

Institutional Affiliate of American Congress on Surveying and Mapping.

The California Surveyor

No. 66

The Voice of the Land Surveyors of California

Fall 1981

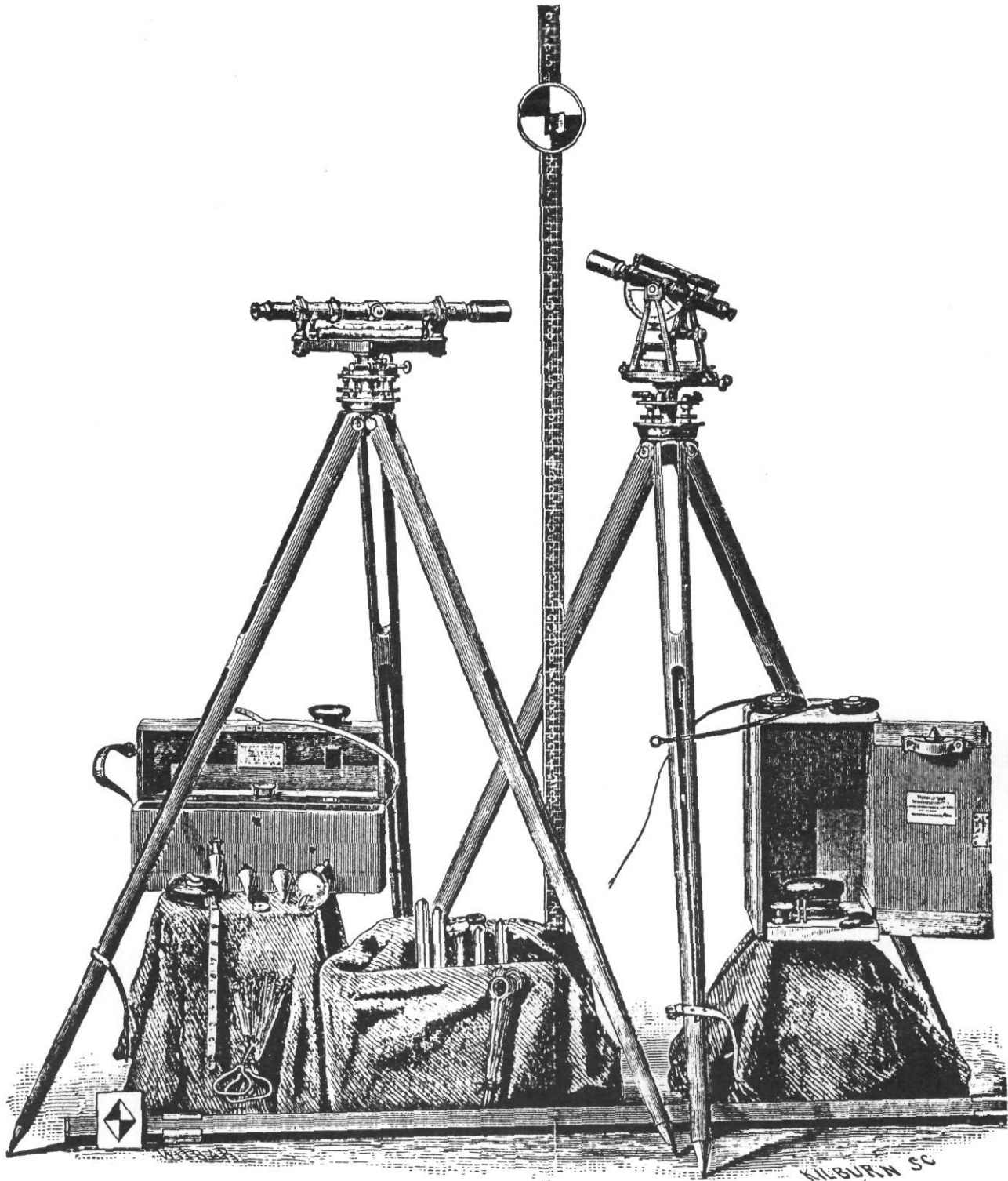


Table of Contents

News Digest	Page 5
Legislation	Page 10
Services	Page 16
Calendar	Page 16
Education	Page 17
Professionalism	Page 18
C.L.S.A. Fellowship Application	Page 19
Letters	Page 20
New Members	Page 20
New Products	Page 21
Book Nook	Page 23
Classified	Page 24
Advertisers Index	Page 27

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

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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.
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 Berkeley, CA 94703

