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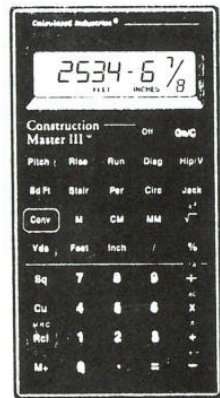
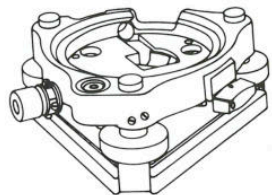
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VOLUME 5 NO. 3

OCTOBER 1993





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NSPS NOTICE OF AWARDS

The National Society of Professional Surveyors sponsors four 1994 awards for excellence in the surveying profession.

SURVEYING EXCELLENCE AWARD

Staff Liaison: Pat Canfield ■ ACSM/NSPS, 5410 Grosvenor Lane, Bethesda, MD 20814-2122

Presented to a person who performed outstanding service to the surveying profession, this award includes an engraved plaque and a \$500 honorarium contributed by POB Publishing Co., Canton, Michigan.

The person does not have to be a surveyor or a member of NSPS or ACSM, but candidates must be nominated for the award by an ACSM affiliate section or two NSPS members at large. If nominated by an ACSM section or affiliate, the nomination must be signed by two officers of the organization. If nominated by two NSPS members at large, the nomination must be signed by the sponsors and accompanied by four letters of recommendation.

Each nomination must include a narrative stating the reasons why the sponsors feel the nominee is deserving of this honor, specific accomplishments the nominee has made toward the profession and biographical data that can be used in the award presentation.

The staff liaison must be notified of any nomination by December 31, 1993.

MOST INTERESTING SURVEYING PROJECT OF THE YEAR AWARD

Staff Liaison: Pat Canfield ■ ACSM/NSPS, 5410 Grosvenor Lane, Bethesda, MD 20814-2122

This award consisting of a Pentax IQZoom 105 Super 35mm camera with case, a plaque, and 1000 reprints of the resulting published article contributed by Pentax Corporation, Englewood, Colorado, is presented to individuals, companies, governmental units, or state associations having knowledge of interesting projects and the ability to provide documentation of the project—technical information, releases, photographs, and a record of the personnel and equipment involved. The project need not have occurred in the last year.

Interested candidates should submit a project by December 31, 1993 to P.O.B., Attn: Most Interesting Surveying Project, 5820 Lilley Road, #5, Canton, MI 48187.

STUDENT PROJECT OF THE YEAR AWARD

Staff Liaison: Pat Canfield ■ ACSM/NSPS, 5410 Grosvenor Lane, Bethesda, MD 20814-2122

This award consists of a plaque and a \$150 honorarium, contributed by C&G Software Systems, Inc., Atlanta, Georgia, as well as paid travel and lodging expenses to the ACSM-ASPRS Spring Convention.

A submitted paper should describe a project in which the applicant was a participant and may involve a group of students and/or non-students. The paper must be written by one person only. Advice and constructive criticism from the applicants' instructor or supervisor is permissible and encouraged. The project need not have occurred within the preceding 12 months. All papers submitted will be considered for presentation and publication by ACSM. Specifications for the format of the manuscript can be acquired from the staff liaison.

Completed papers should be submitted to the staff liaison by December 31, 1993.

EXCELLENCE IN PROFESSIONAL JOURNALISM

Chairperson: Kenneth S. Curtis ■ 2204 Happy Hollow Road, West Lafayette, IN 47906

An engraved plaque is presented annually to the ACSM affiliate society whose newsletter was judged to have the highest quality during the previous year. In the past, judging was made by the editors or publications chairmen of the newsletters participating in the contest. Any editor wishing to participate should contact the chairman for information.

For complete details, contact Pat Canfield at ACSM/NSPS, 5410 Grosvenor Lane, Bethesda, MD 20814-2122. (301) 281-2322.

WACES, WTD leaders sign joint statement

WACES President Jack Noblitt and Wyoming Transportation Department (WTD) Director Don Diller have issued a joint statement agreeing to a mutual goal of enhancing "effective and professional communication between WTD and private sector engineering firms." The joint statement was the result of a meeting between Noblitt and Diller to review William F. Fanning's answer to the Wyoming Transportation Department's critique of his report to the Legislative Transportation Task Force.

The joint statement pledges that "the WTD and WACES Joint Committee will meet regularly to discuss privatization, consultant utilization and selection, needed legislation, and other items of mutual interest." The two leaders agreed that further argument over the measurement of construction cost per engineer is nonproductive. "The goal of both design and construction engineering is to provide the highest quality facility at the lowest total life cycle cost."

The statement, along with Fanning's response letters, is being sent to Transportation Task Force members and Transportation Commissioners.

Diller appointed Dave Hanlin, Assistant Chief Engineer, to head the WTD delegation of the joint committee. Hanlin and Ralph Goodson, WACES Transportation Committee Chairman, recently met to discuss committee direction. They envision the committee serving as a forum for solving problems by working

together. They will pursue joint training sessions to better understand each other's work and procedures. The first committee meeting is scheduled for mid November.

WACES contracted with Fanning to provide a report to the Transportation Task Force, which was organized as a result of passage of state legislation in 1993 to study various government departments for efficiency and improvements. Fanning, Director of Research for Professional Services Management Journal, had conducted a study of all state transportation departments on "contracting out."

WTD issued a critique of Fanning's report which Fanning answered with two letters. In a brief one-page letter to Noblitt, Fanning states that he feels comfortable with the recommendations he made in the report.

His letter to Diller expresses hope of a mutual goal of establishing effective and professional communications between WTD and private sector engineering firms. He explained the differences between his data and the figures and methodologies WTD used.

Upon signing the joint statement, Noblitt said "A very positive mood exists over the direction taken as a result of the so-called controversy between WACES and WTD." He said several people had indicated to him a feeling that "good things are going to happen" between the two groups.

Reprint from Design Pro, October 1993

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_____ 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 IT THEIR ENDEAVORS.		

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(For Affiliate Member applicants only.)

NOTE: All portions of the state have chapters. Chapter dues or assessments may vary in amount. Applications are considered by the Board of Directors

Editorial Potpourri

• **PLSW MEMBERSHIP** - Every man owes something to the profession that supports him. If you are not a member of PLSW, join now. We need your support. An application is included in this issue. If you are a member, recruit a new member.

