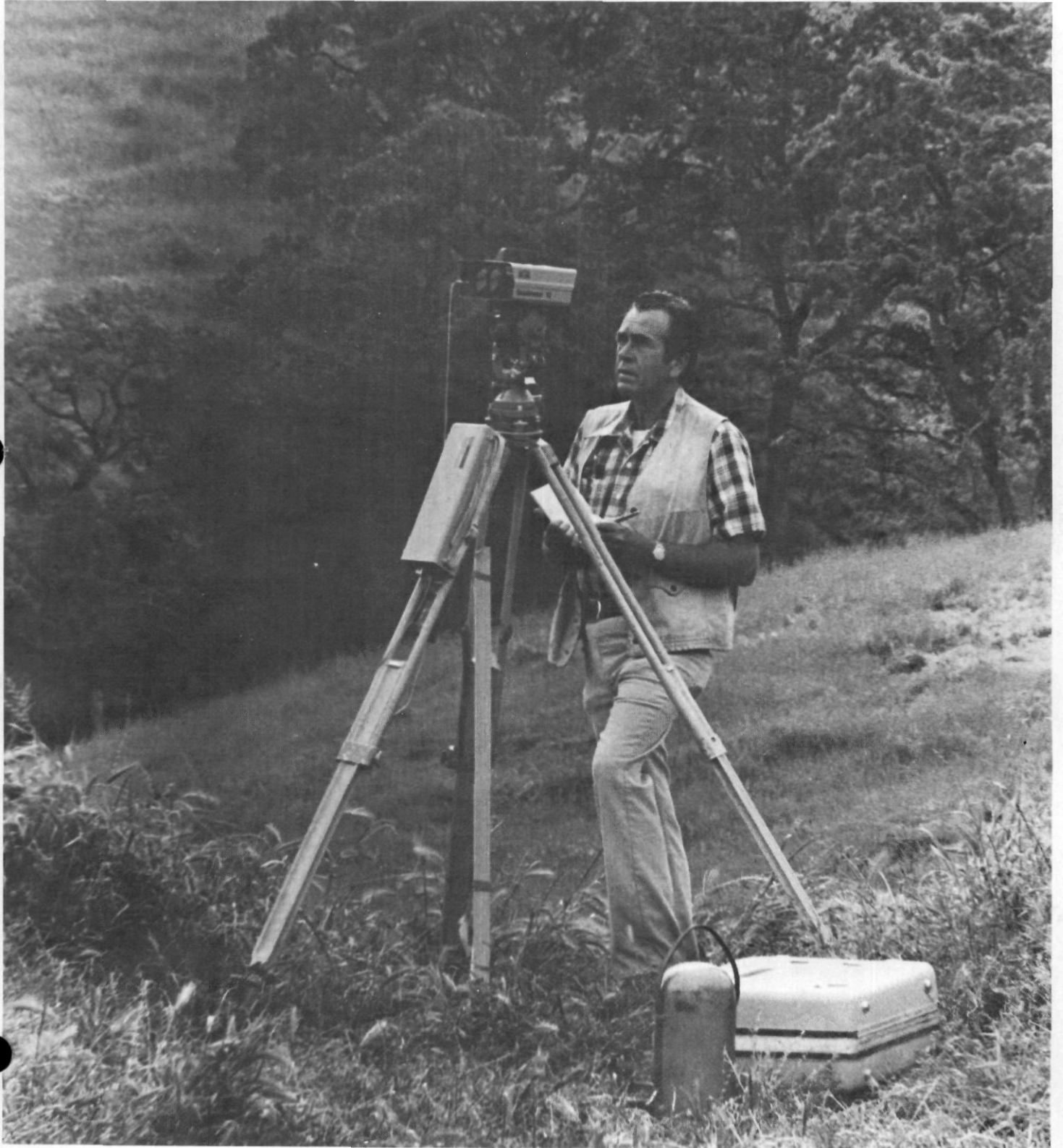


The California Surveyor

No. 56

The Voice of the Land Surveyors of California

Summer 1979



**CALIFORNIA LAND
SURVEYORS ASSOCIATION
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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."

PERSONNEL

Owner: California Land Surveyors Association
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Commercial advertising is accepted by *The California Surveyor*. Advertising rates and information can be obtained by contacting Almac Technical Graphics, 2476 Embarcadero Way, Palo Alto, CA 94303. Phone 415-327-6785.

Sustaining Membership

Membership in the California Land Surveyors Association as a sustaining member is open to any individual, company or corporation who, by their interest in the Land Surveying profession, is desirous of supporting the purposes and objectives of this association. For information regarding sustaining membership, contact the Editor of *The California Surveyor*.

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*.

EDITOR: R. E. Baldwin
1206 Neilson Street
Berkeley, CA 94706

**DEADLINE DATES FOR
THE CALIFORNIA SURVEYOR**

FALL AUGUST 18, 1979
WINTER NOVEMBER 17, 1979

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

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Written Examination Schedule
1979**

Land Surveyor-in-Training—LSIT

***Final Filing Dates:**
August 31, 1979 (Friday)
November 3, 1979 (Saturday)

****Land Surveyor—LS**
November 3, 1979 (Saturday)

*Applications filed after the final filing date specified will be considered for the following examination.
Until further notice, these exams will be given only **once a year.
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Cover: Surveyor Melvin A. Gee in boundary control survey for the city of Walnut Creek Open Spaces Program.



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---------------------------	------------------------	---------------------

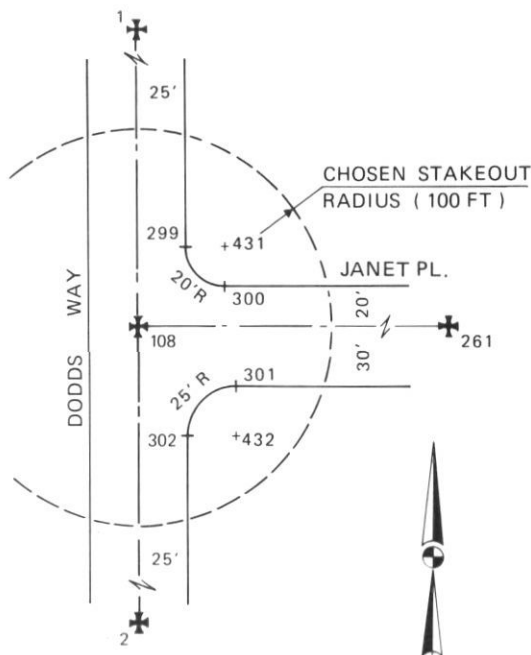
STREET INTERSECTIONS

1. SELECT program.
2. ENTER requested data:

(P.I.) POINT? 108.	BACK OFFSET? 30.
(1ST C/L) TO POINT? 1.	(NEXT C/L) TO POINT? 2.
OFFSET? 25.	OFFSET? 25.
(NEXT C/L) TO POINT? 261.	CORNER RADIUS? 25.
OFFSET? 20.	RADIUS= 25.0000
CORNER RADIUS? 20.	DELTA= 90.00000
RADIUS= 20.0000	LENGTH= 39.2699
DELTA= 90.00000	TANGENT= 25.0000
LENGTH= 31.4159	CHORD= 35.3553
TANGENT= 20.0000	(BC/PC) POINT#? 301.
CHORD= 28.2843	9263.0842
(BC/PC) POINT#? 299.	10052.6976
9332.9924	(RADIUS) POINT#? 432.
10027.4417	9238.0843
(RADIUS) POINT#? 431.	10052.7890
9333.0656	(EC/PT) POINT#? 302.
10047.4415	9237.9931
(EC/PT) POINT#? 300.	10027.7894
9313.0656	BACK OFFSET? 30.
10047.5148	

then, for staking out all points within a 100' radius of #108:

STAKEOUT DATA Successive Points Fixed Point	
FROM POINT? 108.	
BACKSIGHT POINT? 1.	
RADIUS? 100.	



... with the stakeout data printed on an optional page printer:

INSTRUMENT PT#	108.	9292.9012	10002.5882										
BACKSIGHT PT#	1.	10000.0000	10000.0000										
STAKEOUT RADIUS#	100.00												
TO PT:	BEARING	N	AZIMUTH	TURNED<	2TURNED<	DEFLECTED<	2XDEFLECTED<	DISTANCE	NORTHING	EASTING			
299.	NE 31.47444	31.47444	32.00194	64.00388	-	147.59406	-	295.59212	47.17	9332.9924	10027.4417		
300.	NE 65.49410	65.49410	66.02160	132.04320	-	113.57440	-	227.55280	49.24	9313.0656	10047.5148		
301.	SE 59.14445	120.45155	120.57505	241.55409	-	59.02095	-	118.04191	58.31	9263.0842	10052.6976		
302.	SE 24.39132	155.20468	155.33218	311.06435	-	24.26382	-	48.53165	60.42	9237.9931	10027.7894		
431.	NE 48.09243	48.09243	48.21593	96.43585	-	131.38007	-	263.16015	60.21	9333.0656	10047.4415		
432.	SE 42.28593	137.31007	137.43357	275.27113	-	42.16243	-	84.32487	74.33	9238.0843	10052.7890		

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Letters

Editor:

The LSD Board at its recent meetings in Washington, D.C., has established certain Priority Projects as *needing immediate attention and funding*. A management study has been completed which dictated new organization and management. Much of the office work has been computerized and Mr. William A. Radlinski has been hired as our new Executive Director beginning May 7, 1979.

We have classified "Communications" as the first priority item to better keep our members informed of what is being done by their National Organization on their behalf. The second priority is that of Legislative Activity at the national level. The third item is that of Education.

In the area of "Communications" it is our intent to send out more *update type* newsletters and bulletins in addition to our regular quarterly publications. Also, our LSD Board Members will be in direct personal contact with members through at-

tendance at *all* State and Regional Surveyors Meetings, throughout the year. (You will receive a request from your Area Director for meeting dates.)