DEADLINE DATES FOR THE CALIFORNIA SURVEYOR

Winter/Conference Nov. 20, 1981
 Spring Feb. 25, 1981

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

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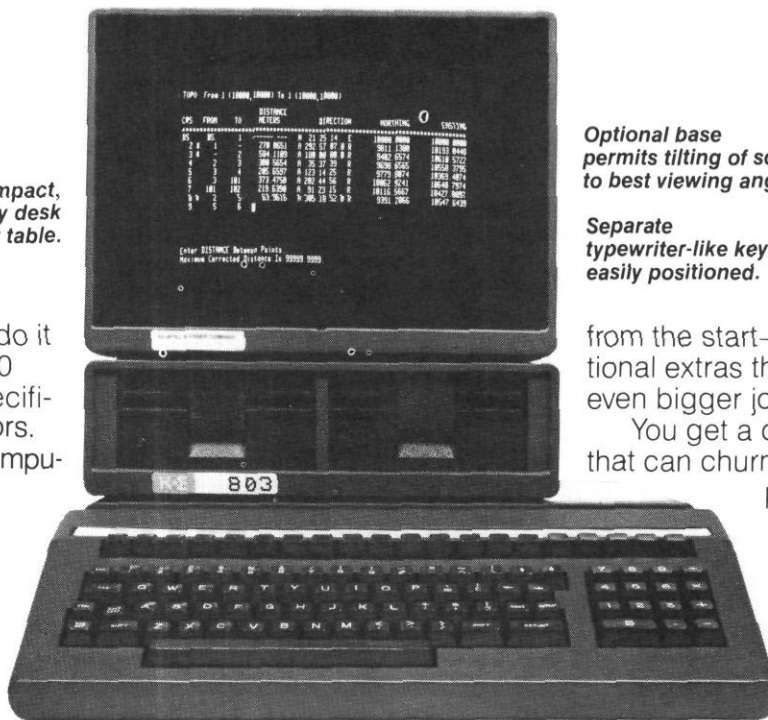
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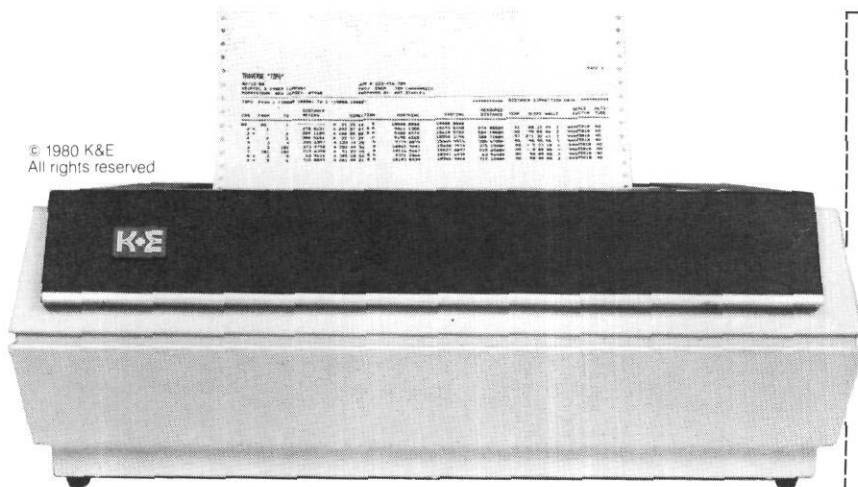
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We asked a California firm of civil engineers, one of the first Geodimeter 120 owners, to compare the instrument with the "Total Station" its crews had been using for staking out. Reports the chief of surveys: "The Geodimeter 120 is much faster and easier to use because of the wider beam, faster tracking, easy mounting and the fact you can verify the vertical angle with the theodolite. The 120 is about 25% faster—50% faster compared to conventional methods using differential levelling.



"If you don't get carried away on distance, staying within 300 or 400 feet, accuracy is plenty good enough for grading, within 0.03–0.04 feet. On real flat land, where elevations are critical, we still use a level." The multi-office firm now owns six Geodimeter 120 EDMs.

Or check out the lower cost Geodimeter 116 EDM. Carlos Chavez and Lonny Sheek, chiefs of surveys in the Santa Monica and Costa Mesa offices of Psomas & Associates: "We figure the Geodimeter 116 saves 25 to 30% in time over our 'key-in' instruments in staking both distances and elevations. It eliminates having to key in a new angle for reduction every time the reflector rod is moved." The firm just purchased its third Geodimeter 116 EDM.

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News Digest

CLSA PLANNING 1982 CONFERENCE

Plans are going ahead for the 1982 CLSA Conference, to be held April 1-3, in San Diego. Those of you who attended the 1978 Conference in San Diego will recall that the location offers many pleasant and interesting activities for the entire family. In addition to their world famous zoo and safari park, there are shopping sprees and jai alai games to be had just across the border.

The Conference Committee is busy scheduling the most informative seminars and workshops ever, as well as planning some exciting social activities, so mark the dates - April 1-3 - on your calendar and plan to attend next year's Conference. It promises to be the best ever.

EDM CALIBRATION BASELINES

The Northern California Section of the American Congress on Surveying and Mapping has copies of its EDM Calibration Baseline Report available through the different line monitors for the basic printing cost of \$2.00 plus postage. The report contains descriptions, instructions and forms for using the lines. Users of the base lines are requested to submit the results of their measurement data so that a history of the individual lines can be maintained. For a copy of the Report contact one of the following Baseline Monitors:

Mr. Ed Bagnani, Survey Department
State of Calif. Dept. of

Transportation
Post Office Box 3366, Rincon Annex
San Francisco, CA 94119
(415) 557-2837

Mr. Bert Burger
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
(408) 265-2600

Mr. Wendle Whipple
Central Contra Costa Sanitary Dist.
P.O. Box 5266
Walnut Creek, CA 94556
(415) 934-6727

George R. Dunbar Land Surveys
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Santa Cruz, CA 95061
(408) 425-7533

Mr. David Sturdivant
Survey Section
County of Sacramento
827 Seventh Street
Sacramento, CA 95814
(916) 440-6291

U.S.C.E. DISTINGUISHED EMPLOYEE

CLSA Member, William A. Angeloni, has been chosen as the "Distinguished Employee for 1981" for the San Francisco District Corps of Engineers.

