

Institutional Affiliate of American Congress on Surveying and Mapping.

# The California Surveyor

No. 80

The Voice of the Land Surveyors of California

Fall, 1985

## 1986 C.L.S.A. Conference

20th Anniversary Celebration  
1966-1986



Red Lion Motor Inn  
Sacramento, CA

February 11-14, 1986

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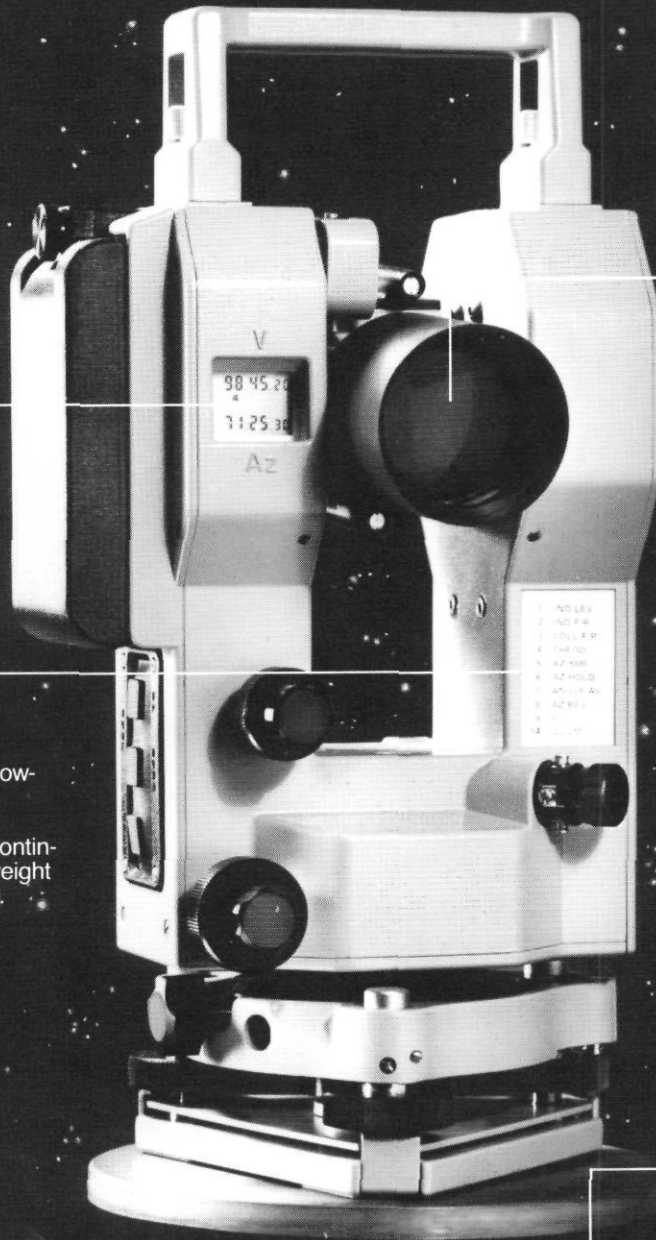
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# The California Surveyor

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."

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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.

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COVER PHOTO (see article on page 4)

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# C.L.S.A. Celebrating 20th Anniversary 1966-1986

## C.L.S.A. 1986 Conference at the Red Lion Motor Inn, Sacramento

### YOU'VE COME A LONG WAY—C.L.S.A.

by Orlean Koehle

The California Land Surveyors Association, founded in the winter of 1966, will be celebrating its 20th Anniversary (1966-1986) at the 1986 Conference in Sacramento, February 11-14, 1986. Much growth, change and maturing have taken place since those early days of 1966. Let's turn back the wheel of history and find out (1) how CLSA became organized; (2) about the beginning problems, objectives, and purposes; and (3) what CLSA is like today.

#### I. The Organization of C.L.S.A.

The roots of the present California Land Surveyors Association stem from two separate organizations: (1) a tri-county group called "Sonoma, Lake and Mendocino Counties, Engineers, and Land Surveyors," and (2) the "California Association of Licensed Surveyors" in Sacramento. The Sonoma, Lake, and Mendocino organization was really the group responsible for forming the state wide association. It had existed for many years. Dick Hogan, later to become CLSA's first president, had belonged to the tri-county group for nearly eight years. He described it as "as pleasant, rather loosely organized bunch who, about every few months, would get together for a cocktail dinner, and a program, usually at the Old Occidental Hotel in Santa Rosa." Their main topics of discussion were "tough surveys, developers, and unpaid accounts."

The group had basically become inactive in 1965. Bob Curtis, also a past president of CLSA, and one of the men responsible for its founding, recalls, "how Dick Stephen and I used to sit in an office in Healdsburg and look out of the window when it was raining, and there was nothing else to do and try to figure out why the [surveying] profession

had gotten into the mess that it had."

They decided something had to be done about it, and were able to contact and arrange a meeting of the old tri-county group to see if they could arouse some interest in forming a state-wide organization; they found, that there was enough interest, and the California Licensed Land Surveyors Association was formed, the CLLSA, later shortened to CLSA. Dick Hogan was elected as provisional president and a nine member steering committee was formed to draw up a constitution and bylaws. The committee met on February 18, 1966 in Sebastopol. Bob Curtis had written to other state associations asking them for information on how they had become organized. Eight of them responded; Bob shared their replies and displayed the Illinois State Association organizational materials from which nine recommendations were then proposed: forming a board of directors and chairman of the board; a provisional state headquarters chapter; various standing committees; establishment of initiation fees and dues; meetings at two month intervals.

Proposed were also three classes of membership which still exist today but with different titles:

(a) active—(now, corporate members)—licensed Land Surveyors; these members have the right to vote and hold offices;

(b) associate—(now: affiliate status)—persons associated in associated or affiliated fields such as title companies, civil engineers, etc.;

(c) junior—(now: associate members)—persons working for a licensed Land Surveyor.

President Dick Hogan then sent a letter to Mr. Gene Foster of Sacramento inviting him and his group of surveyors, the California Association of Licensed Surveyors, to meet with the newly formed CLSA at a

halfway point for discussion and the possibility of merging. They met at Jonesy's Steak House at the Napa Airport on June 3, 1966.

The Sacramento Group was basically a state group set up by Gene Foster and Fred Darby and a number of other people who were government employees. They had united for the same reasons: to gain status for the profession but they were also rather loosely formed, without a constitution or bylaws. It was suggested that since their goals and objectives were basically the same as that of the newly formed CLSA, and since they did not have any formal constitution yet, that they simply join the CLSA and adopt their name. That is exactly what they did; so overnight the membership doubled from 15 to 30 members, and has been climbing ever since. Today, there are some 1,000 members in the CLSA.

The next problem was getting Southern Californians involved. They, at first, ignored the new organization in Northern California, probably thinking it was so small and would never really get off the ground. The early CLSA spent a lot of money and time having board meetings in Los Angeles, specifically for the purpose of inviting Surveyors in that area to take a good look at CLSA and see what they were trying to do. Eventually they were beginning to see some results. In the mid-1970's the Southern Californians really became involved, now there is a predominance of members from Southern California including many leaders of the organization.

#### II. Problems and Concerns

1. The practice of land surveying by unlicensed individuals. One of the main problems CLSA had from the beginning was related to surveying done by unlicensed individuals. The licensed Land Surveyor felt those persons who practice land

February 11-14, 1986

*"This Conference Celebration will reflect the changes in C.L.S.A. history."*

surveying should be educated, experienced, tested and licensed to practice land surveying.

Chuck Wooldridge, a former president of CLSA—a licensed Land Surveyor who had also acquired a degree in civil engineering—noted that in some ways this issue served a useful purpose: it made Surveyors united and working together, "this question provided a terrific battle ground for the many divergent solutions while appealing to all Surveyors to the extent of gaining great momentum and serving as the unifying force to bring Surveyors together under one umbrella."

Other problems, as related by Bob Curtis were:

2. Upgrading the profession. There was a lot of poor work being done and a lot of "moonlighting that was subprofessional."

3. Lack of education. Very few universities offered any kind of land surveying curriculum; only a few two-year programs were offered. According to Bob Curtis, "the four-year curriculum is the basis for Land Surveyors entering the profession as a professional." He strongly advocates working for more four-year programs.

4. Legislation. The problem was how to get the members well enough informed, united and strong enough to combat harmful legislation such as legislation proposed by the American Society of Civil Engineers, Surveying and Mapping Division which had as its object to have all state registration boards require that "those who wish to engage in the practice of land surveying and related engineering work should first be required to qualify for a professional engineers license, and the right to practice land surveying should be a moral right based on professional competence and the engineers code of ethics" rather than a legal right based on separate registration for land

surveying.

5. And, of course, as with every beginning organization, there was the problem of finances. There really was not much money to help with anyone's expenses. As Bob Curtis expressed, "Everything was volunteered time and volunteered money, and I spent a fortune in gas."

This was true of so many of the past presidents as well as other officers, and is still true today. There is much personal sacrifice, generosity and going "the extra mile" service that has helped build CLSA to the great organization it is today.

#### Objectives and Purposes

In a letter to the members sent out in April, 1967, by Bob Curtis, he states what he considers the primary purposes and objectives of CLSA: (A) To get the active participation of all California Land Surveyors involved in CLSA—to gain strength and unity in their association. (B) To be able to advance their career through supporting proper legislation, to be aware of harmful legislation and be strong enough to combat it. (C) To demand Land Surveyors' right to better educational facilities and the resources to use them. (D) To be regarded and respected as a profession by realizing that "high standards require high performance."

On a message prepared for this article Bob Curtis stated what he feels should be the primary objectives of CLSA: (1) to be the voice of all Land Surveyors in California and their main source of information, and (2) to preserve the land surveying profession. He concluded with an impressive statement of what the alternative could be by not getting involved: "We could through blissful ignorance—like the Kiki bird—become extinct."

#### III. C.L.S.A. Today

Fortunately, the CLSA members chose not to become extinct and today the CLSA has grown from its

original 32 members to over 1,000. There are still some of the same concerns such as (1) the age-old problem of what to do with the civil engineers; should they be allowed corporate membership status or continue with affiliate status; (2) it is still very difficult to obtain a formal education in the surveying profession; Fresno State is still the only college in California offering a four-year baccalaureate program for a Land Surveyor.

But, many of CLSA's purposes have been achieved, for example:

(1) the membership has steadily grown and there is greater unity and strength in the Association.

(2) CLSA has a professional lobbyist representing them in Sacramento and keeping them abreast of any kind of legislation concerning land surveying. CLSA is now regarded and respected as a viable state association able to have a strong impact on the successful passage or defeat of legislation.

(3) the publication, *The California Surveyor*, goes out to all surveyors in the state regardless of their membership status. This approach has helped CLSA achieve its objective as being the voice of the Land Surveyors of California.

(4) CLSA has helped to bring higher standards and greater recognition for the Land Surveyor as a profession.

In summary, the future looks very promising for CLSA as we consider what has been accomplished over the past twenty years. We salute the hardworking leaders who were instrumental in its founding and guiding it over the years as well as those presently at the helm of the organization. You truly have come a long way—CLSA.

*Our apologies for any inaccuracies in this history. To quote from Chuck Wooldridge, "the good old days are primarily based on poor memory and a good imagination."* □

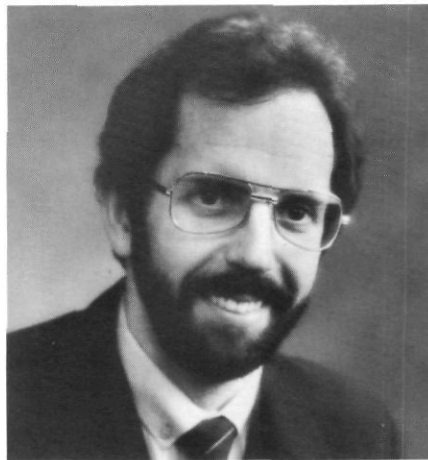
# President's Message

Since my last report, I attended the Board of Registration meeting in Sacramento during the month of June and will be attending their November meeting in San Francisco as a temporary representative of CLSA to the Board of Registration until such time as a new President makes permanent appointments. I am filling the position of representative to the Board of Registration on an interim basis due to the resignation I received on June 22 from Vince Sincek of the San Diego Chapter. Vince has served in this position for a number of years and has done an admirable job at representing CLSA to the Board of Registration. I have found his reports to be objective and fair and never personally critical. On behalf of the Association, I want to extend our sincere appreciation for his contribution to the profession.

I attended the Western Federation Conference held in the latter part of September. Various technical, business, and personal growth workshops were presented in three to four hour morning and afternoon sessions giving the attendees a real opportunity to not just listen but to participate and benefit. It was an excellent conference and very educational.

The third quarter CLSA Board of Directors Meeting was held in July in San Francisco. One of the more important items decided at that meeting was a Resolution to allow engineers Corporate Membership (same as Land Surveyors in the State Association). From the discussions that took place prior to voting on the Resolution, it was apparent there are many surveyors in California concerned about our relationship with the engineering profession and feel we need to work closer together. On the other hand there are others who feel that diluting the voting leadership of the Association would diminish the integrity and autonomy that surveyors have established for themselves, in recent years, as a separate professional group. The Resolution was defeated. This issue will, more than likely, come up again in future years; however, I would hope the positions all surveyors take will be secondary to the solidarity of the profession.

The fourth quarter Board of



Michael R. McGee

Directors Meeting was held in San Francisco on October 12. Although there were no controversial issues on the agenda the meeting did run from 9:30 a.m. until 5 p.m. because the Board Members are taking a more active role in discussing, analyzing, and deciding all of the issues of concern to the membership.

One item that drew much discussion is the location of Board Meetings. For the time being Board Meetings are presently held in San Francisco. The reason being the overall cost to the Chapters and Association is less. Holding meetings in other areas of the state, for example Los Angeles costs more and historically the attendance at Board Meetings has been the Directors only and not usually local members. It has been suggested that if local Chapters were to sponsor meetings of the Board of Directors then the Board Meetings could be moved throughout the state with the hopes of generating more interest in the business of the State Association from the local level. For more details as to the business of both the July and October Board Meetings, see the minutes to be included in the *Cal Surveyor* in this or future issues.

I am pleased to announce that by the time this issue of the *Cal Surveyor* is published, we will have put on our first educational seminar in Los Angeles and San Francisco in November. This is the first seminar in several years and the first of many more to come now that we have reestablished an educational seminar program. Future seminars will be subjects of timely need-to-

know topics and I urge the membership and surveyors throughout California to take advantage of the opportunity to enlighten themselves and keep up with their profession. The seminar presented in November covered legal research and the nature of easements.