Our present Legislative Program is in full swing as evidenced by our recent successes on "the Surface Mining Act," "the Brooks Bill," the ABA "Model Procurement Code," and obtaining professional stature in the Department of Labor's Directory of Occupational Titles. Continuing efforts by surveyors in the area of national legislation is of paramount importance in helping to advance and keep the surveying profession on a par with Engineers and Architects.

In the area of education we are being asked to sponsor more Workshops and Seminars. Also, we must develop a full and ongoing program for professional development and continuing education. Aiding our colleges and universities in establishing degree programs is a prime responsibility. All of our educational goals can only be achieved through the hiring

of a qualified Education Director. This position is now available to any qualified candidate. It is felt that the formation of an Independent Accrediting Agency run by the ACSM might be a worthwhile objective for the proper accreditation of all Surveying related curricula.

All of the above Priority Projects require funding this year. The ACSM Board of Directors has approved deficit funding of these projects on the basis of recovering the advanced funds from members and Affiliated Societies through a temporary "Special Dues" for all LSD Corporate Members (\$20.00 additional on the next dues billing only) and contributions from affiliated State Societies. As you may already know, the "\$5.00 per Non-ACSM Member" amendment to the ACSM Constitution was not ratified by the membership. Therefore, these anticipated funds will not be available. Therefore, until an acceptable method is found we are asking all state affiliated organizations to contribute volun-

(Continued on Page 29)

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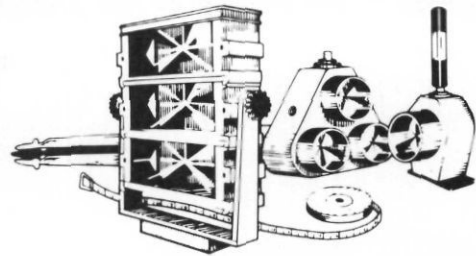
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†Hewlett-Packard 3808 Distance Meter (32,800 ft.)	50.00	30.00	20.00
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*Lietz TS-20 60" Theodolite (Estimation to 20" Horizontal, 1" Vertical)	12.50	7.50	5.00
*Leitz BT-20A 20" or Geotec T-24 Optical Plummet Transit	9.50	5.70	3.80
*Eagle 6 1/4" (20" Surveyors Transit)	6.00	3.60	2.40
*Eagle 4" (1" Construction Transit)	4.50	2.70	1.80
*Leitz B-1 Engineers Precision Automatic Level	7.50	4.50	3.00
*Lietz B2-A Engineers Automatic Level	5.50	3.30	2.20
*Lietz C3-A Engineers Automatic Level	4.50	2.70	1.80
*Lietz B-4 Contractors Automatic Level	3.00	1.80	1.20

Miscellaneous:

*Lietz #7312-45 Traverse Set	6.00	3.60	2.40
*Magnetic Locator, Schonstedt	4.00	2.40	1.60
Spectra-Physics LT-3 Laser Transillite with Fan Beam attachment	20.00	12.00	8.00
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*American Paulin Model M-2 Surveying Altimeter — 0 to 10,000 feet, 2 foot graduation	4.00	2.40	1.60
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Reports

WESTERN REGIONAL CONFERENCE REPORT

by Robert Baldwin

From Wednesday, March 28, though Saturday, March 31, Land Surveyors from 22 States met at the Sahara Tahoe Hotel in Stateline, Nevada, for the Western Regional Conference of Land Surveyors. The 770 registrants, along with their guests and others involved in the profession, enjoyed varied and informative technical sessions and workshops, plus a number of social activities in addition to those for which Nevada is famous. Forty-four exhibitors attended the Conference, bringing with them the latest equipment and the knowledge as to how it's best used. The Conference also afforded Land Surveyors from the 13 western states the opportunity to meet and discuss common concerns and ideas, and led to the formation of the Western Conference of Professional Land Surveyors as reported elsewhere in this issue.

The first social event of the conference was to have been a Golf Tournament at the Eagle Valley Golf Course in Carson City on Wednesday morning, but a fresh snowfall forced cancellation of this event. The skiers among us adjusted reasonably well to this and even the golfers seemed not to mind at the evening's exhibitor-sponsored cocktail party which, in addition to free cocktails, offered such gastronomic delights as prime rib and ham.

The Conference got into full swing on Thursday morning with the opening remarks and introduction of dignitaries by James V. Potter of the Idaho Association of Land Surveyors, Addresses by Morton S. Fine of N.C.E.E. and Urho A. Uotila, president of A.C.S.M., then spoke on the convention theme, "New Shape of the Surveying World."

At Thursday's luncheon, Dr. Helmut Leitz, Chief of Research and Development for Carl Zeiss, Inc., spoke on the latest advance in Electronic Tacheometry. He began by stating there is no "black box" technology for surveyors, and that he personally hopes there never will be, for it would rob the surveyor of much of the enjoyment derived from working in the field. A Ladies Luncheon was held concurrently, featuring a fashion show entitled "Fashions from 1776 to the Present."

The afternoon sessions began with Attorney Michael Dyer presenting Nevada's position in the California-Nevada Boundary Dispute, which is now before a Special Master of the U.S. Supreme Court. Edward Elder of New Mexico then discussed "Intent and How to Prove It." Joseph E. Dracup, Chief of N.G.S. Control Networks Division discussed the "1983 Readjustment of the North American Datum," followed by Cmdr. James Collins, Chief of N.G.S. Coastal Mapping Division, who spoke on "Land-Sea Boundaries by Air." Thursday evening's social activity was an Alpine "Oompah" Party complete with an "Oompah Band," appropriate beverages, and alpine hats.

Friday saw concurrent technical sessions and workshops, offering registrants a choice of which to attend. Don Wilson of New Hampshire spoke on *wooden evidence, including its identification as to type and age*. Don Michael, Technical Sales Manager for K & E Co., discussed the digital electronic theodolite, while Joseph E. Dracup conducted a workshop on State Plane Coordinate Systems. F.D. Uzes, head of the Boundary Determination Section of the California State Lands Commission, presented California's position in the California-Nevada boundary dispute. Claud Hoffman, Chief Cadastral Engineer, State of Alaska, discussed Land Surveying in our northernmost, westernmost, and easternmost State. Concurrent with these sessions were others concentrating on the legal aspects of the profession. Walter Robillard, a specialist in the legal aspects of surveying and photogrammetry, discussed "The Judicial Function of the Land Surveyor" and how to present evidence in court. Roy Minnick, Senior Boundary Officer for the California State Lands Commission, spoke on research. John Briscoe, Deputy Attorney General with the California Department of Justice, discussed legal procedures.

The surprise guest speaker at Friday's joint mens-womens luncheon, whose topic "You Got It, You Sell It, You Still Got It" covered one of Nevada's unique legal recreational activities, was Madame Beverly Harrell of Cottontail Ranch. Undoubtedly, she spoke to what was by far the most enthusiastic audience of the conference.

In the afternoon, while another State Plane Coordinate Workshop was held, Gerald Johnson, Director, Bureau of Business Research & Service, California State University at Fresno, discussed cash flow and how to get it. Leila Johnson, Psychologist, spoke on how to hire and fire. The future role of the Land Surveyor was then discussed by T. S. Madsen, L.S. of Florida. Concurrently, a presentation entitled "The History of a Court Case," which followed the legal proceedings of a court case including a mock trial, gave registrants an idea as to what they might encounter in court. Walter Robillard, Roy Minnick, Don Wilson,

(Continued on Page 26)

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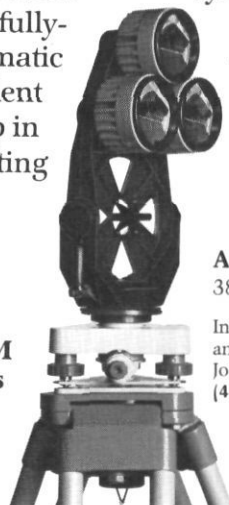
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President's Message

Shortly after our May Conference in Tahoe, Michael McKissick, editor of the *California Surveyor* for the last five years, asked to be relieved of his position subject to his finding a qualified replacement. I am happy to report that Mike has found such a replacement in the person of Robert "Bob" Baldwin. This issue of the *Surveyor*, therefore is Mike's last.

During the time that Mike has been the editor of the *Surveyor*, the paper has grown in stature, size and the amount of advertising. The *Surveyor* format has improved to its present three-column layout and at Mike's urging, the mailing list was increased to include everyone in California who offers to practice surveying professionally. Mike, I speak for all members of CLSA when I say, "Thank you and good job well done."

Our new editor, Bob Baldwin, has written a column in the last several issues of *California Surveyor*, so by now he is more or less up to speed. He

tells me he intends to continue the program of improvement which Mike started. That program will include regular features such as book reviews, legal reviews, new equipment and systems, and profiles. In order to include as much original material as possible, he plans to ask for your assistance. If you want to be sure you are included in his plans, contact Bob.

At this writing Bill SB2 (which removes the engineers exemption from the Land Surveyors Act) is out of the Senate Business & Professions Committee with a 5 to 0 vote recommending "Do pass." The only parties who appeared at the hearing to oppose the Bill were Ted Fairfield and Jim Corn, representing the California Council of Civil Engineers & Land Surveyors. By the time you read this, the Bill should have been heard by the Senate Finance Committee and also on the floor of the Senate. The author of SB2, Senator Green, has done an excellent job of carrying the Bill. The members

of CLSA owe him a debt of gratitude for his efforts.