• **SUPPORT OUR ADVERTISERS** - Advertisers help make this publication possible. Please support them.

• **LOCAL PLSW NEWS** - Send us a summary of your chapters activities for publication. The deadline for the next issue of *Lines and Points* will be 20 DEC 1993.

• **1993 PLSW BOARD MEETINGS** - The last 1993 meeting of the Board of Directors will be 4 DEC 93 in Rock Springs. All members are welcome. PLAN TO BE THERE. Your input is needed.

• **LINES AND POINTS FAX** - The Lines and Points fax number is 307-235-5604.

• **WALTER S. DIX** - Walt Dix died at 94 on June 13th of this year. Walt was a retired surveyor from the Tennessee Valley Authority. He was one of the founders of ACSM and served as president and executive director of ACSM. For several years, Walt was the editor of the ACSM Bulletin. He lived in Washington, DC and was born in England.

• **BOARD REPRIMANDS ENGINEER** - Melvin Johnson, P.E. of Golden, Colorado received a reprimand from the Wyoming Registration Board for failing to perform a thorough review of design documents before authorizing design changes and continued construction.

• **NAME CHANGE** - Coffey Engineering and Surveying has changed its name to KLH Engineering Group. Their offices are at 1050 North 3rd Street in Laramie.

• **SURVEY EQUIPMENT STOLEN** - The following was stolen from Bartlett Consultants, Ltd. In Virginia:
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Pentax GT 4B Transit #312603
Topcon ATF-6 Level #Q13936

If you have any information contact Investigator Cubbage 703-347-1107.

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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.

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.

Advertising rates are as follows:

	Year	Issue
Full page	\$300	\$80
Half page	\$175	\$50
Quarter page	\$100	\$30
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1994 Convention Update

Robert L. St. Claire, President

The 1994 convention at Riverton is quickly approaching. The convention will be held on February 4th, 5th and 6th. There will be several changes from our past conventions. PLSW has retained Dennis Mouland to be our main speaker. He is scheduled for an all day seminar on Thursday, February 4th. The remaining portion of the schedule has not been finalized but it looks like we are going to have our PLSW business meeting on Saturday, February 6th. Here is a short biography of Mr. Mouland and a course description of the seminar that he will be presenting.

Instructor Biography – Dennis J. Mouland

Dennis is a Registered Professional Surveyor in several western states. He has a Bachelor of Arts degree in Management and has been in the surveying profession since 1972. His experience is evenly split between the private sector, including his own surveying business and federal government employment. Dennis is currently the Group Leader for the Boundary Management Unit of the USDA Forest Service in Western Colorado.

Dennis has been an instructor and course manager for the BLM/Forest Service "Advanced Cadastral School". In addition to having over 100 technical articles published in the U.S. and Canada, he was a contributing author to the surveying textbook, "The Surveying Handbook". He has been conducting seminars since 1984, mostly on PLSS subjects. He formed Cadastral Consultants, Inc. in 1987 to conduct a high quality continuing education service for the surveying profession.

COURSE DESCRIPTION – CORNER EVIDENCE ANALYSIS

The professional surveyor and the modern survey crew must have exceptional skills in researching records, searching for corner evidence and analyzing the facts in light of the effects of time.

Course Highlights include:

What surveyors are supposed to be doing

Record data searches and their uses

Field search operations, techniques, clues

Analysis of your corner search attitude

Evidence reality (What you find vs. the record)

Dealing with confusing evidence

What to do with the "uncalled for monument"

How long should you search

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The course is designed for practicing professional surveyors and their field-going personnel. We all learned records and corner search skills from our mentors; this course will help you analyze your experience and then broaden your perspective on this most important aspect of land surveying. Most importantly, you will leave with a renewed attitude and vigor for this part of your job.

This year PLSW and WES have entered a new era of understanding and cooperation. We are taking a more active role in helping with the convention and in return WES has cooperated with us in scheduling our seminar and meetings. We need to show them that we will be active participants at the convention.

This year WES and PLSW are going to require all who attend the convention to have a name badge in order to enter any and all events. This means that you will have to register for the convention through WES. You do not have to join WES but we are encouraging all of our members to join. Since WES picks up the tab for the convention, this will help defray some of the expenses of organizing and putting on the convention. We also encourage you to attend the banquets and other WES events.

PLSW is going to pick up the bulk of the cost of the seminar but we are going to charge ten dollars for PLSW members and fifty dollars for non-members to attend. This very nominal fee will be collected at the door by PLSW. Even with the cost of signing up with WES, the expense will be well worth it because of the high quality of the speaker we have retained.

To ensure that we will have a quality speaker at future conventions, please encourage all surveyors to attend, regardless of their age or experience. I think the younger surveyors will also learn a lot from Mr. Mouland's seminar. In addition, please encourage any out of state surveyors that you know to attend since our seminar will satisfy most other states' continuing education requirements. We also plan on having other local speakers talk about various surveying matters. As soon as the final schedule is worked out, we will publish a brochure and mail it to all interested people.

Save Our Surveyor Honorarium

The competition for a \$100 honorarium for the Land Corner Recordation Certificate judged best by your peers is underway.

This initial contest has **two** categories: The current category is defined as those filed with County Clerk reception numbers dated between January 1 and November 15, 1993. An historic category is also to be judged for all LCR certificates with reception numbers prior to January 1, 1993.

Please send your entries to 5801 Osage Avenue, Cheyenne, WY 82009. Intermountain Prof. Services will act as the clearing house to send copies of the entries to the two other committeemen Honorary Members, Joe Popp and Wes Reed. All entries must be received **prior to January 15, 1994**.

The five entries judged best in both categories will be put on display at the WES convention. The PLSW members will then vote for their choice to receive the honorarium. The announcement of the winners will be made at the annual membership meeting.

Boundary...Continued

title nor the exclusion of unwritten legal title properly and correctly applies the rules as the courts have laid them down. The basic issue is not a question of written/recorded title but, rather, a question of legal (vs. equitable) title. The surveyor's duty is to properly and correctly establish the boundary (monuments) according to the rule of law.

The standard texts on boundary are very explicit. According to these texts, we are obligated to research the records, compare our client's description with each of the adjoining's descriptions, and properly and correctly interpret/construe the record legal title. The conventional wisdom would have us stop there. The conventional wisdom would have us set our monuments at these corners. But the law presumes that our monuments are "landmarks established to indicate a boundary."