Before closing, I am compelled to make some comments regarding the passage last year of Senate Bill 1837. This particular piece of legislation certainly enhanced the laws governing our profession; however, it has drawn some criticism from a number of surveyors as to its purpose and necessity. I wholeheartedly support SB-1837; it has been overdue for some years and could be even further strengthened. Evidence found, analysis of, and monuments set should be clearly shown on a recorded document in the form of a Corner Record, Record of Survey, Parcel Map, etc. every time a survey is performed. To do otherwise is a disservice to your fellow professional surveyors and the public. Preparation and filling of the Record of Survey is simply an undisputable fact of the survey process and is as necessary as researching the project, calculating the traverse, or pounding stakes into the ground. Obviously, if information is recorded and shared with the other surveyors and the public, the overall cost of surveying will decrease not to mention the cost savings due to additional benefits like less opportunity for litigation to occur. SB-1837 represents a new attitude among surveyors who want to organize and work together as a profession, who do want to be retraced, who do take pride in every survey they perform, who want their monuments accepted by others as well as would like to have good reason to accept other surveyors monuments, who wish to share their knowledge and resources with other surveyors to improve the quality of surveying for all surveyors and thereby better serve the public interest.

In closing, I hope to see everyone at our 20th Anniversary Conference to be held in Sacramento February 12 which promises to be an exciting event for the surveyors in California.

Michael R. McGee, L.S.  
President

# Letters to the Editor

Many surveyors seem to be unaware of the rationale and necessity for the passage of SB-1837 (Chapter 943, Statutes of 1984), which modified the Record of Survey provisions of the Land Surveyor's Act.

Some people apparently feel that to disclose the position of the points they set is unprofessional and a violation of the Client-Surveyor relationship. Others see it as a "Big Brother" tool, wherein government is allowed to interfere in the day-to-day operations of the private practitioner.

In my opinion, these observations are nothing but a smoke screen by those who have little or no concern for their professional peers and posterity. How often have surveyors said "I wonder what this pipe represents?" The monument in question may have a tag that is obliterated, or missing. It may have been set as a random point, an offset, or a witness. If there is no record, what good is it? Quite often we re-invent the wheel, when the lines we need have recently been re-established. If a Record of Survey or Corner Record has been filed, one would at least have the benefit of knowing who to look-up.

We, the Land Surveyors of California, constantly harp on the fact that we are "Professionals." Is it professional to scoff at the law, hide corners, fail to perform correct surveys or not to tag your points? If so, let us continue in the manner we have been going.

It is a fact, however, that all surveyors in all of California's counties are not scofflaws. Many file Records of Survey as a matter of course, both under the old language and the new, and these persons don't even understand the argument. Also, many County Surveyor's offices are programmed to make the filing of a Record of Survey difficult, if not impossible. If this is a problem, official roadblocks can be removed or pushed aside. The local CLSA Chapter can visit the County Surveyor or the Board of Supervisors. If this doesn't work, which I doubt, the Board of Registration has jurisdiction, and will, I am sure, act on the problem.

Another concern voiced is "if I file a Record of Survey on every job, my

fees will be too high, and I won't have any work." Admittedly, this could be a problem, but one which is easily solved. Form a Joint Professional Practices Committee, and let your peers know that the law is there to be followed. This is not meant as a call for a "witch-hunt", but merely as a means for the self-policing of our profession. If we don't clean-up our act, somebody else will. A potential side effect of this method is the possible retirement of signature sellers.

Finally, remember that the Act refers to all Land Surveyors and surveying Civil Engineers, both private and *public*. Cities and counties, special districts, and the State must also file maps and corner records. This does not mean that all municipal, district and State records are not void. That would be assinine. It does mean that when one does a survey based on these records, an official record will be created which is not subject to the whim of an unknowledgeable administrator or bureaucrat.

I feel that we must remember certain aspects of our profession, and

do our best to help it along. First, a monument must have character and a genealogy. What is it and where did it come from? The record calls for a redwood hub and you find a concrete monument. Is it in the same position? How can you be sure? A filed map.

If we expect recognition as professionals, and the respect of future surveyors, we must act to improve the public record. We owe it to ourselves, the public and our posterity.

Harold B. Davis, L.S. 3352  
Chairman, CLSA Legislative Committee

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# Legal Corner

## THE BEAUFORT SEA CASE— 800 Miles of Disputed, Ice-Bound Boundaries by John Briscoe

Perhaps the vastest, and certainly one of the most exotic title and boundary lawsuits in our nation's history is the Beaufort Sea Case, now pending before a Special Master of the United States Supreme Court. The case is *United States v. Alaska*, which was filed in 1979 in the Supreme Court's "original jurisdiction." That special jurisdiction of the Court is distinct from its appellate jurisdiction; in original-jurisdiction cases, lawsuits are filed in the first instance in the Supreme Court, rather than in some lower court. This jurisdiction is reserved primarily for cases between the states, and for certain cases by the federal government against a state.

The issue in *United States v. Alaska* is the location of Alaska's three-mile maritime limit off its north coast from Icy Cape, southwest of Point Barrow, to the Canadian border. Within that limit, Alaska owns the submerged lands; beyond it, to at least 200 miles, the U.S. owns the submerged lands and the resources of those lands. (The 200-mile minimum U.S. ownership is attributable to President Reagan's March 1983 statement proclaiming that the U.S. possesses a 200-mile "Exclusive Economic Zone.") If, geologically speaking, the continental shelf extends beyond 200 miles, the U.S. owns those submerged lands as well.

It is one thing, one might imagine, to say that a maritime boundary exists three miles off our shores, and another to say with precision where that boundary is located. Among the issues raised along the 800-mile Alaskan arctic coast are these:

1. Whether the massive ARCO pier, at Prudhoe Bay, built with the "mistaken" permission of the Corps of Engineers, should be treated as a "harbor work" within the meaning of the international treaty governing this case, so that Alaska's boundary is measured from it, and not from the natural shoreline.

2. Whether southeast Harrison Bay, where it is thought another Prudhoe Bay oil field may be found, is a legal bay in international law. If

it is, Alaska's seaward boundary is to be measured from a line drawn between the headlands of the bay, rather than from its shore.

3. In places along the north Alaskan coast, there are barrier islands lying off the mainland that are more than six miles from shore. In the view of the federal government, the Court is strictly to measure the three-mile limit from each island and from the mainland to shore, a practice that leaves pockets or lakes of high seas (whose submerged lands would be owned by the federal government) wholly surrounded by Alaskan territorial waters. Alaska submits that, at a minimum, these areas should be assimilated to its territorial waters. More properly, in Alaska's view, the Court should construct, as in the case of bays, "straight baselines" between the islands, where they are not more than 10 miles apart. The three-mile limit should then be drawn from the islands and these straight baseline segments. In the view of Alaska, this method would accord with more than 100 years of U.S. policy in its foreign affairs—policy that, in the context of this litigation, the U.S. now renounces.

4. Whether an alluvial feature off Prudhoe Bay called Dinkum Sands is an island in international law. If it is, Alaska is entitled to the submerged lands within three miles of it. If Dinkum Sands does not qualify as an island, the government owns the submerged lands within a three-mile radius.

The disputed area off Prudhoe Bay alone was jointly leased by the parties in 1979, pending the outcome of this litigation. The bonus payments from these leases (no royalties have been paid, as no production has yet occurred), with interest, now exceed \$1 billion.

It is obvious that these issues present substantial fact questions requiring a trial—one that would severely tax the schedules of the nine justices of the Supreme Court. While it had been the practice of the Court early in its history to hear such cases itself (the last known jury trial held before the Court was in 1797), modernly the Court's practice is to refer such cases to a Special Master. That is what has

been done in the Beaufort Sea case. The Master there has conducted two days of trial in 1980, three weeks of trial in 1984, and one and one-half weeks of trial this past summer. After hearing arguments on the various issues, he will write his report containing a recommendation to the Court, which will then hear argument and decide the case.

Special prominent Californians have served the cause of Alaska in this case, including Eureka engineer John Winzler of the firm of Winzler & Kelly, and three scientists from the Scripps Institution of Oceanography, Doug Inman, Tim Barnett, and Ron Flick, all of whom testified as expert witnesses for Alaska. In addition, Alaska has benefited from the helpful advice of Francois D. Uzes, the chief land surveyor at the California State Land Commission. Mr. Briscoe, the author of the recently published *Surveying the Courtroom (Landmark Enterprises, 1984)*, has served as special trial counsel to the State of Alaska in the *Beaufort Sea litigation*. □

## "SURVEYING THE COURTROOM"

### A Land Expert's Guide to Evidence and Civil Procedure

by John Briscoe

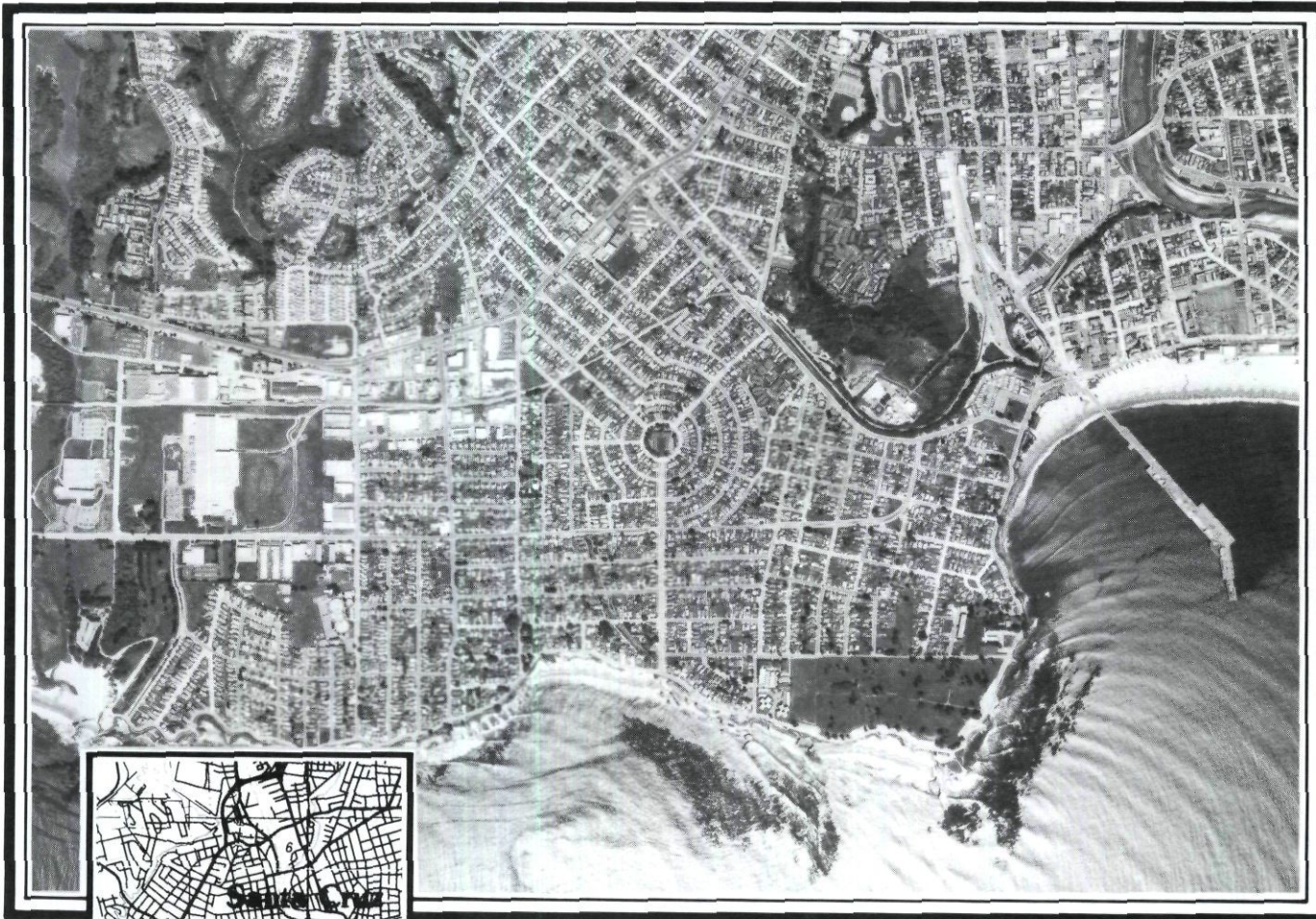
Any Land Surveyor, oilman, engineer, or appraiser who has ever been mystified by the rituals of the legal profession will find this book to be an essential pathway through what appears to be a wilderness. The book relates the rules of evidence from hearsay to burden of proof, and steers the reader all the way through the course of a lawsuit to the United States Supreme Court.

The examples given in "Surveying the Courtroom" are from the authors store of experience in boundary, land and natural resource cases. Ample citations are given to provide easier access to additional reading.

John Briscoe, a San Francisco attorney and writer, has devoted a substantial portion of his legal career to cases of land and natural resources disputes. He has tried such cases in federal and state courts, and has argued them before the United States and California Supreme courts. □



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# Articles

The following is a copy of the paper presented to the CLSA Conference in San Diego, May 1985.

## MULTIPURPOSE DISASTER: THE RESULT OF SPATIALLY IMPRECISE LAND RECORDS INFORMATION SYSTEMS

James K. Crossfield, Ph.D.,  
Associate Professor, Department of  
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California State University-Fresno  
Fresno, California

### Biographical Sketch

James K. Crossfield completed his Ph.D. in Civil and Environmental Engineering at the University of Wisconsin-Madison in May of 1984. Having taught surveying for two years at the University of Arkansas, Fayetteville, in 1978-79, he joined the Surveying faculty at Fresno in August of 1984. James is a member of ACSM and CLSA.

### Abstract

Multipurpose Cadastre, Land Records Information Systems, geodetic reference framework, base maps, cadastral and environmental overlays: A jumble of terms that mean something different to all who see or hear them. Within the context of a particular set of definitions, the spatial imprecision of two county land records information systems are documented. Dane County Wisconsin and Fresno County California provide the standard to which other examples of spatial imprecision may be compared. The potentially disastrous implications of spatially imprecise land records information systems for the public and for surveyors are revealed.

### Introduction

Several documents (NRC, 1980) (Larsen, 1978) have identified important design considerations for use during the construction of a Multipurpose Cadastre. These could be classified as ideal system characteristics.

