapter News

The Northwest Chapter of P.L.S.W. met on March 11, 1991 at 7:30 p.m. at P.E. Grosch Construction, Inc., in Worland. Those present were: Dick Olson, Sherman Allred, Rick Hudson, Jack Donnell, Paul Blough, Harvey Copeland, Alan Cormier, Stan Abell and guest speaker Jeff Donnell.

The meeting was called to order by President Paul Blough. Stan Abell introduced the chapter's guest speaker, Attorney Jeff Donnell. Mr. Donnell gave his comments, views and answered questions for the chapter on the research paper by Mr. Dan Christopherson concerning Public Roads in Wyoming.

Director Harvey Copeland had several letters and handouts to discuss. A committee was formed by President Paul Blough to study and make recommendations on the question of chapter dues and reimbursement of expenses for the director to attend State Board meeting.

The meeting was adjourned by common consent.

Thanks,  
Alan B. Cormier  
Secretary/Treasurer

The NE Chapter of The Professional Land Surveyors of Wyoming has had a busy first half of 1991.

Our officers are James D. Claflin, President and Area 2 Director; Darrel Schlup, Past President and Area 2 Director; Richard Kohler, President Elect; and Don Patterson, Secretary/Treasurer.

At our January meeting a program on EDM calibration was presented by Don Patterson and an HP 41 EDM Calibration program purchased by the chapter was distributed to members. In February, a program on Adverse Possession, Wyoming Case Law, was presented by Charles Anderson, Attorney at Law. The March meeting featured a program related to proportioning corner positions on township exteriors on the latitudinal curve by Dale Wilson. The April meeting featured a talk on the Basics of Investments by Yvonne Snider. In May, Stan French presented a program on the BLM's Geographic Coordinate Data Base.

Our chapter sponsored a booth at the Industry and Education Exposition held from March 21-23, 1991, at the Camplex in Gillette. The exposition committee estimated that 10,000 people attended over the three day period with approximately 5,000 students on Thursday and Friday. We also sponsored a concession stand at the expo and raised approximately \$400 for our scholarship fund.

We have two very active committees. The Surveying/Engineering Tech Committee is coordinating with the local community college formulating an associate degree program in Land Surveying. The Scholarship Committee is working on a scholarship policy. If we are successful in obtaining the associate degree program we would like to offer a scholarship to a surveying student enrolled in the program.



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A joint meeting is planned between the PLSW NE Chapter and the South Dakota Land Surveyors, Black Hills Chapter, on June 8, 1991, in Deadwood, South Dakota. This should be an excellent opportunity for Land Surveyors from Wyoming and South Dakota to interact and may be win some money. With the proposed continuing education requirements in Wyoming we hope to discuss sharing programs to benefit each other. Persons interested in attending should contact Jim Claflin at 307-686-6750.

We omitted an item from our April 17, 1991 newsletter that we would like to have included. At the end of the second paragraph, could you add, "The Chapter, at its last meeting, also voted to donate two hundred dollars to the Jan Modelund Fund."

Thank you. Jim Claflin, President

## South Central News

April 11, 1991 - Natrona County Library

Meeting called to order at 7:00 p.m. by President Jim Jones. Members present; Don Davis, Dan Siek, Mike Blum, John Hibsman, Steve Castle, Bill Fehringer. Also Brad Clow with special guest John Brewer, Regional Manager of Brunson Equipment Company. January meeting minutes were read and approved, and the treasurer's report was given. Chapter discussed newsletter committee, continuing Education and adjourned at 7:30 p.m. for presentation by Mr. Brewer on Global Positioning Systems. The public was invited and included Roy Badger, Sonny Rhone, Wallace Stewart, Bob Jacobson and Rob Shook. Discussion followed and adjourned at 9:30 p.m.

Thanks. Don Davis, Secretary/Treasurer

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## New Honorary Members Designations

At the General Membership meeting on January 31, 1991, in Cody, the members of PLSW voted to extend honorary membership to three outstanding surveyors. Honorary membership is given in recognition of distinguished service to the surveying profession. The membership is a lifetime designation, with full voting rights and privileges in PLSW. The individuals so honored are Frank Luers of Casper, Arthur Hipp of Arvada, Colorado, and Bernard Hostrop of Washington, D.C. A short biography of each honoree follows:

### Frank Luers

A Wyoming native, Frank Luers was born in Midwest on March 26, 1924. He was raised and went to school in Riverton. He served in the U.S. Army during WWII. When he was discharged in 1946, he married Esther Olson. They had 4 children, 10 grandchildren, and one great-grandchild.