Mike Welsh, Chairman of the Legislative Committee, devoted many hours organizing our program to support the Bill for action. It is all too possible to overlook the great effort required of many individuals to successfully push any Bill through the California Legislature. Every bit of effort helps. Any personal contact, particularly with individual legislators, helps. "Personal contact" includes all of the letters that have been written to them. Your good efforts have helped CLSA to hurdle the first step in the process of the eventual success we hope for. ▲

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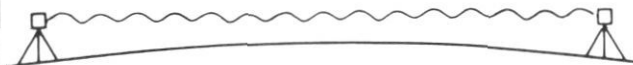
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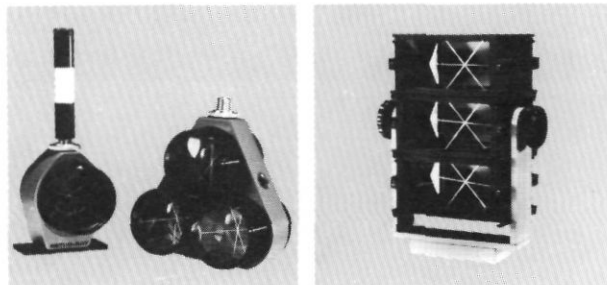
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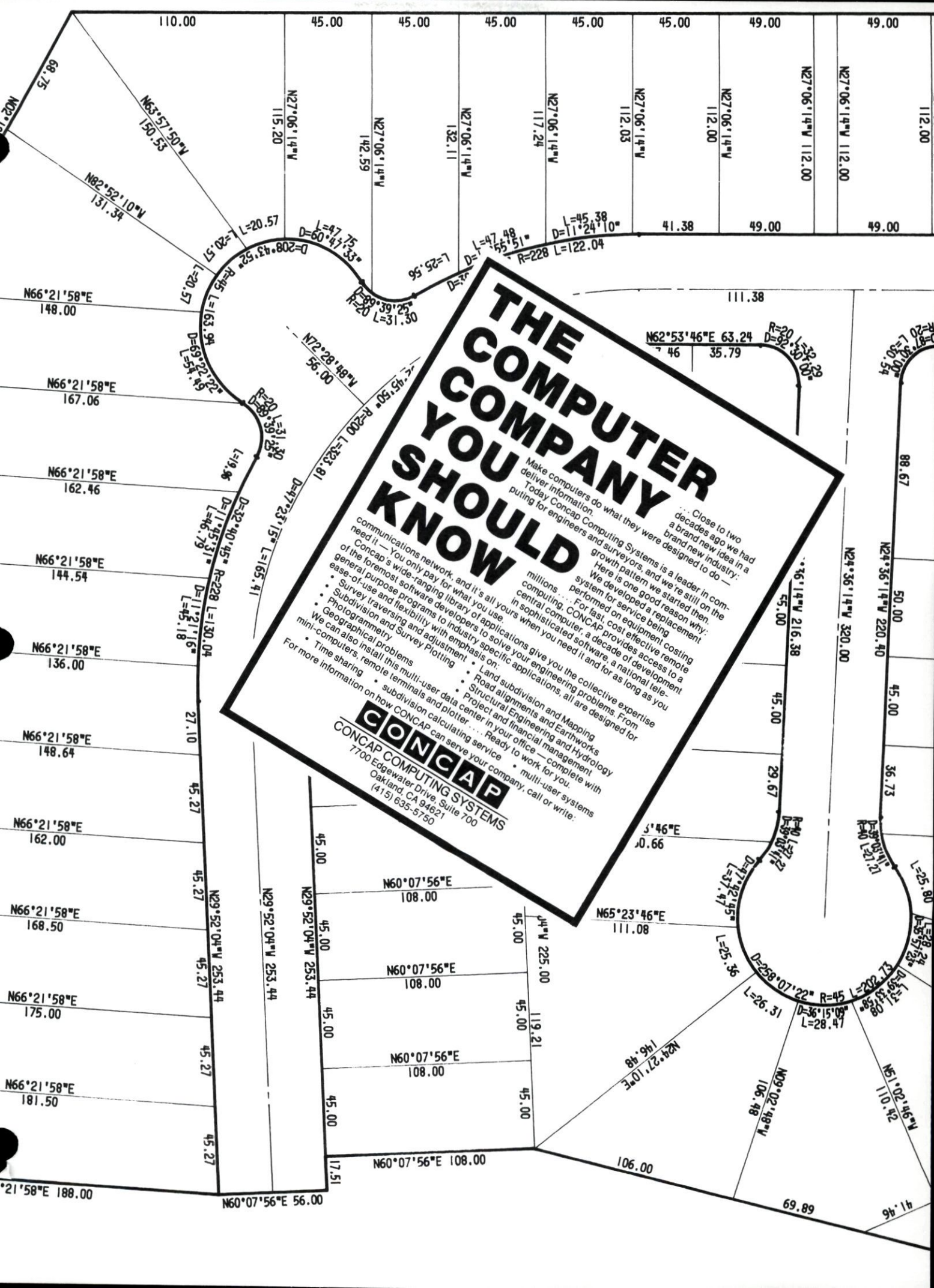
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Report from the Capitol

SURVEYORS APPEAR BEFORE UNITED STATES SENATE ENERGY AND NATURAL RESOURCES COMMITTEE

On June 21, 1979, the American Congress on Surveying and Mapping took its second historic step toward a full time presence on Capitol Hill. At the invitation of the Honorable Wendell H. Ford (Ky.), ACSM's prepared statement and questions relative to the preemption of surveyors by the Surface Mining Control and Reclamation Act of 1977 were submitted.

The ACSM's March 6, 1976 appearance before the Subcommittee on Energy and the Environment of the Honorable Morris K. Udall's House Committee on Interior and Insular Affairs was apparently very well received. Several congressmen were knowledgeable concerning our problem and commented favorably—presumably, the result of personal contacts by a few land surveyors prior

to the hearing. Congressman Udall personally questioned the ACSM representatives and commented publicly that he believed that he might be persuaded to amend the Act to remedy the injustice to land surveyors. The grassroots personal contacts of committee members by land surveyors was of obvious benefit and contributed to an open and concerned review of the surveyor's preemption problem. The placement of surveyors in a subordinate or assistance status to other professions is totally unacceptable to the ACSM and its membership. (See March 1979 *Surveying and Mapping* at page 27 for hearing testimony.)

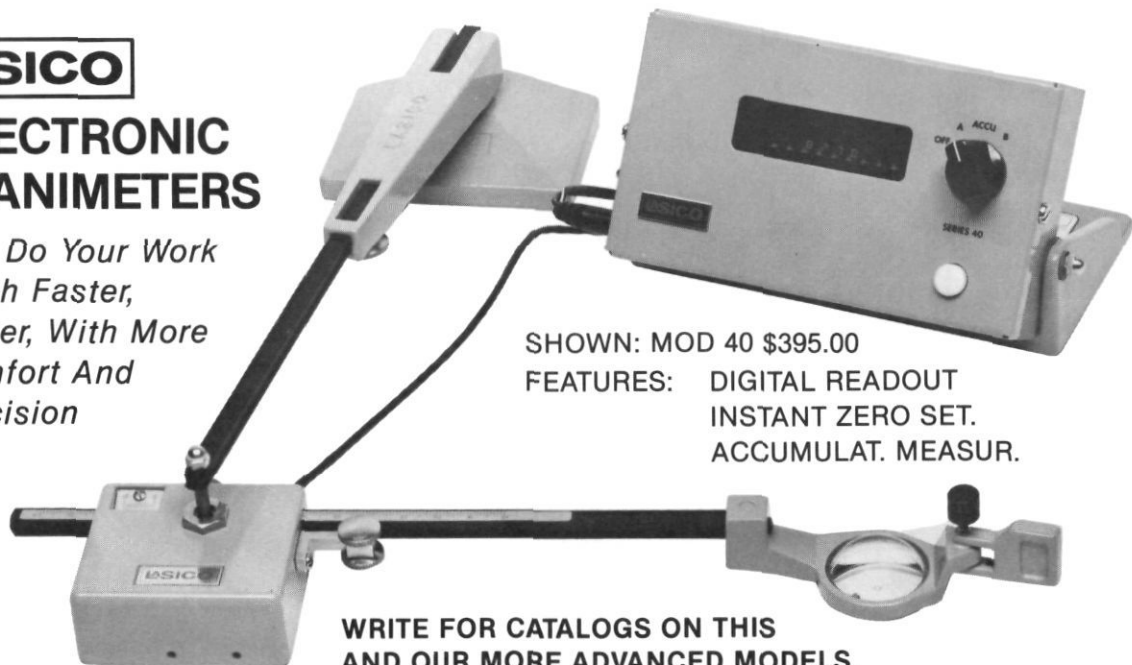
Personal contacts and letters to all members of the Energy and Natural Resources Committee will ensure acceptance of ACSM's request for corrective legislation to reestablish the land surveyor as one of the lead professions in the preparation of maps and plans. The Senators are:

Arkansas:	Dale Bumpers
Alaska:	Ted Stevens
Connecticut:	Lowell P. Weicker, Jr.
Hawaii:	Spark M. Matsunaga
Idaho:	Frank Church, James A. McClure
Kentucky:	Wendell H. Ford
Louisiana:	J. Bennett Johnston
Massachusetts:	Paul E. Tsongas
Montana:	John Melcher
N. Hampshire:	John A. Durkin
N. Mexico:	Pete V. Domenici
N. Jersey:	Bill Bradley
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Washington:	Henry M. Jackson, Chairman
Wyoming:	Malcolm Wallop

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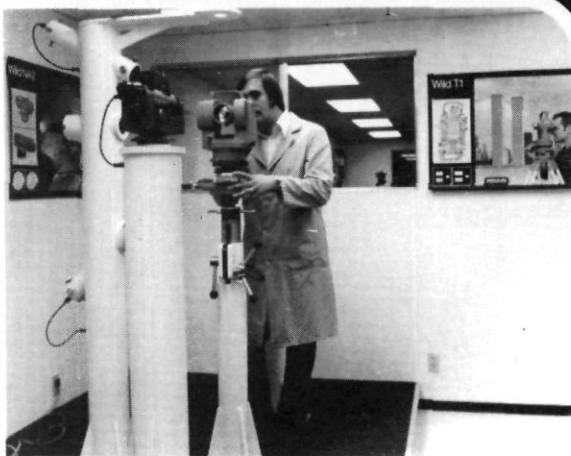
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In Memoriam**

It is with deep regret that we note the passing of Leighton Keeling of Surveyors Service Company.