SURVEY CALCULATIONS JOURNAL

Of interest to all Land Surveyors is the Survey Calculations Journal, a publication containing information by and for surveyors regarding the efficient use of calculators/computers for surveying applications. Of interest are hints that it may be possible to circumvent internal controls of the HP-41C to expand memory and utilize the calculator for data collection. For subscription information, contact: Survey Calculations Journal, PO Box 6674, San Bernardino, CA 92412.

THIEF TAKES BURT SOLAR COMPASS

The Society has received a request from the Michigan Historical Division to give the theft of a Burt Solar Compass the widest possible exposure.

This historical artifact was stolen on May 26, 1981 from the Marquette County Museum.

The compass may be identified by the name of the manufacturer - Grant and Crosman, No. 10, Detroit, Michigan - stamped on it.

If you have any information about this item, please notify the Marquette County Historical Society, attention Director, at 213 N. Front Street, Marquette, Michigan 49855, phone area code 906, 226-3571.

WHO NEEDS A TRADE ASSOCIATION

According to a recent survey, 85 percent of all business failures were concerns of businessmen that were not members of trade or professional associations.

It appears that some of the businessmen who can't see the advantages of joining and becoming active in a trade association are the ones who need an association the most. The man who's out in front has an organization behind him, helping him to get ahead.

- North Central Ohio Newsletter.

THE MARK OF A PROFESSIONAL

A professional is not merely a person who has been accepted into one of the traditional callings as a doctor, lawyer, land surveyor, etc. The dictionary definition (Webster's New Collegiate) defines the term "professional" as:

(a) of, relating to, or characteristic of a profession.

(b) engaged in one of the learned professions.

(c) characterized by or conforming to the technical or ethical standards of a profession.

(d) participating for gain or livelihood in an activity or field of endeavor often engaged in by amateurs.

(e) engaged in by persons receiving financial returns.

(f) following a line of conduct as though it were a profession.

Of the above definitions (c) and (f) perhaps are the most applicable definitions when we attempt to define a true professional. A true professional is one who has a particular state of mind. He or she is indeed a servant of the public. He goes that extra mile in ensuring that his clients and the public in general receive the best level of skill that he can provide. An adequate or mediocre job is not satisfactory.

A true professional need not be the best in his field but he must always *strive* to be the best and always offer *his* best. That is the true mark of a professional person.

CORRECTING LAND SURVEYING ERRORS

The subject of correcting land surveying errors is one that requires an abundance of tactfulness. When your fellow surveyor calls on a Friday afternoon and tells you that he found the lost quarter corner to the section

(Continued on Page 7)



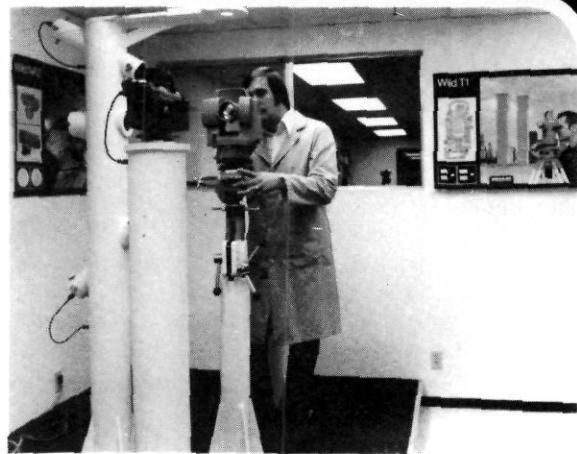
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News Digest

Continued from Page 5)

that you just spent two weeks subdividing, your weekend is sure to be considered a disaster. Revising your calculations, descriptions, and plats is difficult to explain to your client.

Since becoming registered as a land surveyor in Arkansas and sixteen other states, I have become familiar with the procedures of several boards of registrations. One of the most common grounds for revocation of a land surveying license is the refusal of the surveyor to correct an obvious error.

The original surveyors of the public lands in the U.S. have been accused of making office surveys, falsifying field notes, and making gross errors in measurement. Often, the surveys were of excellent quality, considering the equipment. Consider the example of the original survey of the New Mexico Principal Meridian.

The original surveyor, Deputy John W. Garretson under the direction of William Pelham, Surveyor General of New Mexico, surveyed the first 108 miles of the principal meridian.

Both surveyors had worked in the General Land Office in Arkansas and were considered men of the highest integrity and ability. The first 108 miles of the principal meridian were measured in error — the handles of the 66-foot chain were not to be included in the 66-foot measurement. Mr. Garretson remeasured and remarked the entire 108 miles at his own expense!

