

Institutional Affiliate of American Congress on Surveying and Mapping.

# The California Surveyor

No. 60

The Voice of the Land Surveyors of California

Spring 1980



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Cover: *Brent A. Robertson,*  
*Land Surveyor*  
*Photo Courtesy R.E. Baldwin*

## 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  
Editor: R.E. Baldwin, L.S.  
National Sales Manager; Fred Rose — John Geier  
Production: Fred Rose — John Geier

### Advertising

Commercial advertising is accepted by *The California Surveyor*. Advertising rates and information can be obtained by contacting Almac Technical Graphics, 3530 West Bayshore Rd., Palo Alto, CA 94303. Phone (415) 856-6688

### 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*.

Unless indicated, all articles in this publication are prepared by the editor

EDITOR: **R. E. Baldwin, L.S.**  
1345 California St.  
Berkeley, CA 94703

### DEADLINE DATES FOR THE CALIFORNIA SURVEYOR

SUMMER ..... MAY 12, 1980  
FALL ..... AUGUST 11, 1980

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

Editor

California Land  
Surveyors Association  
Central Office:

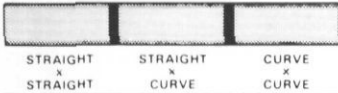
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Santa Rosa, CA 95401  
Telephone: 707-539-3633



# SURVEY 31

## The computer that speaks your language.

**As an example:** Here's how easy it is to compute a street intersection. (Centerline points 1, 2, 108 & 261 have already been computed and stored in memory)



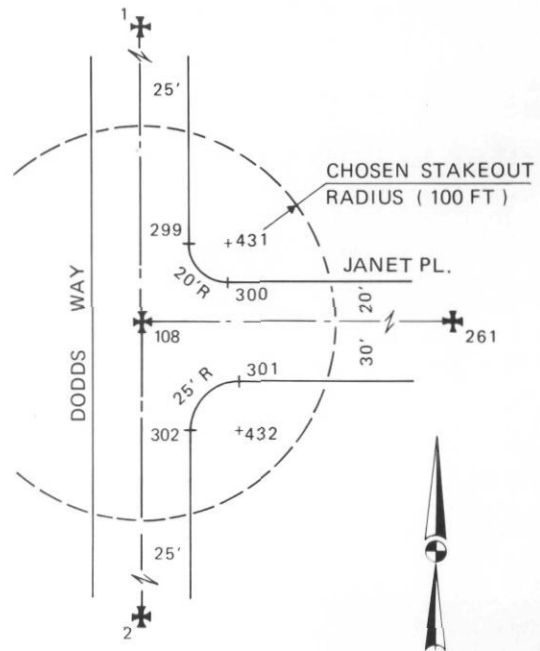
- STREET INTERSECTIONS
1. SELECT program.
  2. ENTER requested data:

(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	9238.0842
(BC/PC) POINT#? 299.	10052.7890
9332.9924	(RADIUS) POINT#? 432.
10027.4417	9237.9931
(RADIUS) POINT#? 431.	10027.7894
9333.0656	BACK OFFSET?
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
300.	NE 65.49410	65.49410	66.02160	132.04320	-	113.57440	-	227.55280	49.24
301.	SE 59.14445	120.45155	120.57505	241.55409	-	59.02095	-	118.04191	58.31
302.	SE 24.39132	155.20468	155.33218	311.06435	-	24.26382	-	48.53165	60.42
431.	NE 48.09243	48.09243	48.21593	96.43585	-	131.38007	-	263.16015	60.21
432.	SE 42.28593	137.31007	137.43357	275.27113	-	42.16243	-	84.32487	74.33
								9238.0843	10052.7890

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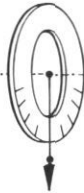
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Feature	HP 3810A	Geodimeter® 120
Range (to one prism)	2,500 ft	4,300 ft
Distance accuracy	0.016 + 10 ppm	0.016 + 5 ppm
Vertical angle accuracy	30"	30" Adjustable to ± 5"
Horizontal angle accuracy	20"	Selectable to 1"*
Telescope power	18X	Selectable to 32X*
Projected area of measuring beam	1	6 times greater
Tracking speed	1	7 times faster
Data output	No	Yes
Weight	26.4 lbs	5.7 lbs plus theodolite* (typically 10-13 lbs)

\*depending on theodolite used  
 Source: Published specifications



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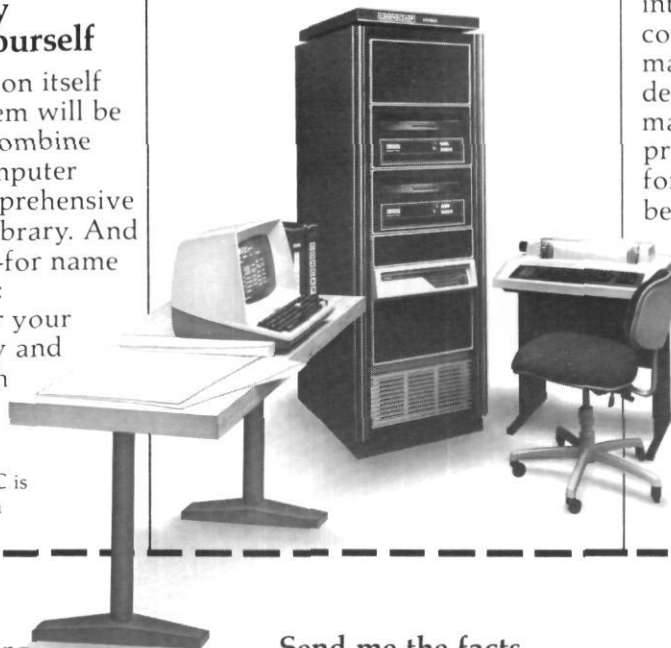
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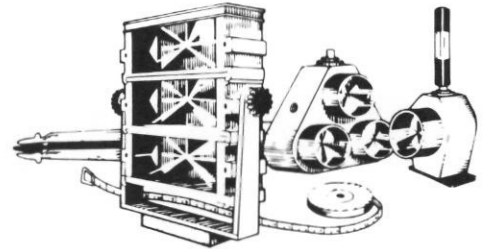
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## Electronic Distance Measuring Equipment:

	1st 10 Days per day	After 10 Days per day (or 30 Day Minimum)	After 90 Days per day
†Hewlett-Packard 3800 A (10,000 ft.)	20 00	12 00	8 00
*†Precision International "Beetle"	25 00	15 00	10 00
†Cubic DM-60 Cubitape Distance Meter (6,000 ft.)	25 00	15 00	10 00
†Hewlett-Packard 3805 Distance Meter (5,280 ft.)	30 00	18 00	12 00
†Hewlett-Packard 3808 Distance Meter (32,800 ft.)	50 00	30 00	20 00
†Hewlett-Packard 3810 Total Station (5,280 ft.)	70 00	42 00	28 00
†Hewlett-Packard 3820 Total Station (16,400 ft.)	150 00	90 00	60 00
*†K & E Autoranger with Azimuth Base or mount for Theodolite	30 00	18 00	12 00
K & E Ranger III	40 00	24 00	16 00
Cubic DM-20 Electrotapes—Two Units	40 00	24 00	16 00

## Positioning Equipment:

**Motorola Mini-Ranger with two Coded Transponders	200 00	105 00	70 00
Each Additional Mini-Ranger Coded Transponder	36 00	18 00	12 00
Cubic DM-40 Autotape with Two Responders	300 00	150 00	100 00
Autotape or Mini-Ranger Printer	15 00	6 00	4 00
Raytheon DE-719 Recording Fathometer	25 00	15 00	10 00

## Optical Surveying Equipment:

•Lietz TM-1A 1" or Wild T2 Theodolite (Direct reading Horizontal and Vertical to 1", Self Indexing Vertical Circle)	27.50	16.50	11.00
•Lietz TM-6 or TM-10C 10" Theodolite (Horizontal and vertical Estimation to 1", Self Indexing Vertical Circle)	20.00	12.00	8.00
•Lietz TM-20C 20" Theodolite (Horizontal and Vertical Estimation to 3", Self Indexing Vertical Circle)	17.50	10.50	7.00
•Lietz T-60D 60" Theodolite (Horizontal and Vertical Estimation to 6", Self Indexing Vertical Circle)	16.50	9.90	6.60
•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 Transitlite with Fan Beam attachment	20 00	12 00	8 00
Spectra-Physics 611 Laser on 20" Transit	15 00	9 00	6 00
•American Paulin Model M-2 Surveying Altimeter — 0 to 10,000 feet. 2 foot graduation	4 00	2 40	1 60
•Kern #173 W. Tripod with 3/8" x 11 Adaptor	2 00	1 20	.80
•Lietz #7512-52 or Equal Wide Frame 3/8" x 11 Tripod	1 00	.60	.40
•Lietz #7311-35 or Wild GDF-6 Tribrach with Optical Plummet	2 00	1 20	.80
•Lietz #7311-38 Tribrach Prism Adaptor	.50	.30	.20
•Retro-Ray Single Prism Assembly (round)	1 00	.60	.40
•Retro-Ray Triple Prism Assembly (round)	2 50	1 50	1 00
•Retro-Ray Tilting Single Prism Assembly (round)	1 50	.90	.60
•Retro-Ray Tilting Single Prism Assembly (lateral)	1 50	.90	.60
•Retro-Ray Tilting Triple Prism Assembly (lateral)	3 50	2 10	1 40

**NOTE: For 30-day minimum contract rate, disregard "1st 10 days" column above.**

\*New and used equipment available for purchase. Option to purchase information in rental agreement. Additional equipment available for rent or purchase—information on request. Authorized Lietz, Lufkin, Geotec, David White, Retro-Ray distributors.

†All short-range E.D.M. units are supplied with power supply, altimeter, thermometer and one single prism assembly.

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Lessee pays all round trip shipping charges on rented equipment. Rental charges commence on the day the equipment leaves Lewis & Lewis and terminates on the day the equipment is returned or shipped for return to same Lewis & Lewis office from Lessee's location. Rates for longer periods available on request. Rates subject to change without notice.



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# Know your Sustaining Members

## Geodimeter® AGA Geodimeter, Inc.

NOVATO, California — AGA AB, Swedish developer of the electro-optical distance measuring device, has upgraded its U.S. Sales and service arm from a division to a corporate subsidiary.

Headquarters of the new entity, AGA Geodimeter, Inc., is 385F Bel Marin Keys Blvd., Novato, CA 94947; (telephone 415-883-2367 or toll-free 800-227-2252; Telex 330 495).

Hans Edvardsson, president of the new firm, noted that a completely new generation of Geodimeter EDMs is now being introduced to the world-wide surveying and civil engineering market. AGA Geodimeter has sales offices, representatives and dealers throughout the U.S. The Novato service department and another at Secaucus, NJ, are staffed by highly skilled technicians, and are equipped to provide complete maintenance service on all Geodimeter instruments.

The parent firm, a major high-technology conglomerate with international operations in industrial and medical gases, infra-red temperature measuring systems, processing and transport of frozen and refrigerated foods as well as optical and electronic equipment, pioneered the EDM concept more than 30 years ago.

"FIFTY YEARS OF SERVICE"



SALES - RENTALS - REPAIRS

**THEODOLITE REPAIRS:** The Brunson Instrument Company has recently developed an instrument repair training program. There was the growing concern that young men were not being trained in theodolite and

precise level repairs. To meet this demand we brought to America one of Europe's finest repairmen, Geoffrey Allies. Mr. Allies comes to us from Worcester, England where he was employed and trained for the past ten years by Europe's finest theodolite instructors, earning the title Senior Instrument Technician. He is satisfied with nothing less than perfection in theodolite and precise level repairs.

The Brunson Instrument Company has five locations serving the United States. Most of you are familiar with our Los Angeles Branch with Jim Hayden as the manager. August 1, 1978 we opened a new branch in San Jose with C.J. Wynn as the manager. At both of these locations we offer a complete line of surveying equipment for sale or rental.

Brunson Instrument Company goes back to 1927 when Mr. A.N. Brunson gained his reputation by replacing old spindles with completely sealed ball bearings. It had been tried before, here and in Europe, but no one had made it work with acceptable accuracy. His initial patent covered that first successful application of precision ball bearings to surveying instrument design.

Mr. Brunson's optical instrumentation for the historic Apollo 11 and 12 moon projects was designated an "Engineering Wonder in Missouri—1969" by the state Society of Professional Engineers. The many awards and honors accorded the Brunson company over the years include among the more recent ones the Outstanding Civilian Service Award and medal given A.N. Brunson for his personal effort in training Armed Services personnel in the field of optical tooling and the formal acknowledgment of Hughes Aircraft, Aerospace Group, for the part played by the Brunson Company and its employees in the success of the Surveyor Spacecraft mission.



Cartwright Aerial Surveys, Inc., has for thirty-three years provided government agencies and private industry world-wide with professional services in aerial photography, photogrammetry and remote sensing. The firm occupies a modern 16,000 square feet building and hangar facility, and maintains a staff of certified photogrammetrists, professional engineers, photo interpreters, cartographers and computer programmers, in addition to the flight and laboratory personnel.

Photogrammetric services offered include full analytical aerotriangulation, volumetric calculations, topographic map compilation, computer-plotted base sheets, cross sectioning, and computer processed and produced maps, including databanks with demographic ties. Datamap Systems, Inc., a computergraphics service bureau corporation, was acquired and merged with the survey corporation in 1979 to further enhance its capabilities in computer cartography and analytical aerotriangulation, and to complement the entire interactive graphics department.

These services and products are accomplished with a WILD PUG-III, a Foster nonocomparator, a Foster 42"x72" flatbed plotter, Data General and Digital Equipment Company computers, three Foster digitizing input stations complete with macro keyboards, Tektronics and Digital Equipment Company CRTs, Diablo disc drives and Wangco nine-track tape transports. The corporation's three Santoni IIC stereoplotters are equipped for digital terrain models and ortho photo operations and are tied to Altek and AutoTrol digitizing stations. Data is recorded offline on a Texas Instruments digital tape console controller and reduction is accomplished in the computer graphics department.

The aerial survey corporation's flight department uses their Beechcraft twin engine Turbo Baron and a Turbo Cessna 206 as airborne platforms for low and medium altitude work. A Lear Jet is on standby lease for high altitude work. Precision photography is performed by experienced flight crews with specialized cameras ranging in focal length from 70mm (2.75 inches) to 324mm



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(36 inches) and includes Zeiss RMK-A 15/23 and RMK-A 21/25 precision mapping cameras. In addition a Bendix thermal infrared scanner (8 to 14 micron) complete with a Sangamo 6-channel airborne recorder and Tektronics scopes is used for airborne heat sensing. To round out the remote sensing data acquisition equipment, the company uses their I<sup>2</sup>S multispectral camera and four Barnes radiometers and four Itek correlation consoles.