Frank attended the University of Wyoming, where he received his degree in Civil Engineering. He then worked for the U.S.G.S. in Montana, Colorado and Texas until 1953, when he went to work for Powers Elevation. In 1956 he became a partner in Casper Engineering, which later became Western Engineers-Architects, Inc. In 1986 he started his own business, Frank Luers & Associates.

Frank had a stroke in January, 1989 and lost his speech. He retired in January, 1991. He belonged to NSPE, WSPE, WACES, PLSW, WCEC, Kiwanis and American Legion.

### Arthur Hipp

Fellow, ACSM. Born: October 19, 1925. Education: B.A., Geography/Geology, Hastings College, Nebraska, 1949; M.P.A., Public Administration, University of Colorado, Denver, 1979. Experience: Six years with Climax Molybdenum Company as Surveyor and Geologist; Twenty-nine years with U.S. Forest Service in Cartography, Geodetic Surveys, and Cadastral Surveys; Retired as Regional Land Surveyor, USFS Rocky Mountain Region, 1986; Registered Land Surveyor in Alaska, Colorado, Georgia, Nebraska and Wyoming. Professional Associations: American Congress on Surveying and Mapping (ACSM), National Society of Professional Surveyors (NSPS), Surveyors Historical Society (SHS), Professional Land Surveyors of Wyoming (PLSW), Arizona Professional Land Surveyors (APLS), Professional Surveyors Association of Nebraska (PSAN). Professional Activities: NSPS Director, 1984-90; Secretary-Treasurer and Executive Director, Professional Land Surveyors of Colorado; Editor, Colorado newsletter *Side Shots*; USFS-BLM Advanced Cadastral Survey Program, Tucson, Arizona, Course Examiner, 1986; Intermittent part-time teaching in surveying at Red Rocks Community College, Denver, Colorado, and Metropolitan State College, Denver, Colorado; Instructor in annual refresher course for Colorado PLS candidates. Awards: ACSM/NSPS Excellence in Professional Journalism Award. 1983 and 1989

### Bernard Hostrop

Mr. Hostrop is the Chief, Division of Cadastral Survey, for the Bureau of Land Management, U.S. Department of the Interior, in Washington, D.C., originally titled the United States Surveyor General. As such, he is responsible for the U.S. Government's Cadastral Survey Program.

Bernie began his surveying career in the Big Horn Mountains of Wyoming in 1952, after serving the Air Force. He is a civil engineering graduate of Michigan Tech and is a professional land surveyor in Wyoming and Alaska.

Bernard Hostrop has served in several official positions with the American Society of Civil Engineers and the American Congress on Surveying and Mapping. He is a fellow in both societies as well as a member of the National Society of Professional Engineers and has published over thirty articles and reference books that deal with surveying and mapping topics. He is past President of the Land Information Assembly and is on the Board of Directors for the Institute for Land Information.

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Becky J. Daman

President, Professional Land Surveyors of Wyoming  
1816 Central Avenue  
Cheyenne, Wyoming 82001

Dear Becky:

What a wonderful surprise! I am indeed honored by the granting of an honorary membership in PLSW to me. I am quite at loss for words.

It is especially meaningful to me to be so honored and recognized by the Wyoming surveying community with which I have had so many contacts and professional relationships over the years.

During my 30 years with the U.S. Forest Service, I was privileged to spend considerable periods of time working in Wyoming and am always happy to return there at any opportunity.

Though I am essentially retired from active surveying work in the project sense, I intend to continue working with and for surveyors through association activities which I believe to be so important to us all.

Again, my profound appreciation for the honor you have bestowed upon me and I hope to remain worthy of that honor.

Sincerely yours,



10. The granting of a water right by the state engineer does not include the granting of ditch easements and rights of way. You must negotiate these with the affected landowners.