Many of you will remember Leighton and his wry sense of humor. He started with Surveyors Service Company in 1938. He worked in the shop, was a salesman on the road, and for the last 25 years has been in administration and management of the company. In January, 1971, he was made President, serving until March, 1978, when ill health forced him to become Chairman of the Board of Directors. He was very active until recent years with the National Model Railroaders Association and was a Past President of that organization. Most recently, he has been active in the Southern California Section of the ACSM and instrumental in counseling on the manufacture of chaining tapes in the metric system.

Leighton is survived by a son and a daughter, both residing in California.

One more good "old-timer" passed on to rest.

Calendar

August 5-8	N.C.E.E. Annual Meeting, Omni International, Norfolk, VA
August 8	BOARD OF REGISTRATION meeting, Board Office, Sacramento, CA 95814
August 31	Final filing date, November 3, 1979 L.S.I.T. Examination
September	Fall A.C.S.M. Convention, Sioux Falls, S.D.
September 12	BOARD OF REGISTRATION meeting, Royal Inn of San Francisco Airport, South San Francisco, CA
September 14 & 15	CALIFORNIA ENGINEERS CONFERENCE on Registration, Marriott Hotel, adjacent to the Los Angeles International Airport
October 4-7	A.C.S.M. California Conference, Monterey, CA, Doubletree Inn, Monterey
October 20	C.L.S.A. Board of Directors meeting
November 3	L.S. and L.S.I.T. Examinations
November 3	C.L.S.A. Legal Seminar—Location to be announced
November 14	BOARD OF REGISTRATION Meeting, Board Office, Sacramento, CA 95814
November 17	C.L.S.A. Legal Seminar—Location to be announced
December 12	BOARD OF REGISTRATION Meeting, Airport Park Hotel, Inglewood, CA

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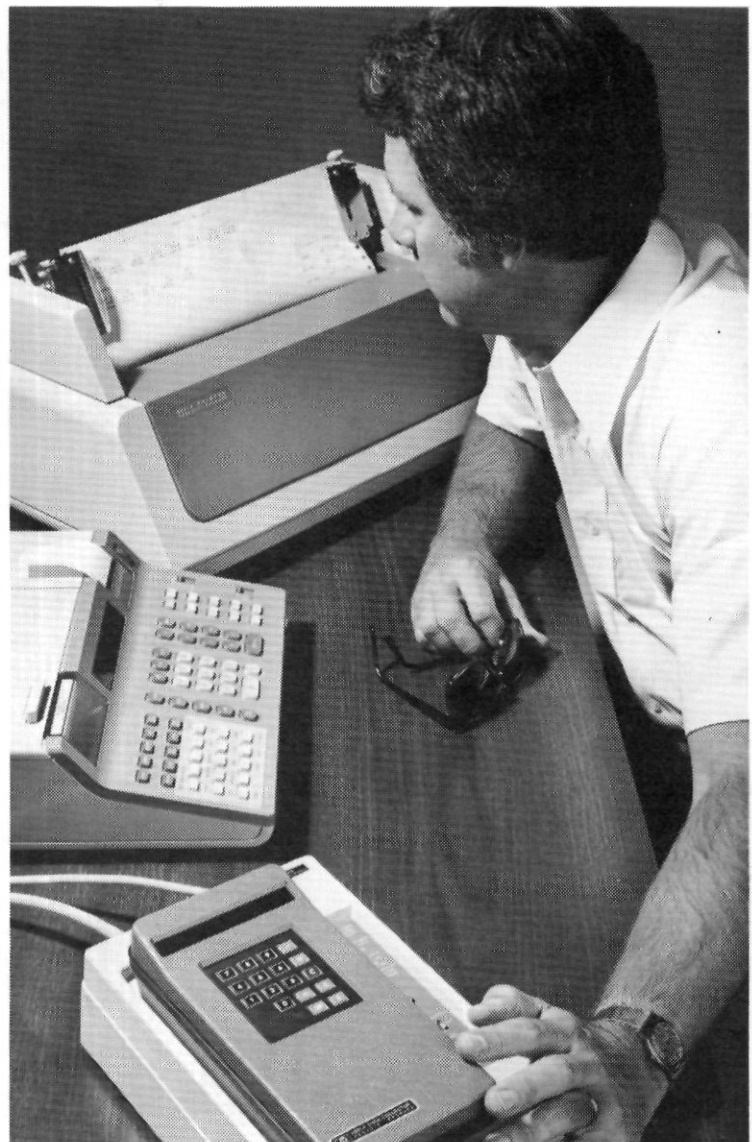
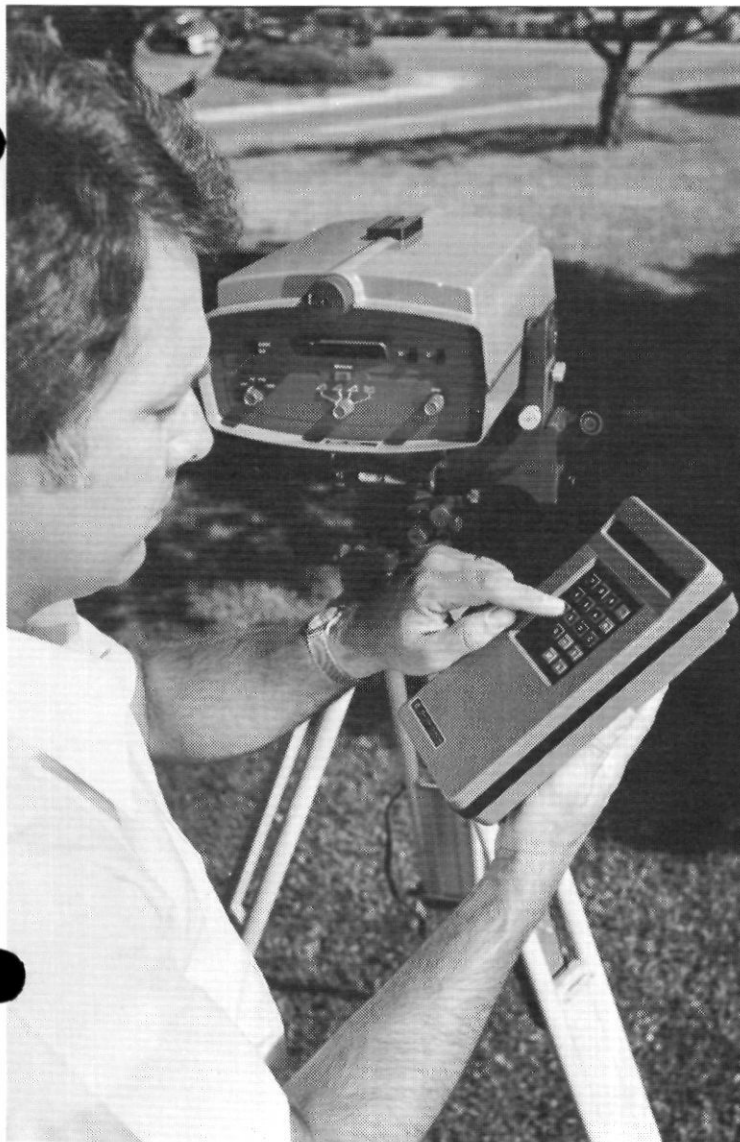
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ELIGIBILITY—The Program is available to professional land surveyors in private practice who render services to a variety of clients. Although the Program is designed specifically for land surveyors, land surveying firms which perform a minimal amount of engineering services may be eligible. Firms rendering a significant amount of services in the engineering area would be eligible for coverage under the Continental Architects'/Engineers' Professional Liability Insurance Program.

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For further information, contact Ms. Michelle Hill, Victor O. Schinnerer & Company, 5028 Wisconsin Avenue, N. W., Washington, D. C. 20016. Phone: (202) 686-2850. ▲