Film is processed and photographic reproductions produced in their highly automated black-and-white and color laboratory. Major equipment includes a Pako color processor, two Kodak versamat processors, continuous contact and reduction black-and-white LogEtronic contact printers, a continuous color LogEtronic printer, a Zeiss SEG-V computer controlled rectifying enlarger, Filmaster automatic film titlers, and a DuPont Cronaflex ERF automatic film and paper processor. An Eastman Kodak Royal print processor is used for small runs.

Associated with the aerial survey company, the Cartwright Research Corporation, under the same management team, performs basic research in photogrammetry and aerial photography instrumentation, and currently holds a patent on an aerial film numbering machine, the Filmaster Titler

Cartwright Aerial Surveys, Inc., is located at the Executive Airport, Sacramento, California, 95822. Telephone (916) 421-3465.



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CALIFORNIA LAND TITLE COMPANY

Although relatively young in terms of years, if measured against the "giants" of the title insurance industry, California Land Title Company, since its inception in 1961, has become one of the fastest growing companies in the industry in California. Dynamic management and innovative thinking, together with the finest title men and women available anywhere, have brought "Cal-Land" to the top percentage bracket in virtually every county in which the company operates.

California Land Title Company maintains its Los Angeles County operations and corporate headquarters in Universal City and is currently serving the counties of Orange, Riverside, San Bernardino, Ventura and Solano. A wholly owned subsidiary, California World Title Company, serves San Diego County. We continue to grow and have opened our new office in San Jose. Offices in other Northern California localities are planned within the next three years.

California Land Title Company is incorporated under the laws of the State of California and is a member of the California Land Title Association and as such issues that association's form policies of title insurance. Our underwriter, Lawyers Title Insurance Co. of Richmond, VA, one of the country's oldest and most financially responsible insurers, is a member of both the California Land Title Association (CLTA) and the American Land Title Association (ALTA); thus, Cal-Land is able to provide the form policies of both associations.

Our company can be of real value to the surveyor through its Preliminary Title Report, the Preliminary Subdivision Report, the Preliminary Condominium Report, all of which are accompanied by copies of all supporting documentation, copies of boundary deeds and boundary surveys (if of record) and of course, the Subdivision and Condominium Plan Guarantees; moreover, our title and engineering people can be of substantive assistance to the surveyor in the areas of boundary determination, water and water related boundaries, Federal and State Patents, title company requirements for the ALTA Survey and in many other problem areas.

Should any CLSA member have specific requests or need more definitive information, he is invited

to telephone Mr. Loren Black, Chief Title Engineer, Los Angeles County office, (800) 232-2718 or Jack Wilcox, Engineering and Subdivision Supervisor, Orange County office (714) 835-5575.

California Land Title Company has propounded and firmly believes in the philosophy that title people and land surveyors can be of tremendous benefit to each other by entering into and maintaining cogent dialogue; by learning from each other and sharing the technical and intellectual aspects of our respective disciplines which converge on many levels.

California Land Title Company is proud to be a sustaining member of the California Land Surveyors' Association and we salute the land surveyor of California.

Here's to a happy and profitable Conference '80.

# disco-tech

T.M.

Now there's an efficient, low-cost computer system complete with a variety of on-target, highly-professional programs for land surveyors. It's the DISCO-TECH Survey-80 package, developed by Morton Technologies, Inc., a Santa Rosa, California engineering firm, for the TRS-80 microcomputer.

Survey-80 consists of five land surveying application programs, Field Note Data Reduction (FiNDeR-1), Coordinate Geometry (CoGo-1), Stadia Reduction, Vertical Curve Design, and Horizontal Curve Staking. Cost of all five programs is only \$815. Programs can also be purchased individually.

An Earthwork Computation program is still in development.

Computer equipment, hardware, costs about \$4,000. Survey-80 is programmed for Radio Shack's TRS-80, a general-purpose microcomputer, which offers low cost, remarkable ease and versatility of operation, and readily-available peripheral equipment, replacements, and maintenance throughout the U.S. and most of the world.

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whiz to run DISCO-TECH programs, which are developed for professionals who have neither time nor interest in becoming computer experts. The computer is simply a tool. Instruction manuals are written in easy-to-follow conversational English. Information on the video screen is presented logically and legibly. Print-outs are straightforward and uncluttered.

DISCO-TECH's *Survey-80* programs were developed by a team of California surveyors and highly-skilled computer programmers who insisted on pinpoint accuracy, maximum flexibility, and simplicity of operation.

DISCO-TECH's unique double-precision routines assure 15 digits of accuracy throughout all of the programs.

*Survey-80* provides immediate access and storage of up to 4,549 points per job.

For more information on DISCO-TECH's *Survey-80* package, as well as its engineering, architecture, business, and utility programs developed for the TRS-80, write DISCO-TECH, P.O. Box 11129, Santa Rosa, CA 95406 or call 707/523-1600.

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SURVEY  
RENTALS, INC.**  
Land, Aerial, & Hydrographic Systems

Electronic Survey Rentals was created to fill the rapidly growing needs of the precision surveying field where versatile, advanced equipment and world wide service are required. Our carefully maintained stock of aerial, land and hydrographic systems are available to you on short or long term rental plans enabling you to avoid costly shelf time and off season cost liability. Expenses occur only when we can make you money.

Another advantage of our rental concept is that it enables you to compete in larger projects where accuracy and time are the money-makers. In the event that you have a need for one of our systems and require operator/technicians, E.S.R.'s staff is on call to operate or train your personnel on site, anywhere in the world.

Where rental for some is the ideal solution, for others our liberal lease-

purchase plan is the answer, being especially useful for companies with a sustained need for any of our instruments. We'd like a chance to help your business grow, and hope our services will establish us as a dependable member of your crew.

## ENGINEERING SERVICES COMPANY

Engineering Service Company of Renton, Washington manufactures and distributes computers and peripheral equipment specifically designed for the Surveying and Engineering professions.

According to Bill Watson of Engineering Services Company, the SURVEY 31 computer is programmed to provide fast and complete solutions to surveying and related civil engineering problems. Many of the more commonly used surveying solutions such as traversing, inverses, curves and area computations, are "built-in" to SURVEY 31 with a "ROM" (Read-Only Memory). Other programs such as intersections, vertical curves, section breakdown, etc., can be added to the existing ones by loading programs stored on magnetic tape cartridges or from a disc memory.

In addition to the unmatched power of its memory, the other important feature of SURVEY 31 is its utter simplicity of operation. There are 45 surveying function keys appropriately labeled so that an operator may easily select the solution to a specific problem. These, combined with prompting messages, make SURVEY 31 all but fool proof to use. As opposed to other computers, requirements of using codes to select different programs has been kept to an absolute minimum.

450 coordinate points (optionally 300 at less cost) can be stored directly into the memory of SURVEY 31. Any point can be instantaneously recalled by number. Data tape cartridges allow an unlimited number of points to be stored for later recall and use.

SURVEY 31 overcomes the two major causes of obsolescence in computers. These are lack of memory expansion and the ability to interface with peripheral equipment. A disc

memory is available that allows memory expansion to over 500,000 program steps or nearly 35,000 coordinate points all of which are available in less than one second.

Almost any peripheral desired can be interfaced to SURVEY 31. These include thermal printers, typewriters, typewriter/plotters, flat bed plotters, drum plotters, digitizers, graphic plotting displays plus other devices.

The SURVEY 31 is produced and marketed directly by Engineering Services Co. (206) 226-7950.

geodetic and photogrammetric applications. Hans Jr., a graduate mechanical engineer and experienced mechanic and machinist, handles outside instrument sales and assists in instrument service.

We insist upon offering prompt first class service of most makes of instrument and honest straightforward answers to your technical questions. We are pleased offer professional assistance in the selection of new instrumentation, consultation on applications, field demonstrations, and training of personnel. Our inventory includes quality theodolites, levels and EDM's from a number of different manufacturers.

Civil Engineering Division is the new Total Survey System - a system designed to let you do more work in less time and with much less chance for error. In brief, the system allows the surveyor to make all of the required field measurements, and then transfer the data to a data collector. Back in the office, the field data is transferred electronically to one of HP's Surveying Computation Systems and computed in a fraction of the time normally spent on the same task. Time savings are substantial, and the potential for error is all but eliminated. In the expanding programmable surveying calculator line, the latest contributions are the new HP 3842A and HP 3845A Surveying Computation Systems. Both the HP 3842A and HP 3845A Surveying Computation Systems integrate a powerful computing device, a graphics CRT, an alphanumeric (typewriter) keyboard, thermal printer and tape cartridge, and a large user memory into a system designed to quickly and conveniently solve surveying computation problems.

Complete information on Hewlett-Packard surveying products is available from local HP sales and service offices in Sacramento, Santa Clara, Fullerton, North Hollywood, Los Angeles, San Diego, and Anaheim, or from Hewlett-Packard, Civil Engineering Division, P.O. Box 301-C, Loveland, Colorado 80537 (303) 667-5000.



Haselbach Surveying Instruments was opened for business in January 1979 in Burlingame, California by Hans K. Haselbach and his son Hans Jr., with the intent of offering Western surveyors a qualified service facility for their precision instruments in conjunction with new instrument sales. We felt that often, in other service departments, not enough attention was given to the optical and mechanical components of the surveying equipment, and consequently the instrument could not perform to its full design capability.

Hans K. Haselbach has been involved with precision instruments for over 40 years. After completion of his precision mechanical apprenticeship at the Wild school in Heerbrugg, Switzerland, he worked for several years in the assembly and adjustment departments. After WW II he established for Wild a service department in another European country. Upon returning to the Heerbrugg plant in 1948, management requested that he establish and manage a service department for their products in the United States. He maintained the position as U.S. service manager for 30 years in charge of all Wild geodetic, photogrammetric, and microscopy equipment. In addition, he organized and taught the service technician training schools for most of Wild's U.S. dealers.

At Haselbach Surveying Instruments, Hans Sr. now supervises the service and repair of the instruments as well as offering technical advice on



Hewlett-Packard - "creators of working tools for people who measure and compute" - is one of the world's leading designers and manufacturers of electronic measuring and test instrument systems; electronic calculators; computers and computer systems; medical instruments and systems; instruments and systems for chemical analysis; and high technology, solid-state components. Founded in 1939, with headquarters in Palo Alto, California, Hewlett-Packard is an international organization with over 52,000 employees. Hewlett-Packard produces more than 4,000 products at 31 domestic divisions located in California, Colorado, Oregon, Idaho, Massachusetts, New Jersey, and Pennsylvania, and at seven overseas locations. Hewlett-Packard products are marketed and sold in the United States and 64 countries abroad, primarily through the company's own network of sales and service offices.

During the past decade, a share of Hewlett-Packard resources has been devoted to the design and manufacture of Civil Engineering products such as electronic distance measuring systems, surveying computation systems, and powerful pocket-size calculators for surveyors and civil engineers.

The latest contribution from HP's



9936 EAST RUSH STREET  
SOUTH EL MONTE, CALIFORNIA

INDUSTRIAL PIPE & STEEL CO. has been located in South El Monte (approximately 15 miles east of Los Angeles) for the past 20 years. INDUSTRIAL PIPE & STEEL CO. has serviced industry and the "Do-It-Yourselfers" with steel, metals, and industrial hardware.

Over the past 20 years INDUSTRIAL PIPE & STEEL CO. has grown from 2 employees to 30 employees.

The President is Joe Schorr; Vice President-General Manager in charge of steel and metals is Tom Plumley. The Vice President-



General Manager in charge of industrial hardwares is Allen Horowitz.

**INDUSTRIAL PIPE & STEEL** supplies surveyors with large assortments of the finest steel surveyor-stakes.

Their business has enjoyed tremendous growth and they are looking forward to equal or greater growth in the years to come.



**KEUFFEL & ESSER CO.**

Keuffel & Esser Company manufactures and markets a complete line of quality surveying equipment, including field equipment, transits, theodolites, alidades, short and long-range EDM's and map-making materials.

K&E's complete line of EDM equipment includes: **AUTORANGER®** Instrument (range: 1 mi.), **AUTORANGER-II** (2 mi.), **AUTORANGER-S** (2 mi.), **UNIRANGER** (6 mi.), **RANGER® IV** (8 mi.), **RANGER V** (15 mi.), and **RANGEMASTER® III** (40 mi.).

The new **VECTRON** Electronic Surveying System from K&E is a modular surveying system that brings electronic technology to standard surveying operations. The **VECTRON** System makes both angle and distance measurements electronically, calculates surveying coordinates in the field, and stores all data without manual transcription. The 800 Series Office Computer and 11/75 Flatbed Drafting System complete the K&E line of electronic surveying equipment.

K&E also manufactures **STABILENE®** Film, a stable-base polyester film designed for precision cartographic applications. **STABILENE** Film is available in a variety of surfaces, both sensitized and unsensitized, for scribing, drafting and masking.

For additional information, contact Keuffel & Esser Company, 1327 South Olive Street, Los Angeles, CA 90015 (213-747-7601); or Keuffel & Esser Company, 223 Lawrence Avenue, South San Francisco, CA 94080 (415) 873-6850).

**MARK of EXCELLENCE**



**SINCE 1819**

Kern & Co. Ltd., Aarau, Switzerland, has manufactured surveying instruments of highest precision since 1819. This tradition finds its continuation in a complete line of modern equipment for photogrammetry and surveying.

The systems concept pioneered by Kern with the introduction of the **PG2-AT** in 1974 for photogrammetry equipment finds its reflection in the modularity of Kern theodolites and electronic distance measuring instruments.

The **DM501** electronic distance meter has a range of more than one mile and is easily interchangeable with the Kern theodolites models **K1-S**, **K1-M** and **DKM2-A**.

The model **K1-M** is new this year; it is a micrometer theodolite with a digital readout to 6 seconds.

The Kern distance meter is also used as the tachymeter-component of the new electronic theodolite **E1**.

The theodolites **K1-S** and **K1-M** are now available with standard tribrachs in the United States and, therefore, interchangeable with any tribrach system.

The **ME3000** Mekometer has established itself as the most precise distance meter. It has an accuracy of  $\pm 0.1\text{mm}$  and a range of 3,000 meters. The *Mekometer* is intended for distance measurements of highest precision.

The **Distometer ISETH** was introduced in 1977 to expand the Kern line of precision measuring tools for deformation and displacement measurements.

Kern levels also enjoy a worldwide reputation. A complete line is available for construction, engineering, and precision work.

The **PG2** and **PG3** Semi-Automatic Stereoplotting Systems are greatly enhanced with three newly developed system modules. The **SDU**, **Closed-Loop X Y Z** Servo Positioning Drive Unit provides for semi-automatic, computer controlled cross-sectioning, profiling and collection of digital terrain models. The **DC2-B** Digitizer-Graphics Computer features 4-axes display, greatly

increased automation of on-line stereocompilation, and intelligent structuring of the digital data bank by overlays. A new, low-cost digitizer, the **ER34**, is also available. It is a 4-axes digitizer with full preset scaling and rotation which combines all the common features of digitizers with the capability of displaying ground coordinates.