#### Simplified Forms

The state engineer may issue you a permit for water storage and development of a spring. File a simplified form, which does not require maps and plans prepared by a registered engineer or surveyor, for the following water uses:

1. Construction of small reservoirs for stock purposes only and fishing reserve waters, where the capacity of such a reservoir does not exceed 20 acre-feet of water or the height of the dam does not exceed 20 feet.
2. Construction of flood detention dams that:
  - a. Store 50 acre-feet of water or less
  - b. Have a dam height not exceeding 20 feet
  - c. Have as a minimum an outlet 18 inches in diameter, and
  - d. Have a dead storage that does not exceed 20 acre-feet.
3. Development of springs may be filed on by one of two methods, depending upon the rate of flow and the use to which the water will be applied. The conditions that determine the method to use are described below:
  - a. If the spring flows 25 gallons per minute (gpm) or less, and if the water is to be used only for stock watering and/or domestic uses (which includes watering of lawns and gardens not exceeding 1 acre in size), the spring shall be filed as ground water. No map is required. After the approval of the application, some type of artificial diversion must be constructed to qualify for a water right. The proposed method of development of the spring and means of conveying the water to the point of use must be described on the application under the section titled "Remarks."
  - b. If the spring flows in excess of 25 gpm (0.056 cfs) or if the water will be used to irrigate more than 1 acre or if the water will be used for any purpose other than stock watering or domestic use, a surface water application form must be submitted using surface water procedures. Preparation of this application and the map that must accompany it, requires the services of a professional engineer or land surveyor licensed to practice in Wyoming. The engineer or land surveyor will handle the preparation of these applications and the accompanying maps as well as their submission to the state engineer.

#### Reservoir Storage

A reservoir is entitled to be filled in priority once each

year if water is available. If water remains unused in the reservoir at the end of the normal use period, the water is designated a carry-over storage and counts toward providing water to meet the following year's supply for appropriation.

#### Instream Flow

The 1986 Legislature declared that instream flow for maintenance or improvement of existing stream fisheries is a beneficial use of water than can be provided from natural streamflows or from storage water. A statutory procedure was established for the state, represented by the Wyoming Water Development Commission, to appropriate specified flow rates for instream flows in segments of streams identified by studies and reports of the Wyoming Game and Fish Commission. The WWDC must conduct a hydrologic study to determine whether the instream flow can be provided from the natural flow of the stream or whether storage water from an existing or new reservoir will be needed for part or all of the instream use. The WWDC report is supplied to the state engineer for his consideration. If storage water is needed from a new reservoir project, normal legislative project authorization procedures must be followed by WWDC.

After receiving reports from the Game and Fish Commission and WWDC, the state engineer may conduct his own evaluation of the proposed appropriations for instream use. Before granting or denying a permit for instream flow in the specified stream segment, the state engineer must conduct a public hearing and consider all available reports and information. If granted an instream flow permit can contain a condition for review of continuation of the permit at a future time.

The instream flow appropriation goes into effect the date the state engineer approves the permit. The water right cannot be adjudicated by the board of control for three years thereafter. An instream water right has a date of priority as of the date that the application was received and recorded by the state engineer, and all senior priority water rights must be recognized in administration of the stream.

The state engineer cannot issue an instream flow permit if it would result in loss of a portion of Wyoming's consumptive share of water allocated by interstate compact or U.S. Supreme Court decree, or if it would result in more water leaving Wyoming than allocated for uses downstream of Wyoming.



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## Tid Bits From the Board of Registration

by Christine Turk

### Continuing Education

The Wyoming Board of Registration for Professional Engineers and Professional Land Surveyors was represented at the Western Zone Meeting of the National Council of Examiners for Engineering and Surveying (NCEES). The meeting was held in Whitefish, MT, and was attended by Board President Dr. John W. Steadman, Board Member Paul Scherbel and Board Administrator Christine Turk.

At the meeting the subject of continuing education was discussed at some length. Presently, two other states require continuing education at this time, however; with the interest in continuing education shown at the meeting in Whitefish, it seems certain that continuing education requirements are very rapidly approaching many of the Western Zone states. The Wyoming Board will be discussing this subject further at its next meeting scheduled for June 24, 1991, when it will be decided whether an "official" public comment period will be advertised. The Assistant Attorney General assigned to represent the Board is currently in the process of writing rules and regulations for continuing education to be reviewed by the Board at its June meeting.

### LSIT Education Requirement

To clarify any possible misunderstanding concerning the June 30, 1991, education requirement for acceptance to sit for the Land Surveyor in Training Examination, the following explanation is offered. Those applicants who have qualified to take the Fundamentals of Land Surveying Examination prior to June 30, 1991, will be allowed to pursue their land surveyor registration providing they pass the examination within two years from the date of the application, and once they obtain the necessary four years of qualifying experience. The educational requirement is for all new applicants filing applications for the first time after June 30, 1991. If there are any questions concerning this subject, please feel free to contact the Board Office.

### Independent Grader

The Board has adopted a policy to have an independent grader grade the Wyoming portion of the Professional Land Surveyor Examination. The Board intends for this change to be effective at the October 1991 examination administration.