### Accessibility:

Because there is such a jumble of public land information, no public official knows all that is available and private citizens are at an even greater disadvantage. It may be argued that the principle of 'Publicity' is being violated since, "... in real estate transactions, public information may be available only to those who have the financial resources to ferret it out."

### Availability:

Gaps in what is known about certain aspects of the land exist. The answer to the fundamental land records question; Where does, Who owns, and What? cannot be properly answered because both public and private decisions are made in ignorance of the facts.

### Duplication:

When two or more public or private entities compile, update and maintain the same land records, waste occurs.

### Aggregation:

Data is seen to be useless when an inappropriate scale or resolution of one entities records means that those records cannot be applied to another entities problems.

### Integratability:

Data incompatibility is evident when similar or related data (positional) is described differently on different products or when the historically based separation of physical and proprietary land data is observed.

### Confidentiality:

Conflicting standards at different agencies create an unclear definition of the demarcation between public and private information.

### Institutional:

It is typical to find separate units of any level of government organized around a particular land related task (property assessment, highways, solid waste, sanitary) and maintaining separate (but similar) files. This encourages duplication and suggests that there are serious organizational drawbacks in most typical land records information systems. A vertical structure is evident when a horizontal structure is warranted.

### Definitions

These definitions are presented within the context of the discussion that follows. Since land records information system definitions tend to be evolutionary, the following definitions may change with the passage of time.

### Multipurpose Cadastre:

The Multipurpose Cadastre may be defined as a comprehensive, continuous, and readily accessible land records information system. While earlier definitions (NRC, 1980) implied that a publically administered and operated system was necessary,

such need not necessarily be the case. Similarly, the land parcel need not necessarily be the cornerstone of the system (Chrisman, 1985). A Multipurpose Cadastre should include an overlay of property parcel information however, in order to be complete.

### Land Records Information System:

A Land Records Information System may be defined as an information system that contains land record components. It is not necessarily comprehensive or computerized. A county recorders' office or the records of a title company could be considered Land Records Information Systems.

### Geodetic Reference Framework:

The Geodetic Reference Framework is the combined horizontal and vertical geodetic control network that contains the fundamental positional criteria used to correlate the location of all Multipurpose Cadastre system components. Remonumented PLSS corners that have been connected to the geodetic control network may become part of the Geodetic Reference Framework. All positional data (overlays) should be obtained with reference to the Geodetic Reference Framework in order to insure data compatibility. This framework is a fundamental component of the Multipurpose Cadastre. A Land Records Information System may or may not be linked to the Geodetic Reference Framework.

### Base Map:

A Base Map is the graphic representation of selected fundamental map information that applies to all components of a Multipurpose Cadastre or Land Records Information System. This definition is more general than that given in the Manual of Photogrammetry (ASP, 1980) which states: "A Base Map is the graphic representation at a specified scale of selected fundamental map information; used as a framework upon which additional data of a specialized nature may be compiled." The three types of Base Map are line, photo, and digital.

### Overlay:

An overlay is a line, photo or digital map that illustrates and maintains the positional nature of some type of land information. Ex-

amples include but are not limited to: property boundary, soil type, land cover, zoning classification, political boundaries, utility and transportation networks. Any overlay may be prepared and included in a Multipurpose Cadastre or Land Records Information System.

#### *Cadastral Overlay:*

The Cadastral Overlay delimits the current status of property ownership. The property ownership parcel is the key component of this overlay. This is an essential component in the Multipurpose Cadastre. The overlay will typically consist of a series of maps (and the information supporting those maps) showing the size, shape and location of all cadastral parcels within a jurisdiction. Map, in the generic sense may be too strong a word here. It is perhaps better to visualize a virtual, digital map that is printable at any desired scale and is continuously updated as new measurements enter the system. Initially the Cadastral Overlay should be based on reliable property boundary information.

#### **Data Standardization**

One requirement for successful

deployment of Multipurpose Cadastres is the establishment of system wide data standards. Effective data standards would go far towards reducing the design problems of data integration and aggregation. Significant efforts are underway in this state to address the data standardization problem. Nationally, however, this effort has focused on the ACSM National Committee for Digital Cartographic Data Standards (Moellering, 1985). An interim set of proposed standards were issued by this committee at the March ACSM-ASP-Auto Carto 7 meeting in Washington D.C. Four subcommittees provided proposed interim standards in each of the four following areas:

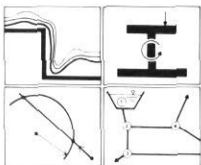
1. General digital cartographic data interchange format
2. Digital cartographic data quality
3. Digital cartographic features
4. Terms and definitions

Particularly interesting to surveyors is the second item. That subcommittee recommended that a five part quality report be required for all digital cartographic data products. The premise behind this report

is to allow potential users the opportunity to evaluate the fitness of a particular digital cartographic product for a particular use. The five parts of the quality report include: lineage, positional accuracy, attribute accuracy, logical consistency and completeness. The lineage section is used to describe the origins of the data source material. Attribute accuracy describes the validity of the various attribute or classification categories. Logical consistency describes the status of cartographic inconsistencies like gaps, overlaps and mismatches. The completeness section is used to describe the extent to which a given product is deemed to be complete. Measures of positional accuracy may be made by any of four *optional* methods.

These four optional methods include: deductive estimate, internal (statistical) evidence, comparison to source (visual inspection of check plots), and comparison to an independent source of higher accuracy. The last should be preferred by the surveying community but as you might expect, it is not the favorite

*(continued on page 12)*



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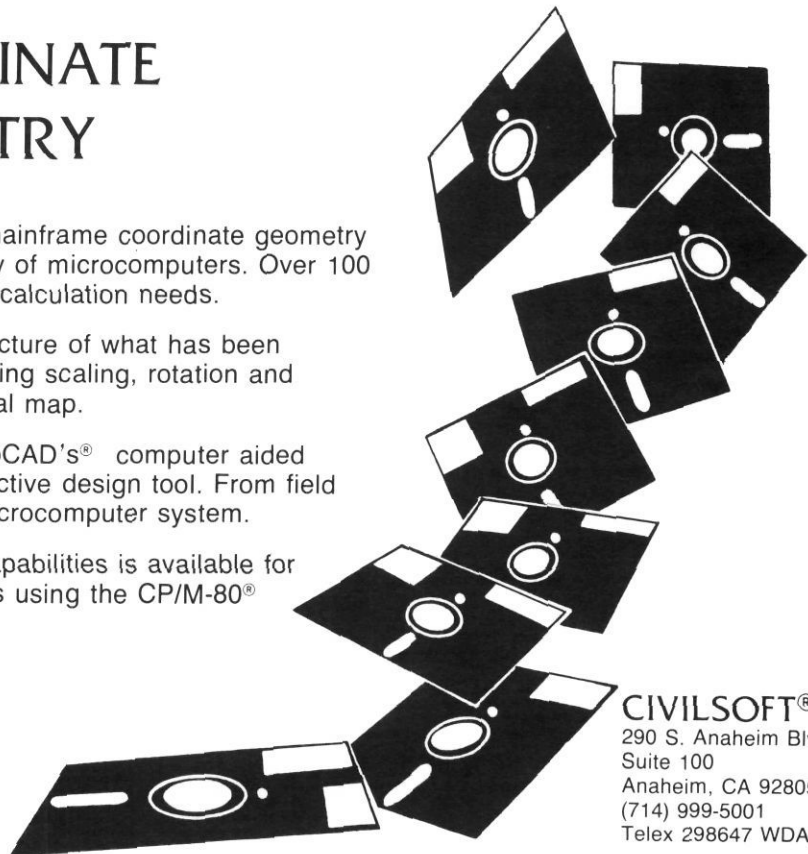
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(continued from page 11)

among the cartographic community because it tends to show precisely how poorly most cartographic products reflect the true situation on the ground.

The emergence of these proposed digital cartographic data standards is encouraging, and should ultimately help to facilitate the development of effective Multipurpose Cadastres. Surveyors must play an active role in monitoring the establishment and application of these standards in order to insure effective implementation.

**Map Accuracy**

National Map Accuracy Standards currently state that for the types of maps most commonly found in land records information systems (large scale, having scales greater than 1:20,000), 90% of all points should be plotted within 1/30 of an inch of their true location (Wolf, 1983). This restriction can become quite dramatic when the variable of interest is the reliability of ground location that can be derived from maps that meet National Map Accuracy Standards.

Based upon a statistical measure, we could say that since a 90% error is 1.646 times as large as the standard error (1 sigma), that the standard deviation of all points must be plotted within 1/50 of an inch of their true ground location. A relationship can be derived that expresses the likely map to ground uncertainty (x) associated with a 1"=100' property map that just meets National Map Accuracy Standards.

$$1"/100' = 0.02"/x \quad (1)$$

The uncertainty (x) for this situation is +/- 2.0 feet (1 sigma). A 1"=200' scale map is likely to have a +/- 4.0 foot uncertainty while a 1"=400' scale map is likely to have a +/- 8.0 foot uncertainty. A 7 and 1/2 minute USGS quad map at a 1"=2000' scale would have approximately +/- 40.0 feet of uncertainty.

A look at the results of some map verification tests is in order. Two county mapping systems will be analyzed. Dane County, Wisconsin and Fresno County, California, represent only two counties. But the mapping accuracies present in these counties are indicative of the ac-

curacies likely to be found in similar systems throughout the country.

**Dane County**


The results of the Westport Section Line Accuracy Test (Crossfield 1983) indicate that the average misplot of property boundary corners along a section line in Dane County, Wisconsin, is likely to be significant. This test was conducted to illustrate the errors associated with the mechanical digitization of existing property boundary source maps at the county level. The results of this test are summarized in Table 1. Notice that National Map Accuracy Standards provide good estimates of the positional errors associated with these maps.

Results of the Site Specific Accuracy of Digitized Property Maps investigation (Petersohn, 1983) indicated that the misplots of property boundary corners within the interior of a section were perhaps greater than those indicated on Table 1. Petersohn's analysis looked at several possible data manipulation schemes to try to improve the positional reliability of the plotted

(continued on page 20)

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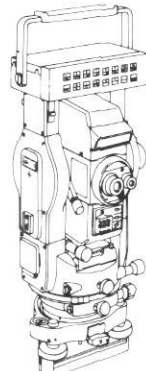
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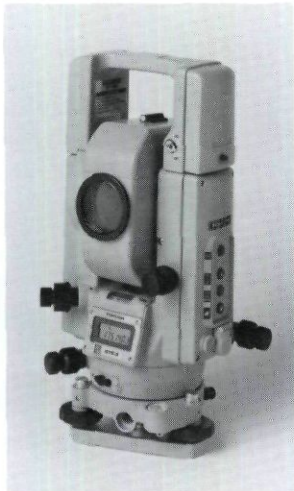


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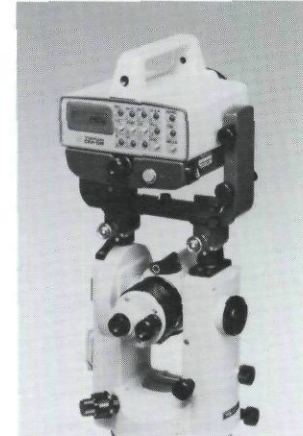
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We have just completed the trial by jury process through Federal Court, having been sued for damages, and we want to warn all others in our profession of the dangers that we have been exposed to and the possible threat to your liability in the future and over the past five years of your work.

The basic facts and history are as follows:

1979—The property owner of approximately 50 acres in Tiburon hired a team of professionals for the purpose of subdividing his property. The team included:

- a) A Licensed Architect
- b) A Licensed Landscape Architect
- c) A Licensed Soil Engineer
- d) A Licensed Civil Engineer
- e) A Licensed Attorney
- f) Two professional planners
- g) The owner is a Licensed Builder.

1980—The Master Plan, prepared with the cooperation of all members of the team, was submitted for processing.

May, 1981—The Master Plan was approved by Resolution by the Town Council.

June, 1981—The Precise Plan, prepared with the cooperation and preparation of required material by all members of the team, was submitted for processing, and the Tentative Map was prepared by the Civil Engineer (Tiburon requires that the Tentative Map be certified by a Civil Engineer or a Land Surveyor) and jointly filed for processing.

July, 1981—The owner stopped paying monthly billings from all consultants.

August, 1981—The Precise Plan and the Tentative Map were approved by formal Resolution by the Town Council.

December, 1981—Work on the Improvement Plans was stopped for continued non-payment of billings.

1983—Because of non-payments to the 1st, 2nd, and 3rd deeds of trust, foreclosure was initiated.

1983—The Owner files for bankruptcy under Chapter 11.

August, 1983—All consultants except the Architect were hired by the new owners following foreclosure to continue work on the Improvement Plans and Final Map toward development of the property.

February, 1984—Final Subdivision Map filed for processing with the Town of Tiburon.

April 3, 1984—Totally unknown to all working parties to the process, the Architect claims sole authorship and files for Copyright on the Tentative Map and releases the rights to the prior owner.

August 2, 1984—The final Subdivision Map is recorded.

September 11, 1984—We received a "Summons in Civil Action" for Copyright infringement. The claim is that since we prepared and recorded the Subdivision Map, and since they claimed that the Subdivision Map was a "copy" of the Tentative Map, and since they had copyrighted the Tentative Map, we had infringed on their rights and were subject to litigation for damages.

May, 1985—Following two weeks of trial, the jury found:

a) The Architect had the right to Copyright the Tentative Map even though he had nothing to do with its preparation because the "Plan" shown on said Map was a presentation of "the Architect's ideas".

b) Because of a technicality, it being that he did not fulfill the requirement of "making a determined effort to place a copyright statement on all known copies of the copyrighted document (the Tentative Map)", he had not quite fulfilled the "perfection" of the copyright and therefore there was no infringement and no damages were awarded.

### Conclusions

1. The court has determined that an Architect can have rights to material prepared by (and even required by local laws to be prepared by) a Civil Engineer or Land Surveyor if he can claim some of the ideas shown on the prepared material to be his.

2. Even though a Tentative Map is required by law (State Subdivision Map Act and local Subdivision Ordinances) to be filed with the governing agency, and the Map is required to be held open to public access and use, it may still be subject to copyright and therefore have a restricted use. This concept could well apply to other "public documents" and could be devastating to our profession as well as to a Title Company and their necessary use of all public documents (filed, recorded, or otherwise).