The documents (both recorded and unrecorded) are not the title itself – they are evidence of title. Further evidence exists, generally, in the form of other surveyors' monuments, lines of occupation, improvements, etc. (either recorded or unrecorded). The surveyor evaluates the admissibility, relevancy, competency, materiality, credibility, and probative value of evidence every time one monument is "held" rather than another. If the surveyor did not utilize the "best evidence," how could the boundary be properly and correctly established?

The "acid test" of this concept – that the surveyor's duty is to establish boundaries in accordance with the rule of law – can be exemplified by "adverse possession." The conventional wisdom would have us believe that if title is based on written memoranda (or monuments linked to it) the surveyor should establish the boundary according to such title; but if title is based on the rule of law (unwritten), the surveyor should not establish the boundary according to such title. This theory says that the method of acquiring title is critical.

The most imperfect degree of title consists in the mere naked possession or actual occupation...being distinguished in this respect from the "modus acquirendi." "...whenever you find a person in possession of property, that possession is prima facie evidence of ownership in fee; and that prima facie evidence becomes absolute when once you have extinguished the right of every other person to challenge it." The procedures, rules, and effects of law are such that under certain limited circumstances a person may come to be owner although no written memoranda exists. The method of acquiring title is not critical, according to the courts.

Since titles/boundaries are established (occasionally) by rule of law, the prudent surveyor must ask: "When does the fence become the boundary?" The only answer possible is: when a preponderance of the evidence indicates that the requirements of a particular rule of law have been fulfilled. "Title to property acquired by adverse possession matures...after the statutory...period has expired." "Nor is a judgment at law necessary to perfect a title by disseisin (adverse possession) any more than one by deed."

From the above, it is quite clear: Unwritten legal rights do not need a court to vest the title and thereby establish boundaries. The court order serves to recognize and thereby quiet the title. The phrase, "It's not the boundary until the court says it's the boundary," would be inappropriate (as applied to vested legal rights).

When faced with unwritten legal title, the conventional wisdom withdraws and thereby denies its professional stature. The conventional wisdom asserts that surveyors are not attorneys – they do not determine questions of ownership; surveyors are experts at measurement – they gather evidence (but do not render judgment?). The conventional wisdom seeks to insulate surveyors by denying our duty to properly and correctly establish the boundary.

The conventional wisdom would have us believe that we must follow the rule of law with regard to written legal title, but may not with regard to unwritten legal title. But where did surveyors get these "rights" – the "right" to choose when we will and when we will not follow the law? and the "right" to choose which rule of law will be obeyed and which will be ignored? Therein lies the fallacy of the conventional wisdom. The surveyor is given no option as to which rules to apply or when. The surveyor may not "pick and choose" simply because it is more comfortable. The only option the surveyor has is to declare that, based upon the available evidence, no "major probability" exists – that the evidence does not preponderate in either (any) direction and that therefore no boundary will be established.

To justify the label "professional," a surveyor must bring to bear an ever-increasing body of knowledge and experience so as to establish the boundary properly and correctly. This can be done only through the appropriate application of the rules of law and science. Applying these rules, the surveyor renders judgment, forms a professional opinion, and sets monuments (which are landmarks established to indicate a boundary).

Boundary, boundary – Which boundary? The boundary of the legal title.

*Reprinted from California Surveyor
Spring 1993*

Cartoon by Larry Perry, PLS • Cheyenne



My horoscope said I should avoid confrontation, so I got out of the office for the day.

Boundary, Boundary – Which Boundary?

By Chuck Karayan, P.L.S.

Wherever surveyors gather these days, whenever one of them writes an article for a "journal," there seems to be an almost endless stream of dissertation on professionalism, duty, and boundary. There are examples of error, cases of surveyor liability, and analysis of typical or theoretical problems. And still the discussion goes on. But rarely is the surveyor's duty with regard to boundary defined; or, for that matter, is the surveyor even told what a boundary is, where it is located, or when it is established. Rarely, if at all, have these basic professional issues been addressed; perhaps that is why the discussion goes on.

The boundary is a line, real or imaginary, which circumscribes a particular tract of land and limits it with reference to contiguous tracts. It is the limits or marks of enclosure if possession be without title (of record), or the limits stated/implied in the controlling document if possession be under title (of record). Surveyors sometimes call the boundary "the property line". Title people and lawyers sometimes call it "the line of ownership." Simply put, "the boundary separates yours from mine."

What are boundaries is a matter of law; where they are located is a matter of fact. The boundary is a line or object indicating (located at) the limit, or furthest extent, of a tract of land. These two concepts of boundary – what and where – produce the confusion and argument about surveyors' "establishing" a boundary. In the first instance – what – the surveyor cannot "establish" – only the law can; in the second instance – where – only a licensed surveyor can legally "establish."

As one reads the current periodicals, it appears that there are many schools of thought as to boundary and how surveyors should establish them. For most surveyors, the profusion of articles only serves to further confuse the question. And the discussion goes on. Some would have us delineate on the ground the line called for in "the deed." Implicitly, this theory says there are many boundaries of a tract of land – but how can more than one be "the furthest extent"?

Some would have us monument the line of occupation or possession. This theory says the fence is the boundary – but whether or not the fence is the boundary ("what are boundaries") is a matter of law. Others, probably the majority, would have us locate and monument the record title line. This theory says that the boundary is the stated/implied line as described in the controlling document (of record) when such line is properly interpreted, construed, and applied. Clearly, this represents the "conventional wisdom" of our profession today.

To this end of proper interpretation, construction, and application, the "conventional wisdom" embraces surveying's standard texts. All of these books tell us the rules of law and prove their points by citing cases already decided by the courts. The conventional wisdom exhorts us to know these rules and admonishes us that our duty is to properly and correctly establish the boundary. What the conventional wisdom does not address are the questions of unrecorded and unwritten title.

The United States Constitution states that the jurisdiction of the Supreme Court shall extend to all cases at law and in equity. Because the basic nature of any case is either one or the other, the Supreme Court's review authority covers all cases. Since

generic use of "record title" would include both. This line of reasoning would have surveyors include record equitable title and exclude unrecorded legal title.

Record equitable title can be exemplified by a real estate sales contract. The contract does not operate to transfer legal title. Since the purchaser generally goes into possession, the seller retains title as security. When the contract has been paid, the seller gives the purchaser a deed, and legal title is transferred between them. A contract purchaser who has fully completed the contract obligations would (absent other considerations) have an interest/title protectable by a court's equity powers. If the contract and satisfaction have been recorded, the purchaser would not hold legal title until the seller signed and delivered a deed.

