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# The California Surveyor

No. 81 The Voice of the Land Surveyors of California Spring, 1986

Paste Book

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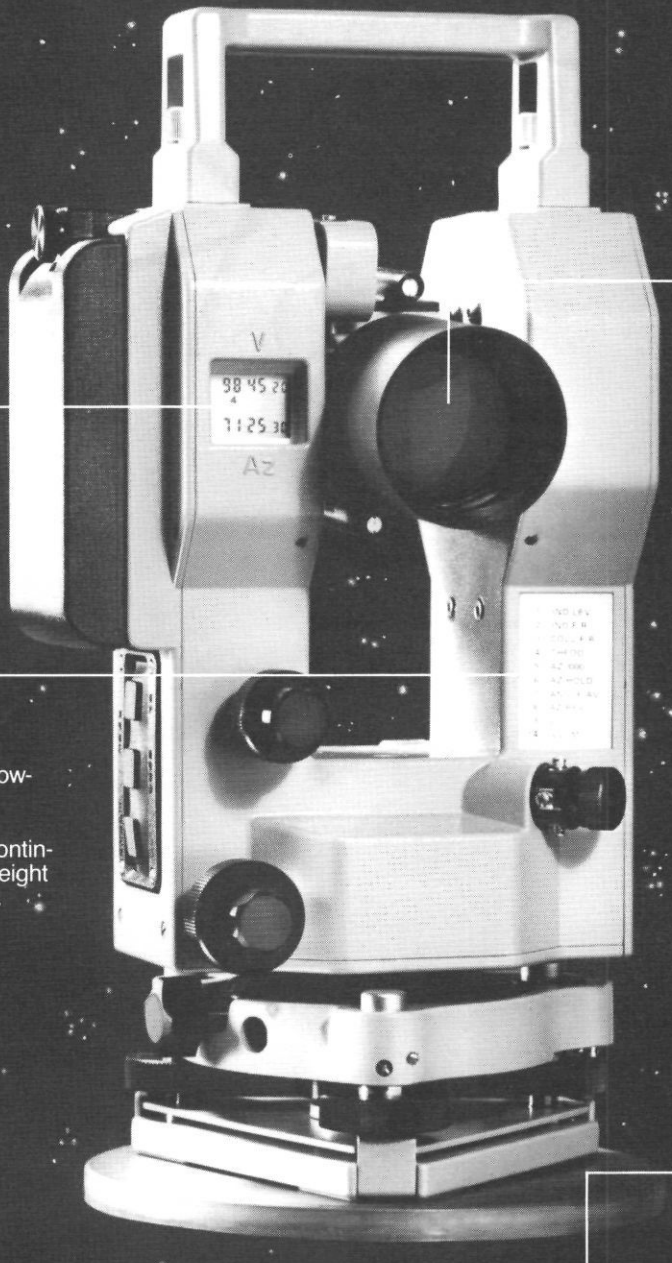


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is the quarterly publication of The California Land Surveyors Association and is published as a service to the land surveying profession of California. It is mailed to all Licensed Land Surveyors and Land Surveyors-In-Training in the state of California as well as to all members of California Land Surveyors Association. *The California Surveyor* is an open forum for all surveyors, with an editorial policy predicated on the preamble to the constitution of the California Land Surveyors Association and its stated aims and objectives, which read:

"Recognizing that the true merit of a profession is determined by the value of its services to society, the 'California Land Surveyors Association' does hereby dedicate itself to the promotion and protection of the profession of land surveying as a social and economic influence vital to the welfare of society, community and state."

"The purpose of this organization is to promote the common good and welfare of its members in their activities in the profession of land surveying, to promote and maintain the highest possible standards of professional ethics and practices, to promote professional uniformity, to promote public faith and dependence in the Land Surveyors and their work."

**PERSONNEL**
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**EDITORIAL MATERIAL**
All articles, reports, letters and contributions are accepted and will be considered for publication regardless of the author's affiliation with the California Land Surveyors Association. Material should be sent to *The California Surveyor.*
Unless indicated, all articles in this publication are prepared by the editor.

**EDITOR: Ronald C. Greenwell, L.S.**
**1023 San Carlos Drive**
**Antioch, CA 94509**

**COVER PHOTO** The first annual Ed Kuhlan award was presented to C.L.S.A. at the 25th Annual California State University, Fresno Surveying and Photogrammetry Conference. Ed Kuhlan, now retired, was one of the founding fathers; a prime mover in creating the four year land surveying program at CSU-Fresno. Many people had assisted him in establishing the surveying program and Mr. Kuhlan found it difficult to select one individual. Having found the one common denominator was an active membership in the Association, Mr. Kuhlan presented the first annual award to C.L.S.A.

**DEADLINE DATES FOR THE CALIFORNIA SURVEYOR**
Summer ..... April 7, 1986
Fall ..... July 7, 1986

Articles, Reports, Letters, etc., received after the above mentioned date will be placed in the next edition.

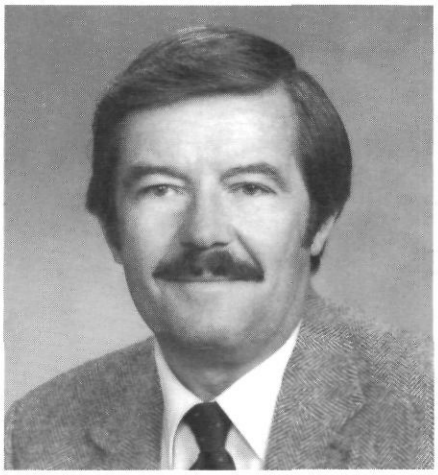
# President's Message

As 1986 begins, I look forward to the challenges and opportunities as President of CLSA this next year. The Vice President—Louis E. Rutledge, Secretary—Susan Jensen, and Treasurer—Paul Cuomo, are all dedicated and hard working as demonstrated by their past services. Our commitment of working together along with improving communications with the membership will prove beneficial to all.

My involvement in surveying over the last few decades has been related to land development. I know many of our members are also in private practice, some are owners of their own businesses, while many others are working for government agencies. In whatever job area we are in, I believe our members look forward to improving the practice of surveying and the surveyor's professional image. How can we as a professional organization do this? Improving our educational opportunities, working on legislation to improve our services, working with government agencies to provide tomorrow's housing and improving our professional level, I believe will be the central stream of CLSA's efforts.

Two legal seminars were held last year, one in Los Angeles and the other in San Francisco. Many members took advantage of the seminars. This is a start in a program of continuing seminars throughout the year on a variety of subjects. These seminars, we hope, can be given in several locations to make it easier for more members to attend.

Another area of great importance is legislation. Last year the implementation of S.B. 1837, requiring Records of Surveys or Corner Records being filed was an example of legislative impact. This legislation is certainly yielding more records on surveys and the sharing of survey information among our survey community. The legislation this year being sponsored by CLSA deals with the State Plane Coordinates. Presently most land lines are not tied together in a system that can be used in a data base. To plug in a coordinate for retrieval of all survey maps, monument information, easements and utilities within a given distance of that



**Richard P. Siegmund**

point, could be very beneficial to our profession. We will have to see how that legislation develops.

More work will have to be done by government and private practice working together to develop an infrastructure to provide services for new homes. Some of the professional organizations will have to get their members to deal with the problems and provide assistance to government in this planning. The installation of these water lines, sewer lines and street improvements will provide design and construction survey work. Without the infrastructure improvements, future housing projects will not develop, which would affect the profession's future work load.

One other important area of concern must be that of being professional. Educating our members to be more sophisticated in dealing with their clients and associates in the business world. Helping to develop guidelines for contracts, billings and communications with other professionals will be of benefit to the profession.

It is my desire that our committees become more efficient and respond to the membership needs. I believe improving our communications in both directions will help. The committees need to know your needs and then respond quickly. Legislation, however, will be an item that does take time and a lot of effort.

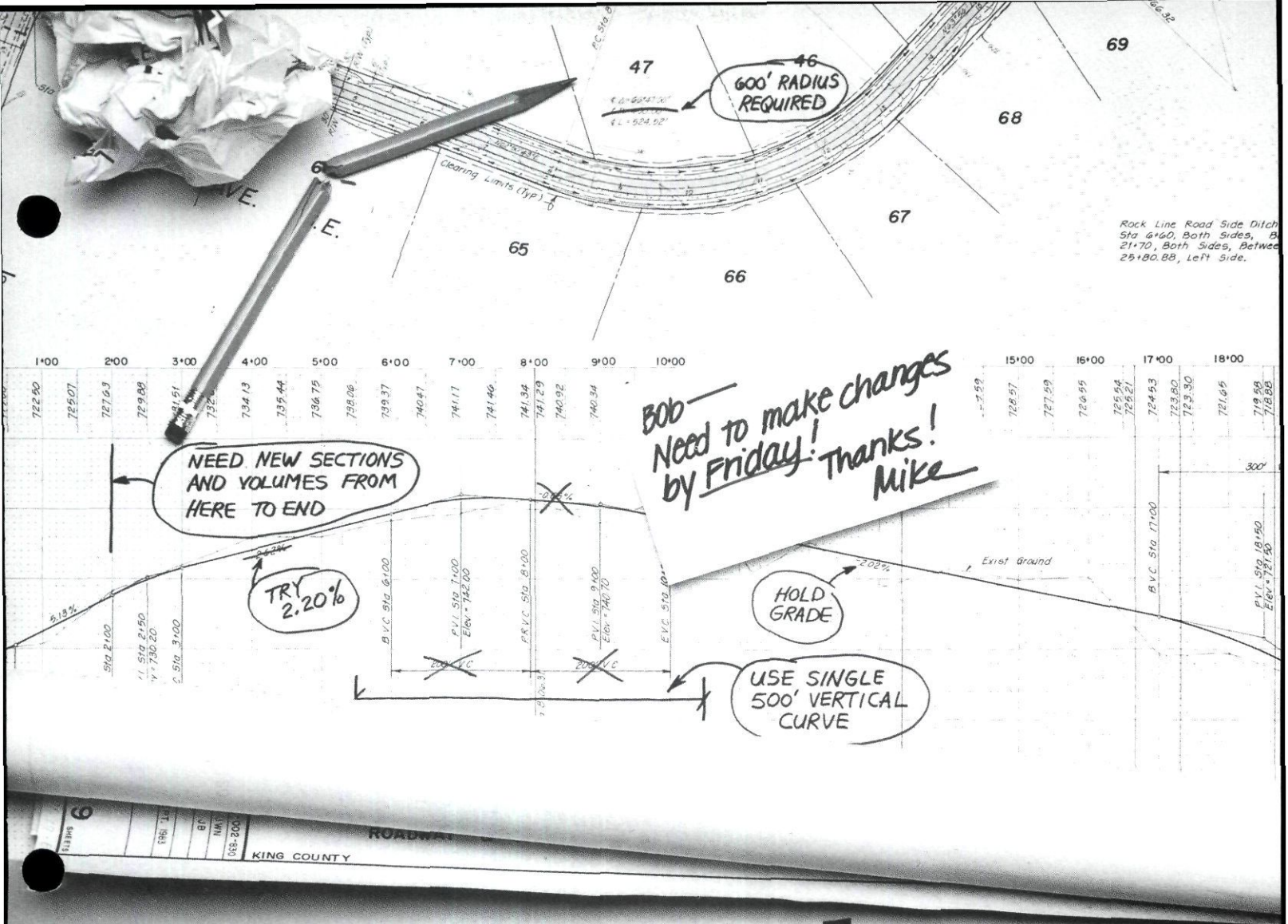
Communication with the membership will receive additional effort this year. The last few years have seen The California Surveyor grow in size and content. We have many fine articles that speak to the issues of today. We need to thank the editor and staff for providing such a fine forum for communications. Last year we started publishing a newsletter. It is proposed to be published every two months. The content is planned to keep CLSA members up to date on what is happening throughout the state. We will need the local chapters to forward to CLSA Central Office information on what is happening in their area.