### NCEES Records Verification Program

The NCEES Records Verification Program serves the needs of the Professional Land Surveyor who is seeking multiple state registration and meets the requirement of holding a current registration with at least one registration board. Through this program, the Council verifies and houses the record holder's file which contains college transcripts, registration information, references and employment verifications. When registration in additional states is needed, a copy of the

istration authorities with a written request.

Licensure is not guaranteed based on the Council Record, as this is a function of the individual registration board. However, it reduces the amount of paperwork required of both the applicant and the registration board for professionals seeking multistate registration.

In addition to the Record Book however, the Wyoming Board will require a boundary questionnaire, included in your application package, to be completed and submitted with your application.

Further information concerning this program can be obtained by contacting the NCEES Records Department at P.O. Box 1686 Clemson, SC 29633-1686, telephone (803) 654-6824.



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## PLSW Southeast Chapter

Participates in the Wyoming Transportation  
Department Adopt A Highway Program



PLSW SE Chapter members that participated with the cleanup on April 6, 1991, were (1st row) Tony Mulé, Jack Studley, Becky Braman, John Steil, (2nd row) Bill Braman, Ray Connin, George Johnson, Steve Pech-



## A RELIABLE REFERENCE

One of the most important tasks that you as a licensed surveyor has is the requirement to write a reference for a person attempting to acquire a license, and who has worked under your direction, or alongside you under another's direction.

State licensing boards require that applicants submit a list or personally solicit a certain number of references, some of which must be licensed. A licensing board is faced with the monumental task of deciding qualification, and must rely heavily on the references that it receives on an applicant, not being able to personally follow him or her for a period adequate to determine their qualifications. You, as a professional, will be called upon some day to serve as a reference. You must be ready to honestly answer whether or not a candidate is qualified for licensure, morally and ethically, as well as educationally and by experience.

You hold in your hand not only the applicant's possible future, but the welfare of the public which you serve. Personal friendships, hatreds, likes or dislikes have no place here, only the honest evaluation of ability and character. You must feel absolutely no doubt at the moment you say he or she is qualified, that they are capable of standing alone with their education, experience, and ability behind them. Your recommendation of this candidate to the board is your expression that this person is qualified in ALL aspects of the definition of Land Surveying, not qualified in some and expected to gain experience in the others shortly. Professional licensing directly implies that the person holding that license is qualified and competent in all "normal" types of surveying. Although many new registrants will continue to work alongside experienced persons, and continue to gain experience, they are not required to do so.

When you get the chance to be a reference, carefully weigh your personal knowledge of the applicants experience against what is required in terms of knowledge and experience and be an absolutely reliable reference. Do more than just check the boxes, write a sentence or paragraph that the board can use in their evaluation. Our profession can only become better and more professional when we do.

Martin A. Pedersen, PLS

JOHN H. HIBSMAN, P.E. & L.S.



**HIBSMAN & ASSOCIATES**

*Civil/Municipal Engineering*

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## B.L.M. & N.S.P.S. M.O.U.

### I. PURPOSE

This Memorandum of Understanding (MOU) sets forth the general terms and conditions for cooperative efforts toward better communications and understanding between the Federal and private land surveying sectors. This includes, but is not limited to, training, joint seminars, forums, and the exchange of information such as software. This may also include the establishment of task forces to identify and resolve objectives of mutual concern.

### II. AUTHORITY

The Economy Act of 1932 (31 USC 686)

### III. The Bureau of Land Management (BLM) has responsibility for the development of policy and direction for the survey of the public lands of the United States. Private lands in the Public Land Survey System which was originally surveyed under instructions from the General Land Office, the predecessor of the BLM.

The National Society of Professional Surveyors (NSPS) is the parent organization representing the professional land surveyors who have the responsibility for the survey of the private lands of the United States. Much of the private land was created out of the Public Land Survey System.

NSPS and BLM desire to enhance the profession of land surveying through improved communications and sharing of knowledge.

Work to be performed under this MOU will be initiated through supplements and addendums to the MOU which will set forth the responsibilities of both parties and specify the work to be accomplished.

If funding is required for joint efforts under this MOU the specifics will be set forth in detail in the individual supplement or addendum.

All supplements and addendums will be effective on the date they are signed by both parties. National level supplements and addendums will be signed by the Chief, Division of Cadastral Survey and the President of NSPS.