An equitable interest/title is a mere floating and ineffectual justness until such time as the court enters a decree actually subjecting the land to such claim. A record equitable title is "ineffectual"; the limit of such a title cannot become the boundary (effectual) until the court enters a decree.

Unrecorded legal title can be exemplified by a deed, properly executed and delivered, which the grantee stores for "safe-keeping." The grantee's legal rights vest at the time of delivery; the boundary then exists and is unaffected by the trust/naivete evinced in the failure to record. (Recording a conveyance gives the grantee senior rights as against a subsequent conveyance of the same property from a common source of title.)

The Statute of Frauds (originally enacted in England) concerns itself with the need for definite proof of conveyance, requiring that every transfer of title be put in writing. While the statute is specific, it does not require that the writing be recorded. As between the parties, an unrecorded conveyance is valid.

From the above, it is quite clear: Recording is not the basic issue. Neither the inclusion of record equitable title nor the exclusion of unrecorded legal title is supported by the courts. What, then, of unwritten title?

Unwritten equitable title can be exemplified by a fence which adjoining owners have recognized and acquiesced in as their adopted boundary (generally, for a period of time equal to the statute of limitations governing the recovery of real property). Whether written or unwritten, an equitable interest is a mere floating "justness" until such time as a court enters a decree actually subjecting the land to such claim. As applied to equitable interests/titles (only), the phrase, "It's not the boundary until the court says it's the boundary," would be appropriate.

Unwritten legal title can be exemplified by a fence which has stood as the limit between adjoining owners for "time immemorial." More commonly known as the rule of ancient fences, the proper name for the doctrine is the rule of ancient boundaries. "By the sufferance of the adjoining proprietors, by the efflux of time, and by consequent operation of law," the boundary is established. And although "it was not the original line .. whether .. erected .. deliberately as marking the boundary .. or by mistake as to location .. can make no difference .."

From the above, it is quite clear: Written documentation is not the basic issue. Neither the inclusion of unwritten equitable



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Board of Directors Meeting Summary

The Board of Directors summer meeting was held in Jackson, Wyoming on Saturday, September 18, 1993. The meeting was hosted by the Central Chapter and was held at the offices of Nelson Engineering. Arrangements for the meeting facilities were made by Rich Greenwood, President and Mike Quinn, Secretary/Treasurer of the hosting Central Chapter.

President Bob St. Claire called the meeting to order at 9:17 AM. Twelve members were present including six members of the hosting chapter. All Chapters were represented by their Director or Alternate with the exception of the South Central and Southwest Chapters.

Minutes of the Casper Board Meeting held May 1, 1993, were discussed and approved. Rick Hudson presented the Treasurer's Report which included Hilltop National Bank statement, itemized expenses and balance sheet all dated September 17, 1993. Treasurer's Report accepted as presented.

The National Society of Professional Surveyors Report was orally presented by Governor Becky J. Braman. She discussed numerous topics including the NSPS map competition, government affairs and the proposal to make the Department of Energy a cabinet position which would involve a change in the current government procurement policy. Herb Stoughton, as ACSM Director, spoke concerning the survey technician certification program, the map competition, the NGS mark maintenance program and "TrigStar". This was followed by a general discussion concerning "wash out" surveys, something new to all members present, and distribution of a letter from Nancy Parke, NSPS Government Affairs Director.

Scott Pierson presented an oral report concerning the Western Federation of Professional Surveyors Board Meeting held earlier this month in Denver. Scott mentioned various items including the possibility of regional NSPS/ACSM fall conventions and a lawsuit against the Hawaii Board of Registration asking for elimination of the state-specific portion of the professional land surveyor examination. He concluded by stating that the next meeting will be in Salt Lake City on 15 January 1994.

Committee Reports were presented by Herb Stoughton / Education and Professional Practice and Rich Greenwood / Handbook Format. Herb mentioned an upcoming HARN/GPS seminar at the University of Wyoming to be held December 6-9, 1993, and the workshop in Cheyenne last July with 21 attendees. Rich reported that the project of "scanning" our handbook is progressing and that the statutes have been completed. This led to a general discussion concerning the need to include the easement and homestead exemption laws.

Herb, as Chairman of the Standards, Ethics and Professional

Practice Committee, reported on the proposed "Standards For Property Boundary Surveys" before the Missouri State Board of Registration. A recent U.S. Supreme Court case setting forth the definition of "expert witness" and the committee's proposed policy statement regarding control surveys for utilities. A general discussion followed wherein the need for an historical roster, in numerical sequence of former registrants. Discussed also the need for Canon of Professional Practice.

Following a break at 10:30 AM, the board met in executive session for approximately 13 minutes. Reconvened the meeting at 10:55 AM with the presentation of old business. The first item concerned the "SOS" honorarium and Herb Stoughton, on behalf of Pete Hutchison, distributed copies of the report and recommendation from that committee.

A general discussion, in accordance with Robert's Rules of Order, resulted in a motion being carried wherein the judging committee will choose five certificates in historic and current categories for vote by the general membership at the annual state meeting next February in Riverton. The deadline for submission of certificates will be 15 January 1994. Herb then displayed three drawers from the "GLO plat file" and various plats on the Wind River Meridian. Formal action on the proposed policy statement concerning control surveys for utilities was postponed until the December Board Meeting in Rock Springs.

Herb announced that his letter to Ray Connin, concerning the whereabouts of the BLM Cadastral Training Program, has resulted in the location of same and that it is being returned to PLSW. He also stated that the software entrusted to Ray as NSPS Governor, has not yet been located but efforts are continuing in the matter.

New business followed with the approval of membership applications from John D. Hart, member and Don Bender, special member. Jeff Lewis, Northeast Chapter Director, presented his chapter's nomination of Bryce Rumph for honorary membership in accordance with the policy adopted last year.

The next new business item was presented by Bob St. Claire and dealt with the PLSW sponsored seminar by Dennis Moulard to be held at the Wyoming Engineering Society convention next February in Riverton. After lengthy general discussion, it was agreed that the PLSW Executive Committee will work directly with the WES Officers and General Chairman regarding the specifics of time, place and cost. As set forth in a Memorandum For Record, submitted by Herb Stoughton and approved by the board, the Executive Committee is to consist of: the immediate Past President, the President, the Vice-President, the Secretary/Treasurer and one Director.