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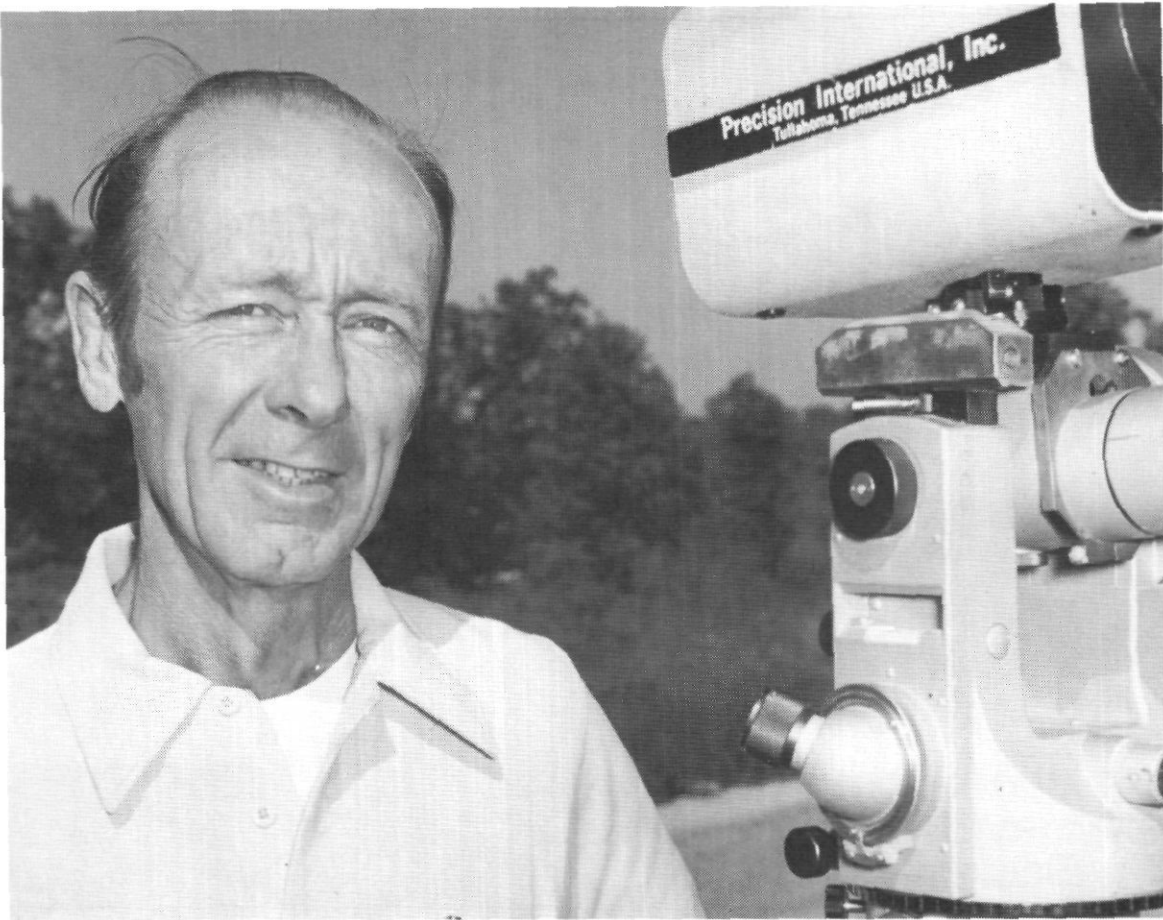
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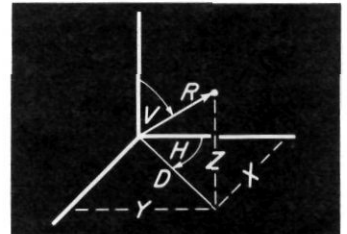
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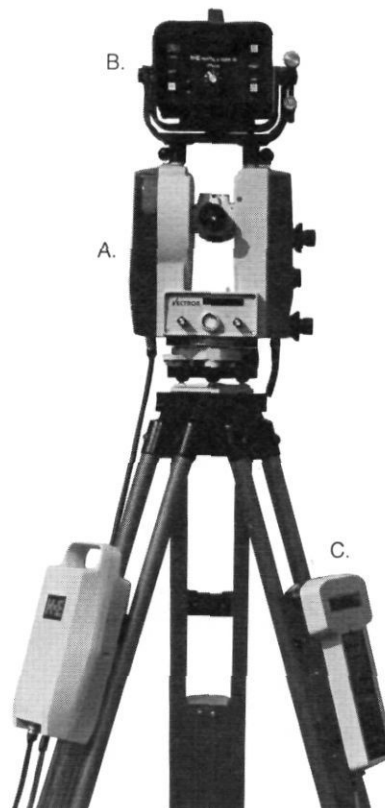


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- latitude (Y)
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Court Case

COURT ERRED IN REFUSING TO DETERMINE BOUNDARY LOCATION

IN THE COURT OF APPEAL OF
THE STATE OF CALIFORNIA
FIFTH APPELLATE DISTRICT

EDWARD JAMES JOAQUIN, et al.,
Plaintiffs and Respondents,

v.

SHILOH ORCHARDS, etc.,
Defendant and Appellant.

APPEAL from a judgment of the Superior Court of Stanislaus County. Jeremy C. Cook, Judge. Reversed with directions.

Zuckerman & Hartmann and Thomas M. Zuckerman for Defendant and Appellant.

A. M. Frad for Plaintiffs and Respondents.

INTRODUCTION

The fundamental question presented by this quiet title action is the extent of the trial court's obligation to fix the location of an agreed boundary between contiguous owners of land where the monument fixing the line (a fence) has been removed without a survey or other marking to identify its precise location. As we shall explain, the trial court is required to fix the location of the agreed boundary according to the evidence presented at trial if it is reasonably possible to do so. Thus, in the present case the court

erred in refusing to determine the location of the agreed boundary and in quieting title in respondents according to their complaint.

STATEMENT OF FACTS

Prior to 1942 the Bank of America was the common owner of the adjoining parcels of real property now owned by appellant and respondents, the boundary line of which is the subject of this controversy. On April 6, 1942, the bank sold one parcel to the respondents' predecessors in interest and on March 1, 1943, sold the other parcel to the appellant's predecessor in interest. The deed to both parcels described their common boundary as the quarter section line separating the southwest quarter section from the northwest quarter section of section 19, in township 4 south, range 8 east, Mount Diablo Base and Meridian, in the County of Stanislaus. There is a 5-inch diameter concrete monument located in Shiloh Road marking the western quarter section corner, which the federal government established in 1854. The monument set at the easterly corner of the section line in 1854 has never been located, but a surveyor reestablished this point in 1974 for a survey of nearby property.

At sometime prior to 1944, a fence was constructed which divided one portion of the property from the other, and the two portions were separately farmed and utilized up to the fence.

In addition, the separate farming practices of the adjoining owners over the years created a line demarcating the differing cultural practices, evidenced by a change in elevation or bench between the two farms at the fence line, ranging from 12 to 36 inches in height. The fence was located at the top of this bench. The area between the fence line and the corner section line is approximately 2.4 acres.

Respondents acquired their parcel on September 5, 1967, and appellant acquired its parcel on December 28, 1973. At the date of appellant's acquisition, appellant and its predecessors in interest accepted and understood the fence to be the boundary between the respective parcels. Appellant entered into possession of its parcel to the fence and dealt with the property as if the fence constituted the boundary, cultivating and improving its parcel, including the now disputed piece.

In 1974 appellant removed the fence to establish an almond orchard on the property, which it accomplished in 1975. The fence line was removed to help control weeds that had grown along the fence. Appellant used a disc to control the weeds on the old fence line. The effect of the discing was to "round" the bench somewhat, but not enough to extinguish the original line. Appellant leveled the property, installed a sprinkler system,

(Continued on Page 23)

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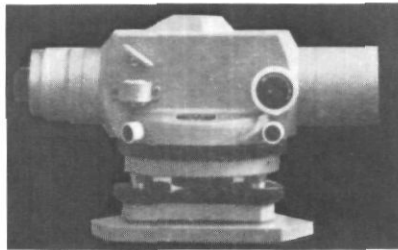
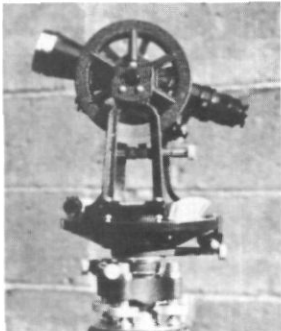
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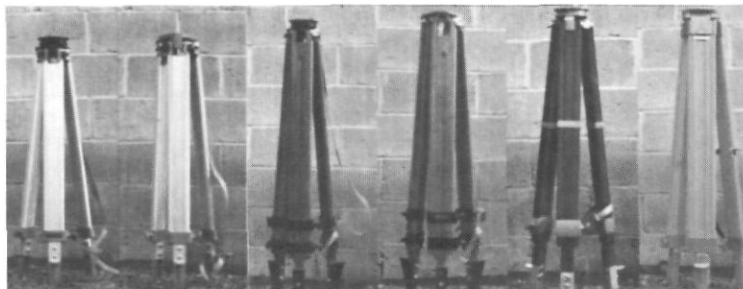
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This problem is from the State Board of Registration's Licensing Exam.

In presenting the following solution to Problem D-1, The Old Professor (TOP) thinks that a few words of explanation are in order. In those few seconds before his pencil began to move several ideas flashed through TOP's head. First, the "Required" said "Determine the coordinates" then, second, it said "and the probable error." Finally, the "Note" said "all formulae. . ." There were, then, two basic parts to the problem and a general stipulation to be followed—the parts required: (1) Grid coordinates AND (2) Probable (not STANDARD but PROBABLE) error.

Looking at the given data there were, within each of these elements, two basic considerations. In the "coordinate" phase we had to relate geodetic direction to coordinate (or "grid") direction and, given the grid distance, to calculate the coordinates of the distant station. In looking at the "error" phase there was error in the direction of the distance measurement and error in the angle measurement to be reflected as error at right angles to the distance measurement.

Since the measured angle was an element in both basic parts TOP started his pencil going as follows (He always starts his solutions by summarizing the "Given" and the "Required"):

PROBLEM D-1

Given:

- Geodetic Azimuth Dust to Mark:
340° 14' 48"
- At Dust Angle Fr. Mark to Cash Meas.
as below.
- Grid Dist., Dust to Cash: 3352.54
±0.02 ±3 ppm std. error
- At Dust:
 - Ø = 34 40 47.076
 - λ = 116 09 42.671
 - N = 798,283.13 (5)
 - E = 2,545,947.50 (5)

Required:

- 1) Coordinates of Cash and
- 2) P.E. of Coordinates of Cash

Solution:

	ν (sec.)	ν^2
Meas. $\bar{\chi}$ = 290° 30' 47"	1	1
49	3	9
42	4	16
44	2	4
46	0	0
48	2	4
E =	276	34
n =	6	
$\bar{\chi}$ 290° 30' 46"		

$$\sigma_{\bar{\chi}} = \pm \sqrt{\frac{E\nu^2}{n(n-1)}} = \sqrt{\frac{34}{5 \times 6}}$$

$$= 1.065 \text{ sec.}$$

$$PE_{\bar{\chi}} = \pm 0.6745 \sigma_{\bar{\chi}} = \pm 0.7 \text{ seconds}$$

$$PE @ \text{ Rt. } \bar{\chi} \text{ s to Direction of Sight}$$

$$= 3353 \times \sin 0.7'' = \pm 0.01 \text{ ft.}$$

$$PE \text{ in Direction of sight}$$

$$= \pm 0.6745 (0.02 + 3(3352))^{10^{-6}}$$

$$= \pm 0.02 \text{ feet.}$$

(Continued on Page 25)

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COURT CASE

(Continued from Page 18)

and planted an almond orchard, at the cost of approximately \$2,100 per acre.