Local MOU's are encouraged between state surveying organizations and BLM state offices. These local MOU's may be signed by the state surveying organization president and the Chief Cadastral Surveyor responsible for public land surveys in that state.

### IV. IMPLEMENTATION

This MOU will become effective upon the date of the final signatures of the parties hereto and will remain in effect until terminated by either party through written notice. Such notice shall be given at least thirty (30) days in advance of the effective date of the termination. Any work in progress at the time termination is agreed upon will be completed with the consent of both parties.

### V. REVIEW

This MOU will be reviewed by BLM and NSPS annually at the spring convention.

## Wyoming State Engineer's Office

*A continuing reprint of portions of the  
"Wyoming Water Law: A summary"*

### Surface Water

Wyoming's first surface water laws here enacted in 1875. More comprehensive laws were adopted along with the state constitution in 1890. In brief, and paraphrased, these laws state:

1. If you (or an association or corporation) want to use surface water, you must first apply to the state engineer for a permit. Application forms are available from the state engineer's office.
2. An engineer or surveyor, licensed to practice in Wyoming, must make a survey and prepare the maps and plans needed to apply for your permit. Generally this engineer or land surveyor also has the necessary application forms.
3. Submit the application form, maps and plans, along with a filing fee, to the state engineer as a package. The priority date is established by the date of the application acceptance in the state engineer's office.
4. Upon approval of the application, the state engineer issues a permit for developing the proposed water project.
5. You must complete and beneficially use the project within the time specified on the approved permit.
6. You must notify the state engineer on appropriate forms of the dates construction began, when construction was completed, and when water was put to beneficial use. The appropriate forms are provided with the approved permit.
7. If in the time prescribed you cannot begin and complete the project and put the water to use, the state engineer may be requested to extend any or all of the time limits. Take your request before the original time limits expire, and cite good cause for needing an extension. If a time extension is granted, the date of priority remains the same.
8. After the water has been put to beneficial use, or a reservoir constructed and the notices as outlined in point 6 submitted, you must submit a final proof of appropriation or construction to the appropriate water division superintendent, who then submits it to the board of control. This proof is advertised in a local newspaper, and an inspection of the project is made. Only lands found to be irrigated and/or possessing a reservoir will be accepted for adjudication. If everything is found in order and no protests are filed, a certificate of appropriation and/or construction is issued by the board of control and recorded in the county clerk's office in which the project is located, as well as in the state engineer's office. It is then listed in the tabulation of adjudicated rights for the respective division. This is evidence of an adjudicated water right. Once adjudicated, the water right is permanently attached to the specific land or place of use described on the certificate of appropriation and cannot be removed except by action of the state board of control to change the use or place of use. The adjudi-



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cated water right takes its place in the list of priorities for that stream. Water is delivered to that right only when sufficient water is available to meet all earlier water rights on that stream.

### 9. Limits on unstored water for irrigation:

- a. Water rights for irrigation are adjudicated on the basis of one cubic foot per second (cfs) per 70 acres.
- b. Water rights with priority date of March 1, 1945, or earlier are entitled to an additional 1 cfs per 70 acres. If you hold such a water right, you are entitled to divert water in the volume of 2 cfs for each 70 acres of land before any water is made available to the holder of a water right with a priority date after March 1, 1945.

If there is not sufficient water to furnish 2 cfs to each pre-March 1, 1945, water right, but more than enough to furnish 1 cfs to each of such rights, then the surplus water is divided among those rights on a prorata basis. If there is so little water that each pre-March 1, 1945, right cannot receive 1 cfs, they are regulated on a strict priority basis.

Any water beyond that required to furnish 2 cfs for each 70 acres of pre-March 1, 1945, water rights is first allocated to rights with priority dates after March 1, 1945, and before March 1, 1985. Wyoming's Excess Water Law states that each water right with a priority date of post-March 1, 1945, but pre-March 1, 1985, is entitled to 2 cfs per 70 acres before any water is made available to post-March 1, 1985, water rights. If there is not sufficient water to furnish 2 cfs to each post-March 1, 1945, and pre-March 1, 1985, water right, but more than enough to furnish 1 cfs to each of these rights, the excess water is divided among those rights on a prorata basis. If there is so little water that each post-March 1, 1945, and pre-March 1, 1985, water right cannot receive 1 cfs, the rights are regulated on a strict priority basis.

For post-March 1, 1945, water rights, those rights are entitled to 1 cfs per 70 acres only after all pre-March 1, 1985, rights have received 2 cfs per 70 acres. Under Excess Water Law, the post-March 1, 1985, water rights may also receive 2 cfs if water is available.