With the recently introduced **Zoom Point-Transfer Instrument PMG2** and the unique **CPM1**, which combines point transfer with a measuring capability on the left stage, and the well-known **Monocomparator MK2**, Kern now offers a complete line of instruments for fully analytical aerotriangulation. All instruments for aerotriangulation are manufactured in the new Kern Plant in Brewster, New York.

## **LEWIS & LEWIS**

**surveying equipment**

Lewis & Lewis Company was originally started by Mr. R.B. Lewis as a locally oriented civil engineer-land surveyor company in Ventura, California. During 1953, a partnership was formed by Mr. R.B. Lewis and his son, Mr. R.T. Lewis. In 1953, Mr. Robert T. Lewis took over active management of the firm. During the next few years, "Bob" Lewis became one of the first to actively pursue the burgeoning off-shore and navigational work. Using the most modern techniques, the company became world-wide in scope and operation sending men and equipment wherever the need arose.

In the natural course of events, another facet of the business was born. Because much of the precision equipment used by the firm was too costly for many individuals and companies to own, a rental division was started and has grown to include most types of survey equipment.

In conjunction with the Rental Division, the firm of Lewis & Lewis has recently begun sales of selected quality surveying equipment. One of the first items distributed on a national scale was the **Retro-Ray** line of retro-reflectors—originally used as tested in the operational side of the



business. A rental/purchase plan for distance measuring equipment and related survey equipment has also been created.

Future plans include a broadening of the marketing base of the company. As more equipment is tested and added to the line, Lewis & Lewis will continue to offer the options of lease, rental, purchase or a combination of these plus full service capability anywhere there is a need.

The company is headquartered at 1600 Callens Road, Ventura, CA 93001 (telephone 805/644-7405 or toll-free 800/235-3377 outside California).



The LIETZ Company has been a leading supplier of precision instruments to surveyors, engineers and contractors since 1882.

It all began with Adolph Lietz, who was born in Lubeck, Germany, on April 25, 1860. A mechanical genius, Lietz was manufacturing transits and levels by the time he was 22. As a young man he designed and built a unique dividing engine, which is still operational today after more than a century.

Lietz moved to the United States and his surveying instruments, manufactured in San Francisco, played a significant role in projects around the world, including our own Golden Gate Bridge. Lietz transits were used on many of the primary triangulation projects that contributed to the "building of the West" and the Lietz name became synonymous with quality whenever surveyors, engineers or contractors spoke of land measuring equipment.

In 1965 The Lietz Company expanded its marketing of surveying instruments manufactured by Sokkisha, Ltd., Japan, the largest exclusive manufacturer of surveying instruments in the world. During 1970 Sokkisha granted Lietz exclusive U.S. distribution of its product line and since has served as the manufacturer of Lietz specified units. This expansion necessitated the opening of the first Lietz sales office east of the Rockies in 1973 and has contributed materially to Lietz ever-increasing

national sales.

On January 15, 1978, Lietz moved their national headquarters to Kansas City, and established there a major distribution center and service facility for the eastern 38 states. The western 12 states continue to be served from a branch distribution center and service facility in the Los Angeles area. Regional sales offices are now located in the Nashville, Pittsburgh, Chicago, Dallas/Fort Worth, Los Angeles and Sacramento metro areas.

Today, Lietz's products are marketed through a nationwide network of 150 Authorized Distributors and 600 dealers. The Lietz product catalog is recognized as the finest and most complete source of instruments, equipment and supplies for the surveying industry. It also serves as their primary retail customer advertising media.

Lietz can best be described as a growing, dynamic marketing, physical distribution and service organization. Surveying instruments, manufactured by Sokkisha, are the nucleus of the Lietz line. They include everything from builder's/contractor's instruments to sophisticated automatic levels, theodolites and electronic distance measuring units. Lietz complete line of quality products at affordable prices is constantly gaining recognition for its value, performance, ease of maintenance and service ability. Lietz products are becoming the new standard for the surveying industry and its professionally trained employees constantly strive to live up to its motto: "It's easy to do business with Lietz!".

## SAGE MICRO SYSTEMS



SUBDIVISION COMPUTATION & PLOTTING  
MICRO COMPUTER SYSTEMS

Sage Micro Systems was begun in 1977 to provide data processing services to land development engineers and surveyors, and to develop an inexpensive engineering computer based on an 8080 S-100 bus micro-computer system. Since then, Sage Microsystems has calculated and plotted over 4000 lots, while computer development has progressed in the background.

Subdivision computations are currently run on a large commercial system with a CalComp flat bed plotter to provide high quality, precise drawings. Automated drafting capabilities include base maps, improvement plans, grading plans, and fully annotated record maps. Plots can be drawn on your own media, can be superimposed onto existing drawings, and can even be drawn on either the top or bottom surface (thus effecting a separation between two aspects of the job). Printed output typically includes boundary, block, lot, and center line closures, and field staking data.

For further information on subdivision services, the purchase of a microcomputer system, or for independent computer advice, contact Michael Sage at 5333 James Ave., Oakland, Ca. 94618 or phone (415) 658-1926.



**SECO**  
SURVEYING EQUIPMENT, INC.



**OGDEN**  
SURVEYING EQUIPMENT CO.

Seco Surveying Equipment, Inc. and Ogden's Surveying Equipment Co. have been providing the surveyor and engineer of Oregon, California and Nevada goods and services for over 35 years.

Ivan Ogden, the founder of Ogden's, started business in 1945. Located in Sacramento, Ogden's provides a complete line of equipment and supplies featuring the largest retail inventory in Northern California. Viola Ogden is the working Chairwoman of the Board. Bruce Ogden, an attorney-at-law, is the Store Manager. The repair facility is operated by "Buck" Buckhalter, Guy Vidales and Keith Tam. Ogden's courteous sales staff provides everything from plumb bob tips to electronic distance meters. Rental equipment of all types is also available.

Seco Surveying Equipment, Inc. is based in Redding and Medford with a sales force covering from Eugene, Oregon to Reno, Nevada. The Redding store features its new repair facility with some of the most highly qualified repair technicians on the West Coast. Jerry Culwell, Duard

Wilson and Joe Svedeen operate in the Redding store, with Jeff Whittaker and Ed Garfield in Medford specializing in Wild, Kern, Zeiss and Lietz.

Founded and located in Redding in 1965, Seco stocks a complete line of surveying and architectural supplies and provides blueprint service in both Medford and Redding. An authorized distributor for GAF Diazo products, Seco sells and services blueprint machines and prides itself on having the largest inventory of retail blueprint papers between Sacramento and Portland. Seco also specializes in theodolites, electronic distance meters and accessories, featuring Topcon, Auto-Ranger, Beetle, Wild, Zeiss, Pentax and Lietz. The Redding store is managed by Corporate President Paul Ogden, with 25 years experience in the industry, and Mike Dahl, Corporate Vice-President.

Seco Manufacturing Co., Inc. was developed in 1977 and distributes surveying accessories nationwide. With two locations in Redding, including an anodizing plant, Seco manufactures prism poles, prism housings, distance meter yokes and mounts, rods, hand levels and targets.

The staff and management of Ogden's and Seco stand ready to provide service and quality merchandise to the membership of the California Land Surveyors Association.



## SURVEYORS SERVICE CO.

Beginning their second half-century of service to Western land surveyors and civil engineers, CLSA's sustaining member, Surveyors Service company of Costa Mesa, takes special pride in their long record of conscientious and knowledgeable service to the land surveying profession.

Specializing in the field needs of surveyors and engineers, and alert in promoting products aimed at increasing the efficiency and skill of their customers, they take particular pride in the high reputation they have established for competent and reliable service and repair of the equipment they handle.

As Western distributors for the universally respected line of fine,

modern geodetic instruments produced by Wild-Heerbrugg, SERVCO is especially proud of the part they have played in popularizing the use of better equipment to provide better field results.

For your requirements for either plumb bobs or station targets, theodolites or hand levels, chain tapes or EDM instrumentation, users of surveying equipment will find SERVCO's staff courteous, capable, and anxious to be of service.



Twelve years of technical experience derived from working for a top Siss optical instrument manufacturer preceded the opening of Swiss Precision Instruments in May, 1978. Peter Muller, the sole proprietor and founder, has continued since that auspicious occasion to insist on the highest quality repairs as well as offering a full line of equipment including Wild, Lietz, Topcon, and Kern. The unique nature of Swiss Precision Instruments owes itself to the pride and knowledge obtained from the years of familiarity with optical instruments.

The repair of today's highly sophisticated equipment is accomplished through the use of high quality repair facilities and the technical knowledge necessary to diagnose and solve complex optical and mechanical problems. In addition to Swiss made factory tools, Peter has equipped his shop with such repair machinery as lapping plates and precision lathe; using only manufacturer specified lubricants, every instrument is repaired to conform to exact manufacturer specifications. "Precision repairs" is no empty slogan. A baseline has been established in order to check and calibrate EDM equipment, and each new and repaired distance meter is tested and calibrated before it is released. The pride and precision demanded by each member of the repair team has earned Peter the nickname of the "King-Pin" of technical services.

No shop is complete unless it offers

a competent and knowledgeable sales staff. Recently, Peter was pleased to announce the arrival of Michael Dudley to head the sales team. A recent graduate of the University of Albuquerque, Michael has a long acquaintance with optical instruments. He is looking forward to meeting the many demanding surveyors in the Western section of the country, and meeting their demands with the equipment right for their needs.

Every member of the Swiss Precision Instruments team is ready and willing to discuss your particular needs. Give them a call at (415) 883-7866, or come by and inspect their facilities at 154 Hamilton Drive, Novato, CA. 94947.



## TRIOPTICS



April 1 marks the third anniversary of service to the professional surveyor. Western Surveying carries complete lines of geodetic instruments, EDM equipment, and field supplies. They have a modern repair facility with factory trained specialists.

Formerly the Lietz Burlingame regional office, they are now an authorized distributor for all Lietz products.

## ZEISS

TECHNICAL ASSISTANCE  
AND INSTRUMENT REPAIR

When the first Recording Electronic Tacheometer, the CARL ZEISS REG ELTA 14, was presented to the public at the 1968 Meeting of German Surveyors at Stuttgart, none could foresee the profound effect this

instrument would have on measurement and data-reduction techniques.

Within a few years, optical tacheometry, which itself had taken about 20 years to replace the conventional techniques, was ousted almost completely from such fields as detail surveys and traversing.

Two new instruments from CARL ZEISS, the ELTA-4 and the ELTA-2 are presently being marketed.

In both instruments, electronic angle measurement and electro-optical distance measurement are controlled by microprocessors. Further computer functions are provided for the following operation modes: Measurement in 400 grads or 360 degrees, feet, meters or chains; right or left reading horizontal circle; automatic index of horizontal circle; reduction of slope distance to horizontal distance and difference in elevation with allowance for earth's curvature; refraction and meteorological data; tracking of angles and distances with or without reduction; rapid measurements within one second; normal measurement in five seconds with unambiguous readout to 4999 meters.

The Self-Reducing- Electronic Engineer's Tacheometer ELTA-4, is a digital Theodolite with incremental circle reading and integral electro-optical rangefinder. A circle reading accuracy of  $\pm 1$  milligrad ( $3''$ ), range of 3 Km (9 prisms) and a ranging accuracy of  $\pm 5-10$  millimeters, underline the versatility of this ex-

tremely light and compact instrument from ZEISS.

The Self-Reducing Second-Reading Electronic Tacheometer ELTA-2, is the first ZEISS Theodolite built of steel. Together with the diametrical scanning of absolutely coded circles, results in an angular resolution of 0.2 milligrads ( $0.65''$ ) in elevation and azimuth are possible. The accurate automatic, vertical indexing compensator, high telescope quality and a range of 4 Km with 9 prisms, make the ZEISS ELTA-2 a truly universal instrument.

The ELTA-2 can easily be expanded by the user into a recording computer tacheometer by adding an available RECORDING PACKAGE.

YOUR  
PROFESSION  
NEEDS YOUR  
SUPPORT  
JOIN  
C.L.S.A.  
NOW

## Would you go into the field ill-equipped?

Not today you wouldn't! The competition would outdistance you. But there's more than your equipment to worry about. What about you? Are you prepared to exercise the technical and discretionary judgements required by your profession? Maybe you are, but a library of background and reference material wouldn't hurt you. And we know where to get it.

### The American Congress on Surveying and Mapping (ACSM) . . .

- Publishes a quarterly journal filled with articles of importance to the land surveyor and cartographer.
- Publishes a quarterly bulletin aimed specifically at the land surveyor.
- Has a "bookstore" of published materials on various aspects of land surveying and cartography available to its members.

There are many benefits in belonging to ACSM, but just those that make you a better-informed surveyor are well worth the cost of membership. Write or call today for a membership application.

American Congress on Surveying and Mapping  
210 Little Falls Street  
Falls Church, Virginia 22046  
Telephone: (703) 241-2446



## New Members

### CORPORATE

Manuel Mendoza, LS Garden Grove  
John Young, LS El Cajon  
Robert Hogue, LS Tehachapi  
Larry Hubbard, LS Bakersfield  
Larry Cotton, LS Running Springs  
Werner Brutsch, LS Garberville  
Benjamin Weaver, LS Boulder Creek  
Louis Vonderscheer, LS Redding  
James R. Maunder, LS Eureka  
Floyd E. Brooks, LS Perris  
Gary E. Goetz, LS Salinas  
Michael L. Stevens, LS El Cajon  
Charles N. Willess, LS Vista  
Gary M. Szytel, LS Escondido  
William L. Balmain, LS Grass Valley  
Monte L. Post, LS Palmdale  
Edward Hall, LS Marysville

### ASSOCIATE

John Margaroni, Burlingame  
Russell Robinson, Danville  
Leonard Stiles, Santa Ana  
Alec Pacini, Ukiah  
David Ragland, Chico  
John Koch, New York  
William Harman, Santa Clara  
Ryan McLean, Arcata  
Carl W. Wishman, Citrus Heights  
Robert J. Costa, Auburn  
Doyle W. Stine, Bakersfield  
Henry Skidmore, Visalia  
Jon Breyfogle, Penngrove

### AFFILIATE

Mike Fleming, Chico  
Kenneth Lombardi, Santa Rosa

Richard Anderson, Concord  
Keith Raymer, Newbury Park  
Jack Wyckoff, Eureka  
Larry E. Johnson, Fresno

### STUDENT

Paul Weller, Arcata  
Gordon Schell, Lafayette  
Jerald P. Miller, Fresno  
John W. Thayer, Selma  
Steven C. Johnston, Fresno  
Mohsen Sanawi, Fresno  
Michael P. Barbee, Berkeley  
Rodger A. Wagner, Fresno  
Susan J. Cook, San Francisco  
Karin Have, Fresno  
Jeffrey J. Seib, Fresno  
L. Wynne Krell, Pasadena



# News from the Board of Registration

*The following is a summary of actions affecting Land Surveyors taken by the Board and its Committees in the fall of 1979.*

## SEPTEMBER 12 NOTIFICATION OF DISCIPLINARY ACTION

A Public Hearing was held for the purpose of considering proposed new Board Rule 419, Notification of Disciplinary Action. After hearing testimony, by Mr. Ray Thinggaard in favor of the Rule, it was moved, seconded and carried that the Hearing be closed. After discussion, it was moved, seconded and carried that the proposed new Rule 419 be adopted. The text of Rule 419 is as follows:

*419. Notification of Disciplinary Action.*

*(a) As a condition of staying an order which suspends or revokes a registration or license on any of the grounds specified in subsection (b), the board shall require a registrant or licensee to provide the board, not later than 30 days after the decision becomes effective, with evidence that such person has notified all clients and employers with whom he or she has a current or continuing contractual or employment relationship of the offense, findings and discipline imposed and to provide the board with the name and business address of each person required to be so notified.*

*(b) The requirements in subsection (a) shall apply to all suspensions or revocations which are based on any of the following grounds:*

- (1) conviction of a felony that is substantially related to the practice of engineering or land surveying, as appropriate;*
- (2) deceit or misrepresentation in the practice of engineering or land surveying, as appropriate;*
- (3) fraud;*
- (4) incompetency.*

## NOVEMBER 14 RULE 464(f) REPEALED

After discussion of the memo from Deputy Attorney General William M. Goode reviewing Rule 464(f) regarding the filing of Record of Survey maps when a "lost corner" is restored, it was moved, seconded and

carried that subsection (f) of Rule 464 be repealed. It was then moved, seconded and carried that the repeal be effective immediately, on an emergency basis, because of a situation that exists in Alameda County.