In closing, I look forward to CLSA growing in membership this next year and improving communication with the Surveyors of California. I enjoyed seeing everyone at the 20th Anniversary Conference held in Sacramento during February.

Richard P. Siegmund, L.S.
President

## 1986 C.L.S.A. Officers

*Left to Right: Louis E. Rutledge, Richard P. Siegmund, Susan A. Jensen, Paul A. Cuomo, Michael R. McGee*

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# Legal Corner

## ELEVEN THOUSAND ACRES OF CLOUDED TITLES: The Legacy of the California-Nevada Boundary Resolution

*by John Briscoe*

Mr. Briscoe, the author of the recently published *Surveying the Courtroom* (Landmark Enterprises, 1984), is a member of the San Francisco-based law firm of Washburn & Kemp, which specializes in real property, land title and boundaries, and land-use law. He expresses his appreciation to Sean E. McCarthy of his Sacramento office, who has testified before Congress on the California-Nevada boundary problems, for much of the information contained in this article.

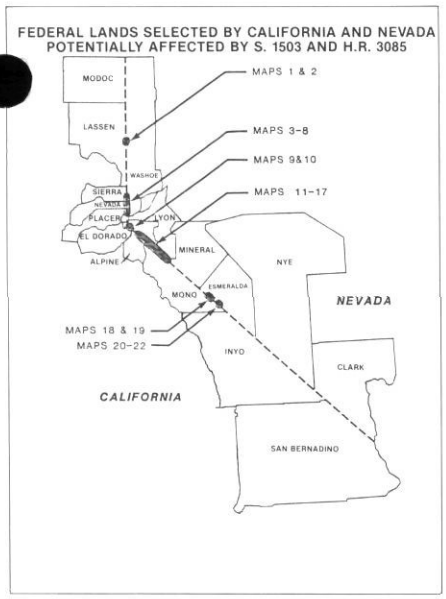
The United States Supreme Court in 1980 rendered a decision that all but the most chauvinistic Nevadan must concede exemplifies, if not legal genius, at least judicial sense. The 1980 decision held that the points at which a modern traveler encounters signs declaring "Entering Nevada, Leaving California," in fact mark the interstate boundary. *California v. Nevada* 447 U.S. 125 (1980). Nevada had argued that substantial portions of what most people assumed were parts of California were in fact parts of Nevada. California filed the lawsuit and contended, for its first line of argument, that the long-recognized line should be confirmed as the true interstate boundary, even if modern scientific techniques showed that it had been located erroneously. As a second row of teeth, California suggested that if the line long acquiesced was in fact in error, the error was its being too far to the west—the consequence being, of course, that several "state line" casinos really lay in California.

As sensible as the Supreme Court's decision may have been, it nonetheless opened a Pandora's box of private title and boundary problems that had lain dormant for as much as a hundred years. This article will outline the facts leading to the Supreme Court's 1980 decision to uphold the long-presumed state boundary. It will also explain how that decision precipitates a rain of private title problems. In the next issue of *The California Surveyor*, the second part of this article will attempt to bring the reader current on the efforts, especially in Congress, to correct these problems.

The two straight-line segments that constitute the boundary between California and Nevada were initially defined in California's Constitution of 1849. The first, the "north-south" segment, commences at the Oregon border at the intersection of the 42nd parallel and the 120th meridian and runs south along that meridian to the 39th parallel. The "oblique" segment of the boundary begins at the 39th parallel and runs in a southeasterly direction to the point where the Colorado river crosses the 35th parallel. When California was admitted to the Union in 1850, Congress approved its 1849 Constitution and, with it, California's eastern boundary. On the same day that Congress admitted California to statehood, it established in the area immediately to the east a territorial government. The act of Congress creating that new "Utah territory" provided that the territory was to be "bounded on the west by the State of California." Eleven years later, in 1861, the territory of Nevada was carved out of the territory of Utah, and in 1864 Nevada was admitted as a state, with the same western boundary as its predecessor Utah territory.

In the decade following California's admission to the Union, there were brief and sporadic efforts to survey its eastern boundary. But its actual location on the ground remains so uncertain that fighting broke out over the precise whereabouts of a small valley on the north-south line above Lake Tahoe, and the border town of Aurora along the oblique line found itself claimed as the seat of both a Nevada and a California county. These difficulties led California and Nevada to commission a joint survey of their common border. Conducted in 1863, that survey located what is known as the Houghton-Ives line from the Oregon border south along the 120th meridian to a point in Lake Tahoe, and then southeast approximately 103 miles along the oblique line. The remaining 300 or so miles of the oblique line were not surveyed.

Both states adopted the Houghton-Ives line by statute, but fundamental errors in the location of that line surfaced almost immediately, and prompted the commissioner of the General Land Office to recommend that Congress appropriate money for a full survey of the eastern boundary of California. The money was appropriated and a full survey was conducted by Allexey W. Von Schmidt in 1872. Von Schmidt concluded that the true location of the 120th meridian lay a full six-tenths of a mile east of the Houghton-Ives line, and he surveyed the north-south line accordingly. His survey of the oblique boundary likewise produced some startling results. From the intersec-




tion of the north-south segment, as he had surveyed it, and the 39th parallel, Von Schmidt set off in the direction of the point where the River, he thought, intersected the 35th parallel. To his surprise, the Colorado River had shifted since the time when the point for which he was aiming had been surveyed. His attempted corrections of the oblique boundary produced an incomplete and crooked line, but over time the VonSchmidt line nevertheless won gradual acceptance in both California and Nevada.

Over time, however, the infirmities in Von Schmidt's oblique line proved sufficiently troublesome that Congress was required in 1892 to appropriate funds for a new survey of that line. That survey was done, not by the General Land Office in this instance, but by the United States Coast and Geodedic Survey. The new oblique line generated by that survey proved that the one run by Von Schmidt in 1872 was in fact inaccurate. By statute, both states adopted the C.&G.S. line, California in 1901, and Nevada in 1903.

*To be continued in Summer, 1986.*

### Humboldt County Chapter

The December meeting of the Humboldt Chapter was called to order by Bill Andrews. Mr. Ira Greene from Dean Witter Reynolds of Eureka was introduced. Mr. Greene gave a talk on the varied financial services and investment opportunities available through his firm.

There was a discussion on how to handle non-record monuments that are found/tied, but not accepted by your survey. There have been several instances of the county asking that such monuments be tagged/plugged, even when they are not used and shown only for information. The consensus of the discussion was that they should be tagged only if accepted, and that showing unaccepted monuments on a map is useful information for the next surveyor. In the case of a non-record, unaccepted monument of known origin, a surveyor should contact whoever set the monuments prior to showing it on a map.

Chapter election results were given. If you are interested in participating in the Humboldt County Chapter contact: Michael John Hollins, New Secretary, 907 K Street, Eureka, CA 95501. □

# Articles

## FORENSIC DENDROCHRONOLOGY

*Compiled by staff from material presented by Charles W. Ferguson*

DENDROCHRONOLOGY may be defined as the study of the chronological sequence of annual growth rings in trees. The concepts and techniques of the science, as presented here, reflect the work and practice of the Laboratory of Tree-Ring Research at the University of Arizona in Tuscon. Development of the science of dendrochronology—as opposed to the simple counting of tree rings in a stump—began in 1901 with an observation on aridity in relation to elevations by Andrew Ellicott Douglass, an astronomer interested in sunspots, and continues up to our strongly computer-oriented age.

The Science of Dendrochronology in association with the surveyor is valuable in boundary determination with regards to three blazes at boundary corners and along boundary lines. The following paragraph, and the associated reference, are from Studhalter (1955, p. 53): "Numerous legal cases involving property rights have been settled in court from the blazes left by surveyors on the trunks of trees along boundary lines (P.C. Smith, 1883; Child, 1883; Hotchkiss, 1894; Fernow, 1888, 1897). In nearly all cases the court accepted the dictum that tree rings are annual; however, at least one case is on record (Child, 1883) in which the court ruled that growth layers are not infallible indicators of age. A case was recently brought to court in Alsace in which tree rings were used as evidence of ownership (Senn, 1933). Tree rings were used also by Tharp (Sellards, Tharp, and Hill, 1923) in a boundary dispute between the States of Texas and Oklahoma, and by Cowles (1915) in an extensive Federal lawsuit in Arkansas involving riparian boundaries."

Perhaps the most famous use of tree rings in a legal case was that of the Hauptmann trial in the kidnapping of the Lindbergh baby. Hauptmann used a homemade ladder to reach the second-story bedroom window—and he left the ladder leaning against the house. Through an amazing bit of detective work, the commercial lumber in the ladder was traced to Hauptmann. The real cincher, however, came from one rung that was not made from the same wood as the rest. Apparently, he ran short of wood and made the final rung from a piece of floorboard in his attic. The piece was matched by a combination of saw marks, nail holes, and the pattern of the annual growth rings in the sawn ends. Thus, the ladder found at the scene was identified with the Hauptmann residence. A technical report was made by Koehler (1952). An article by Christensen (1977) was based upon this report and incorporated some broader aspects of the case.

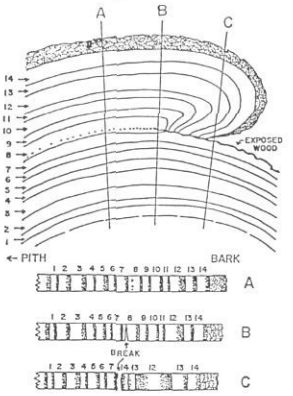
In conjunction with riparian boundary litigation, tree-ring ages of narrow-leaf cottonwood, *Populus angustifolia*, and spruce, *Picea* spp., were studied in the Snake River floodplain near Jackson, Wyoming (Ferguson and Bert, 1985). Approximately 17 islands along 40 miles of the Colorado River from New Castle to DeBeque are being investigated and studied by the Bureau of Land Managment to determine federal or private ownership. Since the U.S. Surveyor General's Office made original surveys in the 1890's, the Colorado River has changed course in some cases, thus warranting further examination and study of the river corridor. The purpose of the investigation and study is to determine the current status and ownership of the involved lands. Selected trees have been cored and are being analyzed to determine age. A single cottonwood tree on the floodplain of the Colorado River near Blythe, California, developed an extensive history when it became part of a court case.

The cutting of firewood without a permit has provided fuel for court cases. A cord of oak firewood was reconstructed and the base of two trunks was matched to two stumps. A bristlecone pine, partially cut when the act was discovered, was demonstrated to be 1300 years old. And in the common Christmas Tree Caper, the basal sections of illegally cut Christmas trees were matched to stumps in the forest. And all of this without permission; the evidence in court was very incriminating.