Appellant's witnesses testified that the location of the fence line could be established. Ronald P. Vella testified that the fence "lined up with the road across the street" and that the fence ran just north of a roadway used by farmers in the area for access to the irrigation gates at a nearby irrigation canal. Gordon A. Batson also indicated that the fence line could be located in relationship to the canal. He also testified that the assessor's map in use since 1967 appeared to designate the boundary line between the properties in accordance with the location of the fence line.

Keith Chrisman, a registered civil engineer, was retained by appellant four months before trial to survey the location of the old fence line. Mr. Chrisman testified that he located the two quarter section corners that are on the east and west ends of the quarter section line and with a surveyor's transit measured the angle between the center line of Shiloh Road (a north-south section line) and the quarter section line and found the angle to be 89 degrees and 28 minutes. He then measured the angle between the center line of Shiloh Road and the top of the bench, a "very evident physical boundary between the two properties," and found it to be 90 degrees and 54 minutes.¹

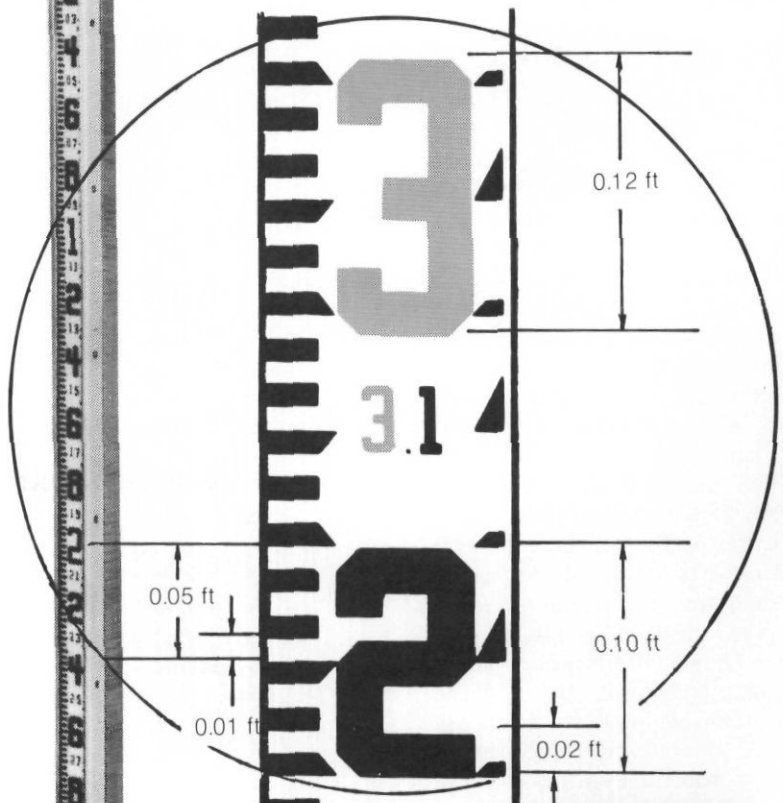
Chrisman then compared his physical measurements of the location of the fence line with a 1956 aerial photo of the property taken by the United States Department of Agriculture, Soil Conservation Service. With a protractor he measured on the photograph the angle between the center line of Shiloh Road and the quarter section line as represented by the visible physical features on the photograph, including the line representing the differences in cultural practices between the two parcels of land, a road adjacent to and south of the cultural line, and the north edge of the irrigation canal. Mr. Chrisman found the angle to be 89 degrees and 20 minutes. He then measured the angle between the center line of Shiloh Road and the cultural boundary line and found it to be 90 degrees, 50 minutes. He then expressed the opinion that the fence line represented by the embankment

(Continued on Page 24)

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COURT CASE

(Continued from Page 23)

described by prior witnesses is "very close" to the cultural boundary line shown on the aerial photograph. He explained that by "very close" he meant "somewhere between two to five feet."

In the course of constructing a power line project, respondents began to suspect that the former fence line might not be the boundary described in the deeds to the respective parcels. Respondents commissioned a land survey, which indicated that the boundary described in the deeds was some distance to the north of the newly planted almond orchard, leaving ownership of a portion of the orchard in dispute and leading to this action.

TRIAL COURT'S FINDINGS

The trial court found that although a fence had been in existence for many years south of the quarter section line, and the parties and their predecessors had each farmed the land to the fence, causing the formation of an embankment of soil along the fence line, the removal of the fence without a survey or other method of marking its exact location resulted in a loss of appellant's title in the land to the fence. In support of this conclusion, the court found that appellant had disced and broadened the bank after the fence had been removed; that neither the top nor the bottom of the bank as it existed prior to 1974 had been established; and that no remnants of the fence post remaining below ground had been shown. From these findings the court concluded that "[t]he only ascertainable boundary which can be defined in words and which can be translated into monuments on the ground is the common quarter section line as used and described in the recorded deed of each property." It then quieted title in respondents according to the prayer of their complaint.

THE AGREED BOUNDARY

The doctrine of acquiescence to a boundary line is referred to in California as the doctrine of title by agreed boundary. (See *Ernie vs. Trinity Lutheran Church* (1959) 51 Cal.2d 702, 707.) It is a mixture of implied agreement and estoppel. (Miller and Starr, *Current Law of California Real Estate* (1977) § 21:27; pp. 552-559.) The elements of the doctrine are an uncertainty as to the true bound-

ary line, an agreement between the adjacent owners establishing the line, and acceptance and acquiescence in that line. (*Ernie v. Trinity Lutheran Church, supra*; *Duncan v. Peterson* (1970) 3 Cal.App.3d 607, 611.)

The doctrine clearly applies to this case. The inability to locate the eastern quarter section monument demonstrates the requisite uncertainty. The evidence shows that the owners had accepted the fence as the boundary line. "A longstanding acceptance of a fence as a boundary line gives rise to an inference that there was, in fact, a boundary agreement between the coterminous owners resulting from an uncertainty or dispute as to the location of the true line." (Current Law of California Real Estate, *supra*, § 21:31, p. 562; *Ernie v. Trinity Lutheran Church, supra*, 51 Cal.2d 702, 708.)

The trial court apparently misunderstood the full legal consequences of the agreed boundary.

"... [W]hen such owners, being uncertain of the true position of the boundaries so described, agree upon its true location, mark it upon the ground, or build up to it, occupy on each side up to the place thus fixed and acquiesce in such location for a period equal to the statute of limitations, or under such circumstances that substantial loss would be caused by a change of its position, *such line becomes, in law, the true line called for by the respective descriptions, regardless of the accuracy of the agreed location, as it may appear by subsequent measurements.*" (Emphasis added. *Young v. Blakeman* (1908) 153 Cal. 477, 481; *Duncan v. Peterson, supra*, 3 Cal.App.3d 607, 611.)

Once an agreement between parties over an uncertain boundary line is established according to law, the agreement is conclusive as to the correctness of the boundary. (*Martin v. Lopes* (1946) 28 Cal.2d 618, 622; 2 Cal.Jur.3d, *Adjoining Landowners*, § 93, p. 164.) The agreement establishes the true boundary line which the parties are estopped to deny. If more land is given to one than the description of his deed actually requires, he holds the excess by legal and not merely equitable title. (*Sneed v. Osborn* (1864) 25 Cal. 619, 631; 2 Cal.Jur.3d, *supra*, § 93, p. 146.) Thus, once appellant proved by uncontradicted evidence that the fence line was the agreed boundary separating the two properties, respondents lost

their right to quiet title to the quarter section line.

UNCONTRADICTED EVIDENCE SHOWING THE GENERAL LOCATION OF THE FENCE LINE

Appellant's witnesses testified that the former fence line could be established. Batson and Vella testified that even though the embankment formed by the different cultural practices had been disced and rounded somewhat, the original line had not been obliterated altogether. Sidney Long testified that the fence had been located at the top of the bank. Vella testified that the fence lined up with a road perpendicular to and west of Shiloh Road. The fence also ran just north of a roadway leading to the irrigation canal. Batson's testimony was similar. He further testified that this line corresponded to the boundary on the assessor's map. Long testified that he could locate the former fence within one foot on the basis of Vella's description.

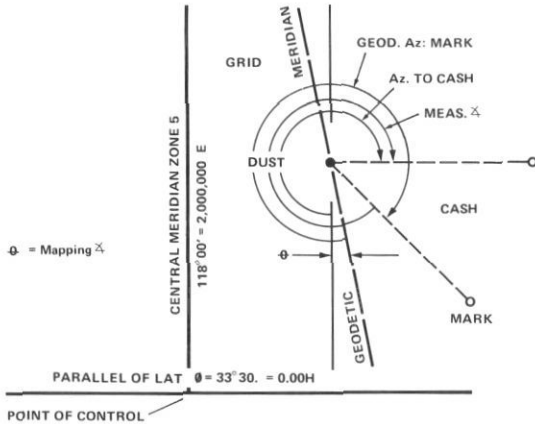
Chrisman, the civil engineer, testified that he was able to observe through his transit the top of the embankment from the quarter corner on Shiloh Road down a line of sight to the north edge of the canal. He compared that line with the cultural practices line apparent on the aerial photograph and opined that the two lines were "very close." He explained that the accuracy with which he could read the location and distances of the lines on the aerial photograph was two to five feet.