Continued on page 7



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30 August 1993

Mr. Mike Sullivan, Governor
State of Wyoming
Capitol Building
Cheyenne, Wyoming 82002

Dear Mike,

Recently opportunities have been taken by me to visit the four corners of the State of Wyoming. It was thought that you might be interested in the status of the monuments marking your domain.

At the southeast corner of the state is a well marked stone monument with additional work by a local surveyor. It would well use an explanatory plaque which possibly the Southeast Chapter of the Professional Land Surveyors of Wyoming might undertake to install.

At the northeast corner is a 12"x12"x6 ft. quartzite shaft which has toppled to the ground. The Northeast Chapter of the PLSW has undertaken to reestablish this monument in its correct position. So far the survey work has been done with the resetting to be done in the near future.

At the southwest corner is a 12"x12"x68" above ground red sandstone shaft nicely marked located in a fence line. Perhaps the Southwest Chapter of PLSW will undertake to remove the graffiti from the monument, rearrange the fencing, and install an explanatory plaque.

The foregoing three monuments are easily reached via automobile.

At the northwest corner the original monument was a post set in a large mound of stones with three marked stones plus nineteen bearing trees. The recent fires destroyed the original post and killed the bearing trees. Some of the bearing trees are still standing and identifiable. The group of thirty-two people who made the rigorous, for me, two mile climb to 8600 feet to recover the monument last Saturday, plan to rehabilitate this monument in some manner next year.

Very sincerely yours,

Paul N. Scherbel
Professional Land Surveyor
Registration No. 164
PNS:my

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Metric Facts: Density

Which is heavier, a pound of feathers or a pound of lead? This childish question probably marked the first encounter with the concept of density for many people. For engineers, the concept is one that is used almost daily.

Density is defined as mass per unit volume. There have been many ways of expressing this concept in different measurement systems over the years. Fortunately, in metric there is only one combination of units that should be used and that is kilogram per cub meter, kg/m³. For conversion purposes, there are 2.205 pounds per kilogram and 264.2 U.S. liquid gallons per cubic meter.

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\$10+ Billion In Metric

So much federal metric work is under way that estimating the total has become difficult. Virtually all agencies have some metric projects in the design stage or beyond. More and more are moving aggressively as they find that metrication is readily achievable.

- The Army Corps of Engineers expects to have all of its *Guidespecs* converted by this fall and has formed a Senior Executive Service committee to implement metric in all Corps programs. A number of metric pilot projects are under way and many more are in planning.
- All new GSA design work will be in metric after this October. The agency recently completed construction of a metric-based pilot project in Denver. It came in under budget and there were no appreciable metric-related problems in either the design or construction stages.
- The Federal Highway Administration is maintaining its schedule for the metrication of highway construction by October 1996. States are preparing for the change to metric now, and many have pilot projects under way. Annual federal highway outlays are about \$16 billion; these funds will stimulate billions more in state and local metric construction dollars.
- Other federal agencies hard at work on conversion include the Air Force, the Navy, NASA, the Smithsonian Institution, and the Departments of Veterans Affairs, Energy, Health and Human Services, Commerce, interior, and Agriculture.

Virtually all federal construction – about \$40 billion annually – will be designed and built in metric by late in this decade. Spurred by federal grant programs, state and municipal construction also may be predominantly metric by that time.

The private sector is doing its share. Codes, standards, trade, and professional organizations are converting their remaining non-metric documents and beginning to prepare their constituents for the change to metric. Product manufacturers are beginning to convert their product literature.

You can help speed the process by promoting metric in the organizations to which you belong. **Remember, English is the international language of business and metric is the international language of measurement.**

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BLM News

This letter is to inform you of official cadastral surveys in Wyoming that have been accepted from July 1, 1993, through September 30, 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. 44 N., R. 71 W.	Dependent Resurvey	6 P.M.	07/29/1993
T. 45 N., R. 71 W.	Dependent Resurvey	6 P.M.	07/29/1993
T. 44 N., R. 72 W.	Dependent Resurvey	6 P.M.	07/29/1993
T. 45 N., R. 72 W.	Dependent Resurvey	6 P.M.	07/29/1993
T. 46 N., R. 72 W.	Dependent Resurvey	6 P.M.	07/29/1993
T. 42 N., R. 113 W.	Dependent Resurvey	6 P.M.	07/29/1993
T. 55 N., R. 69 W.	Dependent Resurvey	6 P.M.	09/07/1993
T. 17 N., R. 107 W.	Supplemental Plat	6 P.M.	09/07/1993

Wind River Meridian, Wyoming			
Township and Range	Type of Survey	Meridian	Accepted
T. 1 S., R. 1 E.	Dependent Resurvey	WRM	07/29/1993
T. 2 S., R. 1 E.	Dependent Resurvey	WRM	07/29/1993
T. 2 N., R. 2 E.	Dependent Resurvey	WRM	07/29/1993
T. 1 S., R. 3 E.	Dependent Resurvey	WRM	07/29/1993
		WDM	07/29/1993

Board Summary...Continued

The next topic concerned the 17 petitions for administrative rules to the State Board of Registration. These petitions were submitted by Wyoming Land Surveyor's Council for the board meeting held on 18 June 1993. Bob read a letter he had received from the board stating that the petitions were rejected at that meeting. He also stated he had sent letters to the board indicating that PLSW had not been contacted by the petitioner and consequently, had not had time to review and offer comment regarding the petitions. Paul Scherbel, State Board of Registration member, provided additional information and indicated that one of the petitions was considered. After lengthy general discussion, it was decided that the Professional Practice Committee shall review the petitions and report back to the board at the December meeting in Rock Springs.

Jeff Lewis reported on the remonumentation project of the northeast corner of the state and an artist's rendition of the proposed memorial was presented. Paul Scherbel reported on the August 28th trek to the northwest corner, involving 32 persons including five PLSW members. He stated that the rock mound and bearing trees were recovered and indicated the corner is to be remonumented next year.