One should know a little about dendrochronology before one attempts to date a survey blaze. This basic approach, however, has been in use for some time. The Laboratory is continually being asked to assist in such activity, usually in the legal sense. Perhaps "new" corners were established to expand the logging acreage acquired. In a recent case, we were asked by both sides to submit testimony. Fortunately, we came up with the same answer, done independently and by different people at different times. The same techniques have involved C.W. Ferguson in court cases involving illegal cutting, plant theft, and riparian boundary litigation.

In dendrochronological studies, sampling may be done by taking a cross section or, more conveniently, by using a Swedish increment borer, a precision tool designed to remove a small core 3/16 inch in diameter, without causing the living tree any harm. The tip of the borer has a razor-sharp cutting edge with external screw threads that draws the borer into the tree as the handle is turned. A 16-inch borer is a common size, but they can be obtained up to 48-inches in length.

The following sketch indicates the proper position for use of increment borer for dating blazes.




An increment core taken along radius A would not intersect the original wound boundary and the core would not have a break caused by the exposed surface. The ring containing the scar may have features such as damaged tracheid cells or traumatic resin ducts.

A core from radius B would be very close to the original wound boundary and may show the peeling scar entering the correct ring.

A core from radius C would include a break, but the last visible ring before the break may be one or more years earlier than the actual peeling date. Note that the ring sequence from the bark into the break will not include annual rings 8-11, and rings 13 and 14 may actually appear twice! □

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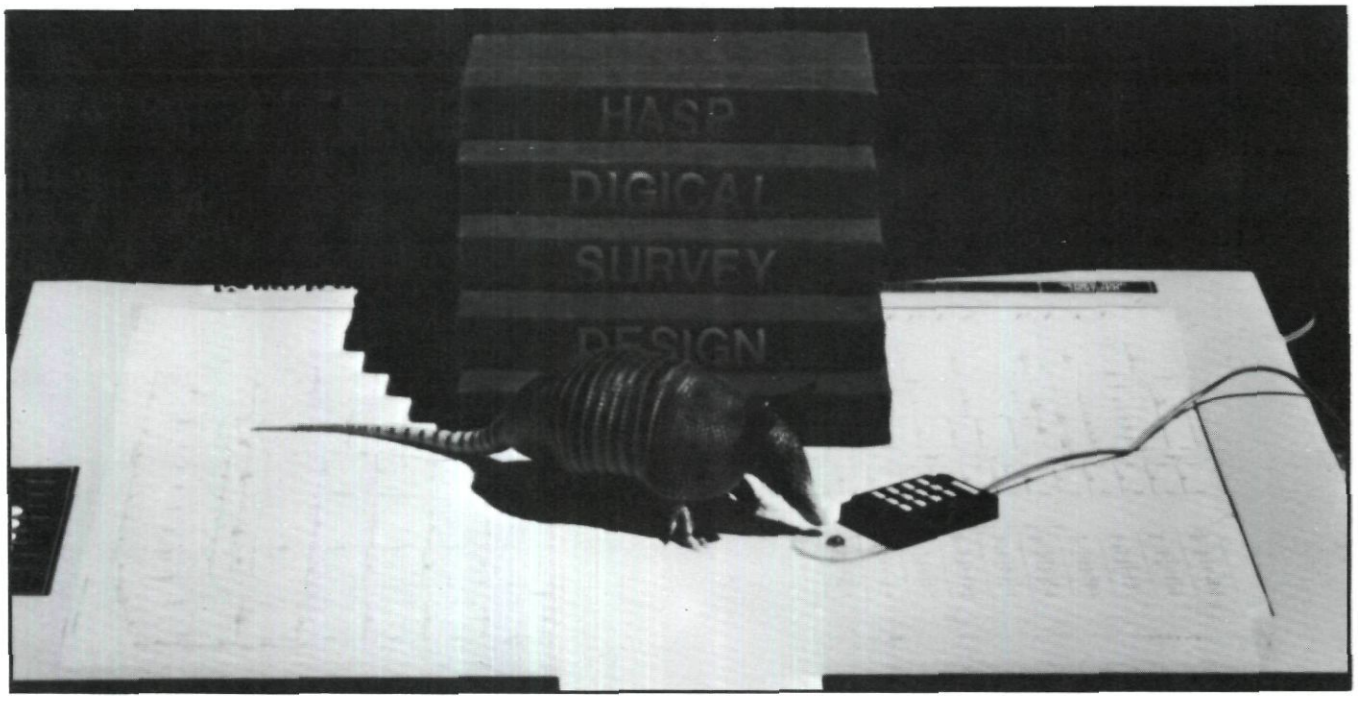


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## DEVELOPING EFFICIENT SURVEY TECHNIQUES

*James K. Crossfield, Ph.D.*
*Associate Professor, Dept. of Civil and Surveying Engineering, California State University, Fresno, Fresno, CA 93740*

**Abstract**

Recent advances in applications of conventional surveying equipment are keeping this technology competitive with high technology systems. The Global Positioning System promises to revolutionize surveying activity, while a terrestrial-based field positioning unit needs further development. The real property component of any developing land information system must be properly merged in a positional and legal sense with other types of data. Systems analysis techniques that consider the cost factor must be available to those who must design, construct and maintain multipurpose land records information systems.

### Introduction

The analysis of efficient survey techniques requires more than just a perfunctory look at currently available theodolites, distance meters and total stations. Predictions about the tremendous promise of satellite-related Global Positioning System (GPS) receivers or real-time coordinate readout devices are expected, but efficient surveying equipment alone cannot enhance multipurpose land information systems unless the proper environment exists. This environment or organizational context demands that the primary fruits of land surveying (boundary surveys) and all applicable related title documents have a meaningful role in the overall system. Ultimately, selection of a given survey technique must occur within the overall constraints that exist at the particular location of implementation. This selection requires that a delicate balance be maintained between the minimum acceptable specifications required and the maximum allowable funding available for any specific multipurpose land information system application.

### Conventional Surveying Equipment

The modernization and automation of conventional surveying equipment are well-documented facts. Conventional equipment is taken here to mean those devices used to measure angles and distances, using electronic, optical, or physical means (taping, etc.) Conventional surveying procedures have, in a sense, remained virtually unchanged for centuries. The newer and faster methods for obtaining and processing raw field data (angles, directions, and distances) are merely the applications of modern technology to conventional surveying procedures.

Kenneth Gold recently said, "The total stations of that day (year 2000) will have small data collectors, and the accessories will involve 'briefcase' computers and even plotters for in-the-field completions" (Miller, 1985). Gold's predictions are indeed astute when taken in light of a recent paper given by an official of a major surveying equipment manufacturer (Martin, 1985). Martin evaluated the time requirements for observing and calculating a particular common conventional surveying activity. Four different equipment and procedure combinations were tested, each involving different amounts of computational automation and equipment sophistication. These combinations represented conventional surveying equipment and procedures typically available and used for the years 1975, 1980, 1983, and 1985. Martin's time study revealed that 114, 90, 85, and 68 minutes, respectively, were required to accomplish the same task in these different years. Extrapolating this reduction in time due to automation to about 1988 would suggest that an overall productivity increase of 100% should occur in conventional surveying equipment and procedures during the 13-year period from 1975 to 1988.

This trend is significant. It suggests that conventional surveying equipment and procedures are evolving and, for many applications, may continue to be competitive for some time. Thus, caution is necessary when predicting the future role of alternative surveying equipment and procedures.

### Alternative Surveying Equipment

Alternative equipment is represented by those devices offering different or nonconventional technological approaches to determining the positions of points on the surface of the earth. These alternative approaches basically include photogrammetric, inertial, and satellite positioning systems. Developments in this area are occurring very rapidly.

Photogrammetric solutions to surveying tasks have been attainable for almost 100 years now. Use of photogrammetry to obtain topography for any application larger than a few acres is almost universally accepted. Use of photogrammetry for control extension is well documented, also. Boundary survey applications have been demonstrated, but do not enjoy widespread acceptance. The foregoing photogrammetric applications represent what might be called conventional photogrammetry.

More automated photogrammetric techniques are continually being developed. The effort to develop automated digital image correlation is an example. Success of this and other automation efforts should ultimately lead to an operational automatic digital photogrammetric system. This will go far towards enhancing the data collection efforts of areawide-type data sets (ground cover, topography, orthophoto maps). More sophisticated analytical procedures hold promise in the point positioning realm as well. Unfortunately, photogrammetric techniques for the collection and maintenance of real property boundary data will probably remain an insignificant aspect of future multipurpose land records information system activity.

The future role of GPS in developing comprehensive land records information systems has not been underestimated by many people in the surveying community. The potential application to point positioning is particularly significant. One researcher found that, "purchase of GPS equipment was justified in 1983 for any jurisdiction requiring precise positions in more than 1200 PLSS (Public Land Survey System) corners." (Crossfield, 1984)

This research also demonstrated that for a given situation, GPS costs per point could be kept below $10 for certain 1:5000 property boundary positioning applications, in terms of 1983 dollars. While this scenario is probably at least five years away from being possible under even the most favorable conditions, it does show the potential impact that GPS may soon have. Then dollars per point is quite competitive with the options outlined in the National Research Council mod-

ernization of the PLSS report involving acquisition of digital coordinates from existing files, maps and archival survey data. Thus, inexpensive GPS technology may significantly increase the availability of reliable property boundary corner coordinate data for multipurpose boundary overlay applications. Producers of mechanically digitized property maps should reevaluate the data capture possibilities now available through use of the Global Positioning System.

A controversy exists with respect to multipurpose land record information system development. Two points of view are held. One holds that easily obtained (less costly) data sets may be incorporated into the new system first, leading to certain immediate system products and benefits. Then, additional data sets (more costly) may be incorporated later, as time and money allow. The basic argument of those holding this view is that geodetic control, and property boundary corner coordinates of sufficient accuracy to be considered for legal use, are assumed to be too costly and are lumped into an 'incorporate later if necessary' data set.

The second view holds that the geodetic control framework and legal property boundary overlay data sets must be substantially in place before additional sets are incorporated into any developing multipurpose information system. The basic arguments supporting this view are that precise geodetic control data cannot efficiently be added later to a series of spatially disjointed overlays and that it is much more efficient to tie the additional overlays directly to one legal property boundary corner data set rather than try to tie the legal property boundary data set to a series of spatially disjointed sets.

The continued high cost of quality GPS receivers, the promise but not full development of the complete GPS configuration of satellites, and the uncertain nature of civilian access add just a hint of caution to GPS expectations. Ten years ago, inertial technology appeared to be the ultimate "black box." Significant price reductions did not occur, however, and except for a real-time positioning capability, use of the inertial technology appears to be dwindling.

Total reliance on any one technology would be foolhardy, especially considering the real vulnerability that 18 GPS satellites will exhibit in an era of superpower Star Wars capability. Continued development of alternative ground-based positioning technology must be insured. Ron Hogan recently predicted that by 1990, a cost effective real-time instantaneous XYZ coordinate measurement device will be available. (Miller, 1985) Whether or not GPS can become a real-time stakeout-type technology in the near future, an alternative positioning technology is required.

A major component of most construction projects in the field is the layout or stakeout process. Establishing the horizontal positions and/or vertical positions of many sets of points (often more than once per point) are required. Laser levelling and continuous readout distance meter technologies have automated these field layout procedures, but current technology still requires more than one crewperson to make horizontal applications and more than one piece of equipment if both horizontal and vertical determinations must be made.