Correction of a land surveying error is almost always costly, but the peace of mind one has after correcting the error is well worth the expense. When dealing with our fellow surveyor, it is important to remember what the eighth verse of Proverbs, chapter two says: "Reprove not a scorner, lest he hate thee: then rebuke a wise man, and he will love thee."

Keith Houseman

Cypress, Texas

*Arkansas Association Newsletter—
July 1980*

THE ETHICS OF LINE-FLAGGING

by F. Henry Sipe, LLS

Land Surveyors are occasionally asked to "flag" a line to guide timber cutters. The client will insist that he does not want a "complete" survey of the property, nor does he want corners monumented or lines marked and painted. He may not want a plat, and of course, no description or written report. In other words, he just wants an approximate line of ribbons. He won't pay for any tie lines. He says you are to run "by his deeds". And, he wants the job done "tomorrow".

Such clients have legitimate need for this kind of service. The surveyor's question is, "How can I help the client and still be ethical and meet the law and regulations?" If the flagging results in his client being sued by an adjoiner, can the surveyor avoid being sued too? Can he keep his reputation unblemished? If he rejects the job, some other surveyor may not only get this particular job, but he may lose a permanent client.

The surveyor should explain to the client that he is normally required to locate property lines according to all deeds that could affect its location within certain prescribed technical accuracy, and as a court would decide if there were a lawsuit. The surveyor should advise the client that if the work is to be done to his specifications, that the surveyor must prepare a report for him that discloses fully what the surveyor has done, how he did it, the problems he encountered, the weaknesses and strengths of the work, etc. And that surveyor is required to keep the adjoiner informed of plans and progress and results should also be explained. If the client does not accept these terms, the commission should be rejected.

*— Reprint — The Michigan Surveyor
Newsletter*

THE CALIFORNIA SPLIT

from the California Journal

*A California Split is the new ice
cream treat!*

*Will we come back for more? Will
we find it too sweet?*

*For just as each flavor demands its
true topping,
The taste will be wrong if someone
tries chopping,*

*The North from the South, for in
spite of best wishes,
They'll never look right served in two
separate dishes.*

*We'd accept such a Split if be-
queathed by The Quake*

*Or by (ice cream again) the old Cal
Super Shake.*

*But to split California sans banana
or tremor*

*Might be merely a dull legislative
dilemma,*

*And poses the problem: divide it by
latitude,
Longitude, time zone, linguistic, or
attitude?*

*The most obvious lines would respect
Rand McNally —*

*Divide North from South or the
Coast from the Valley.*

*(Though one might think the Berlin
solution the best:*

*There's L.A. — that's one planet —
and then there's the rest.)*

*The question, of course, is who
started the scrimmage —*

*Are we talking water rights here — or
self-image?*

*And who can predict if you start to
divide them?*

*The urge to divide may run ad
infinitum:*

*City states, suburb states, small
private beaches,*

*Each with state senates and
governor-creatures,*

*The State of Laguna, the State of
San Quentin*

*(One to get tan in and one to
repent in).*

*And this is California, we do set
the fashion:*

*America soon, subdividing with
passion,*

(Continued on Page 25)



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Time to Wake Up!

MORE STRAIGHT TALK FROM SIERRA CYBERNETICS

If you're thinking about getting a new computer system for your office, you may be inclined to purchase the old standard of the industry, H-P, or one of the small Apple or Radio-Shack based systems that seem awfully cheap. You are probably asking for a whole lot of trouble if you expect your business to grow in the future.

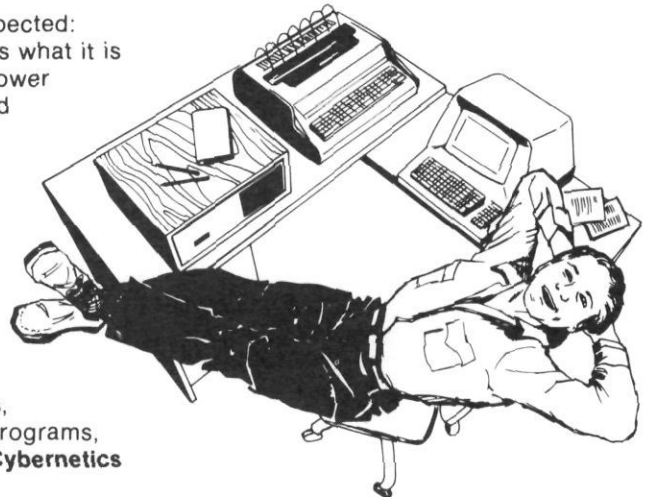
If you buy the H-P 85, you may find the available memory too small to fit many larger programs that are developed for special applications. You may tire of a screen that does not have enough columns to show a complete letter or form. You may be appalled at the cost of extra equipment you may want in the future, and the lack of incompatibility with equipment developed by other manufacturers. And, most of all, you may be disappointed because you cannot change any of the programs for your particular application or surveying style.

If you buy one of the "fly by night" systems, you may find that the programs run like they were written by an amateur programmer, or someone who does not think like a surveyor. You will probably find the supplier is selling a hobby-grade computer, and not a business grade computer. You may find the printer is a cheapo one, that takes special paper, or prints out unreadable text.