President Nance then assigned the Land Surveyor Committee the task of analyzing this situation and making a recommendation to the Board on whether there is a problem sufficient to require legislation, or what future action (if any) the Board should take. The following is excerpted from the memo of October 25, 1979, reviewing Rule 464(f):

*In your memorandum of October 19, 1979, you requested that I review section 464(f), Title 16, California Administrative Code, and advise you whether a County can require that a record of survey be filed when a civil engineer or land surveyor restores a "lost corner" as required by that regulation.*

*It is my opinion that section 464(f), Title 16, California Administrative Code, cannot be enforced by anyone because it exceeds that scope of the statute on which it is based.*

*I have been advised that the question arose when the County of Alameda refused to accept corner records for lost corners from civil engineers and land surveyors, and required that records of surveys be filed pursuant to section 464(f), Title 16, California Administrative Code.*

*There may be valid reasons why the restoration of a lost corner should be treated differently from other public land survey corners. Business and Professions Code section 8773 simply does not permit it, and section 464 therefore may not do so. Requiring a record of survey for the restoration of a lost corner may be desirable, but present law does not permit such a requirement to be imposed.*

*While the Manual of Survey Instructions contains detailed instructions for the restoration of a "lost corner", there is no provision for the recording of the restoration of a lost corner in that federal publication. In fact, there is no way that a private engineer or surveyor can record the restoration of a lost public lands survey corner in such a way that it will be binding on the federal government.*

*When the Bureau of Land Management conducts resurveys, it checks with local County surveyors to determine whether a corner record has been filed on a lost corner. That corner record may or may not be accepted.*

*The final restoration of a lost corner can be determined only by the Bureau of Land Management. When a private engineer or land surveyor restores a lost corner pursuant to the procedures in the Manual of Survey Instruction, there are two options available to him: (1) he can file a corner record with the County Surveyor, or (2) he can include the restored corner in a record of survey with appropriate notation. The Federal Government is not obligated to accept such a restoration and may totally disregard it. When the Bureau of Land Management undertakes a resurvey, they are required to file a plat which must be approved before it is accepted as valid restoration.*

*While it would be possible for a private engineer or land surveyor to record a record of survey on which he shows the restoration of a lost public lands survey corner, there is no legal authority for a county officer to require that a record of survey be filed whenever a lost corner is restored.*

*Applying the foregoing to your specific problem, it is my opinion that the County of Alameda is without legal authority to refuse to permit the filing of a corner record for the restoration of a lost corner.*

*I recommend that this matter be submitted to the board with the suggestion that section 464(f) be repealed. The only thing that bothers me is that this provision has been in effect since at least 1974 and apparently no one has raised any questions. Further, the regulation must have received the blessing of the Director of Consumer Affairs on the recommendation of the legal counsel. An acceptable alternative would be to amend Business and Professions Code section 8773 to specifically require a record of survey for a lost corner.*

*(Signed)  
WILLIAM M. GOODE  
Deputy Attorney General*

*(Continued on Page 20)*



# News Digest

This section of the *California Surveyor* is designed to provide access to information by printing short news items, reviewing articles from other publications, and reviewing new products. Its success depends upon readers responding with information to be included herein.

## POLITICAL ACTION FOR ARCHITECTS

"State's Architects Awaken to Need for Coordinated Political Muscle", by John Dreyfuss, Los Angeles Times, Nov. 25, 1979. Contributed by Don Bender.

In this article, Dreyfuss details the establishment by the California Council, American Institute of Architects of an Architects Political Action Committee, to lobby for legislation and to financially support or oppose candidates and ballot measures affecting Architects. Realizing that political action costs money, CCAIA also increased its annual dues to \$123 per year, an increase of 4%. CCAIA also levied a one-time assessment of up to \$50 per member to finance a study of the State Board of Architectural Examiners in light of Governor Brown's budget proposal earlier this year to cut funds for the Board, which prompted a massive letter writing campaign by Architects to support the Board.

As reported in the Fall Edition of *The California Surveyor* (Editorial) the Governor also cut the budget for the State Board of Registration for Professional Engineers, and the need for political action on behalf of Land Surveyors to curtail the erosion of the profession is equally great. CLSA is actively pursuing these issues and needs your support for effective action. It is hoped that Land Surveyors are at least as aware and concerned as are Architects, and will respond by becoming involved in these efforts.

## PREVAILING WAGES

In the *Issues* section of the Fall Edition of *The California Surveyor*, Richard Hogan discussed his court battle with the State Department of Industrial Relations over the Department's Prevailing Wage policy. At the end of that article it was noted that the case was to go to trial on

August 30, 1979. *The California Surveyor* has learned that Judge Ira Brown took the Department's request for the matter to be dismissed based only on the complaint under submission. As of this printing, our latest information shows that a request for the trial to go ahead is pending by the Judge, the decision of which has not yet been received.

## CAL-NEV BOUNDARY DISPUTE

Submitted by Don Bender

Both California and Nevada have filed exceptions to a ruling by U.S. District Court Judge Robert Van Pelt, special Master in the case, who decided the boundary should follow Von Schmidt's 1873 survey north of Lake Tahoe and the U.S.C. & G.S. survey south of the Lake.

California's brief supported the finding, while Nevada filed objection on the grounds that the decision seems to allow the Federal Government to unilaterally change a state boundary and commission a new survey.

The case is scheduled to go to the U.S. Supreme Court this spring. Nevada Attorney General Richard Bryan is hoping for a practical settlement, stating, "To change the border would involve title to private lands and would affect the dispute over the bi-state compact governing the Lake Tahoe basin."

## RECENT COURT CASES

Submitted by Don Bender

The following is a list of recent court cases which affect property in California. References are given to facilitate our readers obtaining full information:

### Adverse Possession

Finley v. Yuba County Water Dist.  
79 Daily Journal D.A.R. 471  
(C.A. 3rd, Dec. 12, 1979)

### Escrow

Yackey v. Pacifica Development Co.  
79 Daily Journal D.A.R. 470  
(C.A. 4th Dec. 12, 1979)

### Inverse Condemnation

Richmond Elks Hall Assn. v. Richmond Redevelopment Agency  
79 Daily Journal D.A.R. 371  
(U.S.C.A. 9th, Dec. 6, 1979)

### Land Sale

De Luz Ranchos Investment, Ltd. v. Coldwell Banker & Co.  
79 Daily Journal D.A.R. 303  
(U.S.C.A. 9th, Nov. 28, 1979)

### Landlord /Tenant

Richardson v. La Rancherit a La Jolla  
79 Daily Journal D.A.R. 4 (C.A. 4th, Oct. 25, 1979)  
De La Vara v. Municipal Court  
79 Daily Journal D.A.R. 164  
(C.A. 2nd, Nov. 13, 1979)  
Kenney v. Vaccari  
79 Daily Journal D.A.R. 372  
(C.A. 1st, Dec. 4, 1979)  
Samuelson Nat'l v. Kaiser Aetna  
79 Daily Journal D.A.R. 424  
(C.A. 2nd, Dec. 10, 1979)

### Nuisance

Greater Westchester Homeowners Ass'n v. City of Los Angeles  
79 Daily Journal D.A.R. 417  
(Cal. Sp. Ct., Dec. 14, 1979)

### Personal Property

Pena v. Toney  
79 Daily Journal D.A.R. 208  
(C.A. 3rd, Nov. 8, 1979)

### Real Property - Conveyance

Kirkland v. Risso  
79 Daily Journal D.A.R. 258  
(C.A. 1st, Nov. 23, 1979)  
Huckell v. Matranga  
79 Daily Journal D.A.R. 402  
(C.A. 4th, Dec. 7, 1979)

### Recording Acts

Brown v. Johnson  
79 Daily Journal D.A.R. 190  
(C.A. 3rd, Nov. 16, 1979)

### Restrictive Covenants

Ezer v. Fuchsloch  
79 Daily Journal D.A.R. 457  
(C.A. 2nd, Dec. 14, 1979)

### Title Insurance

Harrison v. Commonwealth Title Insurance  
79 Daily Journal D.A.R. 15  
(C.A. 1st, Oct. 25, 1979)

### Warranty of Habitability

Knight v. Hallsthammar  
79 Daily Journal D.A.R. 481  
(C.A. 2nd, Dec. 21, 1979)



# Education

## FUNCTIONS OF THE APPRENTICESHIP PROGRAM

by A.A. Pennebaker,  
Administrator, NCSJAC

In 1961 the Bay Counties Civil Engineers and Land Surveyors Association, Inc., through collective bargaining with the Union that represents its employees, established a formalized training program for Field and Construction personnel. The program was designed to produce career field and construction survey workers for the employer and **not** to produce a proliferation of Licensed Land Surveyors. Simple logic was the motivating force. The Registered Engineer or Licensed Land Surveyor is responsible for not

only the legality of certain Surveys, but is ethically bound to provide the client with performance of the work to the highest Professional Standards. In many cases, however, it is not the Professional who accomplishes the work in the field. In those instances the Professional turns over the practicalities of the performance of the field work to employees. The education and training of those employees therefore becomes vital if Professional and Ethical Standards are to remain high.

Usually courses are available at the

community colleges as adjuncts to Engineering and Pre-Engineering studies. The theory of Surveying is well covered, but how to actually accomplish the work accurately and profitably in the field is sorely neglected. The Bay Counties Association program focuses on the practical work performed by the Chief of Party and Chainman, with heavy emphasis placed on the hands-on training in the field as a member of the Survey Party. The school work is considered only as related and supplemental to the field work.



## Calendar

### 1980

- |              |   |
|--------------|---|
| April 26     | C.L.S.A. BOARD OF DIRECTORS MEETING                           |
| July 26      | C.L.S.A. BOARD OF DIRECTORS MEETING                           |
| August 10-12 | N.C.E.E. ANNUAL MEETING, Hyatt Lake Tahoe, Lake Tahoe, Nevada |
| October 7-10 | A.C.S.M. FALL CONFERENCE, Niagara Falls                       |
| October 18   | C.L.S.A. BOARD OF DIRECTORS MEETING                           |

### 1981

- |                |  |
|----------------|--|
| February 18-22 | WESTERN STATES REGIONAL CONFERENCE OF LAND SURVEYORS, M.G.M. Grand Hotel, Reno, Nevada |
| February 22-27 | A.C.S.M. SPRING CONFERENCE, Washington, D.C.   |
| August 9-12    | N.C.E.E. ANNUAL MEETING, Williams Plaza, Tulsa, Oklahoma                               |
| September 8-12 | A.C.S.M. FALL 1981 CONFERENCE, San Francisco, CA                                       |

### 1982

- |                 |  |
|-----------------|--|
| March           | A.C.S.M. SPRING CONFERENCE, Denver, Colorado |
| September 19-25 | A.C.S.M. FALL CONFERENCE, Hollywood, Fla.    |

Please send information on meetings, to be included in this Calendar, along with Sponsor, Theme, Date(s), Fee, to:  
C.L.S.A. CENTRAL OFFICE  
P.O. Box 7400  
Santa Rosa, CA 95401  
Attention: Calendar of Events





# Book Nook

1. *Shore and Sea Boundaries* (1962) Reprint 1975—Aaron L. Shalowitz, U.S. Department of Commerce Publication No. 10-1  
*Vol. II—The Interpretation and Use of U.S. Coast and Geodetic Survey Data* . . . . . \$11.95 ea.
2. *Tide and Current Glossary*—U.S. Department of Commerce, N.O.A.A.—National Ocean Survey (1949) Revised 1975. Special Publication No. 228. . \$ 0.75 ea.
3. *Proceedings; Water and Water Related Boundaries Workshop II, May 20 & 21, 1977, Irvine, CA* (262 pages)  
CLSA Members . . \$15.00 ea.  
Non-Members . . . \$20.00 ea.
4. *Coastal Zone Map #TP-00189—Florida, Palm Beach County, Lantana to Boynton Beach—1:10,000 (1970)*  
An extremely interesting map format which contains detailed printed instructions to Surveyors on How to Locate a Mean High Water Line According to Law, adopted by the Florida State Legislature. A real collector's item . . . . . \$ 2.50 ea.
5. *Restoration of Lost or Obliterated Corners & Subdivision of Sections*—a guide for surveyors—United State Department of the Interior, Bureau of Land Management—1974 Edition. . .75 ea.
6. *Cassette Tape Recordings of the CLSA Water & Water Related Boundaries Workshop II at Ir-*