Satellite positioning units using GPS satellites do exist today that can provide accurate 3-dimensional point positioning (± 1cm) on the ground. These units are not real-time, their cost is exorbitant, they are heavy or bulky, and they are currently usable only about 6 hours out of 24 due to insufficient numbers of orbiting satellites.

Currently available total station technology, in which a distance meter and a theodolite are built into one piece of equipment, works well in construction layout activities, but it requires two crewpersons to operate it. Independent accuracy checks of positioned points cannot be conducted with this technology unless at least one additional total station and one additional crewperson is used.

A one-man device that could provide nearly instantaneous, redundant, 3-dimensional positions would save significant labor costs. An ideal field positioning unit (FPU) would have the following characteristics: one-man operation, reasonable cost, lightweight, accurate (± 0.005 m), 3-dimensional capability, real-time coordinate readout, easy to use, and rugged.

Four or more fixed units are envisioned permanently set on known central points around the perimeter of a project area. A mobile unit would continually measure the distance to each of the fixed points. A resection solution of the mobile unit's position (X, Y, and Z) with one redundancy would then be available.

Development of an FPU-type device should occur soon, ensuring a complete transformation of centuries-old conventional surveying construction stakeout techniques. The resulting system will provide productivity increases, lower construction costs, and a reliable alternative, should the GPS satellite technology be threatened.

*To be continued in the Summer, 1986 issue.*

### CLSA Sponsored Legal Seminar

*Report by Michael J. Pallamary*

Saturday, December 7, 1985, the Holiday Inn in Costa Mesa, California played host to a two part CLSA seminar entitled "What Everyone Should Know About Easements and Legal Research." This seminar was identical to the one presented on November 16, 1985 in San Francisco.

Moderator, Michael J. Pallamary, LS, began the days events by welcoming the attendees and introducing the guest speakers. Mr. Peter Jan Honigsberg, Esq. was the first speaker for the day. Mr. Honigsberg is the director of the writing and research program at Golden Gate University School of Law in San Francisco. Peter Jan also teaches paralegals at San Francisco State University. He is the author of several books, including *Gilberts Legal Research*, a textbook from the Gilbert Law Series.

Peter Jan began his lecture by demystifying much of the tasks performed by the lawyer. He explained how many attorneys relied upon the references he was to acquaint the group with and how many of them did not perform this important aspect of their work properly. As any competent land surveyor would know, the need for thorough and detailed research cannot be overemphasized.

Peter Jan proceeded to outline the basic legal research sources. These sources are similar for both the federal government and the state government. They include the related statutes, cases and administrative codes. In addition, one must be constantly aware of local ordinances. Peter warned that many of these ordinances, once prepared, are seldom amended. This presents some problems when subsequent revisions to the law are not incorporated nor considered in the local ordinances. As is true with any process requiring human input, there is always the potential for mistakes. This includes the very references Mr. Honigsberg was discussing.

The two major publishers, Peter Jan noted, are West's and Deering's. One of these is published by a private concern and the other by a group of attorneys. The major difference is the annotations by the editors. At the discretion of the editor, the major points of the relevant case or statute are capsulized. He stressed that these points are those as seen through the eyes of the editor and accordingly are subject to interpretation.

In addition, Peter Jan made note of the secondary sources. These include the legal encyclopedias, digests, and dictionaries. At the very least, he recommended that one obtain a good legal dictionary. Again, he stressed that these secondary sources are definitions as defined by the various editors and authors.

The most important aspect of performing the research, Peter Jan noted, is to always check the related supplements. These are published regularly to update the basic hardbound texts until enough revisions warrant a republication of the text. Finally, Mr. Honigsberg presented a discussion entitled "Reading and Understanding a Case." The major portion included the proper method of briefing a case. The essential outline to include the following:

1) Name and Citation
2) Court
3) Judicial History
4) Facts
5) Issues
6) Holdings
7) Reasonings
8) Decision
9) Concurrring Opinions
10) Dissenting Opinions

The most important of these items, Peter Jan noted are the facts. Everything is determined by them. Peter Jan concluded the morning session with a brief question and answer period.

Mr. Honigsberg has lectured on several occasions to CLSA and is always well received. If you have the opportunity to obtain one of his textbooks, do not pass it up. Mr. Honigsberg has an uncanny ability to decipher much of the confusing language associated with law and then explain it in terms one can readily understand.

Following a relaxing lunch of roast beef, potatoes and salad, the group reconvened with a lecture presented by Ronald L. Endeman, Attorney at Law. Mr. Endeman, a graduate of U.C. Riverside and the University of Southern California School of Law, is a partner and member of the board of directors of Jennings, Engstrand & Henrikson, a professional law corporation in San Diego, California. In addition, Mr. Endeman has extensive experience and background in right of way acquisition including handling of eminent domain, inverse condemnation and tort matters. Mr. Endeman has also been involved with some fascinating cases involving some significant settlements. Most recently, he has been involved with a case involving the imperial irrigation district wherein a settlement had been made in the amount of $13.5 million.

Ron proceeded to outline the general nature and the various kinds of easements. The most important aspect of easements being whether an easement is appurtenant or in gross. An appurtenant easement is one attached to the land of the owner and an easement in gross being not attached to any particular land as a dominant tenement. It is noteworthy to mention that the civil code lists many of the types of appurtenant and easements in gross.

Continuing, Mr. Endeman explained how easements are granted or reserved. Generally, an easement is created by express words either of grant or reservation. It's extent and the question whether it is appurtenant or in gross, are questions of interpretation. (C.C. 806).

Some of the major considerations involved with easements have to do with the fixing of limits, relocation, improvements, and repairs. Another concern which is continually becoming of importance is the modernizations of use. Ron presented some fascinating factual cases which put the problems in a realistic perspective.

Easements by implication was a most interesting discourse. These, apparently have to be tested to be proven. An easement is not implied unless it is "apparent and continuous," or as the code states, "obviously and permanently" used by the grantors. (C.C. 1104) This means that "there must be something upon the servient estate which is either visible or in the nature of a permanent artificial structure." (Swarzwald vs. Cooley (1940) 39 C.A. 2d 306, 325.). The implied easement is not confined to the precise use at the time of the transfer. That is to say, it may have a broader scope than the quasi-easement on

*(continued on page 15)*

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*(continued from page 12)*
which it is based. The test is the intent of the parties as to the use reasonably contemplated.

Finally, he noted the various ways in which an easement can be terminated as well as the common faults in drafting easements. Ron stressed the importance, as Peter Jan Honigsberg did earlier, of performing thorough and sound research.

In summation, the seminar was very well presented. Both speakers complemented each other and did a fine job in presenting a well organized program. If you, or your chapter members were unable to attend either the San Francisco or the Orange County seminar, I would strongly recommend you contact your associates to see about presenting the seminar in your area. If you have a desire to do so, contact Dorothy Calegari at CLSA Central Office. □

## WHEN ARE CORNERS ACCEPTABLE?

*by Steven D. Johnson*

This paper was prepared by Steven D. Johnson, Professional Land Surveyor, Washington State, following the 1984 annual fall convention in Yakima, Washington, where he presented a discussion of section subdivision and retracement. His text follows.

The other day as Mr. Jorgeson and I stood at this Northwest property corner observing it was marked by four different pins, he ask me "Why can't you surveyors ever agree? Don't you start from the same point?" Noting that these four corners fell within a five foot circle, I could only shrug my shoulders and shake my head.

How many times have *you* heard this same statement? I believe we, in the surveying profession, must do what we can to erase this stigma. Please understand I am not proposing blind acceptance, for gross errors should not be perpetuated. But neither should we be so rigid that we reject an acceptable corner because of minute mathematical differences.

In the early phases of the Western settlement, the system of rectangular surveys was developed in an effort to eliminate the confusing metes & bounds surveys of the East. The government's hope was that this survey system would enable a settler to easily locate on an identifiable piece of ground. It also gave the government a tool to inventory what truly existed in the Western territories and a simple system to describe the lands for conveyance.

In the ever expanding network of these surveys, the government developed surveying instructions comprised of the various manuals of surveying and their associated circulars. These manuals and circulars were instructions for the Federal surveyors and were considered as informational only in directing the private and county surveyor in their work. They clearly left the division of the interior lines of a government surveyed section to the local qualified individuals. (U.S. Code Title 43, Section 766) This is easily recognized in two areas; first, some states have different methods of subdividing sections. Secondly, the laws developed to guide the General Land Office surveyors in retracement and resurveys strictly prohibited them from interferring with the private rights which had been established in good faith. Generally whatever was to happen to an area was left up to the settlers and the local surveying community once the government had finished building the main frame.

We find the Federal Courts have ruled that once an original government corner is established, it becomes immovable. The logic behind this is simply, once again, good faith reliance. A settler saw that corner, recognized it as being the original corner and relied upon it in the development of his homestead. In almost all cases where a resurvey today shows that the original surveyor placed his corner using some erroneous technique, the original corner will still control over any subsequent work. It's my belief that this same principle needs to be applied by the professional land surveyor in his everyday surveying practice. Washington's State Supreme Courts have generally followed this principle in their decisions. "The Dissertation of Monument Control in Washington State," prepared by Jerry Broadus and published in *The Puget Sound Law Review*, Volume 7, Number 2, cites numerous cases where senior monuments control subsequent work. This, yet again, is good faith reliance and a common sense approach to protecting the layman property owner from damages resulting from erroneous surveys.

So how does this rhetoric apply to our work? It is my conclusion that the terms "original surveys" and "original monuments" are not reserved only for surveys done by the Federal government. I believe original surveys and original monuments refer to the first survey done in an area and further that each time a parcel of land is divided and re-divided, each survey becomes original, contingent upon the senior work. Generally, the surveyor of today will check this senior work to see if it was accurately done. For another fundamental rule of land ownership is simply; you can only sell what you own. Balancing this rule however, is a myriad of quiet title laws which todays surveyor must consider in his acceptance or rejection of the senior work. In juggling these questions, the surveyor must have standards from which to base his decisions. Much has been written about this subject and there are definite opposing sides in the surveying community.

The following is an analysis which I feel a surveyor should step through before accepting or rejecting a corner. These questions are developed by combining the Bureau of Land Management's rules of acceptance and numerous State court decisions.

1) How was the corner placed there? Did the surveyor use correct procedure or was it stubbed in from one corner only? If you're not able to ascertain how the previous surveyor established his corner from existing records, there's nothing wrong with retracing the work and checking his position by your survey.

2) Is the senior survey a matter of public record, have people been relying upon it, developing their land from it? Have other surveyors been using it?

3) Is the monument substantial, durable, easily recognized as a corner?

4) Does the corner fall within an acceptable distance from your position? In analyzing this question

*(continued on page 16)*

*(continued from page 15)*
the surveyor must reflect on the surveying instruments used and the surveying standards when the corners were set.

If I can answer yes to these questions, I accept the corner and if needed, remonument it in place. There are also times when the answers might only be partially yes, yet that corner is also accepted. I simply do not lock myself into rigid acceptance or rejection. Each corner is weighed independently.

The BLM manual (which is adopted as Washington State's standard) allows the Federal surveyor to close a new survey against an older one when the corners are out of position by 16½ feet per ½ mile (25 links in 40 chains). Granted, this may have the appearance of being very loose but many of the surveys of the late 1800's reflected this misclosure, for that was the standard of the day. When we reject a center ¼ set in 1900 because it's 15 feet from our mathematical position, I feel we're skating on thin ice and are probably going to fall in. Let's not get ourselves into that old trap of accuracy vs precision.