Sierra Cybernetics gives you the equipment you really expected: industrial quality hardware and professional software that does what it is supposed to do, is easy to learn to use, and offers the extra power you are going to need in the future. Professional keyboard and screen, letter quality printouts, precise plotting, modifiable programs, complete hardware and software documentation, dual floppy disks, and backup support by Sierra Cybernetics for both hardware and software, are some of the standard features that **no other** supplier in this industry offers.

Sierra Cybernetics offers the most complete list of optional hardware and software in the market, and will continue to do so. Remote hookups to plotters and large computers, hard disk systems from 5 to 60 Megabytes, multi-user systems, CPM compatible programs, plotters, digitizers, data collection, coordinate transfer to and from other systems, professional time billing, bookkeeping and word processing programs, and an ever increasing list of new software, make the **Sierra Cybernetics** system one that you will not outgrow.

A complete system with letter quality printing and plotting, professional terminal, 64K NorthStar Horizon computer with all survey programs written in BASIC, and complete supplies cost under \$10,000. Don't cut yourself short at the beginning, and learn to regret it later. Call or write for more information today. You'll be glad you did!



SYSTEM COSTS: SIERRA CYBERNETICS PIONEER I, complete with computer, terminal, letter quality plotting printer, complete programs and supplies: \$9940.00. (Optional plotters, data collector, phone modem, H-P 9815 data swap, earthwork, subdivision volumes, engineering programs available, call for quotes).

Terence Petersen
Calif. License LS4315

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S-100 compatible	X	0	0	0	0
Programs in modifiable BASIC	X	0	?	0	0
64K memory	X	32	48	?	X
CPM compatible	X	0	0	0	0
Letter quality printer	X	0	0	0	0



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Legislation

RECENT CALIFORNIA LAW

The following bills have been passed into law:

AB #119 (Chapter 86, Statutes of 1981)

SMALL CLAIMS COURT; SATISFACTION OF JUDGMENT

Existing law provides that immediately upon receipt of payment of judgment, a judgment creditor or his or her assignee shall file with the small claims court an acknowledgment of satisfaction of judgment; and any judgment creditor or assignee who, after payment in full of a judgment and after written demand therefor by the judgment debtor, fails without just cause for a period of 15 days to execute and file an acknowledgement of satisfaction of judgment with the court is liable to the judgment debtor or his or her grantees or heirs for all damages which he or she may sustain by reason of such failure and shall also forfeit to him or her the sum of \$50.

AB #119 will also provide that a canceled check or money order that was written subsequent to the judgment by the judgment debtor for the full amount of the judgment, made payable and endorsed by the judgment creditor, or a cash receipt written subsequent to the judgment for the full amount thereof and signed by the judgment creditor, shall also constitute a rebuttable presumption of satisfaction of the judgment when filed with the clerk of the small claims court together with a specified statement signed by the judgment debtor under penalty of perjury, and in such event a satisfaction of judgment shall be entered.

AB #497 (Chapter 65, Statutes of 1981)

SMALL CLAIMS COURT; PROCEDURES

Under existing law, a small claims court action must be heard not more than 40 days from the date of the order to appear if the defendant or defendants reside in the county, and not more than 70 days from the date of the order if one or more of the defendants reside outside the county.

AB #497 would, upon request of a plaintiff which is a public entity and which is filing more than 10 claims at one time, permit the extension of

those deadlines from 40 to 70 days, with respect to a defendant or defendants who reside in the county, and from 70 to 90 days with respect to a defendant or defendants who reside outside of the county.

AB #605 (Chapter 88, Statutes of 1981)

LIMITATION OF ACTIONS: LATENT DEFICIENCIES

Under existing law, an action for damages for or arising from a latent deficiency against persons who develop real property or who perform various services relative to the construction of improvements on real property may be barred after 10 years following substantial completion of the particular development or work of improvement. Existing law does not define the term "substantial completion".

AB #605 would provide that the 10-year period shall commence upon substantial completion of the improvement, but not later than the earliest of the date of final inspection, recordation or a valid notice of completion, use or occupation of the improvement, or one year after termination or cessation of work on the improvement.

SB #932 (Chapter 96, Statutes of 1981)

FICTITIOUS BUSINESS NAME STATEMENTS

Existing law provides for a fee of \$10 for filing a fictitious business name statement for the first name and a fee of \$2 for for each additional name filed on the same statement and doing business at the same location.

SB #932 would provide that the \$10 fee would include up to one partner operating under the fictitious name statement and that a fee of \$2 shall be charged for each additional partner operating under the same fictitious business name statement.

SB #972 (Chapter 116, Statutes of 1981)

COUNTY SURVEYOR: QUALIFICATIONS

Existing law provides for an elected or appointed County Surveyor in each county and requires that the person elected or appointed be a licensed land surveyor or registered civil engineer of the state.

AB #972 would, instead, require that the county surveyor be a person

authorized to practice land surveying in this state.

Copies of these bills are available through your legislator or by writing or calling the Legislative Bill Room at State Capitol, Room 1149 Sacramento, CA 95814 916/445-2323

SURFACE MINING ACT

Congressman Nick J. Rahall, West Virginia, introduced a bill on June 24 to rectify what he calls the "grave injustice" that was committed when land surveyors were not given a lead role in the Surface Mining Control and Reclamation Act of 1977.