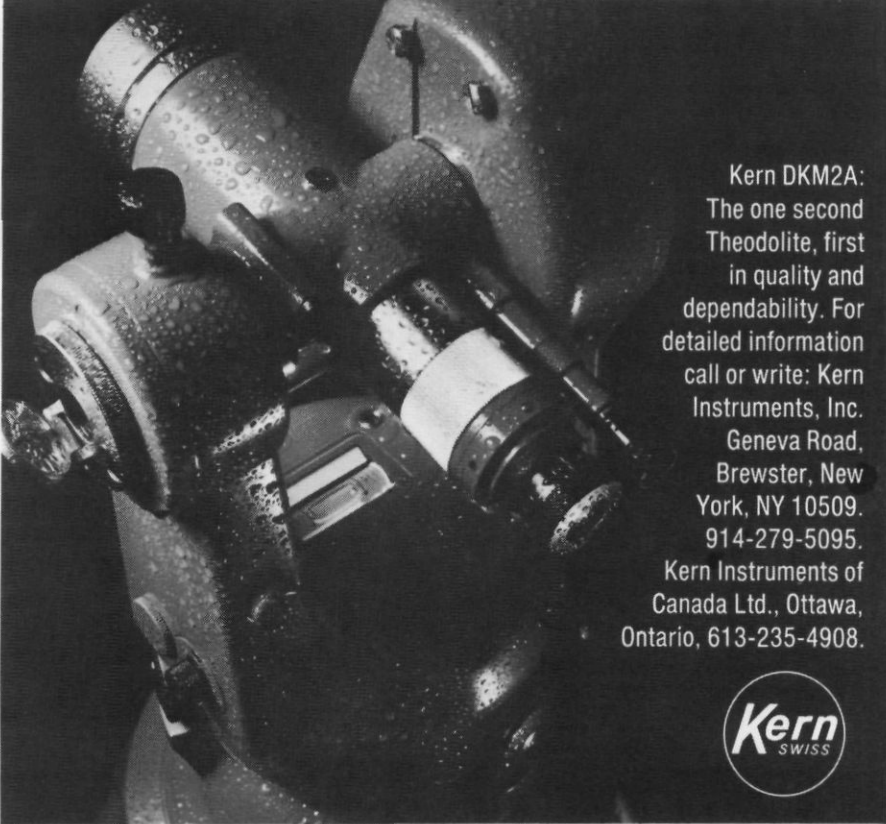
- vine, CA—May 25–26, 1977.*  
Costs have been established as follows:  
Complete 10 cassette set, including "Proceedings" (Item 3 above) (Over 8 hours of lecture and discussion)  
CLSA Members . . . . \$50.00  
Non-Members . . . . \$60.00
- a. *The Pornography of Water and Water Related Boundaries (Terms 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 Cali-*

- fornia 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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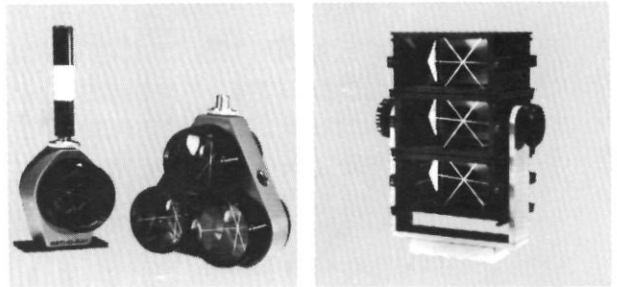
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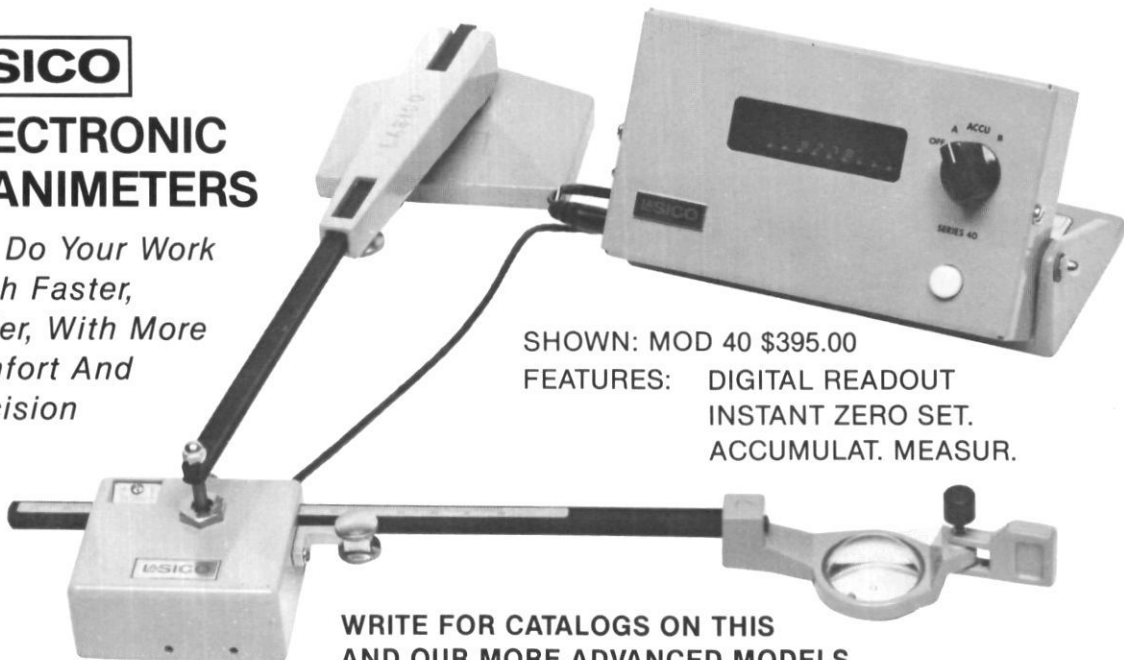


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# The California Surveyor

No. 61

The Voice of the Land Surveyors of California

Summer 1980





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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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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*.

Unless indicated, all articles in this publication are prepared by the editor

EDITOR: **R. E. Baldwin, L.S.**  
1345 California St.  
Berkeley, CA 94703

### DEADLINE DATES FOR THE CALIFORNIA SURVEYOR

FALL ..... AUGUST 11, 1980

WINTER/CONVENTION ..... NOVEMBER 1, 1980

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

Editor

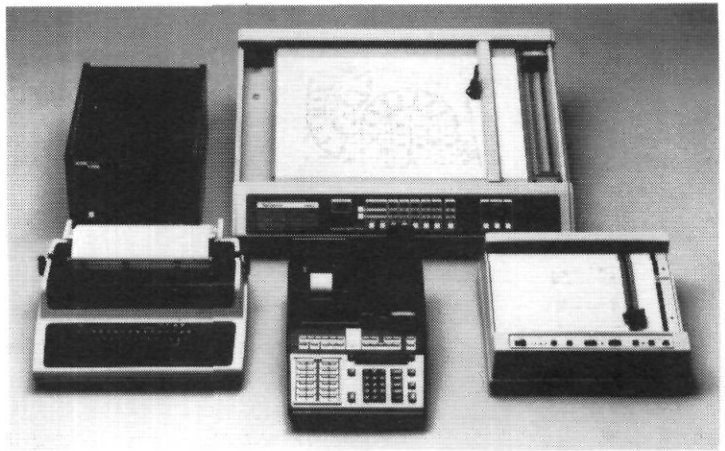
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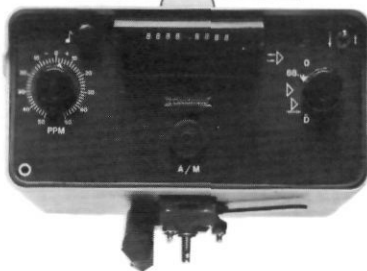
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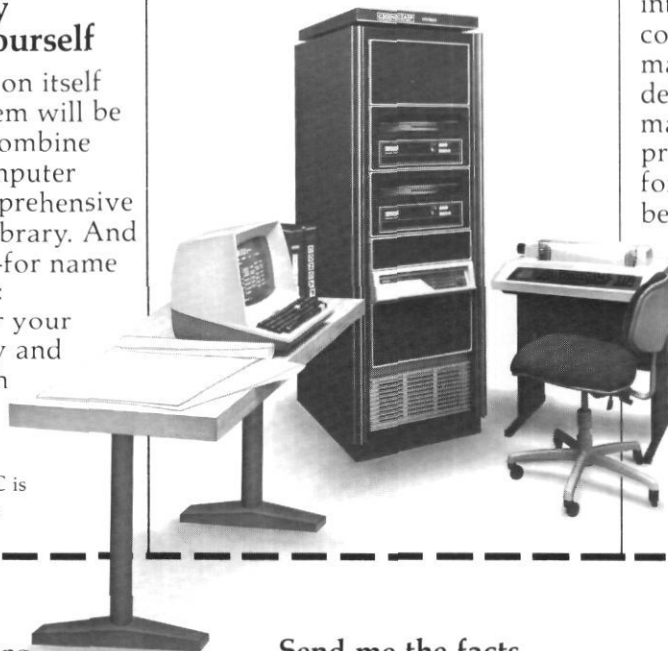
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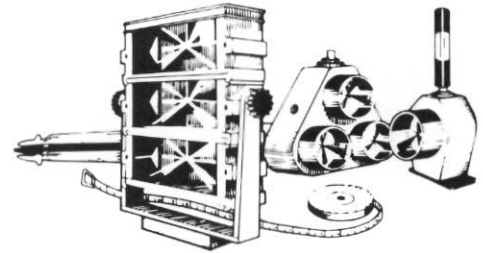
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# Letters

## PROHIBITIVE COSTS

April 4, 1980

Editor  
The California Land Surveyor

For over ten years I have been a CLSA supporter, sustaining member, advertiser or exhibitor at conventions. Despite the long association, our company chose not to exhibit at the CLSA convention in Fresno this year for two reasons:

1. The unreasonably excessive cost involved

2. The limited amount of time allocated for exhibits

We felt that the exhibit fee of \$325 charged by CLSA for one 8' by 10' booth for a day and a half was excessive. The exhibitors prospectus stated that the fee was to "cover the cost of space". However, since there were 35 booths at \$325 each, that amounts to \$11,375! And unless different at the Hacienda Inn, most hotels do not even charge for convention floor space since they make up for it in other business such as rooms, food and drinks. We see no reason for so high an exhibit fee.

Further, the \$325 is just the beginning of the overall cost. Added to that would be transportation to Fresno, freight for equipment, lodg-

ing, meals, salaries, etc. By the time all costs were in, it would easily amount to more than \$1,000. Still, the expense could possibly have been justified had there been sufficient time allocated for demonstration of equipment, but this was not the case.

There was nothing specified in the exhibitors prospectus about exhibit times other than a ½ hour coffee break for two mornings and one afternoon. Somehow it just doesn't seem to make good business sense to spend \$1,000 for an exposure time of 1½ hours that also must be shared with 34 other exhibitors!

Because of the trend of increasing exhibit fees with less being given in return, a number of surveying equipment companies have expressed serious doubts about whether it is worth it to exhibit at conventions. I know of several that have already decided against it and predict there will be more in the future.

If such is the case, who will be the losers? All of us. One would be the companies who might have a chance to sell more equipment than otherwise. Another would be the many surveyors who have stated that one of the main reasons they go to conventions is to see all of the latest equipment in one place. And if they stopped going, the convention would also

be a loser.

What can be done? I would suggest a poll of members to see what their feelings are regarding the value of exhibits at conventions. Ask them if a coffee break allows them sufficient time to find out about a theodolite, EDM or computer, as well as to go to the mens' room. The other suggestion is to take a poll of exhibitors and get their opinions of what should be done.

Here is our opinion: First, allow at least a half a day during the convention for nothing but exhibits. This could possibly be at either the beginning or end of the convention so that those who were not interested would not have to be there. One stipulation would be that no exhibitor be allowed to set up or tear down at that time. Second, keep a reasonable limit on the exhibit fee charged. After all, those extra costs are like unwanted government programs - someone has to pay for them. And guess who that would be? You!

Sincerely,

Bill Watson

Engineering Services Company, Inc.  
President

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### NOTICE

This edition of *the California Surveyor* contains the full text of the Disciplinary Guidelines for Land Surveyors adopted by the Board of Registration for Professional Engineers. The Board is utilizing *the California Surveyor* to officially notify all Licensed Land Surveyors of these guidelines by providing CLSA with their names and addresses so a copy of this edition can be mailed to them.

With receipt of this edition, you have been OFFICIALLY NOTIFIED of these guidelines - please read them carefully.



# President's Message



My first four months as President of the California Land Surveyors Association have been an interesting and rewarding experience. During this time I have had the opportunity to talk with a number of members and non-members about our numerous activities.

One statement that I have repeatedly made during these talks has been that growth is coming to CLSA and we must prepare ourselves in a variety of ways to best utilize this growth. We must manage this growth so that our association better serves the members, as well as presenting to the general public the best possible image.

The growth in membership will come from newly-licensed persons and hopefully from an increase in the Civil Engineers practicing land surveying, if these latter are admitted as Corporate members through an approved by-law change by you, the

membership. In addition, we should all endeavor to add existing licensed Land Surveyors, not yet members, to our ranks by a concentrated membership drive. In the near future, (after January 1, 1982), the exemption from the Land Surveyor's Act for newly registered civil engineers will be no more. Our association is the only state organization which primarily represents all land surveyors, both public and private.

It should come as no surprise to you that the Western part of the United States will change more rapidly over the next decade as compared to the rest of the United States. According to the Chamber of Commerce, the Census Bureau predicts that, during the years 1970 to 1990, the West will experience a 22.1 percent population growth, whereas the remainder of the United States will experience a 12.4 percent population growth. It is also predicted that California will add more than 3 million jobs by 1990. All those jobs mean more people and more demand for the goods and services they require.

It is predicted that during the 1980s there will be a decline in the number of people between the ages of 5 and 24, resulting from the sharp drop in the birthrate which began in the mid 1960s. Declining school enrollment is one of the most obvious effects of this change in the birthrate.

At the other end of the spectrum however, the number of adults over 65 years of age will grow rapidly as improved medical care increases longevity. Certain sociological changes that have taken place in recent years have had a substantial effect on household formations. These changes will, in turn, create even more demand for good planning, including a wide spectrum of services.

We have the opportunity to make this work for us. Even though it is important to elect legislators who have the intellectual capacity to deal with these opportunities in an unbiased manner, it is incumbent upon our association to provide an active membership, active committee, and direction and leadership that can speak to the issues. With private sector and government working hand-in-hand good things can be made to happen.

Since the time to act is now, a forthcoming meeting of the Council of Past Presidents will be meeting prior to the July 26 Board Directors meeting to formulate some short range and long range plans.

Take an active part in your local chapter's activities. Let our state board of directors know your needs and wishes. Contact me for anything that I personally can help you with.

William O. Gentry, L.S.

## Calendar

June	22-26	10th SURVEYING TEACHERS CONFERENCE Sponsored by ASEE, Colorado State University. For further information contact: Al Barnes, Conf. Director, Co. St. University. 303/491-6767
July	26	CALIFORNIA LAND SURVEYORS ASSOCIATION quarterly Board of Directors meeting to be held at the Grosvenor Airport Inn, 380 South Airport Blvd., So. San Francisco, CA 94080.
August	10-13	NATIONAL COUNCIL OF ENGINEERING EXAMINERS (NCEE) Annual Conference to be held at the Hyatt Lake Tahoe, Incline Village, Nevada.
August	11	Deadline, Fall issue of THE CALIFORNIA SURVEYOR. Send information to: R.E. Baldwin, Editor, 1345 California St., Berkeley, CA 94703.
October	7-10	ACSM/ASP Convention, Sponsored by ACSM/ASP, to be held in Niagara Falls. For further information contact: Charles E. Hartnett, RD 1, Box 142, Melrose, N.Y. 518/235-2313.
October	18	CALIFORNIA LAND SURVEYORS ASSOCIATION quarterly Board of Directors meeting to be held at the Grosvenor Airport Inn, 380 South Airport Blvd., So. San Francisco, CA 94080.