I believe this discussion is easily portrayed by a quote from a text written by A.C. Mulford, titled *Boundaries and Landmark, A Practical Manual.* Mr. Mulford says "It's far more important to have faulty measurements on the place where the line truly exists, than an accurate measurement where the line does not exist at all." I believe we must have a common sense approach to preventing boundary disputes when it's within our discretion.

I've taken a moderately radical stand on this controversial issue in hopes that it will generate some discussion in our local surveying community. I've discussed this topic with other members of LSAW and I challenge them to a response.

**Steven D. Johnson** — Forest Land Surveyor, USDA-FS, Wenatchee National Forest, Wenatchee, Washington.

Mr. Johnson's career in the surveying field began in 1967 as a photogrammetrist with the USFS in Portland, Oregon. In 1977 he transfered to Wenatchee, Washington and has since served as Wenatchee's Forest Land Surveyor.

Mr. Johnson is a registered Land Surveyor in Nevada, Idaho and Washington and an active member in Land Surveyors Association of Washington, presently serving as President of his Chapter. Mr. Johnson has spoken at several surveying seminars around the western states and received the LSAW Surveyor of the Year award in 1984. □

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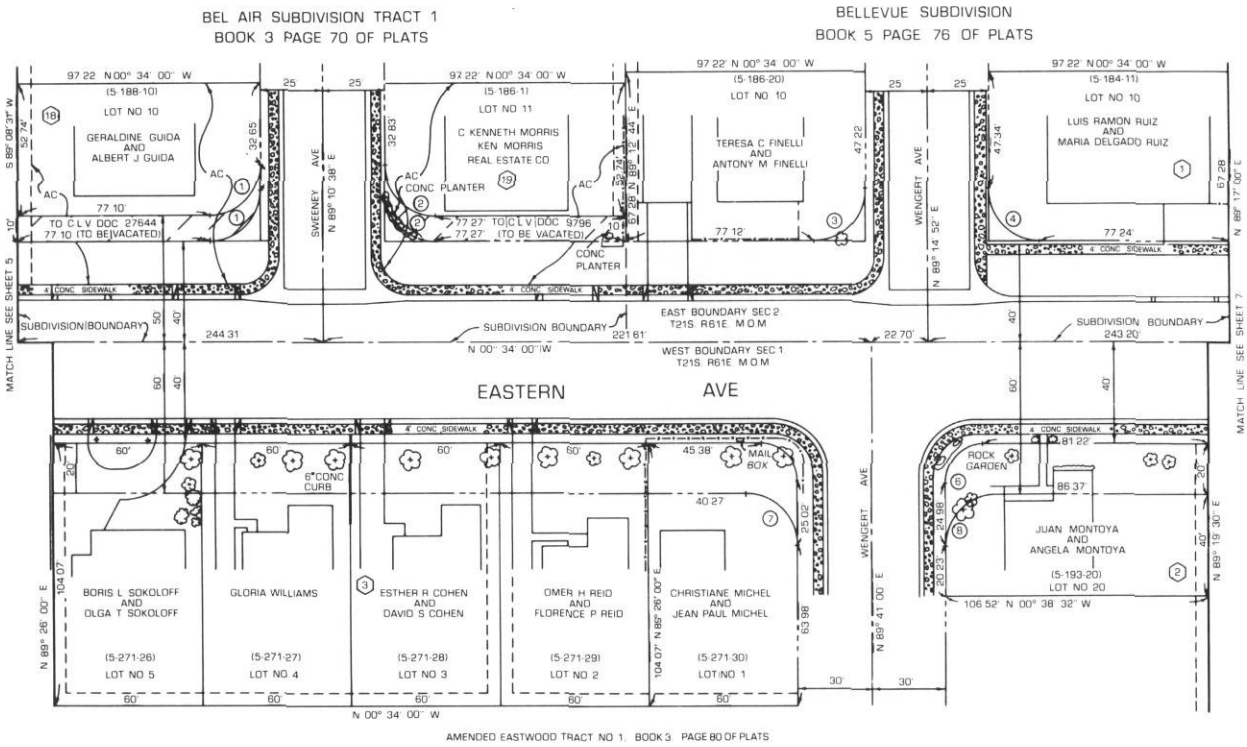


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# Of Interest

## FIELD NOTES

### ACSM/COFPAES, ASPRS Urge Support for $1.5 Million Size Standard

A proposal by the Small Business Administration to define a small business in architecture, engineering and surveying as a firm with up to $1.5 million in gross annual receipts received the qualified support of ACSM through a comment submitted by COFPAES and ASPRS. Both groups said the proposed lower size standard (from $7.5 million for engineering and from $3.5 million for architecture and surveying) is a step in the right direction, but indicated that a disproportionate share of contracts will still be set aside only for small businesses unless a Federal regulation requiring the set aside of any contract in which two or more small businesses might compete is changed. Both COFPAES and ASPRS called for revision, repeal or exemption from the "Rule of Two." The comments also indicated support for the current $85,000 threshold on military construction A/E/S/M set asides. Finally, application of the proposed size standard to archititecture, engineering, surveying and photogrammetry was requested. The public comment period on the SBA proposal closed November 15, 1985. A final decision by the agency is expected by March, 1986.

### House Passes Corps Water Projects Bill

The U.S. House of Representatives on November 13, 1985 passed what it hopes to be the first omnibus water projects bill to be enacted since 1976. The bill, H.R. 6, authorizes work on more than 230 dam, river, harbor, canal, navigation and flood control projects, principally by the Corps of Engineers. Of interest to the surveying and mapping science profession are key provisions which provide permanent Brooks Bill authority for Corps surveying and mapping contracts; require 30 percent of architecture, engineering and construction design to be performed by contract with the private sector and mandate consideration of increased Corps reliance on private firms to increase its capabilities and productivity; and require reporting of the distribution of contracts to share a fair distribution to firms of all sizes and classes of ownership.

### House Tax Panel Picks Surveying, Mapping Firms for Cash Accounting

Surveying and mapping firms can continue to use the cash method of accounting under the tax reform bill passed December 17, 1985 by the House of Representatives. The House Ways and Means Committee, at the urging of senior committee member Rep. Sam Gibbons (D-FL), specified these firms in the committee's report language clarifying the exemptions to new limits on cash accounting are as follows:

"The committee bill allows continued use of the cash method of accounting for entities where the incidence of taxation falls either at the individual level or on a qualified personal service corporation. Entities eligible for the exception include sole proprietorships, S corporations, qualified personal service corporations or other qualified partnerships.

A qualifying partnership is a partnership in which all of the partnership interests are held by individuals, qualified personal service corporations, S corporations, or other qualifying partnerships.

For the purposes of this exception, a qualified personal service corporation is a corporation that meets both a function test and an ownership test. The function test is met if substantially all the activities of the corporation are the performance of services in the field of health, law, engineering (including surveying and mapping), architecture, accounting, actuarial science, performing arts or consulting. The ownership test is met if substantially all of the value of the outstanding stock in the corporation is owned by employees performing services for the corporation in a field satisfying the function test. . ."

Had the clarification not been made, firms in surveying, mapping and other professions would have been required to use the accrual method and pay taxes on fees billed rather than those actually collected.

**House Panel Rejects Cash Accounting Limit for Professional Firms**

The House Ways and Means Committee voted on November 7, 1985 to kill a provision in President Reagan's tax reform proposal to require certain firms, including many in surveying and mapping, to use the accrual method of accounting. The practical effect of the change would have been that surveyors, architects, engineers and other professionals pay taxes on money they have not received by forcing payment of taxes on fees billed rather than those actually collected. Under the reform plan approved by the Ways and Means Committee, businesses under $5 million may still use the cash method of accounting even if they file financial statements and reports under another method. The exemption from accrual accounting includes individuals, professional service corporations, partnerships of individuals or professional corporations, and subchapter S corporations.

**ACSM's William G. "Bill" Wallace, Jr. Named COFPAES Chairman**

William G. Wallace, Jr., PLS, has been inducted as Chairman of the Committee on Federal Procurement of Architectural/Engineering Services (COFPAES). Upon taking office at the group's November 14, 1985 meeting, Wallace became the first ACSM member and the first surveyor to chair the A/E procurement panel. Wallace is a member of the ACSM Board of Direction, has served as the society's delegate to COFPAES since ACSM was first admittee as a member in 1981, is chairman of the ACSM/NSPS Political Action Committee and past chairman of the ACSM Government Affairs Committee. ACSM Assistant Executive Director for Public Affairs John M. Palatiello was elected COFPAES Secretary at the same meeting. ACSM's P. Porcher "Shay" Gregg, PE, LS, moved from the society's COFPAES alternate to delegate. COFPAES is a coalition of the Nation's leading design associations. Its purpose is to promote the selection of architects, engineers and surveyors on the basis of their demonstrated competence and qualifications, as embodied in the federal "Brooks Law" and the American Bar Association's model procurement code for state and local government. Along with ACSM, other COFPAES members are the American Consulting Engineers Council, The American Institute of Architects, American Road and Transportation Builders Association (Planning and Design Division), American Society of Civil Engineers, and National Society of Professional Engineers.

**ACSM 'As-Built' Survey Specification Published.**

The American Congress on Surveying and Mapping has published an "'As-Built' Survey Specification (A Post Construction Survey)." The specification provides surveyors and their clients with guidelines for surveys that will consistently and properly identify the size, shape, location and other relevant features of roads, pipelines, buildings and other structures. The document is available by sending a $5 check for "'As-Built' Survey Specification" to ACSM, 210 Little Falls Street, Falls Church, VA 22046.

**House Small Business Panel Queries FS Licensing Law Snub**

The House Small Business Committee is investigating a Forest Service practice of permitting non-licensed entities to compete for and win some of the agency's surveying contracts. Committee Chairman Rep. Parren Mitchell (D-MD) asked the Forest Service to explain why it does not follow Federal Acquisition Regulation provisions requiring use of licensed professionals for A-E and related services. The Forest Service, in a response to the Congressman, claimed a solicitation provision requiring licensed surveyors may be unduly restrictive of competition. The Forest Service's counsel stated, "while licensed surveyors are capable of performing the subject surveying services, other firms or individuals also may be capable of satisfactory performance on an individual project." In a letter to ACSM asking for further background on the matter, Rep. Mitchell noted the Forest Service reply raises the additional issue of what definitive standards the Forest Service uses to evaluate the responsibility of the "other firms or individuals" offering to perform surveying services . . . (and) . . . it does seem inconsistent to me for the Department to claim effectively that licensed surveyors may exceed its needs, when it has never articulated a minimum standard of responsibility." ACSM will continue to work with Chairman Mitchell to encourage the Forest Service to improve its evaluation criteria and require the use of licensed surveyors for all surveying contracts.

**Brooks Act for DMA Surveying, Mapping Becomes Law**

President Reagan on December 19, 1985 signed into law a 1986 funding bill (Public Law 99-190) that includes a provision requiring use of Brooks Act procedures for surveying and mapping contracts by the Defense Mapping Agency (DMA). The provision authored by Rep. Bob Livingston (R-LA) in conjunction with the ACSM-ASPRS, was first cleared by a House-Senate Defense panel chaired by Sen. Ted Stevens (R-AK). □

*by Clifford A. Robinson, Acting Chief, Branch of Cadastral Survey*

The following is a list of official surveys in California which have been accepted in the first quarter of FY 86 (Oct. 1-Dec. 31, 1985). These surveys are now on file in the Survey Records Office, Bureau of Land Management, California State Office, 2800 Cottage Way, Sacramento, CA 95825.