His bill, HR 4000, will reinstate land surveyors in their traditional role of preparing maps and plans for mining operations. Co-sponsoring the bill were Congressman Morris K. Udall, Arizona; James Santini, Nevada; Douglas Applegate, Ohio; Austin J. Murphy, Pennsylvania; and Carroll A. Campbell, J., South Carolina. Congressman Udall, Chairman of the House Interior and Insular Affairs Committee, plans to hold oversight hearings on the Surface Mining Act in July. ACSM will be given an opportunity to testify.

A companion bill in the Senate, S-1153, was introduced on May 11, 1981 by Senator Strom Thurmond, South Carolina, on behalf of himself and Senator's Hollings, Domenici, Mathias, Jepsen, Hatch, Schmitt, Randolph, Hatfield, Goldwater, and Johnston. The bills are virtually identical to S. 2112, which Senator Thurmond introduced in the last Congress. S. 2112 was passed by the Senate, but was never taken up in the House of Representatives.

BILL FOR FEDERAL LAND SURVEY ACT INTRODUCED IN THE HOUSE

On August 4, 1981, legislation of major importance to the surveying and mapping professions was introduced in the House of Representatives. The bill, H.R. 4399, entitled the Federal Land Survey Act of 1981, was introduced by Congressman Manuel Lujan of New Mexico and Congressman John Breaux of Louisiana.

The purposes of H.R. 4399 are to encourage the timely conduct and ap-

approval of federal land surveys, and promote cooperation among private landholders and the local and federal governments in the survey of public lands. The bill also is designed to enhance the stability and permanence of the nation's records of surveys, provide the basis for a multi-purpose national cadastre, and provide for the maintenance of the Public Land Survey System (PLSS).

A significant provision of the legislation would provide authority for the BLM to conduct surveys or resurveys by contract with *private sources* authorized to perform such services under *applicable State law*. In contracting for such surveying services, the BLM would be *required* to employ negotiated procurement procedures that focus on the *demonstrated competence and qualifications* of the professionals offering the services.

Another requirement of H.R. 4399 would provide for cooperation between the BLM and the Interstate Commerce Commission in the conduct of cadastral surveys and plat maps necessary to perpetuate the boundaries of lands adjacent to railroad and utility rights-of-way authorized for abandonment or discontinuance. In addition, within three years, the Secretaries of Interior, Commerce, and Agriculture, in consultation with all the States' Governors and the National Academy of Sciences, would be directed to assess multi-purpose national cadastre information needs and conduct a feasibility study for establishing a multi-purpose national cadastre system.

Similar legislation has been introduced in the U.S. Senate by Senator Peter Domenici of New Mexico. The Senate version S. 706, however, presently does not contain the House bill's requirements that BLM surveys comply with applicable State laws and that federal survey procurements be negotiated.

You are encouraged to contact the House Committee on Interior and Insular Affairs and its Subcommittee on Public Lands and National Parks to urge early hearings on H.R. 4399 in the Fall. In addition, letters to other members of the House of Representatives urging support of H.R. 4399 would be most helpful to promote prompt enactment of the legislation

in 1982. Any such correspondence may be addressed to the House of Representatives, Washington, D.C. 20515.

THE TEXT OF H.R. 4399 IS AS FOLLOWS:

A BILL

To establish a national policy to provide for the timely notice, conduct, approval, and record of Federal land surveys, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Federal Land Survey Act of 1981".

Sec. 2 (a) The purposes of this Act are—

(1) to declare a national policy which will encourage the timely conduct and approval of Federal land surveys;

(2) to provide the public with reasonable notice of intent in the conduct and approval of these surveys;

(3) to promote and foster a spirit of cooperation with landowners and the several States in the survey of Federal lands;

(4) to promote the stability and permanence of the Nation's records of survey;

(5) to provide the basis for a multi-purpose national land information system; and

(6) provide for the reestablishment and maintenance of the public land survey system.

(b) The Congress, recognizing the profound impact of Federal land surveys on land record stability, property conveyance, environmental quality, and resource productivity and the critical importance of Federal land surveys to the economic and social well-being of this Nation's citizens, declares that it is the continuing policy of the Federal Government to—

(1) coordinate Federal land surveys with other Federal plans, functions, programs, and resources;

(2) protect the bona fide rights or claims of any claimant, entryman, or owner of lands affected by such Federal land survey, resurvey, or retracement by complying with the State statutes regulating land survey licensure, corner recordation, and

the platting of lands when such Federal land survey affects the bona fide rights of a private owner or is adjacent to private lands;

(3) cooperate with State and local governments, and other concerned public and private organizations, in the timely notice, conduct, and maintenance of such Federal land surveys, resurveys, and retracements; and

(4) provide national leadership in the development of a multipurpose national cadastre as a basis for improved land conveyance procedures, for equitable taxation, for informed resource management and environmental planning, and to further the Nation's economic productivity.