(Continued from page 12)

geodetic control. It is now necessary to have a horizontal geodetic control network throughout the state that has several points (stations) whose mathematical interrelationships are rigorously and stringently known. Stations established utilizing the GPS technology can provide the geodetic positions, which are, for all intents and purposes, error free and absolute (in position). Since most surveying and mapping projects are independent 'isolated' projects, the GPS technology provides a quick, inexpensive procedure to determine geodetic positions at the project site. Today, these geodetic positions can be determined to an accuracy of 10 ppm (in distance) with respect to the known position with only one or two hours of observation. Historically, a conventional survey (traverse, triangulation, trilateration) required a minimum of one week to execute the requisite geodetic survey of ten kilometers or less, with an additional week of effort for every 25 kilometers distance from the original (master) station.

The "economics" of surveying unquestionably mandates that GPS surveying be utilized to extend geodetic control, particularly when the survey and/or mapping data are to be incorporated into GIS and LIS. Many surveyors have used GPS, and found the technology accurate and reliable. The basis of a GPS survey is to place GPS receivers at both known and unknown stations. At least one receiver must be at a known station. Then, all receivers simultaneously record the transmitted signals from the same satellites. By computational algorithms it is then possible to calculate the position of the unknown station(s). An error in the geodetic position of the known station is transferred directly to the geodetic position of the unknown station. When several known stations are incorporated in a GPS network, their associate errors are propagated through the network of unknown stations. Any discrepancies between the known stations will be exhibited in the preliminary geodetic positions of the unknown stations. Because of the high accuracy of transferring geodetic positions from the known station to the unknown station, all the error in the position of the known station will be *transferred* to the unknown station. Therefore, it is imperative that the geodetic position of the known station be as error-free in geodetic position as is feasible.

At the present time (January 1991) there exists only one or two stations within the boundaries of Wyoming which are directly related to the most accurate stations in the U.S. geodetic network. One station, located at F.E. Warren AFB, is directly related by GPS surveys to the Very Long Baseline Interferometry (VLBI) at Platteville, Colorado. If there were a number of additional stations throughout Wyoming of equal positional accuracy, then there would be a fundamental network from which other surveys could be executed, and without introducing significant positional inaccuracies as existed in prior networks.

The National Geodetic Survey has evaluated GPS determined positions to the NAD83 positions, and has

no major difference between the two systems. Therefore, with a reasonable number of observations under suitable conditions (geometry of the observed satellites, etc.), GPS positions of new stations accurate to 2 ppm, or better, are achieved.

The surveying and mapping divisions of the Department of Transportation in Colorado, Florida, New Mexico, Oregon, Tennessee, Texas, and Washington have recognized the potential of a network of high precision GPS stations (2 ppm, or better, accuracy) located throughout the state. With these stations, and their positional accuracies, local GPS surveys will have a known master station from which geodetic control can be extended. There are a number of advantages for establishing between one to five master stations in each Wyoming county. These are:

1. All local GPS survey projects would in all likelihood utilize a master station within a few tens of kilometers of the project site. From a logistical standpoint, this is advantageous. It occasionally occurs that equipment fails, there are delays in transfer of field personnel, etc. This means that real time communication will permit adjustment of schedules. Also, on site data reduction will minimize reobservation costs due to defective data.
2. Mandatory use of the master stations by contractors will permit a straight-forward evaluation and analysis of the submitted results.
3. Connection of two GPS projects employing different master stations will minimize disagreement for multiple values of common stations.
4. The availability of regional GPS stations will facilitate requisite geodetic positions needed to transfer and incorporate existing cartographic and GIS/LIS data into a common positional data base.

The National Geodetic Survey has initiated a cooperative program of establishing GPS master station networks with various states. There are two basic approaches. 1. The state selects the sites for the master stations, monuments the stations, and completes the administrative matters (station description, right of entry/trespass, etc.). The National Geodetic Survey performs all the observations, data reduction, adjustment, and publication. 2. The state selects the sites for the master stations, monuments the stations, completes the administrative matters, and performs all the observations and preliminary data reduction. The National Geodetic Survey performs final data reduction, adjustment, and publication. An alternative to the latter is that in lieu of the state performing all the activities, the state enters into a contract with a GPS surveying firm to perform some, or all, of these functions.