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

| Township & Range | Meridian | Date |
|---|---|---|
| T.1S.,R.10E. | San Bernardino | 10-02-85 |
| T.7N.,R.13E. | Mount Diablo | 10-02-85 |
| T.33N.,R.12E. | Mount Diablo | 10-02-85 |
| T.34N.,R.12E. | Mount Diablo | 10-02-85 |
| T.1S.,R.3W. | San Bernardino | 10-03-85 |
| T.8N.,R.12E. | Mount Diablo | 10-21-85 |
| T.8N.,R.13E. | Mount Diablo | 10-31-85 |
| T.22N.,R.4E. | Mount Diablo | 12-20-85 |
| T.16N.,R.9W. | Mount Diablo | 12-20-85 |
| T.16N.,R.8W. | Mount Diablo | 12-23-85 |

In addition, supplemented plats in the following townships were accepted during the first quarter.

| Township & Range | Meridian | Date |
|---|---|---|
| T.6N.,R.13E. | Mount Diablo | 10-31-85 |
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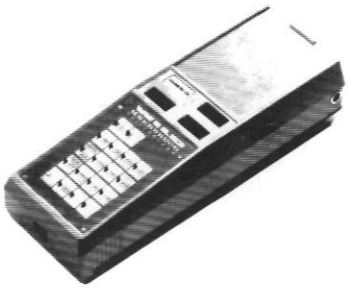

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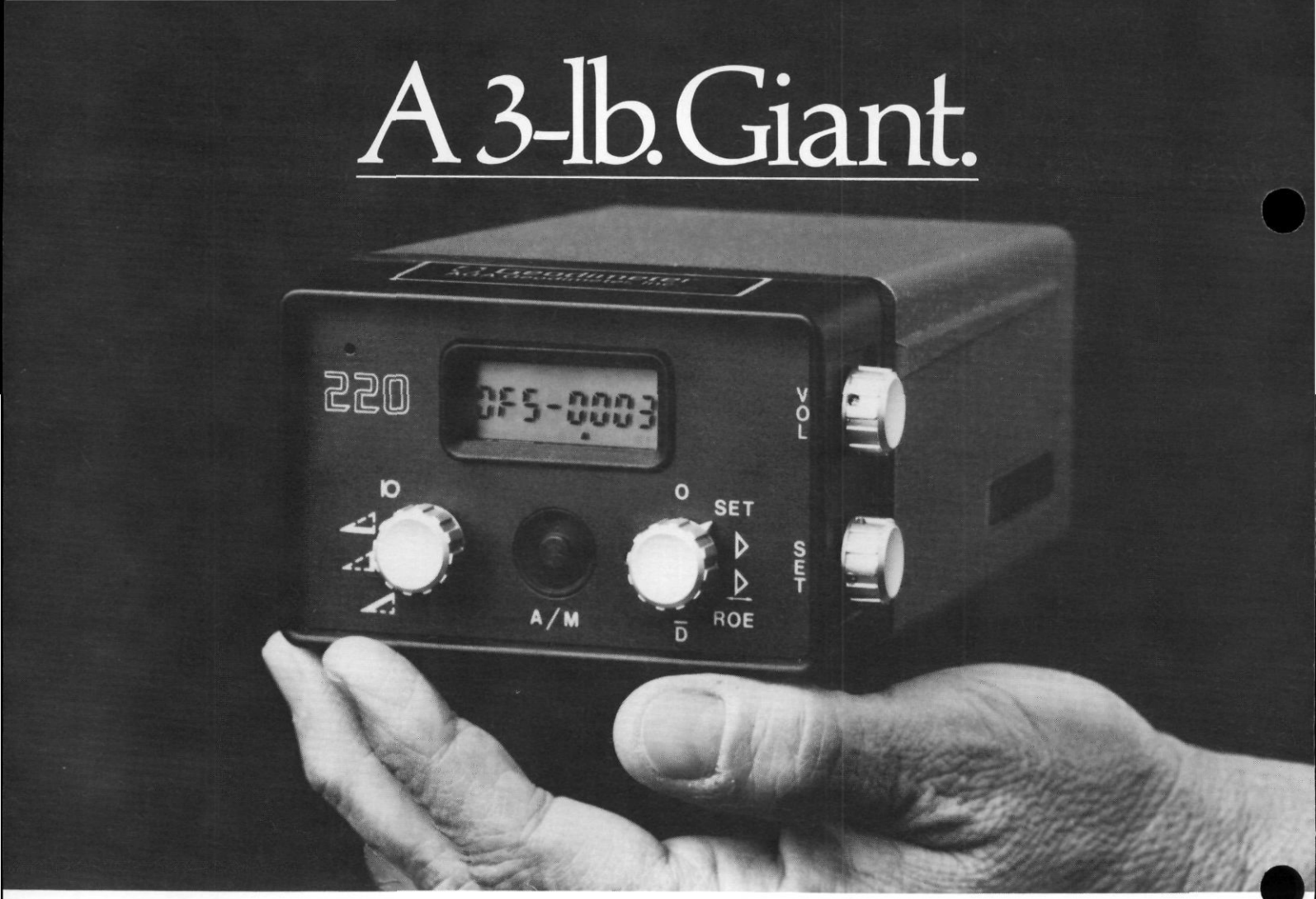


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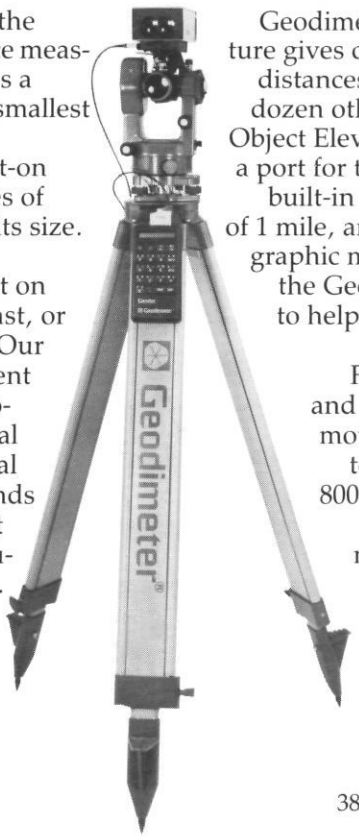


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*Reprint from the Massachusetts Surveyor, Volume 23, No. 4*

**FIG Congress 1986**

From June 1 to 11, 1986, The International Federation of Surveyors (FIG) will hold its XVIII International Congress in Toronto, Canada. The theme of the 1986 Congress is "Inner and Outer Space—Limitless Horizons for the Surveyor." The Congress is a technical meeting with a projected attendance of 1800 registrants and 600 accompanying persons. The technical program for the Congress will include 125 papers on surveying and mapping and 60 papers on urban and rural planning, land management and economics, and land evaluation. In addition, there will be a very large technical exhibit, technical tours and an exciting and varied social program.

In 1878, delegates of seven national professional survey organizations from Belgium, France, Germany, Italy, Great Britain and Switzerland met in Paris and founded the International Federation of Surveyors. Today, it is a federation of survey organizations which represent 220,000 members from 50 countries with correspondents in 12 other countries. The structure consists of the General Assembly, the Permanent Committee (Council) and the Bureau (Executive).

The permanent Committee carries out the professional work in nine technoscientific commissions covering:

1) Professional Practice
2) Education
3) Land Information Systems
4) Hydrographic Surveying
5) Survey Instruments and Methods
6) Engineering Surveys
7) Cadastre and Rural Land Management
8) Urban Land Systems—Town Planning and Development
9) Valuation and Management of Real Estate.

The technical papers program is the responsibility of the nine commissions.

The Bureau deals primarily with policy, administration and the holding of the triennial congresses. The Canadian Institute of Surveying, being the Canadian member organizing the 1986 Congress in Toronto.

There are at least five good reasons for attending the 1986 Congress in Toronto:

1) Interesting and current technical papers covering the full spectrum of surveying will be presented. In addition, there will be a large number of poster sessions.

2) The latest in hardware and software will be exhibited. All manufacturers compete to steal the spotlight by unveiling revolutionary new equipment.

3) A unique opportunity to meet and exchange interviews with hundreds of international surveyors on the North American continent. There will not be another FIG meeting in either Canada or USA in this century.

4) A chance to visit the safe and beautiful city of Toronto. Toronto has an international reputation for fine food, exciting and varied entertainment, and warm and friendly people.

5) A tremendous bargain with $1.00 US currently worth $1.40 Canadian, and Canadian prices for merchandise, hotels, food, etc. are comparable to those in the U.S.

You are invited by your surveying friends and neighbors from Canada to participate in a memorable occasion—the XVIII FIG Congress in Toronto from June 1 to 11, 1986. □

**Masters Program Detailed**

Surveyors can now obtain a Master of Science in Engineering Degree from CSU, Fresno. The degree is called the MS in Engineering —Civil option. A series of surveying courses, both graduate and undergraduate level, will be offered for persons wishing to specialize in surveying. In addition, the degree candidates will need to take three "core" graduate engineering courses and several general civil engineering courses. The MS in Engineering Degree program requires the completion of 30 semester units. The remaining 21 semester units can be covered under three different plans: Plan A, incorporating formal thesis, and Plan B and C, both including a formal comprehensive final examination.

A Master of Science Degree in Engineering requires the completion of a program of study containing 30 units of the following requirements:

**1) Satisfactory completion of a credit-hour core program consisting of the following three courses:**

| | Units |
|---|---|
| Engr. 204 | 3 |
| *Engineering Planning & Operations* | |
| Engr. 205 | 3 |
| *Computing in Engineering Analysis* | |
| Engr. 206 | 3 |
| *Engineering Environment Impact* | |
| TOTAL | 9 |

**2) Plan A or B:**

Six credit hours taken outside the School of Engineering from 100 or 200 level courses in mathematics, statistics, management, business, physics, geography, urban and regional planning, or other disciplines best suited to the student's graduate program as approved by the student's graduate advisor. Fifteen credit-hours taken as a coherent program and designed according to one of the following plans:

| | Units |
|---|---|
| **Plan A—Thesis Plan** | |
| 200 series engineering courses | 9-12 |
| Thesis (6) or Project (3) | 6-3 |
| **Plan B—N-Thesis Plan** | |
| 200-series engineering courses | 9-15 |
| 100-series engineering elective courses | 6-0 |
| TOTAL | 15 |

This plan includes a comprehensive final examination.

**3) Plan C**

Plan C is 21 credit-hours taken from 100 or 200 level courses all within the School of Engineering. A formal final comprehensive exam is included in this plan.

Prospective students wishing to tailor a program of graduate study towards surveying and/or photogrammetry should contact a surveying faculty member at their earliest convenience. □

## PHOTOS WANTED

The California Surveyor is requesting cover photos from its readership. Photos should be 8x10″ glossy-for-repro. Information regarding the subject of the photo plus the photographer/contributor should be sent to the Editor along with the photo and a letter giving The California Surveyor permission to publish the material.