Sec. 3. (a) The Secretary of the Interior (hereinafter referred to as the "Secretary") or such agency as the Secretary may designate, in the survey or resurvey of public lands made after the date of enactment of this Act, shall—

(1) provide all affected Federal and State agencies, local governments, individual claimants, entrymen, landowners, and the local public with notice of intent to conduct, certify, or record a survey or resurvey not less than thirty days prior to the intended action;

(2) initiate any survey or resurvey within six months of providing notice of intent to conduct such survey or resurvey;

(3) complete any survey or resurvey and all necessary monumentation, plats and notes, affixing a permanent mark designating the year of the survey or resurvey on each monument when established or reestablished, identifying as temporary all temporary monuments at the monument, and otherwise complying with all applicable State statutes regulating land survey licensure, corner recordation, and platting when such survey affects the bona fide rights of a private owner or is adjacent to private lands; and

(4) certify the survey or resurvey in the appropriate land office and State agency within ninety days of the date the survey or resurvey is completed.

(b) When a section subdivision survey is conducted involving both lands owned by the Federal Government and non-Federal lands, the section center corner shall be monumented and certified in accordance

with subsection (a) and with all applicable State statutes regarding the subdivision of sections of the public land survey system.

(c) If the Secretary or the Secretary's designee fails to certify a monument within ninety days as required in subsection (a)(4), the temporary monument shall be removed within fifteen days after the ninety-day period has expired. Notice of such removal with reasons for the removal and notice of any plans for resurvey or retracement shall be published in a local newspaper and the Federal Register within thirty days of removal.

(d)(1) The Secretary or the Secretary's designee may conduct the survey or resurvey of public lands made after the date of enactment of this Act by contract with private sources authorized to perform such surveying in State or States in which the survey or resurvey is conducted.

(2) The Secretary's designee, in contracting for such surveying services as provided in subsection (1), shall —

(A) publicly announce all requirements for surveying and related professional services on the basis of demonstrated competence and qualification for the type of services required, and at fair and reasonable prices, and encourage firms engaged in the lawful practice of their profession to submit annually a statement of qualifications and performance data;

(B) provide for establishment of a selection committee which shall evaluate, for each survey or resurvey contract, the current statements of qualifications and performance data on file, together with those that may be submitted by other firms regarding the proposed contract, conduct discussion with no less than three firms regarding the contract and the relative utility of alternative methods of approach for furnishing the required services, and then select from such firms, in order of evaluated preference, based upon criteria established by the Secretary or the Secretary's designee, no less than three of the firms found to be most highly qualified to provide the services required;

(C) negotiate a contract with the

highest qualified firm for surveying services at compensation which the Secretary or the Secretary's designee determines is fair and reasonable to the Government, taking into account the estimated value of the services to be rendered, the scope, complexity, and professional nature thereof. If the Secretary's designee is unable to negotiate a satisfactory contract with the firm considered to be the most qualified, at a price determined to be fair and reasonable to the Government, negotiations with that firm should be formally terminated, and negotiations with the second most qualified firm should be undertaken. Failing accord with the second most qualified firm, the Secretary's designee, should terminate negotiations, and undertake negotiations with the third most qualified firm. The Secretary's designee, if unable to negotiate a satisfactory contract with any of the selected firms, shall select additional firms in order of their competence and qualifications and continue negotiations in accordance with this subsection until an agreement is reached."

(e) Cooperate with the Interstate Commerce Commission to conduct cadastral surveys and plat maps necessary to perpetuate the boundaries of lands adjacent to rights-of-way of any railroad or utility authorized for abandonment or discontinuance by the Commission pursuant to section 10903 of title 49, United States Code, and require such surveys to be accomplished and recorded under the applicable statutes of the State or States in which the land and rights-of-way are situated.

Sec. 4 (a) The Secretary of the Interior, the Secretary of Commerce and the Secretary of Agriculture, in consultation with the Governors of the several States and the President of the National Academy of Sciences, are authorized and directed to conduct an assessment of multipurpose national cadastre information needs and develop a feasibility study for establishing a multipurpose national cadastre system. The Secretary of the Interior, Secretary of Commerce and the Secretary of Agriculture shall submit the feasibility report with recommendations and any proposals for legislation to the

majority leader of the Senate and the Speaker of the House of Representatives within three years of the date of the enactment of this Act.

(b) The recommendations contained in the feasibility study shall be consistent with the Forest and Rangeland Resources Planning Act of 1974, the Federal Land Policy and Management Act of 1976, and the purposes and policies of this Act.



THE MEASURE OF A GOOD SURVEYOR . . .

The nature of land surveying demands that all possible evidence be gathered before the surveyor makes his decisions. A good surveyor searches relentlessly for such evidence, including the testimony of others. We agree that it is a good practice to listen to what others have to say . . . not only on land surveying problems but other matters as well.

For example, we could give you a sales pitch for joining the American Congress on Surveying and Mapping (ACSM), but we'd prefer sharing with you the "testimony of others".

"Just a note to let you know that I am extremely pleased with my membership in ACSM. The group insurance program available to members provides excellent coverage at reasonable rates. My premiums have been reduced substantially by generous annual dividends. Would highly recommend this insurance program, especially to employers who wish to provide a very worthwhile, yet low cost benefit to their employees".