3. A final Subdivision Map, even though required by law to be recorded, may be considered an infringement on copyright if the Tentative Map has been properly copyrighted

(continued on page 18)

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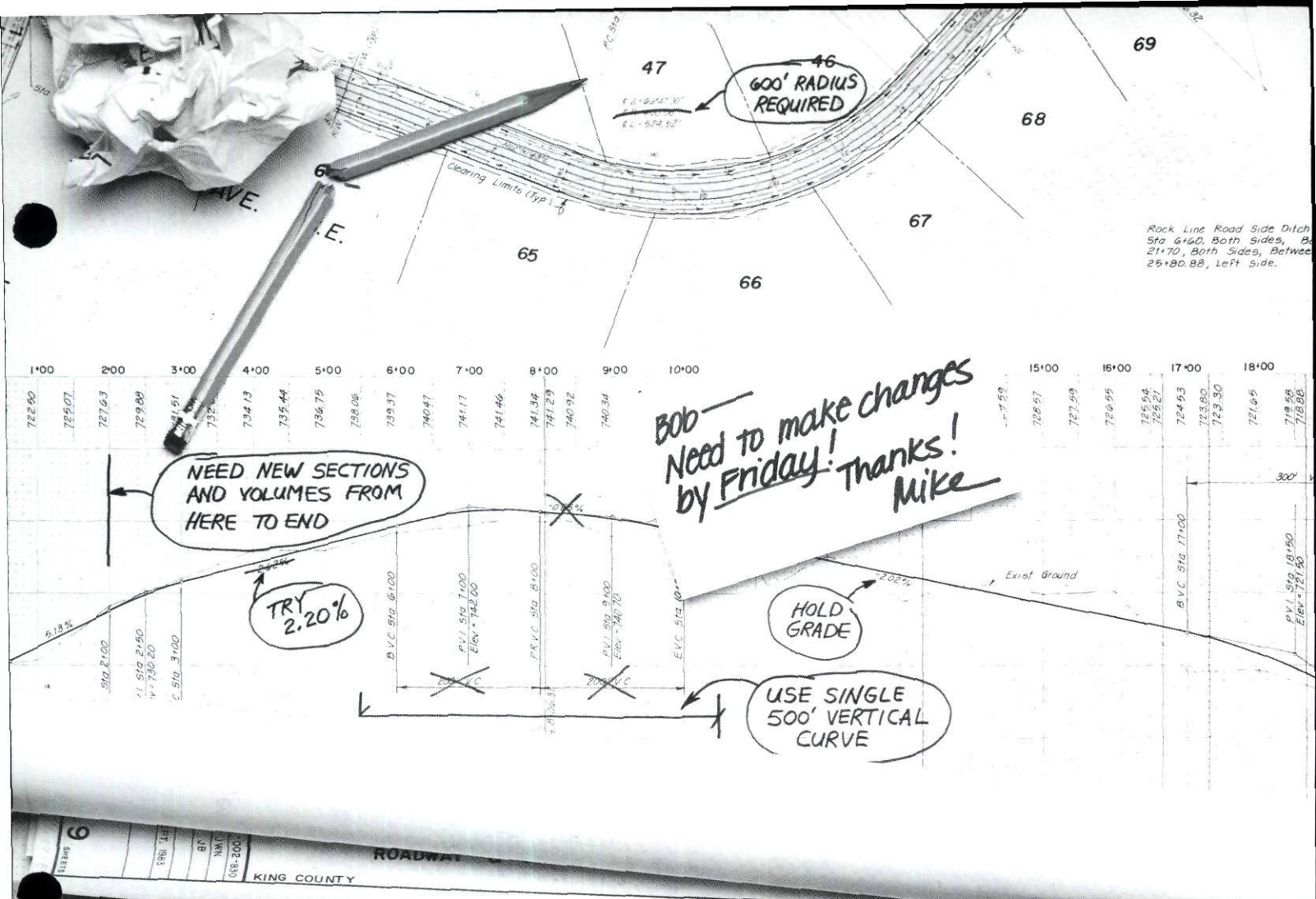
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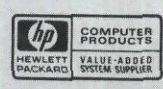
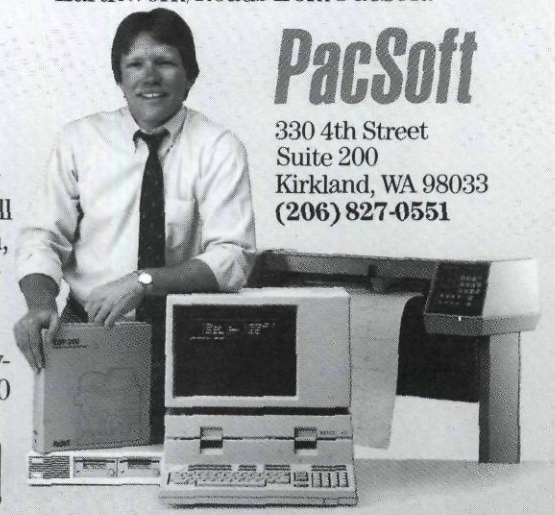
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(continued from page 16)

and the holder of the copyright wishes to file an action.

4. A person may file for copyright any time within a five year period following "first publication" of the material, and may thereafter enforce his rights against any infringements.

5. A property owner, having lost his property through foreclosure, does not necessarily lose the rights to the materials prepared and filed with public agencies for applications regarding the property. Therefore, materials and documents specifically prepared for a given piece of property do not go "with the land" but may remain the property of the original owner.

6. An Engineer or Surveyor may be liable for damages for infringement if he records a final Map after someone copyrighted the Tentative Map even though he had no knowledge of the copyright.

7. We have no intent on appealing the court decision, even though we cannot agree with the conclusions and are very concerned with the impact on our profession, because no damages were awarded and we do

not want to open that possibility again. However, we intend to place a "Copyright symbol" on all of our filed materials in the future. This may or may not be the best legal response, but at least we will have been the first to claim rights to our work.

Rhodes and Gardner, Inc. June 1985

Reference—Copyright

Since the advent of the 1976 revisions to the copyright laws, several cases have been decided in favor of architects and engineers in regard to their rights to have drawings and specifications copyrighted. The need for protection arises primarily when the design professional's contract is terminated prematurely by the client under less than amicable circumstances or when a contractor on the project makes use of the documents on an unrelated project.

In this regard, see *Aitken, Hazen, et al. v. Empire Construction Co.*, 542 F.Supp. 252 (U.S. Dist. Ct., Nebraska, 1982) in which the court ruled that an architect's drawings can be copyrighted under the 1976 Act; and, *Meltzer v. Zoller*, 520 F.Supp. 847 (D.N.J., 1981) in which

the court ruled that architectural drawings are not "works for hire" and thus the architect, and not the client, is the author of the documents for copyright purposes.

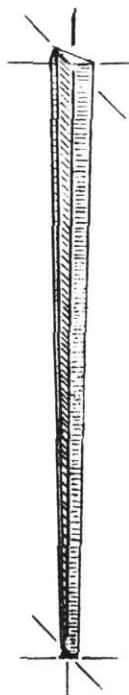
Victor O. Schinnerer "Guideline"

MILLE PASSUS

by Wilfried E. Roeder, PLS, (New Mexico Association of Surveyors and Mappers)

One of the first discoveries of any fledgling land surveyor is the fact that surveyors have to do a lot of walking. He (or she) will soon learn the art of counting paces and to estimate distances with surprising accuracy. Any dictionary will tell you that the word "mile" is derived from the Latin word for "thousand" and leave you wondering how short legged the Roman soldiers must have been or why there should be 5,280 feet in a thousand paces. Having grown up with the Metric System, I am always suspicious of odd quantities until I discover the logic behind their existence.

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of the human body. It is believed that the oldest unit of length was the Egyptian cubit which was defined as the distance from elbow to the finger tips and was equal to approximately one and a half feet. A foot consisted of four hands, which were further divided into four fingers each. A foot thus consisted of 16 fingers or 24 fingers to the cubit, which was soon standardized by a royal master cubit of black granite against which all other cubit sticks in Egypt were compared at regular intervals.

The royal cubit was an ordinary cubit of 6 hands with a seventh hand added and thus consisted of 28 fingers. Septenary units were of practical importance in the measuring of areas of land. It was assumed that a square with a side of 70 was half the area of a square with a side of 100 and twice the area of a square with sides of 50. An acre was originally a square of 70 yards. The foot of 16 fingers became the standard of length in Greece. From there it made its way to Rome.

The Romans started the practice of dividing by twelve and, using the same word for 1/12 foot as for 1/12

pound (uncia) created the foot of 12 inches. The Roman foot was shorter than our present foot (296 mm versus 304.8 mm).

Having need for a practical unit of length for their marching legions, the Romans made 5 feet equal to one pace. This may seem small to a 20th Century American, but was a comfortable length for the small statured Romans loaded down with weapons. A thousand such paces (Mille Passus) became a mile of 5,000 feet. The Romans introduced their system of measurement throughout their area of influence including the British Isles. With the collapse of their empire and the resulting fragmentation of authority, each trade center eventually adopted its own standards, although the Roman nomenclature, translated into local tongues, persisted.

The difficult problem of maintaining an adopted standard over long periods of time soon resulted in large variations of the Roman mile. Only the Italian cities stuck with the definition of 1,000 paces while elsewhere a mile was no longer a thousand of anything and tended to

become longer and longer. In Vienna, a mile was 24,000 feet, in Dresden, an enormous 32,000 feet and soon there were geographic miles, post (mail) miles, military miles, and untold local variations thereof.

In England, the Roman mile of 5,000 feet survived until about the year 1500. The English, having bigger feet, managed to stretch this 5,000 feet distance by virtue of a longer foot. But their surveyors had problems because of this. The most common land measure of the time was the furlong (a furrow long) of 220 yards. The trouble with the 5,000 foot mile was that it was not evenly divisible by 220, so surveyors added another 280 feet for their convenience. This resulted in a mile of 8 furlongs exactly. In 1575, Queen Elizabeth I sanctioned the new value by law. For me, it has remained 900 paces ever since. (From the New Mexico Benchmarks) □





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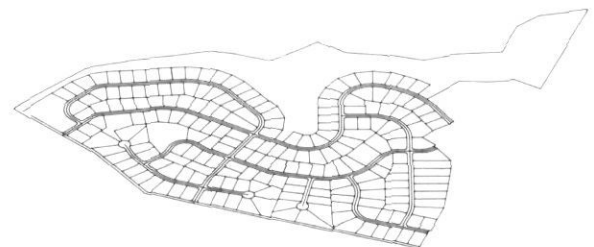
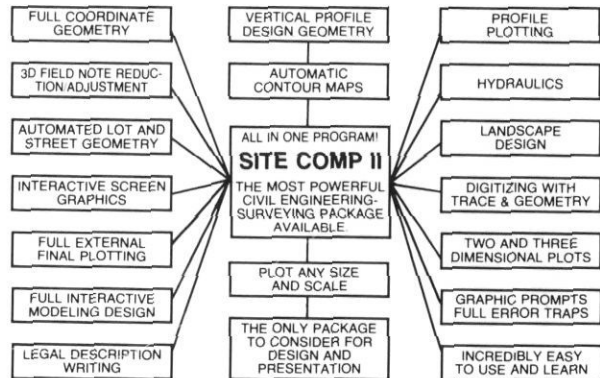
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(continued from page 12)

data by eliminating detectable systematic errors. He concluded: "No amount of mathematical manipulation of an inherently poor source document can result in an accurate final product."

The ground surveyed positions of remonumented section corners in three separate Dane County townships were compared to the coordinates developed for those corners from USGS Digital Line Graph data (Vonderohe, 1985). The Digital Line Graphs were taken from typical 1"=2000' scale USGS quad maps. The results summarized in Table 2 suggest that the plotted positions of section corners more than meet National Map Accuracy Standards. The bottom line here, of course, is whether or not these points could be used to control and orient the display and storage of any usable property boundary overlay. As we shall see presently, society cannot accept this kind of uncertainty.

Wetland boundary maps from the Wisconsin Department of Natural Resources were mechanically

digitized. The plotted positions of the intersections of these wetland boundaries with section lines were compared to the true ground surveyed locations of these points (URISA, 1985). The results of this comparison suggest that the typical misplot of Wisconsin wetland boundaries averages 120 feet.

**Fresno County**

Fresno county has developed an Environmental Management Information System (EMIS). Comparisons have been made between system coordinates (obtained by mechanical digitization of existing maps) and ground survey coordinates for three types of point locations; property boundary points, remonumented section corners, and water wells.

The average misplot for six property parcel corner points for a parcel located just east of Sanger was 75.5' (Parkan, 1985).

The average misplot for eight remonumented PLSS corners located in T13S,R22E was about 13 feet (Wilson, 1985).

The average misplot for three water well locations in the same general area was 510 feet (Larsen, 1985).

These are preliminary figures, but they nevertheless suggest a rather poor correlation between the ground location of certain items and their mapped locations. [Note: Do not fall into the cartographers trap here. Remember that it is the true ground location that is important and that the map must try to conform to reality. The map is merely trying to represent reality.]

EMIS literature states: "One of the most cost effective uses of EMIS in Fresno County is the determination of special parcels that are affected by contemplated actions. . . this is necessary in order to comply with required legal notification of affected property owners."