# News from the Board of Registration

## **DISCIPLINARY GUIDELINES FOR LAND SURVEYORS ADOPTED FEBRUARY 13, 1980**

To facilitate uniformity of penalties and to ensure that its disciplinary policies are known, the Board of Registration for Professional Engineers establishes these disciplinary guidelines. While recognizing the concept that administrative law judges must be free to exercise their discretion in such cases, the Board desires that these guidelines be followed to the extent possible and that any departures therefrom be noted and explained in the proposed decision.

The Board desires that matters in extenuation and mitigation, as well as those in aggravation, be fully considered and noted in the proposed decision. Of primary importance is the effect the licensee's conduct had or can have on the public as consumers.

Disciplinary ranges for violations of the Land Surveyors Act are as follows:

### **1. Section 8780(d): Conviction of a felony arising from or in connection with the practice of land surveying.**

Maximum: Revocation AND public reproof.

Minimum: Revocation stayed for five years on the following conditions AND public reproof.

a. Actual suspension for two years.

b. The respondent shall obey all laws and regulations related to the practice of land surveying.

c. The respondent shall submit such special reports as the Board may require and shall furnish the Board with a complete list of all clients and employers with whom the licensee has a current or continuing contractual or employment relationship, not later than 30 days after the decision becomes effective.

### **2. Section 8780(a): Deceit in the practice of land surveying.**

Maximum: Revocation AND public reproof.

Minimum: 90 days suspension stayed for three years on the following conditions AND public reproof.

a. 45 days actual suspension.

b. The respondent shall obey all

laws and regulations related to the practice of land surveying.

c. The respondent shall submit such special reports as the Board may require and shall furnish the Board with a complete list of all clients and employers with whom the licensee has a current or continuing contractual or employment relationship, not later than 30 days after the decision becomes effective.

### **3. Section 8780(f): Breach of contract.**

Maximum: Revocation.

Minimum: 60 days suspension stayed for one year on the following conditions:

a. 15 days actual suspension.

b. Respondent make restitution to any person damaged as a result of the respondent's breach of a contract to which that person is a party, such restitution to be made prior to the restoration of respondent's registration.

c. The respondent shall obey all laws and regulations related to the practice of land surveying.

d. The respondent shall submit such special reports as the Board may require.

### **4. Section 8780(a): Fraud.**

Maximum: Revocation AND public reproof.

Minimum: Six months suspension stayed for three years on the following conditions AND public reproof:

a. 90 days actual suspension.

b. The respondent shall obey all laws and regulations related to the practice of land surveying.

c. The respondent shall submit such special reports as the Board may require and shall furnish the Board with a complete list of all clients and employers with whom the licensee has a current or continuing contractual or employment relationship, not later than 30 days after the decision becomes effective.

### **5. Section 8780(a): Negligence.**

Maximum: Revocation AND public reproof.

Minimum: 90 days suspension stayed for two years on the following conditions AND public reproof:

a. 30 days actual suspension.

b. The respondent shall obey all laws and regulations related to the practice of land surveying.

c. The respondent shall submit

such special reports as the Board may require.

### **6. Section 8780(a): Incompetency.**

Maximum: Revocation AND public reproof.

Minimum: Revocation stayed for five years on the following conditions AND public reproof.

a. Within 2 years of the effective date of the Board's decision, the respondent shall successfully complete a training course, approved in advance by the Board, specifically related to the area of incompetency, before being permitted to resume practice; and/or

b. Within 2 years from the effective date of the Board's decision, take and pass the second division examination before being permitted to resume practice.

c. After being permitted to resume practice, the respondent may practice only under the supervision of a registered design professional approved by the Board.

d. The respondent shall obey all laws and regulations related to the practice of land surveying.

e. The respondent shall submit such special reports as the Board may require and shall furnish the board with a complete list of all clients and employers with whom the licensee has a current or continuing contractual or employment relationship, not later than 30 days after the decision becomes effective.

### **7. Section 8780(b): Fraud or deceit in obtaining the license.**

Recommended action: Revocation.

### **8. Section 8780(e): Aiding or abetting any person in the violation of any provision of this chapter.**

Maximum: Revocation.

Minimum: 60 days suspension stayed for one year on the following conditions:

a. 15 days actual suspension.

b. The respondent shall obey all laws and regulations related to the practice of land surveying.

c. The respondent shall submit such special reports as the Board may require.

*(Continued on Page 28)*

# Cover Story

The 15¢ commemorative stamp shown on this edition's cover honors Benjamin Banneker, surveyor and 18th century *renaissance man*. Banneker was born on a tobacco farm near what is now Ellicott City, Maryland, in 1731. The son of a freed slave, Benjamin was taught to read and write by his grandmother who was an indentured servant.

Because he was needed to work the farm, his formal education consisted of only a few winters of school. Young Benjamin's passion for things scientific prompted him to continue his studies at home where he taught himself mathematics and astronomy.

He worked ceaselessly on a variety of projects, one of which was to calculate the cycle of the locust plagues which periodically devastated the farms. In 1789, using bor-

rowed instruments and mathematical texts, he charted the stars, calculated tide tables and accurately predicted the time of the solar eclipse of April 4, in that year - contradicting the predictions of prominent mathematicians and astronomers.

In 1790 he published an almanac and sent a copy to Thomas Jefferson, who was so impressed that he recommended Banneker to President Washington for appointment to the District of Columbia Survey Commission, which was to survey the site of the nation's new capitol in 1791. Banneker was appointed to the Commission, and with Major Ellicott, performed the original survey of Washington, D.C.. Later he would, in only several days time, reproduce from memory a year of surveying to make the plans of Washington,

D.C..

He continued to publish his almanac for six years, always advocating the cause of Blacks in America. Although he was a shy individual, preferring the quiet farm life to one of notoriety, he became one of the nation's leading intellectuals. Like his contemporary, Benjamin Franklin, he was a man of science and a prolific inventor. He was also a respected philosopher, like his contemporary Thomas Jefferson, whom he confronted for preaching the doctrine of equality and freedom while holding slaves.

For further information on this eminent Black American, refer to *The Life of Benjamin Banneker*, by Silvo A. Bedini.

## Mineral Survey Examination

by Reily H. Smith

Most of you have read Chapter 10 in the *Manual of Instructions* . . . entitled "Mineral Surveys" and probably thought it would be interesting to do a mineral survey someday. If you went further and tried to find some additional information from the Bureau of Land Management, you were most likely frustrated in your attempt to find anyone who knew anything about it.

There are about 35 Mineral Surveyors on the current California lists maintained by the B.L.M. in Sacramento. Of these, many are not active. The B.L.M. plans to begin purging names of those Mineral Surveyors who do not perform at least one mineral survey every two years or those who cannot justify to the B.L.M.'s satisfaction why their names should not be removed. The names of the Mineral Surveyors on this list are given to an applicant for a patent on a lode mineral claim or a placer claim where a boundary conflict exists. The claimant makes his own arrangements for payment with the Mineral Surveyor he chooses. On the date of the examination, the

Sacramento Office of the B.L.M. had 17 pending applications for Mineral Surveys, so it appears there is some of this work out there.

The B.L.M. gave a two day examination in Sacramento last February and, surprisingly, only 10 surveyors from California took it. Perhaps the reason for the poor turnout was that the only advertisement was in the "Federal Register." The exam consisted of:

1. 37 multiple choice questions, worth one point each.
2. A practical problem, worth 20 points.
3. Writing a set of field notes and making a preliminary plat, worth 23 points.
4. Taking and computing a solar observation for azimuth, worth 20 points.

All types of calculators, theodolites and typewriters were allowed in the examination. The entire exam was open book with essentially all of the material covered in Chapter 10 of the "Manual" and Title 43 of the Code of Federal Regulations. The writing of the field notes and preliminary plat, though worth only 23 points, took most examinees 40 to

50 percent of their allowed time. The second day was supposed to be devoted to the solar shot, but upon completion the examinees were permitted work on the first day's problems. The examination was tedious, but not, in my opinion, as difficult as the California L.S. exam.

Those of you who may be interested in taking the exam someday should be aware that the B.L.M. considers having a cadastral survey contract with them to be a conflict of interest if you are also a Mineral Surveyor.

The February exam was the first one given in California in 10 years. However, the exam proctor said they were planning on giving the exam every two years from now on. The B.L.M. does not appear to have firm experience or education requirements to qualify to take the exam.

For those of you who are interested in receiving additional information, the place to write is:

Director,  
Bureau of Land Management (720)  
Division of Cadastral Survey  
18th and "C" Streets N.W.  
Washington, D.C. 20240



# Fresno Conference

This year's C.L.S.A. Conference in Fresno was an unqualified success, with some 295 registrants attending the technical sessions and a record 29 exhibitors showing the latest in surveying equipment.

Technical sessions included such subjects as early California Surveyors, the extent of Fraudulent Survey areas in California, Title problems, Title by Acquiescence, the Surveyor's Right of Trespass, Prescriptive Easements, and Ways of Avoiding Liability, among other topics. Also presented was a timely discussion of real estate "Boom and Bust" cycles. On Saturday a tour of California State University at Fresno, the only nationally accredited school west of the Mississippi offering a B.S. degree in Surveying and Photogrammetry, was given.

Ladies activities included a tour of the Duncan Ceramics plant, a cosmetics demonstration, a tour of the Sun Maid growers facility, and a wine tasting tour.

Sports events like the Golf and Tennis Tournaments, and the 10 km. "Fun Run" provided enjoyment for many.

Social Events included an exhibitor-sponsored cocktail party, a dinner show at Roger Rocka's Good Company Music Hall where "Fiddler on the Roof" was a big success, and an evening of Armenian food and dance.

Thanks to the Conference Committee, Exhibitors, and all the others who worked behind the scenes to make the 1980 C.L.S.A. Conference a memorable and enjoyable one. See you all next year at the MGM Grand in Reno! ▲



Student assisting at the conference were (front row) Birdie Ross, Peggy McMicken, Don Britton, Daryl Whitcher, Dennis Doi, Lucy Young, Bob Masvoka, (back row) Frank Helm, Dave Grainier, Tom Phelps, Mike Miller (Coordinator), Jerald Miller, Frank Robles and Jeffrey Sand. Also assisting, but not shown, were Jas Arnold, Kathy Cline, Dave Edson, John Korovan, Dan Martinez, Mike Miller, Chuck Moore, Lynn Nichols, Martin Paquette, Mario Quiros, Nathan Willess, and Alan Yan.



The lucky number is . . .

Departing President Paul Lamoreaux (L) greets new CLSA President Bill Gentry (R).





# Surveyors Historical Society

The Spring 1980 meeting of the newly formed Surveyors Historical Society was held on March 29, 1980 in Fresno as part of the CLSA convention.

Chairman F.D. "Bud" Uzes presides over an informative and productive meeting which was well-attended by many active participants. The members are striving towards incorporation and hope to build up their collection of artifacts and archives for display purposes. Last year the Society had a display at the Placer County Museum in Auburn and this year at both the current CLSA and upcoming ACSM California Conference. The planning

and set-up of these displays made it clear that some form of official and permanent records be initiated.

To get an up-to-date inventory of the Society's collection and to have it properly recorded and cataloged, we have obtained the services of Tanya Clark, a professional librarian and active member in local historical societies. She will set-up acquisition and cataloging procedures for artifacts, prepare forms for the processing and filing of Society archives, set-up loaning policies for displays, and generally oversee the operation. Miss Clark's interest in several historical subjects and experience as a professional reference librarian

and cataloger, as well as a museum docent and lecturer, qualify her for these tasks.

The Fall 1980 meeting of the Surveyors Historical Society will be held in Sacramento on October 25th as part of the ACSM California Conference.

For additional information, contact Chairman F.D. Uzes, 10324 Newton Way, Rancho Cordova, CA. 95670.

Myron A. Lewis  
Secretary

## Speakers Bureau

CLSA is undertaking the creation of a Speakers Bureau to assist our Committee Chairman in furnishing guest lecturers to Student Chapter meetings, workshops and annual conferences.

Persons interested in speaking before student groups, workshops and/or annual conferences are invited to sign up for occasional participation by contacting Dorothy Calegari at CLSA Central Office, P.O. Box 7400, Santa Rosa, CA 95401 or telephone (707) 539-3633. Send a note specifying your name, title, company affiliation, address and phone number plus information about your field(s) of expertise, areas of experience and public speaking and/or teaching skills.

### SPEAKERS BUREAU

Please complete the information below and return to CLSA Central Office. Thank you for your help.

CALIFORNIA LAND SURVEYORS ASSOCIATION  
Central Office  
P.O. Box 7400, Santa Rosa, CA 95401

Name \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Telephone No. \_\_\_\_\_

Company Affiliation \_\_\_\_\_

Field(s) of Expertise \_\_\_\_\_

\_\_\_\_\_

Public Speaking and/or Teaching Skills \_\_\_\_\_

\_\_\_\_\_

Availability (day of week) \_\_\_\_\_

\_\_\_\_\_

# News Digest

*This section of the California Surveyor is designed to provide access to information by printing short news items, reviewing articles from other publications, and reviewing new products. Its success depends upon readers responding with information to be included herein.*

## **DON BENDER ADMITTED TO CALIFORNIA LAW PRACTICE**

Donald E. Bender, past director-at-large of CLSA, has successfully completed the California State Bar Examination and was formally admitted to the practice of law May 30, 1980.

Bender, who has also served with CLSA in positions as secretary and treasurer, continues to be active in both the state association and in ACSM, currently serving as Director, Area 7, for the latter organization's Land Surveys Division.

Employed as survey supervisor for the City of Los Angeles, he was also recently admitted to the National Association of Realtors and has begun his own business as a land use consultant. Incorporating surveying, real estate and real property law, the business is directed primarily toward serving prospective investors in commercial and industrial developments.

## **L.S. QUESTION WRITERS NEEDED**

The National Council of Engineering Examiners is seeking well qualified question writers for material to be used in its examinations in Land Surveying. Writers must be Registered Land Surveyors with sufficient practical experience. Questions must be written according to detailed specifications and with great attention to clarity, proper terminology, and relevance to the purpose of the exams. An honorarium is paid for acceptable material. Anyone wishing to participate should send a brief request to:

Porter W. McDonnell, PE/LS  
Land Surveying Coordinator  
National Council of Engineering Examiners  
P.O. Box 1099  
Seneca, South Carolina 29678  
An instruction booklet and special

forms for submitting questions will be provided.