In sum, the testimony of appellant's witnesses established beyond question that the embankment caused by the cultural practices and on which the fence was located is presently discernible. Hence, the trial court erred in not finding that at least the general location of the fence line had been established. Furthermore, if the trial court felt that it could not determine the precise location of the fence line from the evidence, it could have entered a conditional interlocutory judgment declaring the line to be along the top of the embankment provided that (1) appellant obtained a survey with a metes and bounds description of the agreed boundary line along the embankment and (2) any uncertainty be resolved in respondents' favor. Such a conditional decree would be in keeping with the equitable principle inherent in a quiet title action. (Cf. 4

(Continued on Page 26)

EDUCATION (Continued from Page 22)

Top then drew the following sketch both to jog his feeble mind as to the relation between "grid" and "geodetic" and also to impress the expert examiner (EE) that he knew the relationship between them. (If he had goofed his pinkie count the EE might have had some compassion.) After that the balance of the calculation was straightforward:



$$\theta = \ell \times \Delta \lambda \quad (\text{S.P. 253})$$

$$= 0.57001 \ 19219 \ (118^\circ - 116^\circ \ 09' \ 42.671)$$

$$= 1^\circ 02' 52'' \ 0 \ \text{NOTE: calculate using H.P.25 calculator}$$

w/ "HMS" \leftarrow "Dec. Deg." keys.

$$\begin{array}{r} \text{Geoid "Dust" to "Mark"} = 340 \ 14 \ 48'' \\ \text{Angle @ "Dust"} = 290 \ 30 \ 46 \\ \hline 630 \ 45 \ 34 \\ -360 \\ \hline \end{array}$$

$$\begin{array}{r} \text{Geoid "Dust" to "Cash"} = 270 \ 45 \ 34 \\ \theta = 1 \ 02 \ 52 \\ \hline \end{array}$$

$$\begin{array}{r} \text{Grid " " " " } = 269 \ 42 \ 52 \\ \text{Dist.grid " " " " } = 3352.54 \end{array}$$

$$\begin{array}{r} \Delta N = + \quad 16.87 \quad \Delta E = + \quad 3 \ 352.50 \\ \text{Dust} = \frac{798,283.13}{\quad \quad \quad} \quad \frac{2,545 \ 947.50}{\quad \quad \quad} \\ \text{Cash} = \frac{798,300.00}{\quad \quad \quad} \quad \frac{2,549 \ 300.00}{\quad \quad \quad} \end{array}$$

Top could have found theta using Special Publication 253's Table II for Zone 5 (page 51) as follows:

@ Long. 116°09'	Theta = 1°03'16".3
for 1" of Long.	Theta = 0".570
for 42.7 of Long.	Theta = 24".3
then @ Long. 116°09'42".7	Theta = 1°02'52".0

(Top doesn't like Table II because he's always afraid he'll forget which way to apply the correction for the seconds-of-theta quantity.) (Using the formula: $\text{Theta} = \arctan(x-C)/(R_6-y)$ isn't wrong, but it sure is doing it the hard way when ℓ has been given.) Finally:

ANSWER: At cash: $N = 798,300.00 \pm 0.01 \text{ ft.}$
 $E = 2,549,300.00 \pm 0.02 \text{ ft.}$

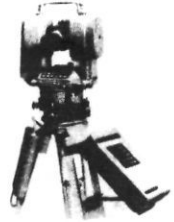
To finish off the problem the following references should be cited:

- USC & GS, S.P. 253, Page 3
- Kissam, *Surveying for C.E.s*, page 622, Table 21-1.

To wrap up this solution, TOP would like to comment on one protest that continually comes up: "But on an exam there isn't time to write out that stuff that you wrote on your solution." Students, please believe TOP: there isn't time NOT to write a complete solution and especially when the NOTE on the problem sheet said "A complete solution to this problem requires that all formulae and intermediate calculations be shown."

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COURT CASE

(Continued from Page 24)

Witkin, Cal. Procedure (2d ed. 1971) § § 18-19, pp. 3194-3195.)

The decree quieting title in respondents to the real property described in their complaint is reversed. The matter is remanded to the trial court with directions to receive such additional evidence as either party shall desire to produce and determine the location of the agreed line according to the evidence available.

The above opinion was filed August 23, 1978 in the Court of Appeals, Fifth Appellate District, California.

FOOTNOTE:

¹Mr. Chrisman explained how he surveyed the fence location as follows: He set up a surveyor's transit on the quarter section corner of Shiloh Road and sighted down a line of site on the top of the bench which intersected the quarter section corner "within five or six inches off from hitting it precisely." He then stated that although he did not physically measure the distance between the two lines at the eastern end, he calculated the 74 feet "plus or minus a half a foot" by computing (by geometric equation) the angular difference at a distance of half a mile.

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John Briscoe, and Lance Kiely, Senior Boundary Determination Officer for the California State Lands Commission, gave the presentation. The evening was spent enjoying a dinner show in the High Sierra Theatre.

Saturday began with an exhilarating Five Mile Fun Run on a brisk, clear mountain morning. Although the previous night's activities seemed to have taken their toll, most of the entrants showed up on time, and problems with the altitude seem to have gone unnoticed amid the beauty of the snow-covered trees.

Saturdays' technical sessions were concurrent with a State Plane Coordinate Workshop and a Time Management Workshop conducted by Dr. Victor Panico of the Department of Office Administration, California State University at Fresno. The technical sessions included a discussion of the Land Surveyor's Liability by Gerald Igl, Vice President of Pioneer National Trust Insurance Co., a presentation entitled "L.S.I.T.—A Right to Life?" by N.C.E.E. Representative James R. McLaughlin, and a discussion of the advantages of a University Education for Land Surveyors by Anthony Novotny of U.S.G.S. and Donald M. McHarg of Nevada.

The Surveyors Historical Society held drawings for the raffle they'd been conducting, and three lucky registrants walked off with antique surveying articles generously donated by Cecil Hansen. The first prize was a Young & Sons transit, second prize a K & E Pocket Compass, and third prize a 1901 Gurley Handbook. Dennis King then reported on the formation of the Western Conference of Professional Land Surveyors, and closing remarks were presented by Paul Lamoreaux and Lawrence Werner, presidents of C.L.S.A. and N.A.L.S. respectively.

Special thanks to all who gave so generously of their time to speak at the luncheons and technical sessions, to those who donated door prizes, to those who handled the ladies activities, and to the Convention Committee for making this first Regional Conference a memorable one. We are all looking forward to the next one, tentatively scheduled for 1981 at the M.G.M. Grand in Reno, Nevada.

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UTAH	40
VIRGINIA	1
WASHINGTON	56
WISCONSIN	18
WYOMING	21
TOTAL	770

SURVEYORS FORM REGIONAL ORGANIZATION

The following is a report on the activities of a Steering Committee established at the Western States Regional Conference of Land Surveyors held March 28-31, 1979 at the Sahara Tahoe in Lake Tahoe, Nevada. The purpose of the Steering Committee was to investigate interest in the formation of a permanent organization and to formulate goals and objectives thereof. The Steering Committee was comprised of two delegates from each state in attendance at the conference. Those states and their respective delegates are listed at the end of this report.

Due to the full schedule of other activities and prior commitments of the delegates, the Steering Committee was limited to three consecutive Breakfast meetings held March 29, 30, and 31, 1979. James V. Potter of Idaho and Dennis A. King of Idaho were appointed Chairman and Secretary, respectively, of the committee.

The principal topic of the Committee was the relationship of A.C.S.M. and the individual surveyor. It was agreed that the prime objective of the Committee would be the formation

(Continued on Page 28)

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Members of the Surveyors Historical Society met on Saturday, March 31, in the Alpine Room of the Sahara Tahoe Hotel during the Western States Regional Conference of Land Surveyors. A major concern of the society is the adoption of a Constitution and By-Laws, with the eventual goal of becoming a non-profit corporation. A committee to study the inventory of antique surveying equipment in private hands was established.

The society exhibited a collection of instruments, books, and other surveying paraphernalia at the Conference. Cecil Hansen exhibited many of his items along with a special exhibit of hydrographic instruments. Cecil also donated antique surveying items as prizes raffled off at the conference.

The next regular meeting of the Surveyors Historical Society will be during the A.C.S.M. Convention in Monterey, California, to be held October 5 and 6, 1979.

Note: In stressing the importance of continually updating our education and technology, it is possible to lose sight of the fact that as Surveyors we are in a very real sense practicing historians, relying upon and perpetuating the work of others before us. Old maps and documents are not merely historical curiosities, they are of substantial practical importance to the Surveyor. The same holds true for "antique" instruments and the knowledge of the quality of work they could deliver when used with care. The Surveyor's Historical Society invites your active participation. ▲

Roy Minnick, Membership Chairman
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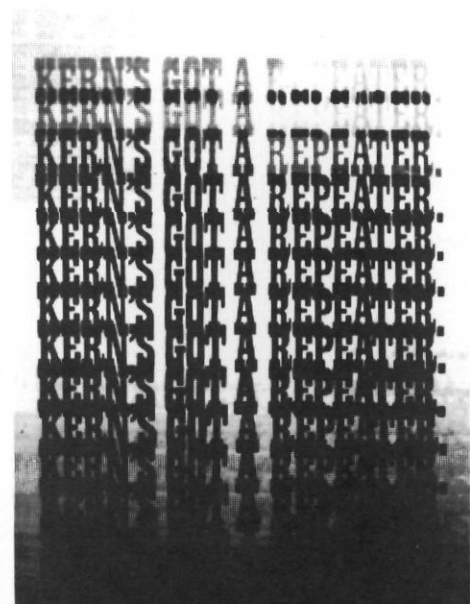
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REPORTS

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of a cohesive regional group which could provide input to A.C.S.M. concerning its proposed reorganization and/or restructuring. General agreement was to form a Western Conference using the By-Laws of the Northeast Federation of Land Surveyors as guidelines.

It is the intent of the Committee for each state to prepare suggested modifications to these By-Laws to fit the needs of the Western Conference. These suggested modifications will be consolidated into a final document to be ratified by the member states.