The exact price for a GPS master station under this program is between one and two thousand dollars. This fee is negotiated between the National Geodetic Survey and the state. It is recommended, by this writer, that the Wyoming State Highway Department develop a GPS master station network for their requirements, and seek

## Minutes

### Wyoming GPS High Precision Network Committee

January 16, 1991

#### Call to Order

The meeting was called to order by Chairman, Ron Regan, at 2:04PM at the Wyoming Highway Department Planning Offices in Cheyenne, Wyoming.

#### Attendance

Members of the Committee in attendance; Ron Regan and Hank Miller, Wyoming Highway Department; Greg Asher and Mike Londe, U.S.D.A. Forest Service; and Don Patterson, BLM. Herb Stoughton, Technical Consultant was unable to attend.

Guest in attendance: Jack Warburton, Planning Branch, Wyoming Highway Department

#### Meeting Topic

The purpose of the meeting was to discuss with Jack Warburton the possibility of the Highway Department providing funds for establishing a High Precision GPS Network for the State of Wyoming.

After a brief introduction, and presentation by Ron Regan on what GPS is, and a summary of Herb Stoughton's paper, "A Precise Horizontal Geodetic Network For Wyoming", the Committee had a discussion with Jack Warburton on how best to get the Committee organized, and what kind of presentation would be needed to get the funding request for a GPS network presented to the Wyoming Highway Department. Jack suggested the possibility that the Committee submit the funding request as possibly a research project with participation from other agencies for submittal to the Highway Department Staff along with an explanation of what's to be done, why it's necessary, and the benefits. What need would be satisfied by having a GPS High Precision Network, and what will it cost. Is the Committee talking about one year funding, or several years of funding? What would be the implementation plan? Jack pointed out that the Committee would need a real good explanation of why it's needed. Also what would be the terms of the other participating agencies in setting up and funding, or supporting this network? The Committee would have to make a very good presentation on the interest of need and support from within the Highway Department. Jack went on to say that the proposal to fund a network would probably require some action on the part of the State Highway Commission if its cost would exceed \$20,000. There is no contingency for something like this in the current budget year.

dollars in the following years. Jack questioned how long it would take to get the network established and if maintenance dollars would be needed to maintain the network yearly.

Jack also suggested that the written proposal to the Highway Department should document the benefits to the Highway Department and the public. Documentation should also be included that would explain how a GPS network would help with implementing a G.I.S. system. If possible the report should document multiple benefits to the public. There may even be a need to explore the possibility of working with the FAA for the six airport sites that they will be establishing in Wyoming. Jack also suggested that it would be of benefit to identify who the other agencies might be that may have an interest in cooperating with the Highway Department in establishing the network. It's possible that the other cooperators might be the U.S.D.A. Forest Service, BLM, National Park Service, Wyoming Fish and Game, U.S. Fish and Wildlife Service, Bureau of Indian Affairs, Office of Surface Mining, U.S. Army Corps of Engineers, Defense Mapping Agency, the University of Wyoming, several counties, and some of the larger cities and towns in Wyoming. It's very possible that most of these cooperators may not be able to contribute funds, but they may be able to contribute labor and/or time towards establishing or recovering the GPS and/or triangulation stations. It would be beneficial if the extent of participation of the other cooperators could be identified as well as the lead agency in setting up the network. The Committee felt that the Highway Department should be the lead agency and that the actual data collection and reduction would be done by the NCS or one of its approved contractors. The Highway Department and the cooperator would monument and/or recover the needed GPS locations, or the triangulation stations. Also discussed was the possibility of acquiring matching federal funds for establishing the network. In closing, Jack stated that he felt that given the timing, that it would be budget year 92 before funds might possibly be designated for establishing the GPS network, if it is approved by the Highway Department. However, in order to get the proposal considered for budget year 92, it will be necessary to have the proposal completed and presented to the Highway Department by early May of this year.

#### Adjournment

The Committee adjourned at 4:30PM with the next meeting set for the Professional Land Surveyors of Wyoming meeting, at the Annual Wyoming Engineering Society Annual Meeting in Cody, Wyoming during the last week in January 1991.