## **FREE PHOTOGAMMETRY CLASS**

The Engineering Department of the City College of San Francisco will offer a course in Photogrammetry (E.T. 193, 3 college credit units) in the Fall semester 1980, on Tuesdays and Thursdays from 6:00 PM to 9:00 PM, with six hours lecture-laboratory work. The Fall semester will start in the second week of September 1980 and end in the middle of January 1981.

The laboratory work will cover the following topics: the test of stereoscopic vision, computation of calibrated focal length of an aerial camera, measurement of photocoordinates and computation of flying height, planning for an aerial photographic mission, use of parallax bar, use of a parallel guide to plot contours, identification and survey of photocontrol points, radial line plot, use of sketchmaster, determination of tilt in an aerial photograph, operation of Kelsh and Ballplex plotters, relative and absolute orientation and map compilation.

The college has three Ballplex, one Kelsh and one Multiplex plotters, four stereoimage alternators and other laboratory equipment for about 15 students. The tuition is free. This course is essential for L.S. examination. For persons engaged in surveying practice, no prerequisites are required.

The necessary forms for enrollment can be obtained from the Registrars Office, San Francisco City College, 50 Phelan Avenue, San Francisco, CA, 94112. Further information can be obtained from Dr.-Engr. D.E. Slavoj, Coordinator Civil Engineering Technology Tel. (415) 239-3159.

## **ULTIMATE TITLE SEARCH**

*"Title Searching for HUD," Editorial Page, Woodland Dailey Democrat, Dec. 28, 1979 contributed by Keith R. Leslie, L.S.*

A real estate man has passed on to us a story credited to Utah Sen. Orrin Hatch about a developer in Louisiana who, after securing approval of

his project from 23 various agencies received this note from the U.S. Department of Housing and Urban Development:

"We received, today, your letter enclosing application for your client and supported by abstract of title. We have observed, however, that you have not traced the title previous to 1803. Before final approval can be granted, you must trace the title previous to that year."

He responded:

"Gentlemen: Your letter regarding title received. I noted that you wish title to be traced further back than I have done it.

"I was unaware that any educated man failed to know that Louisiana was purchased from France in 1803. The title of that land was acquired by France by right of conquest from Spain.

"The land came into possession of Spain in 1492 by right of discovery by an Italian sailor named Christopher Columbus. The good Queen Isabella took the precaution of securing the blessing of the Pope of Rome upon Columbus's voyage before she sold her jewels to help him.

"The Pope is the emissary of Jesus Christ who is the Son of God. God made the world. I believe it is safe to assume that He also made that part of the world known as the United States; and that part of the United States called Louisiana. I hope to hell you're satisfied."

## **DRE STREAMLINES SUBDIVISION APPROVAL PROCESS**

*Submitted by Don Bender*

Effective March 31, the State Department of Real Estate reduced the number of documents for a Preliminary Public Report from 27 to 9, and reduced the application form from 30 to 7 pages.

In response to pressure from builders and developers, the DRE is also expediting processing of complete initial subdivision filings and has added 76 positions to its subdivision section.

*(Continued on Page 27)*

VECTRON  
Surveying  
Instrument



AUTORANGER EDM



VECTRON Field Computer

# The VECTRON Electronic Surveying System

More flexible and economical than any other.

**The VECTRON System's modular format is a unique approach to a totally new surveying technology.**

The most advanced system for field measurements and data collection, it is electronic in operation, and the only instrument of its kind that is modular in application. Each of the three separate electronic components is a fully independent unit that can be purchased separately, and operated independently as well as in various combinations, offering a relatively low initial investment. But all three units are programmed to interconnect in a system of unparalleled surveying efficiency—and cost considerably less than other systems.

Here are some of the many things the VECTRON System performs automatically: measures, displays and records slope range, horizontal angle, and vertical angle; computes, displays and records horizontal distance, departure and latitude; accumulates and averages readings for slope range, for horizontal and vertical angles.



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**VECTRON Surveying Instrument**  
for angle measurement  
and calculation of  
surveying coordinates.

**AUTORANGER® EDM Instrument**  
for range measurement up to 3.6km.

**VECTRON Field Computer**  
for data storage and calculation.

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Also, via the VECTRON Field Computer, it stores measured data and calculated results, which are identified alphanumerically. And retrieves data from storage, for display on command, transfers data to office computer or other peripheral devices.

Only the VECTRON System gives you the option to start with one unit and to add later on. However you start, by the unit or system, the savings over other systems are considerable.

For more details about the VECTRON System and its individual components, write Keuffel & Esser Co., 20 Whippany Road, Morristown, N.J. 07960



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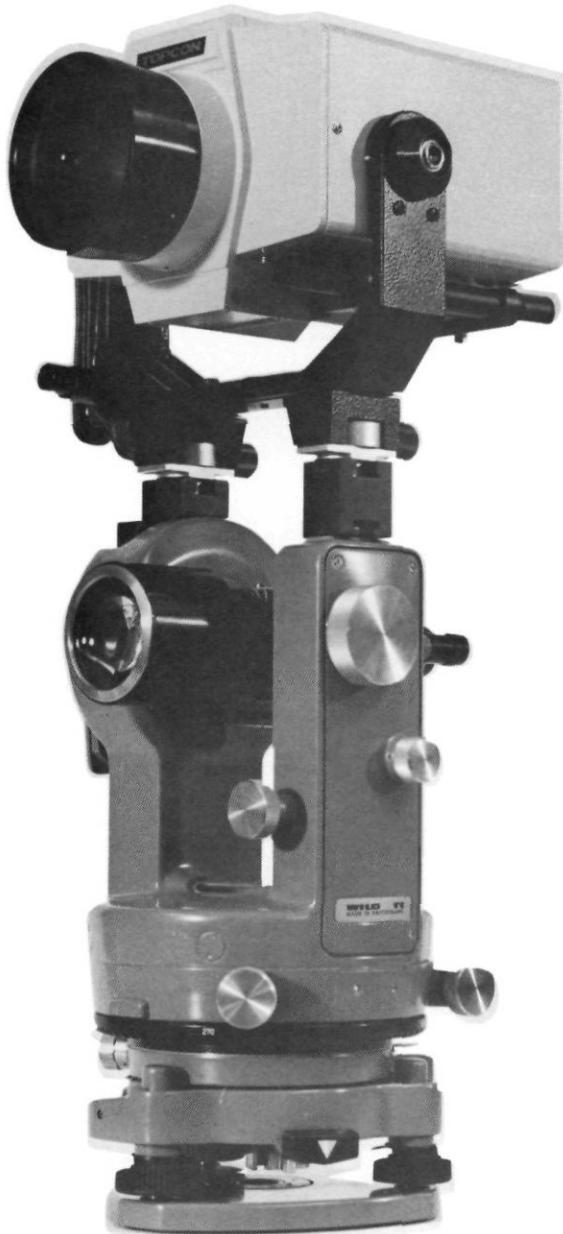
Keuffel & Esser Co.  
1327 South Olive St.  
Los Angeles, CA 90015  
Phone: 213 747-7601

Keuffel & Esser Co.  
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South San Francisco, CA 94080  
Phone: 415 873-6850





# WESSCO'S EDM PACKAGE: Rugged Enough for the Rockies and Now Specially Priced at \$9890.



We examined every distance meter on the market and selected Topcon's proven DM-C2 as the best EDM for the money and value. We combined it with a Wild theodolite because Wild's quality is incomparable. Together these instruments comprise an ideal package.

With them you'll have a system which is highly reliable. In the Rockies surveyors depend on it for isolated field work in Gillette, Wyoming or Meeker, Colorado. Our package even excels in extreme temperatures such as the deserts around Phoenix or the mountains surrounding Vail.

And it's almost fool-proof. The DM-C2 is one of the simplest EDM devices to use. Just point the distance meter and theodolite at your target; adjust the light attenuator and automatically you'll obtain readings in less than 10 seconds. In good atmospheric conditions you can measure over 10,000 ft.

Our complete EDM package includes a Topcon DM-C2, Wild T-1 or T-16D Theodolite, battery and charger, tool kit, triple prism and single prism with carrying bags, tribrach, prism adaptor, pointing target, stake-out range pole, two tripods, barometer, thermometer, EDM mounts and installation.

We've sold over 200 such systems.

We're so convinced of this package's value that we offer the best EDM service in the country. Should a breakdown occur during the warranty period, we'll provide you with a free loaner if we can't repair it within 24 hours, freight included.

This package's list price is \$12,851. *Wessco's price is \$9890.* With a Wild T-2 add \$2,000. Our offer is good until July 31, 1980 but is subject to change without notice should manufacturers increase their prices.

To take advantage of our low price or for further information call Wessco toll free at 800-525-0266; or if in Colorado phone 800-332-1364. Terms and conditions at this low package price are payment in advance or upon delivery of the equipment.

## WESSCO

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If you haven't quite decided which survey monuments to use on your next project, take just a minute with the Berntsen "Best Test". We feel sure that once you

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Part # 1. COMPARE MONEY SAVING BENEFITS	BERNTSEN		"OTHERS"		YOURS	
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NO CHARGE for delivery in U.S.A.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NO CHARGE for personalized custom logo on orders of 100 or more survey monuments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NO CHARGE for the easy to locate permanent ceramic magnet in every monument	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NO CHARGE for "Handling" or "Packing"	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NO CHARGE for "stamping" or "per letter" on your next order with the same pattern	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## IMPORTANT PRICE COMPARISONS SHOW WHY BERNTSEN MAY BE BEST FOR YOU

Part # 2. COMPARE VALUE	BERNTSEN 100-499	"OTHERS" 100-499	"YOURS" 100-499
3 1/4" Cap, 5/8" diameter x 24" aluminum rod	\$4.73 each	\$6.47 each	
3 1/4" Cap, 5/8" diameter x 36" aluminum rod	5.23 each	6.86 each	
3 1/4" Cap, 5/8" diameter x 48" aluminum rod	5.73 each	7.85 each	
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# California Legislature

# Resolution

By the Honorable Rose Ann Vuich, 15th Senatorial District; the Honorable Ken Maddy, 14th Senatorial District; the Honorable Jim Costa, 30th Assembly District; and the Honorable Richard Lehman, 31st Assembly District

## RELATIVE TO PROCLAIMING THE WEEK OF MARCH THIRTIETH THROUGH APRIL FIFTH AS "LAND SURVEYORS' WEEK" IN CALIFORNIA

WHEREAS, Since the dawn of recorded history, the profession of land surveying has been a vital part of the civilized world; and

WHEREAS, The land surveyors of California have made a significant contribution to the orderly growth of the State of California by creating, preserving, and marketing the land holdings of its citizens; and

WHEREAS, Property rights of the citizens of this state have been made meaningful and certain by the products and services of land surveyors who locate, landmark, describe, and map these rights; and

WHEREAS, The professional land surveyors of this state subscribe to a strict code of ethics and practices, which emphasizes service before profit and public interest above their own interests; and

WHEREAS, The land surveying profession of this state is vigorously and continually striving to improve its products and services in the public interest by adapting technological advances to age-old practices and concepts; and

WHEREAS, In view of the importance of the practice of land surveying to this state and the nation, it is fitting and proper that this profession be given official recognition; now, therefore, be it

RESOLVED BY THE JOINT RULES COMMITTEE OF THE SENATE AND THE ASSEMBLY, That the Members proclaim the week of March 30th through April 5th, 1980, as "Land Surveyors' Week" in California; and be it further

RESOLVED, That suitably prepared copies of this resolution be transmitted to the California Land Surveyors Association, to William O. Gentry, its President, and to Paul W. Lamoreaux, its Past President.

Resolution No. 120  
Approved by the Joint Rules Committee  
Subscribed this 24th day of March, 1980

James R. Mills, Chairman  
Senate Rules Committee

Louis J. Papan, Chairman  
Assembly Rules Committee

Mike Curb  
President of the Senate

Leo T. McCarthy  
Speaker of the Assembly



Alvar Yelvington, CLSA's legislative advocate presents Land Surveyors' Week resolution to Paul Lamoreaux (L) and Bill Gentry (R).

# Perspectives

*In support of my belief that many persons besides Land Surveyors and Engineers "survey" property and boundary lines, the following article is but one of many stories to be told.*

William O. Gentry

## PERAMBULATING THE BOUNDS

by Ronald Jager

*BEAT 41. To beat the bounds: to trace out the boundaries of a parish, striking certain points with rods, etc., by way of a sensible sign patent to witnesses.*

Oxford English Dictionary

As small boys in Michigan my brothers and I would now and then take it into our heads to walk completely around my father's farm. Following the woven-wire fence row, where the fieldstones grew, we tramped from corner to corner—a half mile, a quarter mile, a half mile, a quarter mile, exactly eighty acres—and made sure that we touched each corner post and most of the line posts as well. We gave ourselves no particular reason for making this circuit. We celebrated these excursions simply by checking out the gooseberries that thrived among the fieldstones and by recommending cake and milk for ourselves when we returned and made our mission-accomplished report.

There were other farms in the neighborhood with which we were familiar, having worked or played on them, but we never had the slightest impulse to walk their bounds—though that would have been an adventure with more novelty. Apparently it was not the discovery of new things that impelled us. Some ineffable tie between ourselves and our family's piece of land was being reaffirmed for us by our little ritual—a game we supposed had been invented right there and by us.

I had nearly forgotten this bit of juvenilia until it came abruptly to mind—almost forty years later—as I recently contemplated an old stone wall in New Hampshire. I have formed the practice, for no reason that I can recognize, of occasionally walking the bounds of my small piece of New Hampshire, something more than a hundred acres of forestland

and overgrown pasture. On my recent excursion I had a sudden sense of *déjà vu*, a flash of recognition, of having been in precisely this circumstance at some indefinite past time. Shortly I traced this feeling back to my walking the bounds ("lines" they are called in Michigan, being straight) of my father's farm, and so restored to memory a valuable experience I had nearly lost.

However, but for what I had caught in that momentary flash, there is not much similarity between that tame Michigan land and these robust New Hampshire slopes. Most of my bounds are stone walls, lichen gray and sometimes mossy green; they lie not by open fields but in spruce thickets, in maple thinnets and pine groves, across brooks and hillsides. For a century everything visible about them has intimated that they are part of the landscape, natural facts and not boundaries at all.

If my meditative ramble along these walls accomplishes anything, it may be some kind of inward validation of my relation—only the most recent in a series of human relations—to this particular tract of land. In some unspecifiable sense it is satisfying to know that the bounds are emphatically there, practically immovable, participating in the very substance of the land, yet giving a visible sense of order and definition to the arrangements of my imagination and to my obscure affections for inanimate things. The trees, rocks, and stumps on this side of the wall I may call mine; I have entered their history, and they mine. Those yonder side of the wall are aliens—though they all look the same. These bounds, like those of the family homestead, have more meaning to me than I can say, or know. But what I do know is that my experience, then and now, was and is not unique. Indeed, those boundary lines branch out into politics, history, religion, and mythology.