This quote is a bit disturbing since certain environmental data sets (water quality analysis display derived from water well locations) may be off by 510 feet and property locations may be off by 75 feet. Are the decisions that affect the rights of property owners being made based upon erroneous land records information? Are the property rights of landowners and public rights of society being infringed upon by er-

(continued on page 25)



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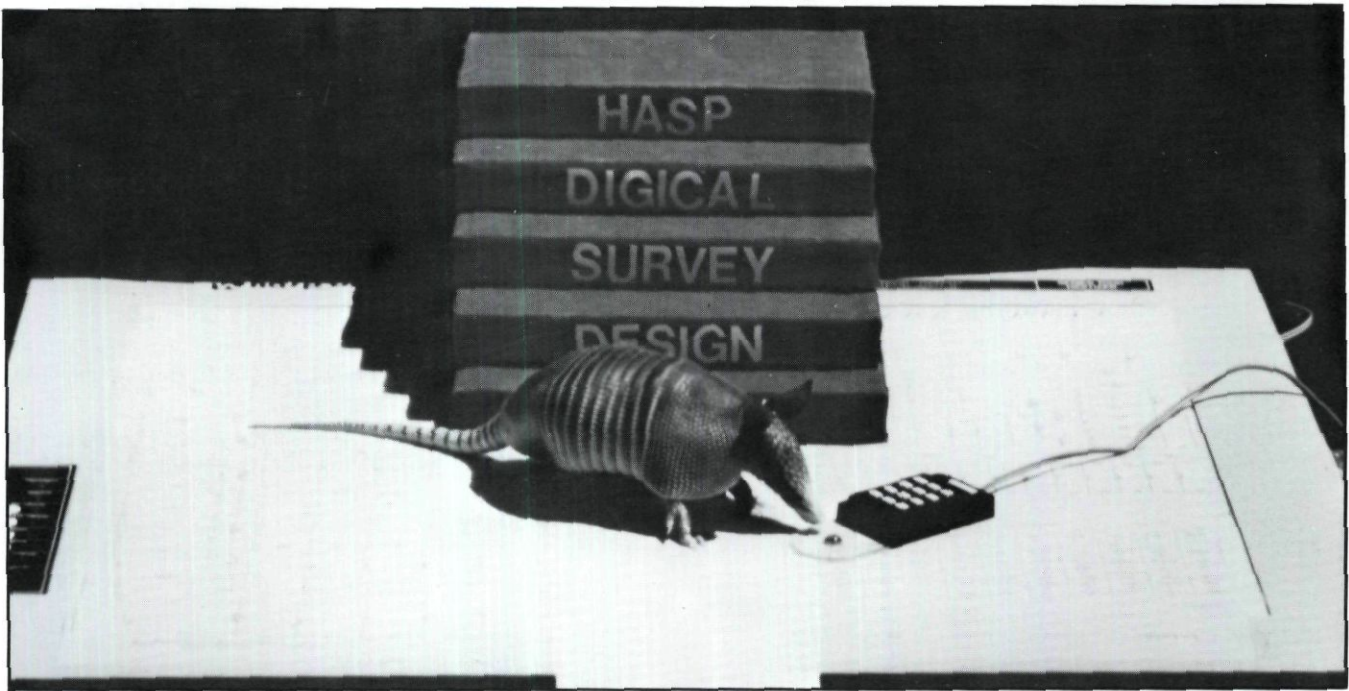
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**SAN DIEGO COUNTY'S  
SURVEY MONUMENTATION  
PRESERVATION FUND**

by *Louis R. Hall*

The enabling legislation that permitted counties to create a Survey Monumentation Preservation fund became effective January 1, 1977, by a passage of Assembly Bill No. 523, Chapter 881 of the 1976 Statutes. This legislation added Sections 27584 and 27585 to the Government Code. Section 27584 authorizes the establishment of the fund, who shall administer it, what type of surveys may be performed with fund monies, records to be generated, and map to be filed. Section 27585 establishes the criteria for collecting monies to support the fund.

The San Diego County's Board of Supervisors by Resolution on June 27, 1978, created the "Survey Monumentation Preservation Fund." The collection of the user's fee to support the fund began August 4, 1978.

The Board of Supervisors Resolution imposed a \$10 fee to be collected by the County Recorder as a condition precedent to recording specified grant deeds conveying real property. The County Recorder in the public notice announcing the collection of the fee established the following exceptions:

- A. Grant deeds conveying *only* entire lots created by recorded Subdivision and *Parcel maps*.
- B. Trust deeds, licenses, grants of easements, rights of way, or oil and mineral rights.
- C. Any conveyance that does not incorporate the word "grant" in the title or operative words of conveyance, including quitclaim deeds.
- D. Grant deeds recorded or re-recorded to correct an error unless the correction changes the property description to a non-exempt status.
- E. Conveyances of real property from one government agency to another government agency.

There is approximately \$110,000 in revenue credited to the fund each year.

With this money the county has established an ongoing program to identify or reestablish all found or obliterated public land corners within a single township each year. These corners are permanently monumented, referenced and tied to the

California Coordinate System by second order class 11 procedures whenever practical. A record of survey is then filed to insure public notice and availability of information to subsequent surveyors.

Where it is determined a corner is lost, a position is plotted on the record of survey as the approximate corner with a note indicating nothing found, nothing set. It is felt that the cost of insuring that the corner is truly lost is not the best use of public funds. We leave the establishment of the physical monument up to the private surveyor if he also determines the corner to be lost.

It is the County Surveyor's opinion that our program generates the most public benefit per dollar spent than any other use of the money authorized by the Government Code for survey monument preservation because:

- A. It does not just attempt to correct a known survey problem where the County has no greater authority than any other licensed practitioner.
- B. We are remonumenting a total township as a unit of work; thereby, showing the relationship of all controlling corners effecting any property corners within the township.
- C. The placement of second order, class II coordinates on the public land corners whenever practical allows these corners to be used to extend the coordinate system. Each corner is directly tied to every other corner in the township thereby eliminating future lost corners.
- D. The information being generated will facilitate an automated base mapping or land information system should one be developed for the County in the future.

The County has to date completed the remonumentation of six townships and is finishing up work on the seventh. There are 130 to 170 corners tied in each township, with 20 to 30 of the corners tied being original or obliterated public land corners. □

**A NEW METER HAS BEEN  
ESTABLISHED**

From David Berg, a professional land surveyor, associated with the firm of Whitacre Engineers, Inc. located in Tacoma comes information regarding the adoption of a new way of defining the meter.

In October, 1983, U.S. diplomats traveled to Paris, France to attend the international Geneva Conference on Weights and Measures where they ensured that the world would begin to measure distances more accurately—by using the speed of light to define the standard meter.

The meter, which is the basic unit of all distances, including the foot, was first described in 1790 as a 10-millionth of the distance from the North Pole to the Equator. Currently, scientists designate it as 1,650,763.73 wave lengths of orange-red light emitted from a Krypton-86 lamp. But the wavelengths vary. The new method, defining the meter by how far light will travel in 1/299,792,458 of a second, will be 10 times more accurate, says Karl Kessler of the Center for Absolute Physical Quantities at the National Bureau of Standards.

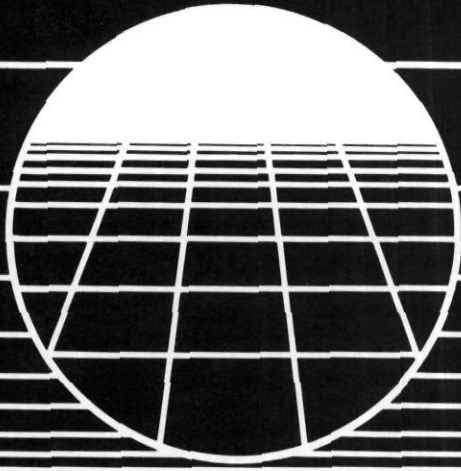
The new standard is possible because scientists have found a way to measure the frequency of a more reliable wave-length of light using a cesium-133 "atomic clock." Atomic clocks are substances that emit pulses of radiation at very rapid, regular intervals. All distances will now be based on a constant value for the speed of light—which was derived using the new technique and set at 299,792,458 meters per second—and measured by the ticking of the cesium clock.

The new method will not make the 39.37-inch meter longer or shorter, just easier to measure accurately, Kessler says. Astronomers, for instance, will be able to use the speed of light standard to measure more precisely the distances between planets.

(*Evergreen State Surveyor, August 1985*) □

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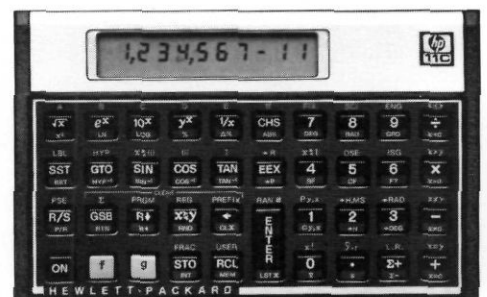
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(continued from page 20)

redundant land records information system data?

An EMIS spokesman (Weather-son, 1985) said that no landowners rights were being infringed upon by the EMIS system. But certain EMIS documentation tends to make us even more suspicious.

"The approach used by the EMIS system may make it unnecessary to correct the old surveys for the purpose of computerizing the maps. The use of street intersections for control points, combined with the ability to stretch and fit the data so the control points line up correctly have allowed Fresno to bring different kinds of maps into accurate correspondence with each other."

This is, of course, the standard cartographic approach to things not understood. Rubber sheeting, to make a map look good and to mask real property boundary discrepancies is what is going on here. We all know that these discrepancies exist in the real world. That is why land surveyors exist, to sort out problems like this.

Cartographic rubber sheeting

must be recognized for what it is, a not too thinly disguised move by the cartographic mentality to nudge the professional land surveyor a little closer to extinction by further

restricting his role in society. Does this cartographic mentality have merit? Recently released statistics suggest that nationwide, we are

(continued on page 28)

TABLE 1—Westport Section Line Test Average Boundary Point Misplats

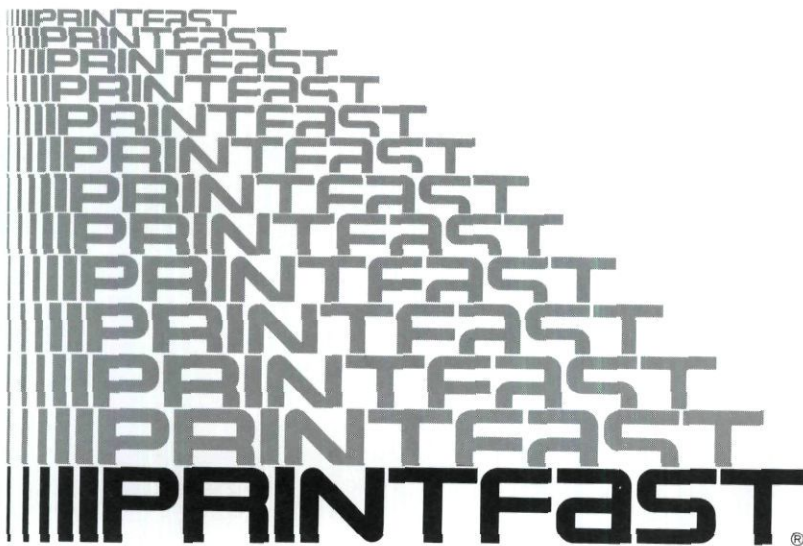
Points	Source	Unadjusted	Adjusted
23	1"=100' recorded survey subdivision	+/-1.2'	+/- 1.0'
42	1"=200' official maps	+/-3.6'	+/- 3.5'
57	1"=400' county assessor maps	+/-9.0'	+/- 5.1'

TABLE 2—Dane County PLSS Corner Postional Accuracies (Comparing Digital Line Graph to Ground)

Township	Section Corners	Average Discrepancy
Oregon	34	18.7'
Attica	11	18.0'
Waunakee	12	32.5'
Combined	57	21.2'

TABLE 3—Property Encoachment Tolerance Limits

Category	Respondents	Average Property Encoachment Tolerance Limits
Land Owner	35	+/-0.83'
Non Owner	43	+/-2.67'



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# Legislative News

## GOVERNOR SIGNS TWO CLSA-SPONSORED BILLS

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This year CLSA sponsored two legislative measures, both of which easily cleared the Assembly and Senate and were signed into law.

AB 621, authored by Assemblyman Dominic Cortese (D-San Jose), amends the Subdivision Map Act in two areas. The existing Subdivision Map Act specifies the content of final subdivision maps and parcel maps. Existing law also authorizes cities and counties to require, by ordinance, the inclusion of additional survey and map information deemed necessary. This has led to problems. Over recent years, parcel and final maps have been cluttered in numerous instances with information which is not essential for record title purposes. Examples include descriptions of geologic fault zones, 100-year flood plains, archeological sites, set back requirements and zoning information.

AB 621 attempts to solve this problem by allowing peripheral or non record title information to be filed or recorded simultaneously in a separate document attached to and referenced on parcel or final maps.

AB 621 also requires that county surveyors or county engineers maintain an index of recorded certificates of correction of maps. At the present time, some county surveyors/engineers do not keep indexes of certificates of correction. The lack of such indexes has resulted, in some cases, in inaccurate information being communicated to persons requesting map information from county surveyors and engineers.

AB 621 requires county recorders to send copies of certificates of correction to county surveyors or engineers who would be required to maintain an index of the recorded certificates. The bill also requires the recorder to send copies of the certificates to a city engineer, upon request, if the property affected by the certificate is within a city. The city engineer would not be required to maintain an index of recorded certificates. AB 621 includes a funding mechanism which allows the county recorder to collect a fee on behalf of the county surveyor to cover the costs of maintaining the index.

SB 1349 was authored by Senator Leroy Green (D-Sacramento). This bill conforms the Land Surveyors Act to legislation which was en-

acted in 1984 for professional engineers (SB 2127-L. Greene, Chapter 1356, Statutes of 1984). SB 1349 makes it explicit in law that public employees (state, counties, cities) are subject to licensure as land surveyors if practicing land surveying in California. SB 1349 also requires the federal government to use California licensed land surveyors when surveying exterior boundaries of federal lands in California.

The Legislature recently wrapped up the 1985 session and is now in interim recess. In addition to sponsoring AB 621 and SB 1349 the CLSA legislative committee was closely following the progress of 91 other bills having the potential of affecting the practice of land surveying in California.

The Legislature returns on January 6, 1986, to begin the second year of its two year session. A new wave of bills will be introduced when the Legislature returns. As always, your legislative committee will be closely reviewing those measures in behalf of CLSA, and influencing certain bills where appropriate.

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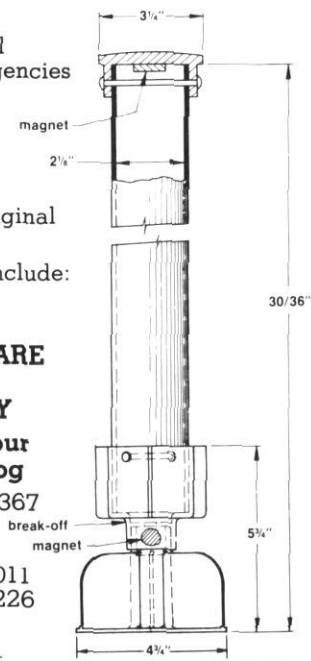
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State of the Art / SYSTEMS

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turning into a renter nation. The demise of the family farm and the explosive growth of rental housing (California single family housing boom notwithstanding) in recent years makes us wonder.

The situation is not all that bleak however. Especially when considering the view of real estate property owners. A sample survey was recently conducted (March, 1985) by the students in "The Multipurpose Cadastre" class at CSU, Fresno. As might be expected, non land owners were less concerned about the integrity of property lines than were land owners. The results of this study are listed in Table 3.