Various announcements were presented. Jeff Lewis announced that the Northeast Chapter has awarded a scholarship, for the fall semester at Northern Wyoming Community College, to Cevin Imus. Congratulations Cevin!!! Herb distributed a letter concerning NAVD 88, announced that Metro State will no longer be accepting surveying majors after November and mentioned an article from *Lines & Points* had been reprinted in *Arizona Surveyor*. Paul Scherbel passed out copies of a proposed *Corner Record* he has prepared and stated that it results from a challenge, to the State Board of Registration, from an attorney representing a (land surveyor) registrant. The Certified Land Corner Recordation Committee, Chairman Harvey Copeland, will look into the matter and make a recommendation at the board meeting in Rock Springs. A general discussion concerning the outside preparation of "minimum standards" followed with no formal action being taken at this time.

The meeting was adjourned at 1:32 PM with members being invited to lunch at Tortilla Flats before heading home. Dated this 5th day of October 1993.

R.L. Hudson, Secretary/Treasurer

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Tid Bits from the Board

By Christine Turk

In the October 1992 issue, I reported that the Wyoming Board of Registration for Professional Engineers and Professional Land Surveyors was in the process of making modifications to the Rules and Regulations and Statutes signed by the Governor and Secretary of State. The modifications have been in use since October 15, 1992, and seem to be working well with no negative comments being reported.

Beginning October 1993, all Fundamentals of Land Surveying Examinations will be administered on the same day as the Engineer-in-Training Exam, which will be on Saturday's at the University of Wyoming. This change was recommended to all Member Boards' for security and uniformity purposes. Those involved with the administering of those exams agree that this change should not cause any complications in the administration of the exam.

Examination locations have been slightly changed with the Fall 1993, exam administration. Exam sites will be in Casper and Cheyenne only, eliminating the Green River site.

Now that an educational requirement for Land Surveyor registration is in force, I will attempt to clear any misunderstandings as to when the Board will begin considering qualifying experience for those applying for the Land Surveyor-in-Training (LSIT) Exam. If applying for LSIT Certification based on an ABET Associate Degree in Surveying Technology, one also needs four (4) years of combined office and field experience in land surveying, of which two (2) years shall have been in charge of boundary land surveying projects under the supervision of a registered land surveyor. The described experience will not be considered until **AFTER** the education requirement is met, rather than after the LSIT Exam has been successfully completed.

The National Professional Land Surveyor Examination was revised in October 1992, to be a universal six (6) hour exam (four (4) hours in the morning and two (2) hours in the afternoon). The remaining afternoon two (2) hours will be used for the Wyoming State Specific Exam. The PPLS Public Domain, which was administered in the afternoon, is no longer a specific part of the national exam. Public Domain questions have now been incorporated into each state specific exam. Therefore, examinees will find the majority of the public land survey questions to be part of the two (2) hour state specific.

The Board has begun limiting the number of times a candidate may attempt an exam. After three (3) failures of any examination, the candidate will be given the opportunity to reapply, but must allow one (1) year to lapse, and must meet any and all new standards that may have been enacted.

ANNOUNCEMENT

The spring ACSM/NSPS meeting will be in Reno, April 23-28, 1994. Start making your plans!

Letter To The Editor

Editor

Dear Sir:

May I relate a recent incident again indicating the necessity for adequate research and the importance of reading the field notes when the public land survey system is involved?

The Scenario:

In 1914 the GLO set the east 1/4 corner of Section 33 with one bearing tree.

In 1965 a U.S. Forest Service corner-finder recovered and placed a sign upon the bearing tree noting the location of the 1914 monument but did not recover the 1914 monument.

In 1968 the BLM did not recover the 1914 monument but did recover the 1914 bearing tree during a remonumentation effort in cooperation with the U.S. Forest Service and without survey set a new monument. Proper field notes were filed.

In 1981 Surveyor A subdivided the NW1/4 of Section 33 setting the center one-quarter corner and several one-sixteenth corner monuments with corner reports for all using the 1968 monument. That corner report did not mention the 1914 monument nor the bearing tree.

In 1984 Surveyor B posted and flagged the east line of Section 33 using the 1914 monument with the corner report not mentioning the 1968 monument nor the bearing tree. Apparently the PLSS field notes were not thoroughly consulted.

In 1993 Surveyor C in subdividing the NE1/2 went to E1/4 corner, readily found the 1914 monument and commenced his work. After several days work found that his lines were not jibing with the 1981 survey. He had read the corner reports but assumed that the 1981 report was merely incorrectly written. Later the PLSS field notes arrived and it was found that there had been two monuments set. Armed with that information, the E1/4 was again visited, and it was found, indeed, that there were two extant monuments 23.79 feet apart with the bearing tree and USFS sign intact. At that time it was noted that the bearing tree was more nearly S88°W instead of the N88°W of the field notes though the distance was correct. The 1968 monument was buried and not readily visible.

What happens now?

Very sincerely yours,

Paul N. Scherbel

Professional Land Surveyor

Registration No. 164



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Federal Highway Metric Transition Timetable	
Prepare metric conversion plan	October 1991
Initiate revision of laws and regulations that are barriers to metric conversion	1991
Complete conversion of FHWA manuals, documents, and publications	1994
Complete conversion of FHWA data collection and reporting processes	1995
Issue construction contracts in metric units only	September 30, 1996

Although many federal agencies have set a goal of converting their construction to metric in January 1994, the 1996 date adopted by the FHWA allows the states, which perform the actual highway work except on federally owned land, sufficient time to prepare for metric conversion. This is particularly important in light of the long lead times that larger highway projects require.

Here, in abridged form, are the answers to commonly asked questions about highway metrication. Taken from a June 1993 FHWA metric fact sheet, the questions and answers illustrate the complexity of the conversion process and FHWA's firm commitment to meeting the 1996 deadline.

Q What is meant by metric plans, specifications, and cost estimates (PS&Es)? Do all measurements have to be in metric or can certain designated numbers remain in inch-pounds or can dual units be used?

A All PS&Es are to be in metric units exclusively after September 30, 1996. While special situations may be considered on a case-by-case basis, it is expected that the states are currently taking necessary actions in their project activities to ensure that projects advertised for construction after this date are being developed in metric. General exceptions will not be granted. Specific exceptions will have to be justified – for example, if circumstances are beyond the state's control due to unforeseen delays in right-of-way acquisition or environmental clearances, an exemption would be considered.

Q Will structural and hydraulic design calculations have to be in metric? These are not transmitted with the PS&E package.

A Eventually, all highway engineering and reference manuals will be in metric, so it seems reasonable to expect that calculations requiring the use of data from tables and equations in these manuals will be also in metric. Working in inch-

pounds units and then converting to metric defeats the purpose of learning the metric system and creates an environment that is prone to confusion and errors.