To further exemplify the purpose of the Western Conference, the Committee adopted the following resolution:

WHEREAS, the temporary delegates of the participating State Land Surveying Societies convened this 30th day of March 1979 for the Western States Regional Conference of Land Surveyors, in the Sahara Tahoe Hotel, subscribe to the following goals and objectives for the promotion of the Land Surveying Profession, to wit:

To promote the profession of Surveying by:

Improving the national, regional and state image of the Surveyor.

Conducting a public relations program to increase public awareness of the surveyor and his services.

To maintain active legislative involvement at the national and state level and provide region coordination and assistance in local legislative matters.

To provide regional communication by soliciting information from each state affiliate and communicating said information to all society members.

To develop and maintain recommendations for educational standards.

To develop and maintain recommendations for professional registration requirements.

To develop and maintain standards of practice for the surveying profession as an aid in the development of state manuals.

To develop a program which will provide professional development activities.

AND, WHEREAS, it appears that the American Congress on Surveying and Mapping may be taking positive steps to better accomplish these Goals and Objectives.

NOW, THEREFORE, BE IT RESOLVED, that this Conference supports the efforts of the American Congress on Surveying and Mapping to reorganize and will work with that Congress to accomplish these goals and objectives.

AND, BE IT FURTHER RESOLVED, that the temporary delegates of the State Land Surveying Societies here convened return to their separate societies to discuss with their membership the notion of forming a federation of the participating Professional Land Surveying Societies of the Western United States of America in order to better achieve these stated goals and objectives, and if this notion be favorable to their members, appointed delegates of these Societies meet again, in not less than four months time, to commence with the formation of such a federation.

To facilitate communication between the various states, the State of California offered to restructure its publication, the "California Surveyor," into a Western Regional Journal. It was agreed that such a regional journal should not replace individual state publications, but should be considered as a supplemental publication. It was mutually agreed that the profits from the Regional Conference in Tahoe be retained and utilized to initiate the publication. California will also be publishing a convention issue which will include this report.

Two sub-committees have been formed to expedite the formation of the Western Conference. One committee will be coordinating efforts toward the establishment and structure of the Western Conference and the other in providing input to the re-organization of A.C.S.M. The committee members from each state are as follows:

<u>STATE</u>	<u>WESTERN CONFERENCE COMMITTEE</u>	<u>A.C.S.M. COMMITTEE</u>
ALASKA	Robert D. Cray, Chairman	Albert J. Hebrank, Chairman
ARIZONA	Harry M. Campbell, Jr.	Claud M. Hoffman
CALIFORNIA	(Not Represented)	(Not Represented)
COLORADO	Mike Welch	Paul Lamoreaux
HAWAII	Bernard F. Kochevar, Sr.	Mark Fischer
IDAHO	Dennis A. King	James V. Potter
MONTANA	Scott L. Valentine	Stanley J. Skousen
NEW MEXICO	(Not Represented)	(Not Represented)
NEVADA	James L. MacFarlane	Maurice E. Lafferty
OREGON	Bob Wade	Tom O. McCullough
UTAH	Thomas W. Harvey	Ed Patience
WASHINGTON	Robert D. Cray	Albert J. Hebrank
WYOMING	Martin A. Pedersen	

The above committees will be meeting June 15 and 16, 1979 in Seattle, Washington to continue their efforts in the establishment of the Western Conference.

The "Western Conference of Professional Land Surveyors" was adopted by the Steering Committee as the official name for the organization. Subsequent information from the committee will be placed under this heading.

Plans are being formulated for the next Regional Convention of W.C.P.L.S. Tentative plans are to hold the convention in Reno, Nevada the week prior to the A.C.S.M. Spring Convention in 1981. The Nevada Association of Land Surveyors have agreed to host the convention.

Respectfully Submitted,
Dennis A. King, L.S.
Acting Secretary

LETTERS

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tarily *this year* whatever funds they deem appropriate to support the LSD Priority Project mentioned above.

Some State Societies have increased their own membership dues by \$5.00 so as to be able to send ACSM a \$5.00 per member contribution. Others have agreed on amounts ranging from \$1.00 per member to \$10.00 per member depending on the size of their membership. Whatever amount you deem reasonable for your specific membership is urgently needed to fund projects *our membership has requested*.

ACSM will be undergoing a complete restructuring of its Constitution during this next year. This will mean that the LSD will be a separate and distinct National Surveyors Organization under the "umbrella" of ACSM. This will mean "autonomy" for Land Surveyors nationally. We can then structure ourselves to provide for membership dues that are needed to pursue our own programs.

It is our hope that all affiliated State Societies will respond directly

and positively to this request. Professional stature must be earned and guarded. It is time Professional Surveyors started to be professional at the national level as are Engineers and Architects.

Sincerely,
James G. Donahue
LSD/ACSM Chairman

Gentlemen:

I wish to express my appreciation for the professional job done by the convention staff at your recent Western States Regional Conference in Stateline, Nevada.

Your programs were excellent and the hospitality was outstanding.

I wish to especially thank your president, Paul Lamoreaux, Jr., and others for going out of their way to accomodate me.

Sincerely,
E. R. Brownell
President Elect, ACSM

EXPLANATION OF PROPERTY LINE SURVEY

Dear Editor:

This originated in the office of Oscar Larson, an old-timer in Eureka who is well known and respected for his land surveying abilities.

The following is a copy of a letter written by a surveyor to explain the many steps which are necessary before a property line survey can be completed. It gives an excellent explanation of why the cost of a small survey is so high when compared with the time the survey crew actually spends on the ground, and for that reason we feel it is worth repeating. It is as follows:

CONFERENCE. The client must at some time, explain what he requires, or what his problem is. This may take considerable time.

RESEARCH. Before any work is attempted, some knowledge of the legal boundaries of the property must be

(Continued on Back Cover)

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 - a. *The Pornography of Water and Water Related Boundaries (Terms and Terminology)*—James N. Dowden, L.S., Boundary Determination Officer, State Lands Commission.
 - b. *Tides, Time and Shoreline Processes*—Dr. Warren C. Thompson, Professor of Physical Oceanography, U.S. Naval Post Graduate School, Monterey.
 - c. *California Law Looks at the Water Boundary*—Peter H. F. Graber, Esq., Deputy Attorney General, Land Law Section, Department of Justice.
 - d. *The Ordinary High Water Mark – How Determined!*—Ned Washburn, Esq., Attorney at Law, Landes, Ripley & Diamond, San Francisco, CA
 - e. *To Insure or Not to Insure—That is the Exception!*—James R. Dorsey, L.S., Executive Vice President, Winter, Durnford, Dorsey and Associates, Land Consultants.
 - f. *More Muddles in the Puddle—The Jurisdictional Aspects and Boundaries of the California Coastal Zone Commission and San Francisco Bay Conservation and Development Commission*—Raymond B. Thinggaard, L.S., Assistant Manager Real Property, Leslie Salt Co.
 - g. *Internal Conflicts—State V. Federal Rules, Sovereign Lands and Rights*—Ed Griffin, L.S., Chief, Branch of Cadastral Surveys, California State Office of U.S. Bureau of Land Management.
 - h. *The Restless Tides and the Marine Boundary Program of the National Ocean Survey*—Carrol I. Thurlow, Deputy Chief, Oceanographic Division, Office of Marine Surveys and Maps, N.O.S.
 - i. *Slope and Undulations of Tidal Datum Planes and Quantification of Accuracy of Various Methods*—Cdr. A. Nicholas Bodnar, R.C.E. (California) Principal Engineer, Requirements and Facilities Section, Tides and Water Levels Branch, Oceanographic Division, Office of Marine Surveys and Maps, N.O.S.
 - j. *Survey Procedures For Determination of Mean High Water*—Jack E. Guth, Capt. N.O.S. (Ret.), President of Coast Survey Limited, Herndon, VA.

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LETTERS

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had. Unless the client furnishes the proper documents, it is necessary for the surveyor to look these things up in the records. This involves office time, in extreme cases several days. Having this data in hand, the surveyor then searches notes of previous surveys to find data as to the location of physical monuments on which these documents are based.

EVIDENCE. The monuments mentioned above must be found in the field in order that the required measurements may be taken from them. At this point, it is usual to find that some of the monuments have been destroyed, or moved, or do not correspond with record measurements.

MEASUREMENTS. The field party measures to check existing monuments and then runs lines and sets corners where it is possible to do so. In most cases, however, it is not possible to complete a project at this stage, so the field party returns their findings to the office.

COMPUTATIONS. Field notes, which consist of measurements of horizontal and vertical angles and slope distances must be reduced to bearings, true distances, and positions before they can be evaluated. This involves considerable mathematical computation in the office, and the results must be plotted on a map or plat.

INVESTIGATION. The data and evidence found is then compared with matters of record, such as deeds, plats, older surveys, etc. In many cases, there are prima facie defects in the records, such as overlaps, gaps, erroneous or contradictory descriptions, missing data, etc. Resolving these existing defects is usually part of the required survey.

SOLUTION. The surveyor then decides what must be done to complete the required survey, and the necessary computations are made to enable the field party to set monuments or run lines or do whatever is required by the client.

SETTING CORNERS AND LINES.

The field party then returns to run

from the previously found points to set the required corners or lines for the client. This often is the first time that the client sees anyone on the job, and he may be surprised to see how quickly the work proceeds.

RECORDS. Upon completion of the survey, a record must be made. Usually, the surveyor is required by law to file certain records in the County Surveyor's office. Often maps and descriptions are required by the client. All of this requires considerable time.

REPORTS. Very frequently the client will need explanations or advice concerning his problem, or an attorney or title company will require information as to the findings of the survey. Often clients request detailed statements of charges for the survey fees, but such detail is not meaningful to most people unless they understand the situation as outlined herein.

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