All Fresno respondents questioned wanted a property overlay that has more reliability than +/-75 feet. Similar responses are likely throughout the state and nation. Unfortunately, land records information systems like the ones on Dane and Fresno Counties exist or are being developed almost everywhere.

**Implications**

The implications of spatially imprecise land records information

systems should be obvious to any surveyor. The following list is indicative but by no means complete.

1. A cadastral overlay for use in a Multipurpose Cadastre cannot be developed by digitizing existing property maps.
2. Since digitizing is perceived as being cheap, most developing systems will continue to digitize property maps. This may prove to be much more expensive in the long run.
3. Rubber sheeting, a common cartographic trick, does not improve the quality of digitized property boundary overlays.
4. Many Land Records Information Systems will be shown to have inadequate property boundary overlays.
5. Private and public property boundary rights are already being infringed upon by spatially imprecise Land Records Information Systems.
6. Cartographers, geographers, planners and resource managers may ultimately convert spatially imprecise property boundary overlays into legally binding real property systems.
7. The public still expects society to

respect the location of real property boundaries.

The National Research Council said it well in its 1983 report titled "Procedures and Standards for a Multipurpose Cadastre" by stating, "... it is particularly important to resist the temptation to use only paper records of mapped locations as a basis for the development of the land data system in order to save initial costs" (NRC, 1983).

**Alternatives**

It is easy to envision a set of viable alternatives for the surveyor in the ongoing development of Multipurpose Cadastres. Unbelievably, a landscape architect and a cartographer have suggested that a 'base map' in the traditional sense is not necessarily an integral part of the Multipurpose Cadastre. They stated, "A true multipurpose system will have no simple basic unit; it must be based on separate layers maintained by cooperating agencies. The Layers must rely on the coordinate system, not a base map, for integration" (Chrisman, 1985).

Thus we can envision a system freed from the biases of the cartographic mentality. The surveyor must be prepared to use this argument when necessary to protect society from needless waste and duplication.

Additionally, the surveyor must be prepared to participate in the development of useful property boundary overlays that legitimately have legal significance. The value of maintaining society's trust by safeguarding property boundary tolerances cannot be overemphasized. Development of flexible property boundary overlays that do not require a state guaranteed title (Torrens system) is possible and should be pursued at every opportunity.

Great public expense will be incurred trying to alter spatially inconsistent systems. Surveyors must speak up to remind the public of these extravagances. A golden opportunity exists to take a leading role in guiding society towards workable solutions to the burgeoning land records information system problems of spatial imprecision.

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(continued on page 30)

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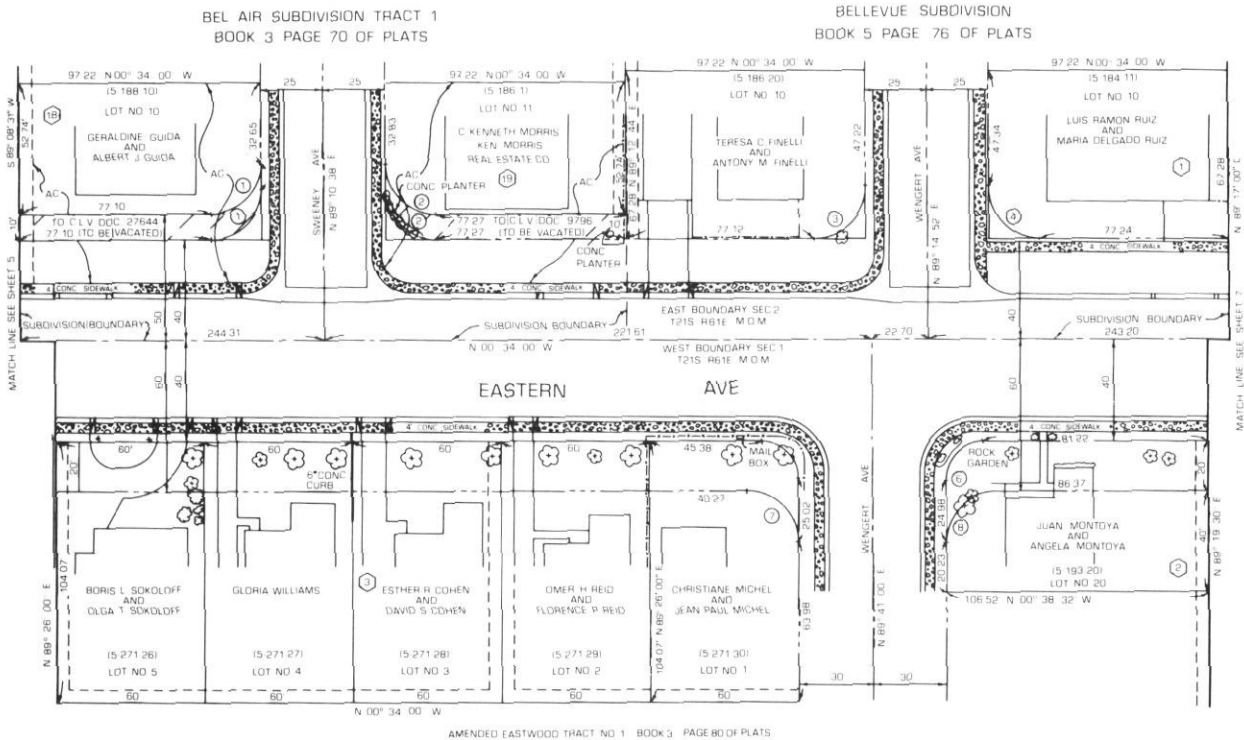
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**OFFICIAL REPORT  
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**JOHN PHOENIX, A.M.**  
*Of a Military Survey Reconnaissance of the route from San Francisco to the Mission Delores, made with a view to ascertain the practicability of connecting those points by a Railroad.\**

*\*The Mission Delores is only 2½ miles from the City Hall of San Francisco, and is a favorite suburban locality, lying within the limits of the City Survey. This fact is noted for the benefit of distant readers of these sketches.*

It having been definitely determined, that the great Railroad, connecting the City of San Francisco with the head of navigation on Mission Creek, should be constructed without unnecessary delay, a large appropriation (\$120,000) was granted, for the purpose of causing thorough military examinations to be made of the proposed routes. The routes, which had principally attracted the attention of the public, were "the Northern," following the line of Brannan Street, "the Central," through Folsom Street, and "the extreme Southern," passing over the "Old Plank Road" to the Mission. Each of these proposed routes has many enthusiastic advocates; but "the Central" was, undoubtedly, the favorite of the public, it being more extensively

used by emigrants from San Francisco to the Mission, and therefore more widely and favorably known than the others. It was to the examination of this route, that the Committee, feeling a confidence (eminently justified by the result of my labors) in my experience, judgment and skill as a Military Engineer, appointed me on the first instant. Having notified that Honorable Body of my acceptance of the important trust confided to me, in a letter, wherein I also took occasion to congratulate them on the good judgment they had evinced, I drew from the Treasurer the amount of (\$40,000) appropriated for my peculiar route, and having invested it securely in loans at three per cent a month (made, to avoid accident, in my own name), I proceed-

(continued on page 32)



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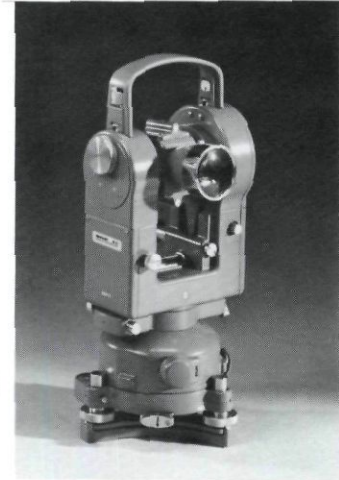
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(continued from page 30)

ed to organize my party for the expedition.

In a few days my arrangements were completed, and my scientific corps organized, as follows:—

- John Phoenix, A.M. . . . . Principal Engineer  
and Chief Astronomer
- Lt. Minus Root . . . . . Apocryphal Engineers  
First Assistant Astronomer
- Lt. Nonplus A. Zero Hypercritical Engineers  
Second Assistant Astronomer
- Dr. Abraham Dunshunner . . . . . Geologist
- Dr. Targee Heavysterne . . . . . Naturalist
- Herr Von Der Weegates . . . . . Botanist
- Dr. Fogy L. Bigguns . . . . . Ethnologist
- Dr. Tushmaker . . . . . Dentist
- Enry Halfred Jinkins, R.A. . . . . Draftsman
- Adolphe Kraut . . . . . Draftsman
- Hi Fun . . . . . Interpreter
- James Phoenix, (my elder brother) Treasurer
- Joseph Phoenix, ditto . . . . . Quarter-Master
- William Phoenix, (younger brother) . . . . .  
Commissary
- Peter Phoenix, ditto, . . . . . Clerk
- Paul Phoenix, (my cousin) . . . . . Sutler
- Reuben Phoenix, ditto . . . . . Wagon-Master
- Richard Phoenix, (second cousin) . . . . .  
Assistant ditto

These gentlemen, with one hundred and eighty-four laborers employed as teamsters, chainmen, rodmen, etc., made up the party. For instruments, we had 1 large Transit Instrument (8 inch acromatic lens), 1 Mural Circle, 1 Altitude and Azimuth Instrument (these instruments were permanently set up in a mule cart, which was backed into the plane of the true meridian, when required for use), 13 large Theodolites, 13 small ditto, 8 Transit Compasses, 17 Sextants, 34 Artificial Horizons, 1 Sidereal Clock, and 184 Solar Compasses. Each employee was furnished with a gold chronometer watch, and, by a singular mistake, a diamond pin and gold chain; for directions having been given, that they should be furnished with "chains and pins,"—meaning of course such articles as are used in surveying—Lieut. Root, whose "zeal somewhat overran his discretion," incontinently procured for each man the above-named articles of jewelry, by mistake. They were purchased at Tucker's (where, it is needless to remark, "you can buy a diamond pin or ring," and afterwards proved extremely useful in our intercourse with the natives of the Mission of Dolores, and indeed, along the route.

Every man was suitably armed, with four of Colt's revolvers, a Minie rifle, a copy of Col. Benton's speech on the Pacific Railroad, and a mountain howitzer. These last-named heavy articles required each man to be furnished with a wheelbarrow for their transportation, which was accordingly done; and these vehicles proved of great service on the survey, in transporting not only the arms but the baggage of the party, as well as the plunder derived from the natives. A squadron of dragoons, numbering 150 men, under Capt. McSpadden, had been detailed as an escort. They accordingly left about a week before us, and we heard of them occasionally on the march.

On consulting with my assistants, I had determined to select, as a base for our operations, a line joining the summit of Telegraph Hill with the extremity of the wharf at Oakland, and two large iron thirty-two pounders were accordingly procured, and at great expense imbedded in the earth, one at each extremity of the line, to mark the initial points. On placing compasses over these points to determine the bearing of the base, we were extremely perplexed by the unaccountable local attraction that prevailed; and were compelled, in consequence, to select a new position. This we finally concluded to adopt between Fort Point and Sausalito; but, on attempting to measure the base, we were deterred by the unexpected depth of the water intervening, which, to our surprise, was considerably over the chain bearers' heads. Disliking to abandon our new line, which had been selected with much care and at great expense, I determined to employ in its measurement a reflecting instrument, used very successfully by the United States Coast Survey. I therefore directed my assistants to procure me a "Heliotrope," but after being annoyed by having brought to me successively a sweet-smelling shrub of that name, and a box of "Lubin's Extract" to select from, it was finally ascertained, that no such instrument could be procured in California. In this extremity, I bethought myself of using as a substitute the flash of gunpowder. Wishing to satisfy myself of its practicability by an experiment, I placed Dr. Dunshunner at a distance of forty paces

from my Theodolite, with a flintlock musket, carefully primed, and directed him to flash in the pan, when I should wave my hand. Having covered the Doctor with the Theodolite, and by a movement of the tangent screw placed the intersection of the cross lines directly over the muzzle of the musket, I accordingly waved; when I was astounded by a tremendous report, a violent blow in the eye, and the instantaneous disappearance of the instrument.

Observing Dr. Dunshunner lying on his back in one direction, and my hat, which had been violently torn from my head, at about the same distance in another, I concluded that the musket had been accidentally loaded. Such proved to be the case; the marks of three buckshot were found in my hat, and a shower of screws, broken lenses and pieces of brass, which shortly fell around us, told where the ball had struck, and bore fearful testimony to the accuracy of Dr. Dunshunner's practice. Believing these experiments more curious than useful, I abandoned the use of the "Heliotrop" or its substitutes, and determined to reverse the usual process, and arrive at the length of the base line by subsequent triangulation. I may as well state here, that this course was adopted and resulted to our entire satisfaction; the distance from Fort Point to Sausalito by the solution of a mean of 1,867,434,926,465 triangles, being determined to be exactly *three hundred and twenty-four feet*. This result differed very much from our preconceived ideas and from the popular opinion; the distance being generally supposed to be some ten miles; but I will stake my professional reputation on the accuracy of our work, and there can, of course, be no disputing the elucidations of science, or facts demonstrated by mathematical process, however incredible they may appear *per se*.