# Board of Directors Meeting

**BOARD OF DIRECTORS MEETING MINUTES**
**October 12, 1985**
*prepared by*
*Louis E. Rutledge, L.S., Secretary*
(condensed for publication)

The CLSA Board of Directors Meeting was held at the Airport Hilton Hotel, at the San Francisco International Airport.

The meeting was called to order at 9:47 a.m. by President Michael McGee.

It was moved, seconded, and carried that the minutes be approved as distributed.

UNFINISHED BUSINESS:

A. PRESIDENT'S REPORT:

Michael presented a brief report. He voiced several concerns dealing with conducting the business of the Association. One such concern dealt with who should sign binding contracts.

Hal Davis made a motion that the Executive Director prepare a resolution stating that the President or Vice President as so designated and the Secretary be empowered to act on behalf of the Board of Directors in the execution of contracts. The motion was seconded by Louis Hall. The motion carried.

B. SECRETARY'S REPORT:

The Secretary reported on the PAC meeting held October 11, 1985. There was only one PAC meeting held since the last Board meeting.

C. TREASURER'S REPORT:

Susan discussed the Political Action Committee and made a motion that the Political Action contribution remain the same as last year, $7.00 Corporate, $3.50 Affiliate and Associate, and $1.00 student, with a separate box that must be marked if the member wanted to contribute a portion of his dues, and the Political Action Committee be encouraged to include a request for those funds in the ballot. The motion was seconded.

Ron Greenwell made an amending motion that the dues be increased a full 10%. The motion was seconded. The motion carried.

Hal Davis made a motion directing the President's Advisory Committee to study the question of assessments and come back to the January meeting with a recommendation for the Board to consider. Ruel del Castillo seconded the motion. The question was called and carried.

Louis Hall made a motion, seconded by Gene Ehe that the President's Advisory Committee look into the meeting place. Lou pointed out that it was important that Southern California be considered. The motion carried.

D. EXECUTIVE DIRECTOR'S REPORT:

Dorothy reported that the Association had been audited by the IRS. They went over the books line item by line item.

ByLaws Committee Report: Neal Campbell reported that he had studied our bylaws and Robert's Rules of Order under which we operate and finds that there is no provision for proxy voting. We have provisions for absentee voting on agenda items only. The Board member's vote must be presented to the secretary in writing prior to the meeting.

Nominating Committee: A motion was made and seconded to adopt the

slate of candidates as proposed by the nominating committee. The motion carried.

Fred made a motion that the AM Committee be charged with the responsibility of meeting with the Nominating Committee and discuss problems and report back to this Board for action. Gary Shelton seconded, the motion carried.

Legislative Committee Report: Hal Davis made a motion that the President and the Secretary be authorized to execute a contract with Winner/Wagner for the year 1986. The motion was seconded by Paul Lamoreaux. The motion carried.

Membership Committee Report: Mike O'Hern would like to prepare a brochure to be used for membership recruitment. Hal Davis made a motion that the membership committee be authorized to expend up to $250 to prepare a membership brochure from the membership committee budget. The motion was seconded and carried.

California Surveyor: Ron Greenwell made a motion that the Board and the Editor of the Cal Surveyor prepare a letter of gratitude to Lisa Reese for her work on the Cal Surveyor. Susan Jensen seconded the motion. The motion carried.

Board of Registration for Professional Engineers and Land Surveyors: Hal Davis made a motion that we write a letter to Consumer Affairs stating that since the Board represented both Professional Engineers and Land Surveyors that it would behoove them to have a Licensed Land Surveyor on staff. The motion was seconded by Ruel del Castillo. The motion carried.

Lou Hall made a motion that this Board request that Vince attend our next board meeting. That he put together what he feels would be the best procedure for this board to get input into the Board of Registration. That he present his recommendations to this body as to how that could be best accomplished. The motion was seconded by Ron Greenwell. The motion carried.

NEW BUSINESS

Glen Aalbers made a motion that the Board accept LA/Ventura Resolution that all chapters contribute 10% of the profits realized from seminars to the headquarters of CLSA. The motion was seconded by Gary Shelton. Lou Hall made a motion to table the motion and refer it to a committee for a report back to the Board. Motion to table was seconded by Hal Davis. The motion to table carried.

Ron Greenwell made a motion, seconded by Louis Hall for the Board to give the President the responsibility to sign contracts for the 1986 conference. The motion carried.

Minutes prepared by Louis E. Rutledge, L.S., Secretary. □

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# New Members

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Halcomb S. Hacker, LS
Michael S. Mahoney, LS
James B. McCavitt, LS
Clyde C. Cabrinha, LS
Michael Petyo, LS
William H. Young, LS
Robert L. Chacon, LS
Larry R. Bryant, LS
M. Kent Johnson, LS
Andrew K.F. Leong, LS
Rafael J. Lamarca, LS
John Ross Rinaldi, LS
Robert B. Sheaffer, LS

### ASSOCIATE MEMBERS

Steve MacArthur
Carol J. Jacobson, LSIT
Susan D. Ruschmeyer
Marshall Wilkinson
Lee A. Meckel
Clement Lee
Matthew D. Ward
Peter S. Brewster

### AFFILIATE MEMBERS

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John B. Rogers, RCE
Thomas R. O'Connor, CE
Bill Lindsey
James E. Sutherland
Donald L. Baker
Charles L. Kavanagh
Madeleine von Laue
William H. Hewitt
Donald Becker

### STUDENT MEMBERS

Jon D. Scarper
Alan Davidson
William P. Carpender
Algis J. Marcuiska
Mark Lewis
James M. Appleton
Richard C. Shepard
Paul Marcuiska

*Continued from Fall, 1985*

**Official Report of Professor John Phoenix, A.M.**

Kearny Street is a pass about fifty feet in width. The soil is loose and sandy, about one inch in depth, below which Dr. Dunshunner discovered a stratum of white pine, three inches in thickness, and beneath this again, sand.

It is densely populated, and smells of horses. Its surface is intersected with many pools of *sulphuretted protoxide of hydrogen*, and we found several specimens of a vegetable substance, loosely distributed, which is classed by Mr. Weegates as the *stalkus cabbagiensis.*

It being late in the evening when our arrangements for encamping were completed, we saw but little of the natives until the next morning, when they gathered about our camp to the number of eighteen.

We were surprised to find them of diminutive stature, the tallest not exceeding three feet in height. They were excessively mischievous, and disposed to steal such trifling things as they could carry away. Their countenances are of the color of dirt, and their hair white and glossy as the silk of maize. The one that we took to be their chief, was an exceedingly diminutive personage, but with a bald head which gave him a very venerable appearance. He was dressed in a dingy robe of jaconet, and was borne in the arms of one of his followers. On making them a speech, proposing a treaty, and assuring them of the protection of their great Father, Pierce, the chief was affected to tears, and on being comforted by his followers, repeatedly exclaimed, "da, da,—da, da!' which, we were informed by the interpreter, meant "father," and was intended as a respectful allusion to the President. We presented him afterwards with some beads, hawk-bells and other presents, which he immediately thrust into his mouth, saying "Goo," and crowing like a cock; which was rendered by the interpreter into an expression of high satisfaction. Having made presents to all his followers, they at length left us very well pleased, and we shortly after took up our line of march. From the notes of Dr. Bigguns, I transcribe the following description of one of this deeply interesting people:

"Kearney Street native; name—Bill;—height, two feet nine inches;—hair, white;—complexion, dirt color;—eyes, blue;—no front teeth;—opal at extremeity of nose;—dress, a basquine of bluish bombazine, with two gussets, ornamented down the front with *crotchet* work of molasses candy, three buttons on one side and eight button holes on the other—leggings of tow-cloth, fringed at the bottoms and permitting free ventilation behind—one shoe and one boot; occupation, erecting small pyramides of dirt and water; when asked what they were, replied 'pies,' (word in Spanish meaning *feet;* supposed they might be the feet or foundation of some barbarian structure)—religious belief, obscure;—when asked who made him, replied 'PAR' (supposed to be the name of one of their principal Deities)."

We broke up our encampment and moved North by compass across Market Street, on the morning of the 6th, and about noon had completed the survey as far as the corner of Second Street.

While crossing Market Street, being anxious to know the exact time, I concluded to determine it by observation. Having removed the Sidereal Clock from the cart, and put it in the street, we placed the cart in the plane of the Meridian, and I removed the eye and object-glass of the transit, for the purpose of wiping them. While busily engaged in this manner, an individual, whom I have reason to believe is connected with a fire company, approached, and seeing the large brazen tube of the transit pointed to the sky mistook it for a huge speaking trumpet. Misled by this delusion, he mounted the cart, and in an awful tone of voice shouted through the transit *"Wash her, Thirteen!"* but having miscalculated the strength of his lungs, he was seized with a violent fit of coughing, and before he could be removed had completely coughed the vertical hairs out of the instrument. I was in despair at this sudden destruction of the utility of our most valuable instrument, but fortunately recollecting a gridiron, that we had among our kitchen apparatus, I directed Dr. Heavysterne to hold it up in the plane of the true Meridian, and with an opera glass watched and noted by the clock the passage of the sun's centre across the five bars. Having made these observations, I requested the principal computer to work them out, as I wished to ascertain the time immediately; but he replying that it would take some three months to do it, I concluded not to wait, but sent a man into the grocery, corner of Market and Second, to inquire the time, who soon returned with the desired information. It may be thought singular, that with so many gold watches in our party, we should ever be found at a loss to ascertain the time; but the fact was that I had directed every one of our employees to set his watch by Greenwich mean time, which, though excellent to give one the longitude, is for ordinary purposes the meanest time that can be found. A distressing casualty that befell Dr. Bigguns on this occasion may be found worthy of record. An omnibus, passing during the time observation, was driven carelessly near our Sidereal Clock, with which it almost came into contact. Dr. Bigguns, with a slight smile, remarked that "the clock *was nearly run down*," and immediately fainted away. The pursuits of science can be delayed by accidents of this nature, two of the workmen removed our unfortunate friend, at once, to the Orphan Asylum, where, having rung the bell, they left him on the steps and departed, and we never saw him afterwards.

From the corner of Market to the corner of Second and Folsum Streets, the route presents no object of interest worthy of mention. We were forced to the conclusion, however, that little throwing of stones prevails near the latter point, as the inhabitants mostly live in glass houses. On the 8th we had brought the survey nearly up to Southwick's Pass on Folsom Street, and we commenced going through the Pass on the morning of the 9th. This pass consists of a rectangular ravine, about 10 feet in length, the sides lined with pine boards, with a white oak *(quercus albus)* bar, that at certain occasions forms across, entirely obstructing the whole route. We found no difficulty in getting through the Pass on foot, nor the wheelbarrows; but the mule carts and the "two Fannies" were more troublesome, and we were finally unable to get them through without a considerable pecuniary disbursement, amounting in all to one dollar and fifty cents ($1.50). We understand that the City of San Francisco is desirous of effecting a safe and free passage through this celebrated canon, but a large appropriation

*(continued on page 32)*

*(continued from page 31)*

($220,000) is required for the purpose.

The following pasages relating to this portion of the route, transcribed from the Geological Notes of Dr. Dunshunner, though not directly connected with the objects of the survey, are extremely curious in a *scientific point of view, and may be* of interest to the general reader.