Q Have any states put out metric PS&Es? If so, can the other states be provided with examples and a description of problems and difficulties that had to be overcome? Does Canada have standard designs, computer software, and other aids we can use?

A The Florida Department of Transportation (DOT) will contract for a large metric project in August. The Kentucky DOT has a metric project 10.5 kilometers (6.5 miles) long to be let in the near future. The Federal Lands Highway Office completed several metric projects in the 1970s. The Puerto Rico Department of Public Works has been doing metric projects exclusively for a long time. Canada has been very helpful in providing information about metrication and we are consulting with a number of their highway officials.

Q Will the FHWA require certain items to be in hard metric units or will this be left up to the states?

A The FHWA expects states to follow metric standards adopted by the American Association of State Highway Transportation Officials (AASHTO), the industry, and the FHWA. To the extent practical, units should be hard converted.

Q Will dimensions have to be shown in metric for rehabilitation projects? How about replacement of inch-pound parts such as bolts?

A When reasonable and practical, all dimensions should be in metric. Showing two different methods of measurement only creates confusion. In the replacement of inch-pound parts such as bolts, common sense should dictate the action.

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Northwest Corner of Wyoming Revisited

A group of 34 hale and hardy individuals parked their vehicles along U.S. Highway No. 191 on the cool morning of August 28, 1993, and made the arduous climb to the northwest corner of Wyoming. The group represented numerous agencies and organizations: Bureau of Land Management, Professional Land Surveyor Societies of Montana and Wyoming, National Park Service, State of Wyoming and Professional Surveyors of the 6th Principal Meridian.

After a two hour climb, the corner position was reached. Much standing dead timber was remaining from a fire that had swept the area in 1988. The original corner, a pine post, 10 ft. long, 30 ins. diam., was gone, apparently consumed by the fire. A 20 in. hole in an expansive mound of stone marked the corner

position. Three marked boulders were found alongside, originally set as reference stones. The outlines of the original pits were evident N. and S. of the corner position. Several dead pine bearing trees have remained standing despite the elapse of 119 years and the devastating damage caused by the fire. The healed blaze on one of the bearing trees was opened to reveal the original scribe marks.

Pending remonumentation, the group set an aluminum rod monument, 5/8 in. diam., at the corner position. Permanent monumentation is scheduled for the summer of 1994, followed by an appropriate dedication ceremony. The contact for Bureau of Land Management participation is Jerry Messick (307) 775-6220.



Paul Scherbel
"Wyo" is inscribed just right of his hand.



Jeff Scully comes up for air while digging in bottom of monument post hole



John Lee opens a bearing tree.



Paul Scherbel stands in the rock cairn that held the corner post.

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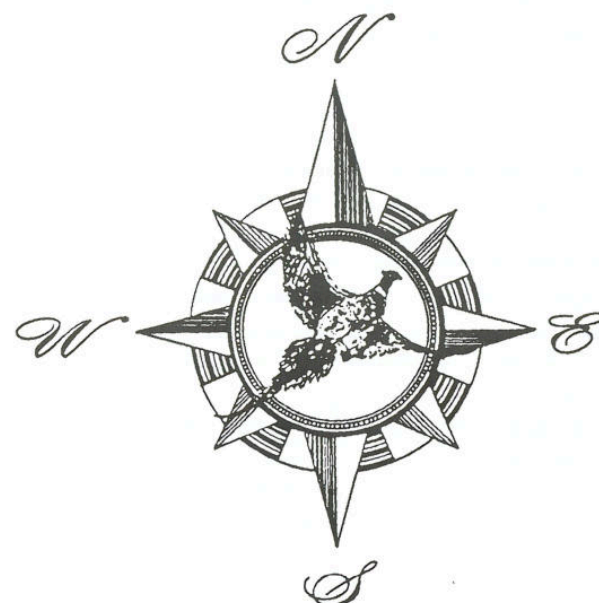
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Remonumentation

Representatives from the Bureau of Land Management, Forest Service, Professional Land Surveyor Societies of Montana, South Dakota and Wyoming, and Professional Surveyors of the 6th P.M. converged at the northeast corner of Wyoming on September 28, 1993. The objective was to remonument the corner common to South Dakota and Wyoming on the Montana State Boundary, and the southeast corner of Montana. With abundant assistance, both existing monuments (quartzite monoliths, 6 ft. long, 1 ft. square) were reset in concrete bases and surrounded by fence for adequate protection. By day's end, the objective had been accomplished and further plans were developing toward a dedication ceremony.

That evening, a planning meeting with the local community was held in Belle Fourche, South Dakota. Local organizations are actively supporting the dedication scheduled July 16, 1994, at the Montana-South Dakota-Wyoming corner site. The ceremony will highlight early survey history, early settlement in the area and the importance of boundary marker preservation.

Mark your calendars now and plan to attend this event located adjacent to the beautiful Black Hills and near famed Deadwood, South Dakota. Contact Dennis Bland (307) 775-6219 for further details.

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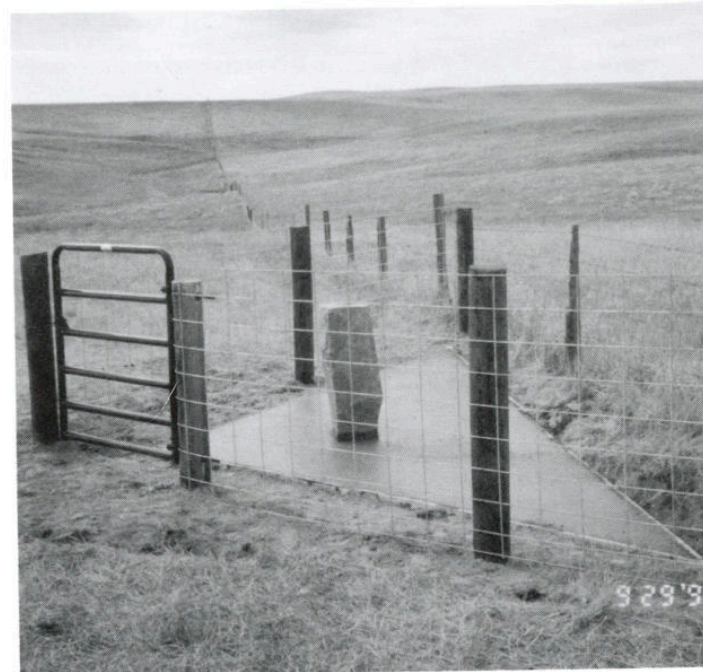
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Corner common to South Dakota and Wyoming on the Montana State Boundary.