Gregory W. Asher  
Temporary Secretary



## A Precise Horizontal Geodetic Network for Wyoming

Dr. Herbert W. Stoughton, P.E., L.S., C.P.  
Geodetic Engineer

After the American Civil War, the Wyoming Territory was the scene of numerous mapping and exploratory expeditions. Although these programs required latitude and longitude to portray the geographic relationship of salient topographic features, the scale of the mapping (1:200,000 to 1:1,000,000) only required positional accuracies of about 0.5 kilometer [0.025 inch map scale at 1:200,000]. After formation of the U.S. Geological Survey (1879) and initiation of the topographic mapping program to support geological and mineral mapping, the USGS topographic maps were at scales of 1:250,000 (1"x1" 1: 125,000 (30"x30"); and 1': 62,500 (15"x15"). Since the mid 1930s, the general map accuracy standards required well-defined points be horizontally positioned on the map to within 0.01 inch, and that the representative elevations be good to one-half contour interval. Today, 1991, it can be assumed that horizontal positions are good to 0.01 inch, contours are within one-half the contour interval, and the spot elevations (black) are accurate to one foot or one-tenth contour interval, whichever is larger. This means that current mapping horizontal control must have positional accuracy of about 20, 50, 100, 210 feet for 1:24,000, 1:62,500, 1:125,000, and 1:250,000 mapping, respectively.

In Wyoming, about sixty percent of the current horizontal geodetic control was specifically established to support the national mapping program. The remainder of the geodetic control was part of the basic national geodetic network (First-Order and Second-Order). Until the early 1970's, the basic national geodetic network in Wyoming had a precision between 50 and 20 ppm. In the 1970's, a special geodetic survey accurate to 1 ppm was executed through Wyoming. This survey lengthened the distance from the east coast by between 90 and 120 meters in Wyoming. This means that the east-west distance across Wyoming increased by thirty meters. For mapping purposes, this magnitude of error does not affect map accuracy in a relative sense.

The errors in the national network and the mapping control were intolerable for large scale mapping, 1:120, 1:240, 1:480, 1:600, 1:1200, and 1:2400 (1 inch equals 10, 20, 40, 50, 100, and 200 feet). These errors are not uniform (in direction and magnitude). The surveys executed for large scale mapping were developed for land, engineering and mapping purposes. In many instances, survey control for mapping purposes could tolerate the errors and misclosures encountered when surveying between existing control. However, the same survey would be unsatisfactory for land and engineering surveys. The results, (either unadjusted or adjusted) would be grossly inadequate for design and construction. The encountered problems with large misclosures or discrepancies will affect the project.

The cause of the problems of large horizontal position

misclosures is not due to poor surveying practices, but to the deficiencies of the existing network. At this time, there are only about 1,310 horizontal control stations within Wyoming with valid NAD83 geodetic positions. While the NAD83 adjustment was the most sophisticated (theory, methodology, and computation), the adjustment could not detect and eliminate existing systematic errors, or strengthen a weak geometrical configuration. These same conditions existed in NAD27, and cannot be eliminated by even the most sophisticated adjustment procedure.

The NAVSTAR Global Positioning System (GPS) provides a means to establish horizontal geodetic control that does not have the inherent error that occur in conventional surveys. In conventional surveys, the termini of every line must be intervisible for any survey of a precision better than 20 ppm (1:50,000). Furthermore, the personnel, instrumental, and meteorological errors that occur in every conventional observation degrade the data. Surveying employing the NAVSTAR GPS constellation circumvents these errors. GPS satellite receivers are set at two or more points, one of which has known horizontal geodetic position. These receivers record the signals broadcast by a number of GPS satellites above the horizon. To obtain the geodetic position of the unknown point, the signals from a minimum of the same four satellites must be recorded simultaneously. With adequate data, it is possible to position an unknown point with respect to the known point with an accuracy of one to two ppm, and a precision of a few tenths of a ppm.

Usually several unknown points are surveyed simultaneously. The distance between the known and unknown points is not restricted by a specific distance. The restriction is that both sites *must* receive the same broadcast signals from the same satellites (a minimum of four). The accuracy of the results is not a function of the distance between the points. When two new and intervisible points have been measured by conventional survey technology, there has been excellent agreement (within the conventional instrumentation's capabilities) to the geodetic inverse between the GPS derived positions.

The Wyoming Highway Department and the Wyoming State Engineers' Office are two, of several, state agencies utilizing regional and state-wide surveys and mapping. In the past, existing geodetic control has been utilized for local projects. However, as a series of these projects were connected, it was impossible to obtain agreement between the various projects. This problem has far reaching effects. The old surveys and maps are being digitized, and entered into LIS (land information systems) and GIS (geographic information systems) data bases. If these data bases and data bases from other sources, for the same region, are not identical, then problems will arise attempting to marry data bases into a single information system.

Because the foundation of all GIS and LIS is a mathematical model, then the geodetic positions of unique points are the logical choice for the model. It has been standard practice to utilize the existing local horizontal

Continued on Page 14

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