According to long-standing New Hampshire law (and similar laws in some other New England states) the selectmen of each town are obliged to "perambulate the bounds" of the town at seven-year intervals, to mark

again the bounds and enter an account of this into the town's records, noting the trees they have blazed, the lines they have measured, and the granite they have chiseled. There is but slight enforcement of this law, and in some towns it is done less according to the schedule than according to the impulses of selectmen. One reason the itch may not come every seven years is the sheer physical difficulty of the task. Many New England towns were laid out hundreds of years ago in the office of a developer, the lines being subsequently transferred to the terrain, which the map makers had never seen. Hence town lines go up cliffs, across bogs, at right angles across ledges, over mountains and ponds, and through streams. The map of the unseen town was the first rude assault of the settler on the wilderness. When the measurements were applied to the contours of the countryside, they seldom fit exactly, and that was only one reason why many towns have had boundary disputes. Roads and settlements that evolved later followed more closely the imperatives of nature, with the result that town lines now frequently run though very unfamiliar regions.

Town bounds may be obscure in the field, but in the minds of the residents the *idea* of them and therefore of the town that they enclose is very sharp and clear. In this respect the town in New England differs notably from the typical township in the Michigan that I am familiar with—where the lines, more often than not, are marked by straight blacktop roads. Such midwestern townships have explicit geographical boundaries, and no emotional boundaries at all. There the idea of the township line is an idea without resonance: it has a certain meager bureaucratic meaning, but no content of feeling or emotion, no possessiveness and no affection attends it. The township and its boundaries compose an idea more useful than alive, yet even so there would be no use at all for the idea of perambulating the lines of such a township. But in New England's countryside, it is an idea, a practice, and a law that is likely to survive despite the physical difficulty of it for as long as we can



imagine. The practice of walking the bounds, like the annual town meeting, is one that has shaped and been in turn shaped by the idea of the town itself as a political and social unit. In New Hampshire it requires an act of the legislature and two-thirds vote of the residents of both affected towns to change a town boundary. In New England generally the town is ever the most explicit unit of political and social self-consciousness, and until well into the nineteenth century it was the locus of the community's religious self-consciousness as well. Walking the bounds of something, whether it is a rectangular half of a quarter section in the Middle West or a misshapen piece of bristly and jagged townscape in New England, is an intimate gesture of linking oneself to the life of whatever is exemplified within those bounds.

Perambulating the bounds of a town is rooted in the ecclesiastical practice of "beating the bounds" of a parish. Trace this out and you find that—just as with so much else that still gives coherence to the social and political mind of New England—perambulating the bounds was apparently transferred to the politics of New England from the parishes of old England. "In former times when maps were rare it was usual to make a formal perambulation of the parish boundaries on Ascension day or during Rogation week," says my eleventh edition (1911) of the *Encyclopaedia Britannica*. And it goes on to tell how they did it:

The priest of the parish with the churchwardens and the parochial officials headed a crowd of boys who, armed with green boughs, beat with them the parish border-stones. Sometimes the boys were themselves whipped or even violently bumped on the boundary-stones to make them remember. The object of taking boys was obviously to ensure that witnesses to the boundaries should survive as long as possible. In England the custom is as old as Anglo-Saxon days, as it is mentioned in laws of Alfred and Aethelstan. It is thought that it may have been derived from the Roman Terminalia, a festival celebrated on the 22nd of February in honour of Terminus,

the god of landmarks, to whom cakes and wine were offered, sports and dancing taking place at the boundaries.

Evidently my brothers and I were participating, all unaware, in a far more venerable ritual than I could have imagined when we walked the lines of the family farm and touched the corner posts. Not only were we really perambulating, when I thought we were just walking, but we were actually performing real history, and we didn't even know it! For now I learn that Terminus, god of landmarks in ancient Rome, is probably behind a whole series of habits and traditions. Checking out my bounds ties me into the Roman Empire! There will henceforth be a new spring in my step: proudly I shall "walk" with the Anglo-Saxons and "perambulate" with the Latins.

Such discoveries are enough to set a mind awhirl; perhaps the Romans and the Anglicans have something more to teach us. So far as I can determine, the selectmen of my town have not typically thrown a party when they have perambulated the bounds. The sheer difficulty of the ambulating would seem to justify such a celebration even if tradition did not. In our town at least thirty-five miles of extremely difficult scrambling is involved, and not every board of selectmen relishes this undertaking. Moreover, the law requires that there be a representative from each of the two adjoining towns when the bounds are walked, and I learn that the impulse to take this stroll does not often strike three sets of selectmen simultaneously; it is not especially difficult to find plausible excuse to put the matter off until next year. The law itself thoughtfully provides that the older of the two adjoining towns must take the initiative in setting a date. Might it not be natural, then, to schedule the completion of perambulating the bounds so that it just preceded the town picnic, Old Home Day, or whatever local celebration, party, picnic, ball, fair, or feast was already on the agenda? This plan would be a way to adapt and improve a fine custom that goes back to the parishes of old England but was evidently too good

to last. Says *Britannica*:

In England a parish-ale or feast was always held after the perambulation, which assured its popularity, and in Henry VIII's reign the occasion had become an excuse for so much revelry that it attracted the condemnation of a preacher who declared "these solemn and accustomable processions and supplications be now grown into a right foule and detestable abuse."

It is enough to know that I was enacting one of the parables of human history. There is no doubt that this ritual has staying power, cutting across the centuries through religions and politics. Here and there it is alive still in English parishes. I learn that in Newbiggin by the Sea (Northumberland), for example, it has been practiced since 1235 and now takes place annually in May. The Tower parish bounds in London are beaten every third year, the choirboys striking each of the thirty-one boundary marks with willow wands. One of the bounds of St. Clement Danes's parish is in the river Thames and is reached by boat for its beating; another of the bounds of this parish is in an awkward place in Temple Gardens, and one of the choirboys is lowered by his heels to beat this one. In Richmond (Yorkshire) the procession to beat the bounds used to include a wade in the river Swale—a task now performed by the official parish Water Wader. In Crompton (Lancashire) the bounds are perambulated and beaten every seventh year, and this involves swimming across Besom Hill reservoir and climbing over the King's Arms Hotel. I'm sure that further research could turn up more examples of such old English boundary heroics, or pluck; but these instances should fortify any of our perambulating Yankee selectmen as they wade boggy brook and shamble through the brush up the face of Old Baldy. If Yankee shrewdness fails, they have Western civilization on their side.

Terminus was no trivial deity, I learn from *The Oxford Classical Dictionary*. When an important boundary was set in ancient Rome, an

(Continued on Page 24)

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PERSPECTIVES

(Continued from Page 22)

animal together with fruits and wines was sacrificed and burned on the lines, after which the boundary stone was anointed, crowned with garlands, and then solemnly set in the hot ashes. Anyone who moved the boundary stone was subject to the death penalty. Long before that the Hebrews, as the Old Testament shows, placed a comparable emphasis on the permanence and immovability of boundaries. The Bible does not record the penalty for violating such landmarks, but the prohibition is explicit, for example, in Deuteronomy 19:14 "Thou shalt not remove thy neighbor's landmark, which they of old time have set in thine inheritance, . . ." Undoubtedly this passage refers to landmarks that were also set with sacrifice and ceremony.

I imagine that the only sacrifice involved in setting the corner posts of my father's farm was the labor involved, and I am glad now that as boy I added some ceremony to the observance of those landmarks. Being wood, they won't last much longer. But I'll remember where they were. The stones that mark the bounds of my own land in New Hampshire were set with permanence more in mind, and with a larger expenditure of labor and ceremony. However it was done, it was no casual task; they were anointed with plenty of perspiration and for a long time now they have been garlanded with lichen and moss, emblems of stability, endurance. So, besides the bounds of our own properties, which we may walk in privacy, perambulating to the beat of our own drummer, what remains as exemplary are the bounds of towns, fitting symbols of the relation of a community to its own place. There is reassurance in the knowledge that the statutes require that these "shall be perambulated, and the marks and bounds renewed, once in every seven years forever."

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2. *Tide and Current Glossary*—U.S. Department of Commerce, N.O.A.A.—National Ocean Survey (1949) Revised 1975. Special Publication No. 228. . \$ 0.75 ea.
3. *Proceedings; Water and Water Related Boundaries Workshop II, May 20 & 21, 1977, Irvine, CA* (262 pages)  
CLSA Members. . . \$15.00 ea.  
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4. *Coastal Zone Map #TP-00189—Florida, Palm Beach County, Lantana to Boynton Beach—1:10,000 (1970)*  
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6. *Metric Practice Guide for Surveying and Mapping*—American Congress on Surveying and Mapping. This Metric Practice Guide has been prepared to aid those engaged in surveying and mapping

in the use of the International System of Units (SI) in accordance with recommendations contained in the Metric Conversion Act of 1975, Public Law 94-168 . 1.50 ea.

7. *Cassette Tape Recordings of the CLSA Water & Water Related Boundaries Workshop II at Irvine, CA—May 25-26, 1977.*  
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  - 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
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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.
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- 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.
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### ACSM EXECUTIVE DIRECTOR TO SPEAK IN LONDON

W.A. Radlinski, Executive Director, American Congress on Surveying and Mapping (ACSM), has accepted an invitation from the Royal Institution of Chartered Surveyors (RICS) to deliver an address during the Centenary Celebration of RICS in London, August 25-27, 1981.

The Institution was incorporated by Royal Charter on August 26, 1881, thirteen years after its foundation in 1868. To mark the centenary, there will be a program of six addresses dealing with major aspects of the surveyor's work. One, dealing with

"the Surveyor in Society", will be incorporated in a service of thanksgiving at Westminster Abbey, and is expected to be given by the Dean of Westminster. Radlinski will give the address on "the Surveyor in Outer Space".

The other addresses are "the Surveyor and the Environment"; "the Surveyor and the Land"; "the Surveyor and the Seas"; and "the Surveyor in the Microelectronic Age". They are intended to focus attention on topics which will be of interest not only to the profession, but also to a wider public audience.

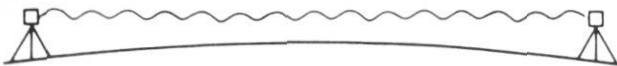
### EDUCATIONAL DIRECTOR

Dr. Marshall W. Davies has been appointed as the first Education Director for the American Congress on Surveying and Mapping. He will report on April 7, 1980, to the National Office in Falls Church, Vir-

ginia to begin his full-time direction of the educational activities of ACSM.

Under the general supervision of the ACSM Executive Director, he will be responsible for developing, organizing, and managing a coordinated continuing education program of short courses, workshops, and correspondence courses to meet the needs of members of ACSM and its Affiliates and Sections.

Among his other responsibilities, Dr. Davies will be establishing and maintaining a procedure for recording educational credit units of members. He will be encouraging Affiliates to establish professional development programs to meet special regional and statewide requirements. And he will be the manager of any certification programs that ACSM may establish. ▲



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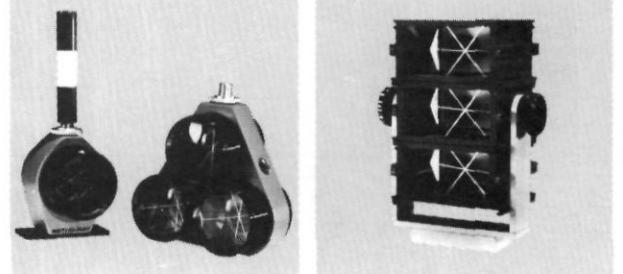
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**BOARD NEWS**

(Continued from Page 11)

**9. Section 8780(c): Violation of any other provision.**

Maximum: Revocation.

Minimum: 60 days suspension stayed for one year on the following conditions:

- a. 15 days actual suspension.
- b. The respondent shall obey all laws and regulations related to the practice of land surveying.
- c. The respondent shall submit such special reports as the Board may require.

**10. Public Reprovals.** Whenever the administrative law judge orders that a public reproof be made, the proposed decision should contain the following or similar language:

"The respondent shall be publicly reproofed."

**N.B.** Conditions of probation shall apply to all penalties other than the maximum penalty of revocation. ▲

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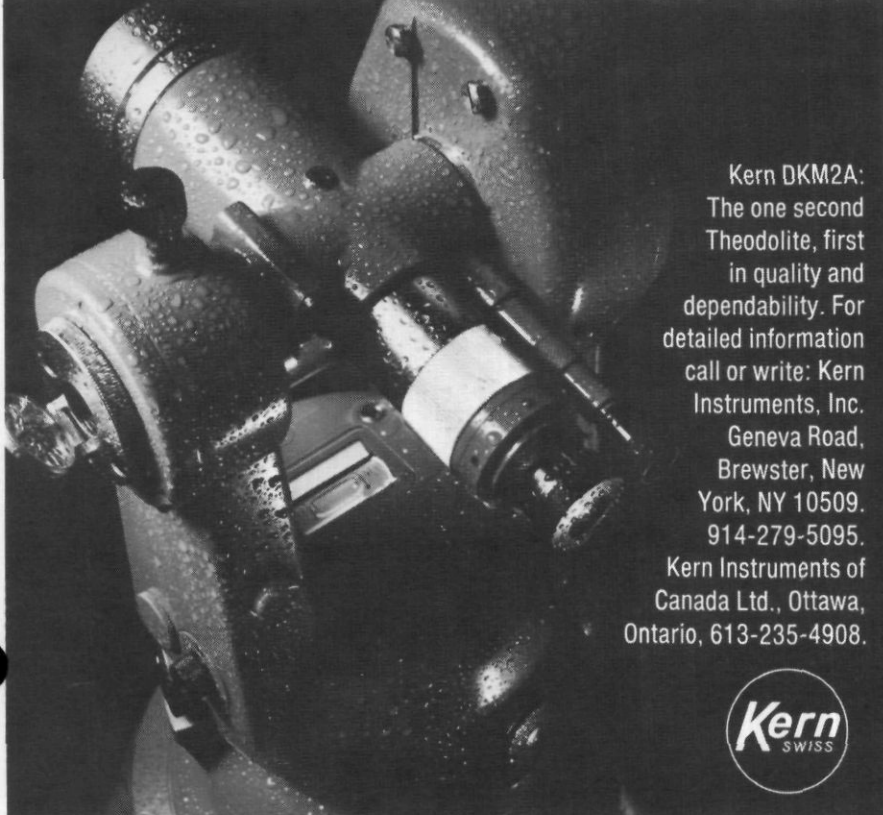
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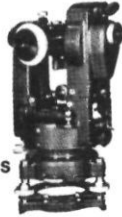
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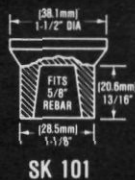
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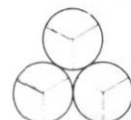
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