We had adopted an entire new triangulation, which I am proud to claim (though I hope with becoming modesty) as my own invention. It simply consists in placing one leg of a tripod on the initial point, and opening out the other legs as far as possible; the distance between the legs is then measured by a two-foot rule and noted down; and the tripod

(continued on page 37)





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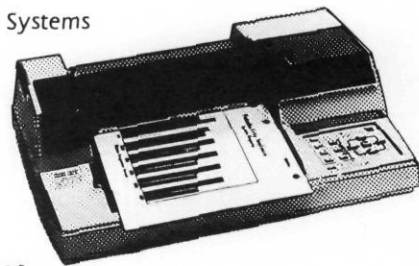
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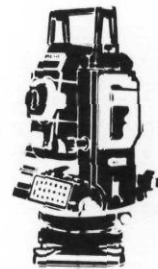
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TM-20H or TM-20C twenty second theodolite	20.00	12.00	8.00
TS-6 or T-60D one minute theodolite	20.00	12.00	8.00
Nikon NT-4D six second theodolite	25.00	15.00	10.00
NT-2D twenty second theodolite	20.00	12.00	8.00
NT-2S one minute theodolite	20.00	12.00	8.00

### TRANSITS

Lietz BT-20 twenty second transit	10.00	6.00	4.00
Nikon TT-400 one minute utility transit	7.00	4.20	2.80
BD-7F five minute utility transit	6.00	3.60	2.40
David White 8300 construction level-transit	5.00	3.00	2.00

### LEVELS

Zeiss Ni-2 engineers 32X, 2nd order automatic level	12.00	7.20	4.80
Nikon AS or Lietz B-1 32X, 2nd order automatic level	10.00	6.00	4.00
Nikon AE-5 or Lietz B-2A 30X, engineers automatic level	7.00	4.20	2.80
Nikon AP-5 or C-3A 26X automatic level	6.00	3.60	2.40
Nikon AZ-1 or AZ-1S 22X construction automatic level	5.00	3.00	2.00
David White 8114 construction 12" dumpy level	3.00	1.80	1.20

### FATHOMETER

Raytheon DE-719B recording fathometer	25.00	15.00	10.00
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### CONSTRUCTION LASERS

Spectra-Physics EL-1 electronic level	30.00	18.00	12.00
942 laser level, vertical/horizontal	40.00	24.00	16.00
611 align. laser w/20 sec. transit	15.00	9.00	6.00
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(continued from page 32)

moved, so as to form a second triangle, connected with the first, and so on, until the country to be triangulated has been entirely gone over. By using a large number of tripods, it is easily seen with what rapidity the work may be carried on, and this was, in fact, the object of requisition for so large a number of solar compasses, the tripod being in my opinion the only useful portion of that absurd instrument. Having given Lieut. Root charge of the triangulation, and detached Mr. Jenkins with a small party on hydrographical duty (to sound a man's well, on the upper part of Dupont Street, and report thereon), on the 5th of February I left the Plaza, with the *savans* and the remainder of my party, to commence the examination and survey of Kearny Street.

Besides the mules drawing the cart which carried the transit instrument, I had procured two fine pack mules, each of which carried two barrels of ale for the draftsmen. Following the tasteful example of that gallant gentleman—who conducted the Dead Sea Expedition, and wishing likewise to pay a compliment to the administration under which I was employed, I named the mules "Fanny Pierce," and "Fanny Bigler." Our *cortege* passing along Kearny Street attracted much attention from the natives, and indeed, our appearance was sufficiently imposing to excite interest even in less untutored minds than those of these barbarians.

First came the cart, bearing our instruments; then a cart containing Lt. Zero with a level, with which he constantly noted the changes of grade that might occur; then one hundred and fifty men, four abreast, armed to the teeth, each wheeling before him his personal property and a mountain howitzer; then the *savans*, each with note-book and pencil, constantly jotting down some object of interest (Doctor Tushmaker was so zealous to do something, that he pulled a tooth from an iron rake standing near a stable-door, and was cursed therefor by the illiberal proprietor), and finally, the Chief Professor, walking arm in arm with Dr. Dunshunner, and gazing from side to side, with an air of ineffable blandness and dignity, brought up the rear.

I had made arrangements to measure the length of Kearny Street by two methods; first, by chaining its sidewalks; and secondly, by a little instrument of my invention called the "Go-it-ometer." This last consists of a straight rod of brass, firmly strapped to a man's leg and connected with a system of clock-work placed on his back, with which it performs, when he walks, the office of a *ballistic pendulum*. About one foot below the ornamental buttons on the man's back appears a dial-plate connected with the clock-work, on which is promptly registered, by an index, each step taken. Of course, the length of the step being known, the distance passed over in a day may be obtained by a very simple process.

We arrived at the end of Kearny Street, and encamped for the night about sundown, near a large brick building, inhabited by a class of people called "The Orphans," who, I am credibly informed, have no fathers or mothers! After seeing the camp properly arranged, the wheelbarrows parked and a guard detailed, I sent for the chainmen and "Go-it-ometer" bearer, to ascertain the distance travelled during the day.

Judge of my surprise to find that the chainmen, having received no instructions, had simply drawn the chain after them through the streets, and had no idea of the distance whatever. Turning from them in displeasure, I took from the "Go-it-ometer" the number of paces marked, and on working the distance, found it to be four miles and a-half. Upon close questioning the bearer, William Boulder (called by his associates, "Slippery Bill"), I ascertained that he had been in a saloon in the vicinity, and after drinking five glasses of a beverage, known among the natives as "*Lager Bier*," he had danced a little for their amusement. Feeling very much dissatisfied with the day's survey, I stepped out of the camp, and stopping an omnibus, asked the driver how far he thought it to the Plaza? He replied, "Half a-mile," which I accordingly noted down, and returned very much pleased at so easily obtaining so much valuable information. It would appear, therefore, that "Slippery Bill," under the influence of five glasses (probably 2½ quarts) of "*Lager Bier*," had actually danced four miles in a few moments.

*The preceding article, originally printed in 1856 in the book entitled, "Pheonixiana," is an account of a "military survey" conducted in 1855 from the City of San Francisco to Mission Delores.*

*To be continued in Winter, 1986*

### ABOUT THE AUTHOR:

#### GEORGE DERBY— Prankster of Renown

Hardship, avarice and isolation. These were among the companions of the Forty-Niners after they reached California.

In the early Gold Rush years these grim sidekicks helped explain why newcomers placed a premium on humor. And the appreciation of it explains why so many of them began to enjoy the wit and (when they were played on others) the practical jokes of Lt. George Horatio Derby.

He was one of California's first humorists. And as with nearly all luminaries, fictitious stories sprouted about him. One was the reason for his transfer West.

He was assigned, so the tale goes, to survey the Tombigbee River "to see how far up it runs."

Lt. Derby is supposed to have responded in great detail how he had studied the river and its adjoining topography. He even interviewed settlers along the river's banks in Alabama and Mississippi.

"My conclusion," he wrote, "is that the Tombigbee River does not run up, but down."

Secretary of War Jefferson Davis reportedly was not amused. Soon Lt. Derby was sweating with General Bennett Riley and his men exploring the Sacramento and San Joaquin valleys. Then on to even hotter terrain—Fort Yuma in California's Imperial County, just across the border from Yuma, Arizona. His "exile" there didn't diminish his penchant for practical jokes and witticisms.

"One of our Fort Yuma men died," the lieutenant would tell newcomers, "and unfortunately went to hell. He wasn't there one day before he telegraphed for his blankets."

Fort Yuma hens, Derby insisted, laid their eggs hard-boiled.

Cooler climes didn't change him.

*(continued on page 43)*

# Board of Directors Meeting

## MEETING MINUTES

July 27, 1985

(condensed for publication)

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

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 9:35am by President Michael McGee. Those present were as follows:

### Officers:

Michael R. McGee, President; Richard P. Siegmund, Vice President; Louis E. Rutledge, Secretary; Susan A. Jensen, Treasurer; Dorothy C. Calegari, Executive Director; Ronald C. Greenwell, Editor, The California Surveyor

### Chapter Representatives:

Bakersfield: Eugene P. Martin; Central Coast: Kenny L. Fargen, Tom Mastin; East Bay: Harold B. Davis; Humboldt: Michael O'Hern; Lake/Mendocino: Lawrence C. Hurley; La/Ventura: Glen L. Aalbers, Jesse E. Newcombe; Marin County: Dale White; Mother Lode: Frederick W. Kett; Northern California: Roger Ackerman; Orange County: Ruel del Castillo, Charles Krepp, Gary K. Shelton; Riverside/San Bernardino: Joseph H. Bell; San Diego: Howard Dye, Louis R. Hall, Frank Fitzpatrick (acting); San Joaquin Valley: Donald E. Watson; Santa Clara/San Mateo: Paul W. Lamoreaux, Jr.; Sonoma County: Howard W. Brunner, Neal P. Campbell

The following chapters were without representation: Central Valley, Monterey Bay, Sacramento.

Moved, seconded, and carried that the minutes be approved as distributed.

### UNFINISHED BUSINESS:

Secretary's Report: The Secretary reported on three PAC meetings that had been held since the May 4th Board Meeting.

Vice President's Report: Dick Siegmund reported that he had visited quite a few of the chapters. The object has been to present the goals adopted by CLSA, and to discuss the direction of the State Association. Dick hopes to visit all of the chapters this year.

Treasurer's Report: Susan Jensen reported having received reimburse-

ment requests that are six to eight months old.

Hal Davis made a motion that this Board adopt a policy that all requests for reimbursement of Association activities be mailed or delivered to the central office or the treasurer within thirty (30) days of such encumbrance. The motion was seconded, called and passed.

Susan reported that the Audit Committee consisting of Susan Jensen, Gene Rutledge, and Leonard Lenger had met and audited the books for the year 1984.

Hal Davis made a motion that the Audit report be accepted. The motion was seconded and carried.

Susan reported on a need to increase the dues by the ten percent allowed by the bylaws.

A motion was made and seconded to read, "That the dues be increased by an amount not to exceed ten (10) percent as allowed by the bylaws". The motion carried.

A motion was made that the Treasurer write an article to be published in the newsletter to explain activities of the organization and the reason for the dues increase. The motion was seconded. Dick Siegmund and Hal Davis are to assist Susan Jensen in the composition of the article. It was seconded and passed.

Ruel del Castillo made a motion that we hold all of the Board of Director's meetings in San Francisco. The motion was seconded by Dick Siegmund. President McGee made note of several suggestions during the discussion. Michael made the statement that if the chapters were to issue an invitation and pick up the bill for the meeting room that the Board would move around the State. Michael called the question. The question was called and carried.

President McGee charged the Vice President with taking all of the suggestions offered during the discussion, such as chapter sponsored Board meetings, and to come back with a report to the Board at its next meeting with a program to implement them.

Executive Director's Report: Moved that the Board of Directors approve the filing of the group exemption for the state association and all its chapters and that Dorothy be directed to forward to

the chapter president or treasurer all forms to be completed for the central office and to be filed for the group exemption. The motion was seconded and carried.

Division Reports: Neal Campbell made a motion to approve the amendments to the bylaws, as proposed. Hal Davis seconded the motion. During the discussion Michael passed the gavel in order to talk about his views on the President-Elect position as now described in the recommended bylaws change. Michael made a motion to amend the motion to eliminate the position of Vice President, and assign the duties of Vice President to the position of President-Elect. The motion to amend was seconded by Glen Aalbers. The amended motion carried on a vote of 13 for; 10 against. The amendments to the motion were accepted by the author. Hal Davis seconded. The question was called and carried.

Gene Rutledge made a motion that Neal Campbell's report be accepted. The motion was seconded. The question was called and carried.

A motion was made by Joe Bell to bring back to the table the resolution that would allow Civil Engineers practicing land surveying corporate membership in CLSA.

Frank Fitzpatrick amended the motion to include testing, or screening for all corporate members of CLSA. Gary Shelton seconded the motion to amend. The motion to amend failed a vote of 13 to 10.

A Roll Call Vote was called for the question. The motion failed a vote of 16 to 12.

Conference Division Report: Susan reported the San Diego Conference made \$7,431.81 to date.

Legislative Committee Report: Hal Davis made a motion that the Board approve the proposed revision to the Corner Record Form. The motion was seconded and carried.

Hal Davis made a motion that the Association join the San Francisco Bay Area Engineering Council. The dues are \$100 a year. The motion was called and carried. President McGee appointed Hal Davis as CLSA delegate.

Membership Committee Report: Mike O'Hern made a motion that the chapter representative be appointed as membership chairman for the chapter. The motion was

seconded and carried.

Neal Campbell made a motion that we refer to the bylaws committee to determine if this organization could award membership to the new licensee. Louis Hall seconded the motion. Dick Siegmund amended the motion to say that CLSA pay the application fee and the pro-rated dues for new LS and LSIT. Lou Hall seconded. Neal withdrew his motion in favor of the amended motion. The motion carried. This action becomes Board policy. It is hoped to increase our membership.

**Liaison with the Board Registration:** Michael McGee reported on the Board of Registration meeting. He noted that three members of the TAC Committee had been replaced, that one member had been held over, and that the remaining four members of the original TAC Committee's term will expire next year. Michael also reported that the original eight member committee would be reduced to five members next year.

Hal Davis made the motion that the eight member TAC Committee be commended for the fine job that they have done. The motion was seconded and carried.

Dick Siegmund made a motion that the President be authorized to submit a name to the Board of Registration in case the replacement of Fred Seiji comes up. The motion was amended and seconded to allow the President some flexibility. The motion carried.

A motion was made by Ron Greenwell, seconded by Tom Mastin, to have the Professional Practices Committee (Lou Hall) develop a questionnaire on SB 1837 and report back to the board on possible implementation. The motion carried.

**Public Works Liaison:** Michael McGee appointed Jerry Hovell to chair the committee.

Lou Hall made a motion, seconded by Hal Davis, that we attend the meetings as guests. The motion carried.

**NSPS/ACSM Board of Governors:** Frank FitzPatrick requested direction in his report back to the Board of Governors regarding the four year degree requirement to set for the Land Surveyor's Examination in California. It was decided that no position could be taken at this time.

This is one of our ten year goals.

ASCE Special Committee on ACSM's Right of Way Manual: Howard Brunner handed out a letter requesting CLSA to take a stand. President McGee responded to the request indicating that we are still studying the issue at this time. This was put in the form of a motion by Howard, seconded by Glen Aalbers, and carried without further discussion.

#### OLD BUSINESS

Susan Jensen made a motion that the Board of Directors direct the Executive Director to implement a Workshop program, the subject depending upon availability of speakers. The motion was seconded and carried.

#### CHAPTER REPORTS

Dick Siegmund reported on Riverside/San Bernardino Chapter Professional Practices Committee.

Ron Greenwell reported on the East Bay Chapter now having the CLSA Logo in the yellow pages and have picked up several new members.

#### NEW BUSINESS

Moved by Hal Davis and seconded that the chapter representatives be directed to take the ASCE position that surveying be included in the definition of Engineering back to their chapters, and report to Frank Fitzpatrick and Dorothy Calegari directly.

It was brought up that the term Engineering probably referred to the generic definition rather than Civil Engineering. The motion carried.

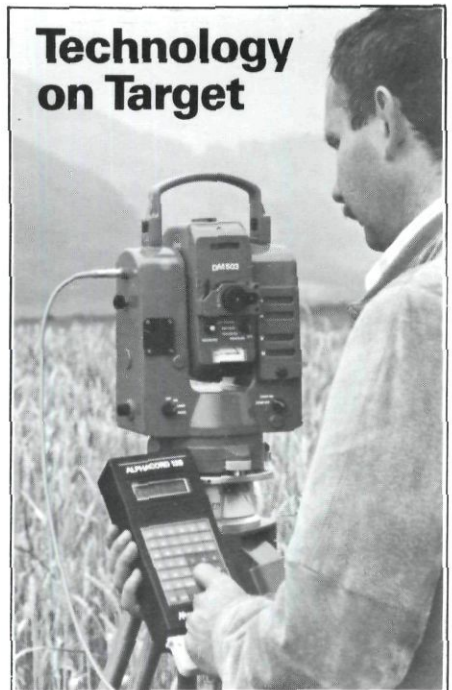
Moved by Dick Siegmund and seconded that the Association give the Executive Director a bonus in appreciation of the fine work. The motion carried.