NE Chapter News

The activities of the Northeast Chapter have recently been focused on the remonumentation of the NE corner of Wyoming. The position of the corner was determined in July during a resurvey conducted by the Bureau of Land Management. With the position of the corner determined the next step was the actual remonumentation. This took place on the 29th of September and involved many members of the Northeast Chapter along with employees of the BLM. The end result of a lot of coordination and hard work is a very impressive looking monument. The dedication ceremony will take place next summer and is currently in the planning stages. We would like to thank the Southcentral Chapter and AMAX Coal for their contributions which greatly helped in funding the project.

In other chapter news, we have awarded a scholarship of \$250 to Cevin Imus. Cevin is originally from Cheyenne but is currently residing in Gillette and is enrolled at Northern Wyoming Community College pursuing a degree in Surveying Technology. He is very interested in making surveying a career and hopes to eventually be registered in Wyoming. Cevin will also receive \$250 of matching funds from the State organization of the PLSW.

Our annual rifle raffle is underway. Prizes this year include: 1st Prize - Ruger Model 77R rifle, 2nd Prize - a pair of Bushnell binoculars, 3rd Prize - a Coleman camping lantern.

We would also like to pass along an item of interest from the University of Wyoming College of Law. For those of you that are interested in studying case law a yearly subscription to the *Land and Water Law Review* is available for \$18. Phone 307-

Response To Herb's Corner

re: *Herb's Corner*, Published in *Side Shots*, May Journal 1993, Volume 24 Number 2

Comments By: Dr. Albert H. Barnes (Al's Corner?)

Dr. Stoughton's evaluation of the error in estimating the sea-level distance from the horizontal distance at any elevation due to the error in estimating the elevation of the "measured" horizontal distance, is an interesting and worthwhile exercise.

Several comments may be appropriate for a better understanding of the subject error. The first will have to do with the correction of printing errors and details of mathematical manipulation. The second will have to do with the significance of this inevitable error.

The "s" on the right-side of the equation of the basic equation as printed, should be a capital "S".

For purposes of the mathematical purity of the evaluation, the author has presented the differentiation of the basic equation. This complete differentiation results in four terms. The first and third terms result from the differentiation of the sea-level distance with respect to the radius (R), the second is with respect to the measured distance (S), and the fourth is with respect to the elevation (h). The HP 48SX hand-held computer indicates that the last two terms should have negative signs rather than the indicated positive signs. This differentiation expresses the change in the sea-level length for changes in the earth's radius, the measured distance, and the elevation of the measured distance. Since the radius of the earth and the measured distance are considered constant, the last two terms are zero. Accepting this at the beginning would have eliminated an unnecessary step.

This relationship can also be easily demonstrated by geometry, similar to the development of the original formula. No formal differentiation would be required. It is left to the student to show this derivation.

The author then expands the simplified form with only the first four terms of an infinite Taylor series expansion. This was not necessary for the resulting numerical evaluation.

The radius of the earth used appears to be 20,905,000 feet. This may be a reasonable representative value. The actual radius of the earth (geoid?) at the latitude of the measured distance may differ from this by as much as the uncertainty of the elevation. Thus, there are other considerations than only the uncertainty of the terrain elevation.

The uncertainty in terrain elevation results in a random error in the estimated sea-level distance in contrast to a systematic error. This random error cannot be applied as a correction. It can only be estimated and compared with other random errors in the entire process. Most electronic distance meter accuracy specifications indicate a proportional error is between 2 and 5 parts per million.

After some algebraic manipulation of the presented equations, we find;

$$ds/s = dh/(R+h),$$

which expresses the relative error in the sea-level distance in terms of the estimated error in the elevation and its distance from the center of the earth (geoid).

For representative EDM's, at an elevation of sea-level (R=20,905,000 feet and h=0), the allowable error in elevation (dh) would be between 41.8 and 104.5 feet, in order to produce

elevations above sea-level, the allowable error in elevation would be greater. Elevation estimates should be well within these limits given local benchmarks, USGS topographic maps, or surveying altimeters.

In conclusion, it can be stated that "Herb's Corner" presents an interesting (academic) evaluation which we all should be aware of, but not let it overwhelm us.

Albert H. Barnes, PhD, PE-PLS
2637 West County Road 40
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Sideshots August, 1993

"Wash Out" Surveys

Many surveyors have posed the question as to the legality of performing residential surveys for banks or mortgage firms under an agreement to waive a fee if the loan or transaction does not take place. This arrangement is commonly terms a "wash out".

In December, 1992, Nick Miller, President, Florida Society of Professional Land Surveyors, wrote a letter to Mr. Dave Williamson, Director of Enforcement for the Real Estate Settlement Procedures Act (RESPA) at the Department of Housing & Urban Development (HUD) in Washington, D.C. requesting a written reply to the legality of "wash-outs" under RESPA. He anticipated an official interpretation of the RESPA rule and "wash out" arrangements to be published in the *Federal Register*. To date, this has not occurred.

In addition, Mr. Williamson has been receiving requests from the states of Texas, Kansas and Florida on this matter.

Last week, I contacted Mr. Williamson at HUD to inquire when an official opinion would be made on the legality of "wash out" survey arrangements under RESPA.

Mr. Williamson indicated that he plans to put out an official notice letter on "wash out" or "bust out" surveys within the next two weeks. He noted that it was HUD's opinion that such arrangements were illegal under RESPA and that enforcement would take place on October 1, 1993 or shortly thereafter. Under RESPA, punishment for violation includes fines and possible imprisonment.

Williamson indicated there was no need for a further regulation in order for HUD to take action. He will furnish me with a copy of the HUD letter on this so we can inform our members. He did, however, indicate that this issue would be elaborated on in a subsequent rule or regulation that would be ultimately published in the *Federal Register*.

Please inform NSPS members that providing residential surveying services to banks or mortgage lenders and waiving fees in exchange for direct or referral business is in violation of RESPA and such arrangements will be legally enforced by HUD. I will forward Mr. Williamson's letter to you when it is received.

Nancy Parke - Government Affairs Director ACSM