"The country in the vicinity of the route, after leaving Southwick's Pass, is very productive, and I observed with astonishment, that red-headed children appear to grow spontaneously. A building was pointed out to me, near our line of march, as the *locale* of a most astounding agricultural and architectural phenomenon, which illustrates the extreme fertility of the soil in a remarkable degree. A small pine wardrobe, which had been left standing by the side of a house (a frame cottage with a piazza), at the commencement of the rainy season, took root, and in a few weeks grew to the prodigious height of thirty feet, and still preserving its proportions and characteristic apperance, extended in each direction, until it covered a space of ground some forty by twenty feet in measurement.

"This singular phenomenon was taken advantage of by the proprietors; doors and windows were cut in the wardrobe, a chimney erected, and it now answers every purpose of an addition to the original cottage, being two stories in height! This, doubtless, appears almost incredible, but fortunately the house and attached wardrobe may be seen any day, from the road, at a trifling expense of omnibus hire, by the sceptical. Some distance beyond, rises a noble structure, built entirely of cut-wood, called 'The Valley house, by Mrs. Hubbard.'' Not imagining that a ver[y] species of profanity was conveyed by t[he] legend, I concluded that Mrs. Hubbard was simply the proprietor. This brought to my mind the beautiful lines of primitive poet, Spenser,* if I mistake not:

'Old Mother Hubbard went to the cupboard
To get her poor dog a bone;
But when she got there,
the cupboard was bare,
And so the poor dog got none.'

*The Doctor is in error; the lines quoted are from Chancer. J.P.

"Feeling curious to ascertain if this were, by any possibility, the ancient residence of the heroine of these lines, perchance an ancestress of the present proprietor, I ventured to call and inquire; and my antiquarian zeal was rewarded by the information that such was the case; and that, if I returned at a later hour during the evening, I could be allowed a sight of the closet, and a view of the skeleton of the original dog. Delighted with my success, I returned according, and finding the door closed, ventured to knock; when a sudden shower of rain fell, lasting but about five seconds, but drenching me to the skin. Undeterred by this *contretemps*, I elevated my umbrella and knocked again, loudly, when a violent concussion upon the umbrella, accompanied by a thrill down the handle, which caused me to seat myself precipitately in a bucket by the side of the door, convinced me that electrical phenomena of an anusual character were prevalent, a[nd] decided me to return with all speed to our e[n]campment. Here I was astounded by discovering inverted on the summit of my umbrella, a curious and deeply interesting vase, of singularly antique shape, and composed, apparently, of white porcelain. Whether this vase fell from the moon, a comet, or a passing meteor, I have not yet decided; drawings of it are being prepared, and the whole subject will receive my thorough investigation at an early day.*

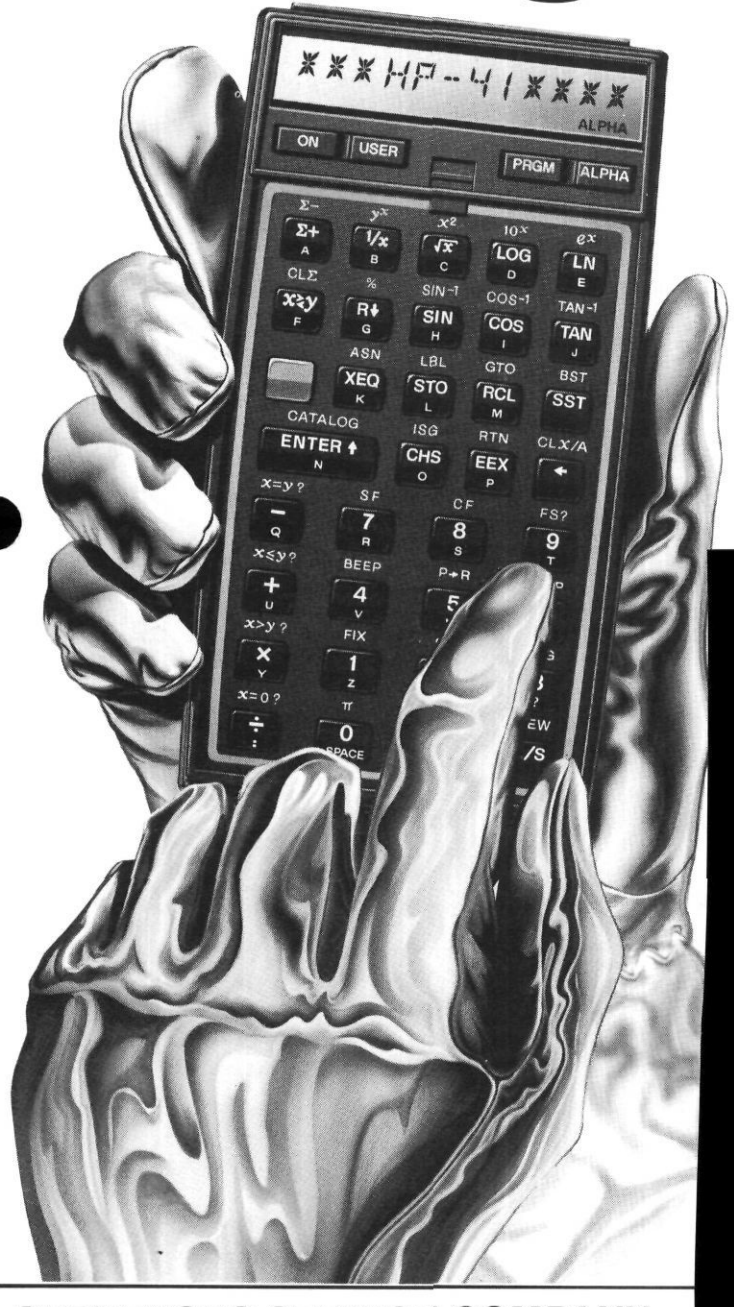
*This curious antique, to which I have given the name of the "Dunshunner Vase," has singularly the appearance of a *wash basin!* When the drawings are completed, it is to be presented to the California Academy of Natural Sciences. J.P.

"I subsequently attemped to pursue my investigation at the 'Valley House,' but the curt manner of the proprietor led me to suspect that the subject was distasteful, and I was reluctantly compelled to abandon it.

"Near the 'Valley House,' I observed an advertisement of 'The Mountain View.' by P. Buckley; but the building in which it is exhibited being closed, I had no opportunity to judge of the merits of the painting, or the skill of Mr. Buckley as an artist. A short distance further, I discovered a small house occupied by a gentleman, who appeared engaged in some description of traffic with the emigrants; and on watching his motions intently my surprise was great to find that his employment consisted in selling the[m] small pieces of pasteboard *at fifty cen[ts] apiece!* Curious to know the nature of these valuable bits of paper, I watched carefuly the proprietor's motions through a window for some hours; but being at length observed by

*(continued on page 34)*

# To get ahead, you've got to push the right buttons.

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*(continued from page 32)*

him, I was requested to leave—and I left. This curious subject is therefore, I regret to say, enwrapped in mystery, and I reluctantly leave it for the elucidation of some future *savant*. The beautiful idea, originated by Col. Benton, that buffaloes and other wild animals are the pioneer engineers, and that subsequent explorations can discover no better roads than those selected by them, would appear to apply admirably to the Central Route. Many pigs, singly and in droves, met and passed me continually; and as the pig is unquestionably a more sagacious animal than the buffalo, their preference for this route is a most significant fact. I was, moreover, informed by the emigrants, that this route was 'the one followed by Col. Fremont when he lost his men.' This statement must be received *cum grano salis*, as, on my inquiry—'What men?' my informant replied 'A box of chessmen,' which answer, from its levity, threw an air of doubt over the whole piece of information, in my mind. There can be no question, however, that Lieut. Beale has frequently travelled this route, and that it was a favorite with him; indeed, I am informed that he took the first omnibus over it that ever left San Francisco for the Mission of Delores.

"The climate in these latitudes is mild; snow appears to be unknown, and we saw but little ice; what there was being sold at twenty-five cents per lb.

"The geological formation of the country is not volcanic. I saw but one small specimen of trap during the march, which I observed at the 'Valley House,' with a mouse in it. From the vast accumulations of sand in these regions, I am led to adopt the opinions of the ethnologists of the 'California Academy of Natural Sciences,' and conclude that the original name of this territory was Sand Francisco, from which the final 'd' in the prefix has been lost by time, like the art of painting on glass.

"Considering the innumerable villages of pigs to be found located on the line of march, and the consequent effect produced on the atmosphere, I would respectfully suggest to the Chief Engineer the propriety of changing the name of the route by a slight alternation in the orthography, giving it the appropriate and euphonious title of the '*Scent*ral R. R. Route.'

"Respectfully submitted,
"ABRAHAM DUNSHUNNER, LL. D.
"P.G.O.R.R.R.S."

From Southwick's Pass, the survey was continued with unabated ardor until the evening of the 10th instant, when we had arrived opposite Mrs. Freeman's "American Eagle," where we encamped. From this point a botanical party under Prof. Weegates was sent over the hills to the S. and W. for exploration. They returned on the 11th, bringing a box of sardines, a tin can of preserved whortleberries, and a bottle of whisky, as specimens of the products of the country over which they had passed. They reported discovering on the old plank road, an inn or hostel kept by a native American Irishman, whose sign exhibited the Harp of Ireland encircling the shield of the United States, with the mottoes

"Erin go unum,
E Pluribus bragh."

On the 14th the party arrived in good health and excellent spirits at the "Nightingale," Mission of Dolores.

History informs us, that

"The Nightingale club at the village was held,
At the sign of the Cabbage and Shears."

It is interesting to the Antiquarian to look over the excellent cabbage garden, still extant immediately opposite the Nightingale, and much more so to converse with Mr. Shears, the respected and urbane proprietor.

The survey and *reconnoissance* being finished on our arrival at the Mission, it may be expected that I should here give a full and impartial statement as to the merits or demerits of the route, in connection with the proposed Railroad.

Some three months must elapse, however, before this can be done, as the triangulation has yet to be perfectly computed, the sub-reports examined and compiled, the observations worked out, and the maps ar

drawings executed. Besides, I have received a letter from certain parties interested in the Southern and Northern routes, informing me that if I suspend my opinion on the "Great Central" for the present, it will be greatly to my interest,—and as my interest is certainly my principle consideration, I shall undoubtedly comply with their request, unless, indeed, greater inducement is offered to the contrary.

Meanwhile I can assure the public, *that a great deal may certainly be said in favor of the Central Route.* A full report accompanied by maps, charts, sub-reports, diagrams, calculations, tables and statistics, may shortly be expected.

Profiles of Prof. Heavysterne, Dr. Dunshunner and myself, executed in black court plaster by Mr. Jinkins, R.A., one of the Artists of the Expedition, in his unrivalled style of elegance, may be seen for a short time at Messrs. LeCount & Strong's—scale 1½ inch to 1 foot.

In conclusion I beg leave to return my thanks to the Professors, Assistants, and Artists of the Expedition, for the energy, fidelity and zeal, with which they have ever cooperated with me, and seconded my efforts; and to assure them that I shall be happy at any time to sit for my portrait for them, or to accept the handsome service of plate, which I am told they have prepared for me, but feel too much delicacy to speak to me about.

I remain, with the highest respect and esteem for myself and every body else,

JOHN PHOENIX, A.M.,
Chief Engineer and Astonomer, S.F.A.M.D.C.E.

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# Sustaining Members




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