Lou made a motion that the Board direct the Legislative Committee to look over the article that appeared in the last edition of ACSM's publication "The Section Corner" titled "Big Brother Strikes Again" and if they thought it necessary, to respond. The motion was seconded and carried.

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



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# On the Banks of the Sacramento

There's plenty of gold, so I've been told on the banks of the Sacramento" Believe it or not, this still holds true!

The Golden City is the chosen location for the Platinum anniversary conference of the California Land Surveyors Association. This is the 20th anniversary for CLSA and a celebration is planned! This anniversary conference is being held at the plush Red Lion Motor Inn, Sacramento, February 11-14, 1986.

Sacramento's parks, historical sites and attractions offer a wide variety of activities for the attendee. Its priceless heritage from the California Goldrush produced a vitality that can be experienced in the attractions today.



**California State Capitol and Museum**

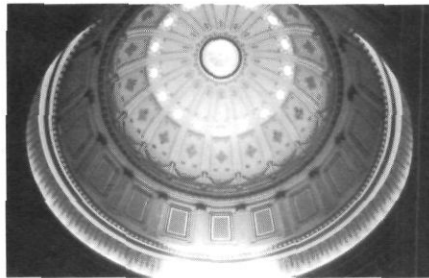
In 1860, the California State Legislature appropriated \$500,000 for the construction of a State Capitol in Sacramento. Nine years later the new State Capitol, although not yet finished, was opened for use. In 1874, the building was completed and California had a permanent home for its legislature.

As the state and its government grew throughout the next 100 years, the Capitol was remodeled at the expense of the original nineteenth century elegance.

In 1972, the decision was made to strengthen the original Capitol and at the same time restore the original 19th century architecture that had

been lost through 100 years of remodeling.

In January, 1982, legislators returned to their chambers, now appearing as they did in 1900. Several



original offices, now museum rooms, were restored to their 1900 motif and can be viewed by the visiting public.

The State Capitol is open daily for tours, and a museum has exhibits and a film on the six year task of restoration. The historic offices of the Governor, Secretary of State, Treasurer, and Attorney General show how the business of government was handled in times gone by, and a legislative process tour gives insight on today's procedures.

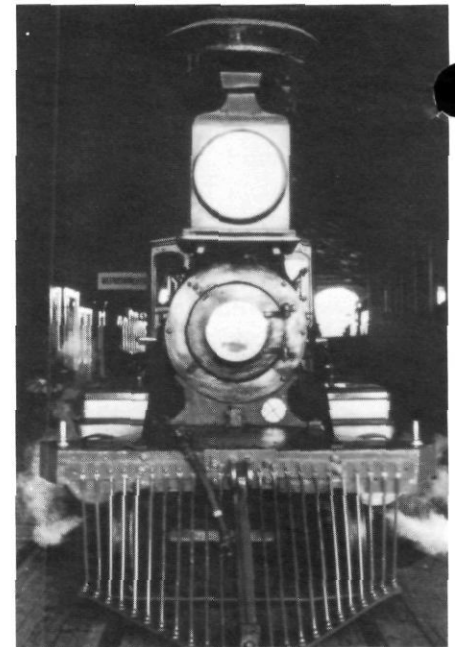


**Governor's Mansion**

In a city with over 150 Victorian homes, perhaps the most beautiful stands at the corner of 16th and "H" Streets. Without a doubt, the Old Governor's Mansion is the most significant.

Since 1878, this regal mansion has graced downtown Sacramento, and for 64 years served as the official home for the governors of California. Inside the mansion, you will see the beauty and grace of the interior architecture. The original owner and builder, Albert Gallatin, spared no expense to build his home. He imported marble from Italy for his fireplace, mirrors from France, and mahogany from South America for the doors, archways, and stairway. Even the hinges and doornobs in the Mansion are exquisitely handcrafted bronze.

The rooms are decorated with furnishings from the 13 governors' families who have called the mansion home. You will see how the mansion has been changed to allow modernization without altering the character of the house.

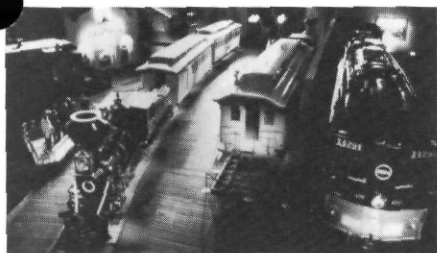


**California State Railroad Museum**

Sacramento's grandest museum, the Railroad Museum in Old Sacramento is the culmination of many years of planning and work by hundreds of people. Sacramento was the logical choice for the site of a museum of western railroading history because the city had played such a significant role in the development of railroads in the West. California's first railroad, the Sacramento Valley Railroad, had its

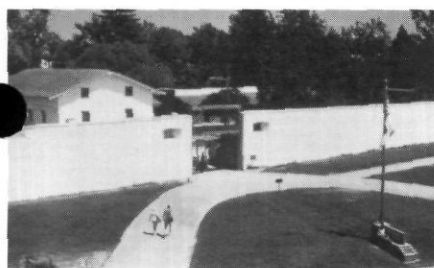


“Sacramento’s parks, historical sites and attractions offer a wide variety of activities . . .”



terminus in Sacramento, as did the first transcontinental railroad.

The 100,000 square foot Railroad Museum and the nearby reconstructed 1876 Central Pacific Railroad Passenger Station house over 30 pieces of historic rolling stock. Inside the Railroad Museum are exhibits that tell the story of western railroading and the history of the people. This is the finest interpretive railroad museum in North America.

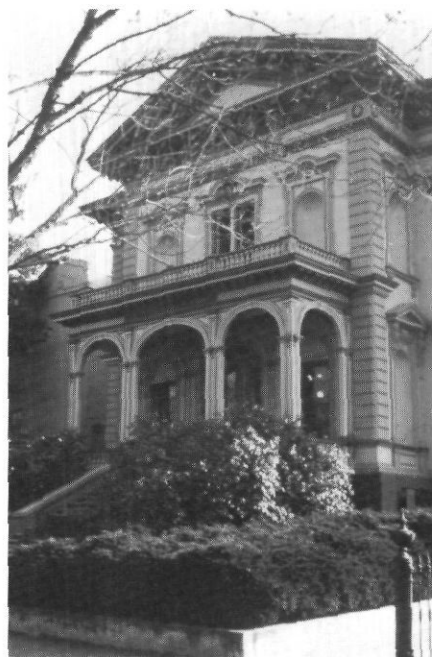


**Sutter's Fort**

A Swiss immigrant, John Augustus Sutter, came to America with a dream to make his fortune in the new world. In 1839, he established a settlement at the confluence of two great rivers, the Sacramento and American. With the help of his small party of men and women and friendly native Indians, he built a fort of sun-dried adobe bricks on a small knoll of land about one mile from the American River. Thus Sutter's Fort became the first non-Indian settlement in California's Great Central Valley. The little settlement thrived, providing work,

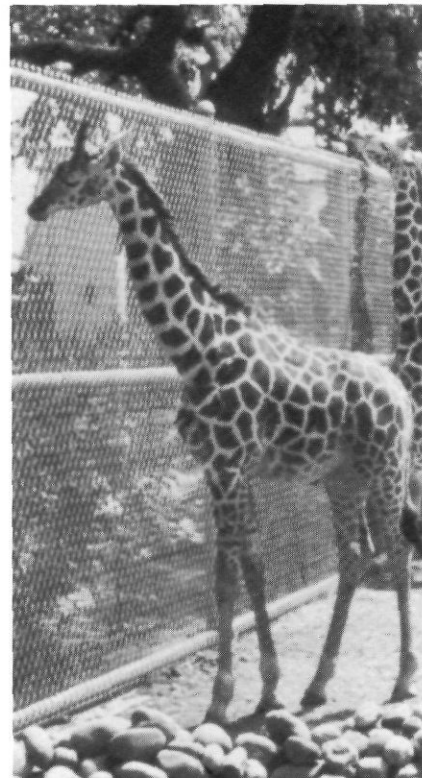
food, clothing and shelter to many. Agriculture, fur trading and a brandy distillery helped support Sutter's Fort. It later became a wayside station for gold seekers traveling to nearby diggings in the Mother Lode. Though gold was first discovered in 1848 at John Sutter's sawmill on the American River at Coloma, Sutter never prospered from the find. Accurate reconstruction was begun in 1892, making the fort the nation's oldest recreated historic fort. In 1947, Sutter's Fort became part of the California State Park System.

When you walk through the gate of Sutter's Fort you will take a step back in time, watching history unfold before you as the past is recreated through various activities and programs. Docents can be seen in period attire doing craft demonstrations such as candle making, bread baking and weaving. The fort has it's own blacksmith, carpenters, and even a cooper.



**Crocker Art Museum**

Built in 1870-74 for the private art collection of Judge Crocker, this Victorian Mansion is the oldest art museum in the West. In addition to featuring a permanent collection, it is also the site of special exhibitions.



**Sacramento Zoo**

The Zoo covers 15 acres in the 600 acre William Land Park, one of the most beautiful parks in the country. The exhibits feature 500 animals in a park-like setting with rolling lawns, flower beds, shrubs and huge 100 year old trees.

Thank you to the Sacramento Convention and Visitors Bureau for supplying a wealth of material and slides. □

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Lietz	SET 3 1 mile/5 sec	75	50	38
	SDM3ER 1 mile/10 sec	53	35	27
	SDR2 collector	20	13	10
	SDM3E 1 mile/3 sec	45	30	22
Topcon	ET1 1 mile/1 sec	75	50	38
	FC1 collector	20	13	10
	GTS3 1 mile/5 sec	53	35	27
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	3805A 1 mile/5 ppm	35	23	18
	3800A 2 mile/5 ppm	25	17	13
Lietz	RED2L 3 mile/5 ppm	35	24	18
Topcon	DMS3 2 mile/5 ppm	35	24	18

### THEODOLITES & LEVELS

Lietz	TM1A 1 second	\$30	\$20	\$15
	TM6 6 second	20	14	10.50
	DT20E 10 sec/elect.	15	10	8
	B1 level 32X	11	8	6
	B2C level 32X	11	7	5
Topcon	DT20 20 sec/elect.	15	10	8
	TL10DE 10 sec.	20	14	10.50
	ATF1 level 32X	11	8	6
	ATF3 level 30X	11	7	5
Ziess	Ni-2 level 32X	11	8	6

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3801A pwr supply	164
3851A collector	366
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38003A charger	55
11440A charger	10
11441A battery	60

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3800A	300	95
3801A	110	60

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3810A attenuator	90
3810B dk attenuator	245
3810B lt attenuator	195
3820A attenuator	275
3801A battery 12V/8ah	25

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(continued from page 37)

It is said that at a rousing ball in Sonoma, Derby's brainstorm was to switch two babies and their toys and blankets into each other's basket, so their parents took home the wrong infants when the party ended. Owen Wister borrowed the incident for his novel *The Virginian*.

Derby was transferred to San Diego shortly before he turned 30. Word soon got around that he'd built a dam *alongside* the San Diego River instead of across it, perhaps as revenge for this transfer.

This one wasn't a joke, though. Derby, a crackerjack engineer in the Corps of Topographical Engineers, was following orders to try to shift the river back to its original bed and thus solve the silt build-up in the city's harbor.

One Derby classic occurred to him while riding in a carriage with two other passengers.

He confided to each of them in turn, "Oh, by the way. Our other passenger is almost stone deaf." Then he sat back poker-faced during the shouting match that followed.

Derby was born in Massachusetts in 1823. He wrote two books of humor—*Phoenixiana* and *The Squibob Papers*—and both enjoyed good sales until their characters and actions became outdated.

His writing skill served Derby well in August 1853 when John Judson Ames, editor of the weekly four-page *San Diego Herald*, asked him to keep an eye on things at the paper while he went to a Democratic party meeting in San Francisco.

Soon, editorial page readers who had been urged to elect the Democratic candidate for governor found themselves being asked to switch their support to the Whig candidate—who later ended up carrying San Diego, much to Ames' discomfiture.

Derby was sent to Oregon and Washington Territory to survey military roads. He wrote, "It rains incessantly twenty-six hours a day for seventeen months of the year..."

Next he headed for New York in 1856 where, despite illness and partial blindness, he managed to play a few more pranks. After his death in 1861, a friend had this to say: "What other men would sacrifice for ambition, for love, for the attainment of fortune or personal aggrandizement, he would sacrifice for fun—his best friend would have no more chance of escape than his worst enemy."

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Nikon Theodolite NT-1 serial number 17143. If you have any information regarding this piece of stolen equipment please contact: Doug Melchior of Melchior Land Survey 619/438-1726 or Palm Springs Police 619/323-8148.

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## New Products

### CASIO CM-100 CALCULATOR

Released by: Casio, Inc., 15 Garner Rd., Fairfield, NJ 07006

FAIRFIELD, NJ, Oct. 7—Casio, Inc., of Fairfield, NJ, has developed an economical calculator that offers scores of advanced computer math functions. The CM-100 is a 10-digit, high powered calculator that operates via a silicon solar battery. Because the unit gets its power from normal roomlight, daylight, sunlight, lamplight, or even candlelight, there's never a need to replace the battery.

The CM-100 computer math calculator affords the user "Base Calculations" including: conversion from binary/octal/decimal/hexadecimal modes to different modes; arithmetic operations including parenthesis, memory and constant calculations; sign change as complement; logical operations (AND, OR, XOR, NOT); bit size specification (1,4,8,16 or 32); block display for large values; shift functions (shift, rotate, arithmetic shift) and flag indications such as carry, borrow and overflow.

In addition to these advanced computer math functions, the Casio CM-100 offers other handy functions such as sexagesimal conversions (degrees to decimal), percentage calculations, including add-ons, discounts, ratios, mark-ups, mark-downs, profits, increase/decrease values; constant calculations for repetitive work; parenthesis calculations (maximum 18 levels); independent memory, square root and reciprocal keys; special digit cut-off key for fast corrections and function command signs. □

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