G. K.

"I recently purchased your booklet relating to the surveyor in court. Many thanks for putting these fine articles together under one cover. Not only was I pleased with its contents but the cost was quite nominal. Hope you compile articles on other subjects".

H. M.

"Where else could I go for such a variety of articles and information on land surveying? As a surveyor I would be remiss in my professional duties by not seeking the knowledge and information available through ACSM. Keep up the good work".

B. R. H.

We've just read the "testimony of others" who have taken the time to tell why they're pleased with their ACSM membership. If you are not already a member we would like you to consider the evidence and decide to join us.

Telephone or write:
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210 Little Falls Street
Falls Church, Virginia 22046
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Now You Can Also Find Wessco's Unmatched Service & Market Expertise in California.



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WESTERN ENGINEERING & SURVEYING SYSTEMS CO.
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Transporting separate pieces of sophisticated EDM equipment is simply unwieldy. For many applications such as stake-out work where precision accuracy and longer distances are not required we discovered a more efficient, easy-to-handle solution - Topcon's compact GTS-10D Total Station.

Drawing upon the technological expertise which produced the DM-C2, Topcon combined a distance meter with a 10 second theodolite to produce an economical, compact and reliable instrument, the GTS-10D Guppy. 25% lighter than a theodolite mounted EDM, the GTS-10D does not require demounting for transporting.

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Our complete total station package includes a Topcon GTS-10D, triple prism assembly, tilting single prism assembly, prism target, prism carrying bags, tripod and stake-out range pole.

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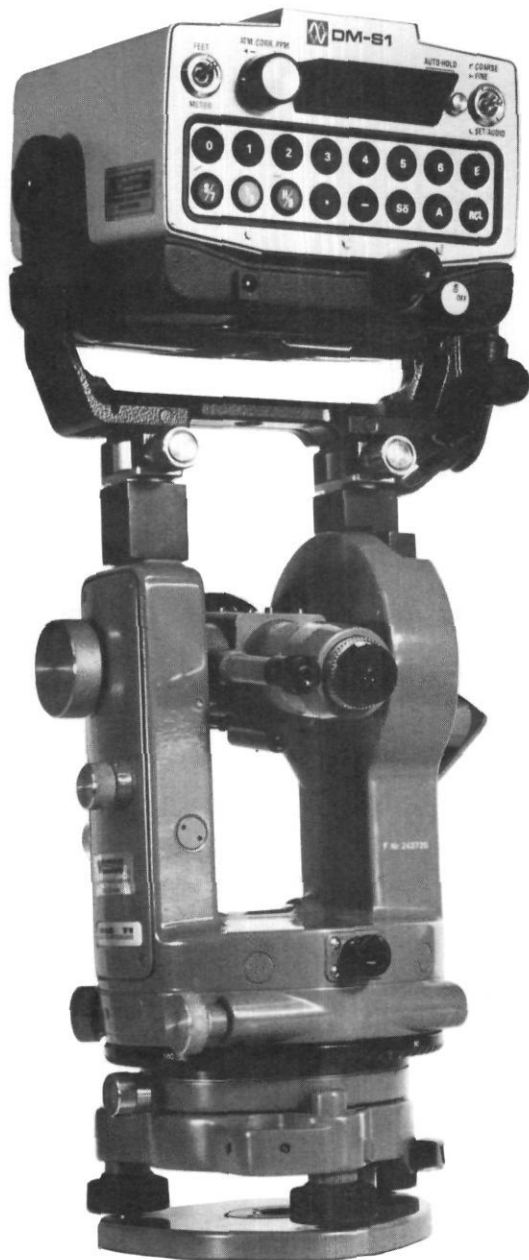
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Now more than ever we believe that Topcon produces the best EDM for the money ... the best slope reduction distance meter for the price - the new DM-S1.

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And like the DM-C2 Topcon's DM-S1 is almost fool-proof. But now with automatic light attenuation this new EDM is even easier to operate. Just point the distance meter and theodolite at your target. Automatically you'll obtain readings in less than 10 seconds. Under average atmospheric conditions you can measure over 1 mile.

Our complete package includes a Topcon DM-S1, 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 350 systems with the DM-C2 and we believe that our new package featuring the DM-S1 is even better. We're so confident of our new system that we back it with 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.

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Services

HEALTH INSURANCE NOW AVAILABLE

We have good news to announce. A Blue Cross Group Insurance Plan has been unanimously approved by the Board of Directors at their July 25, 1981 Board meeting for CLSA members and their families. This plan is also available to Proprietors Council members, their families and employees.

Benefits will include coverage of all pre-existing conditions, effective the day of coverage during the *enrollment period of August 1st, September 1st and October 1st*, after such time, a medical questionnaire will be required for any existing members and acceptance will be based on insurability. Any new members of the Association or an employee of a Proprietors Council member will be offered coverage on the first day of the month following 60 days of membership or employment, after which time, a medical questionnaire will also be required and acceptance will be based on medical insurability.

A Brief Description of Benefits is as follows:

MAXIMUM BENEFIT \$1,000,000 INPATIENT HOSPITAL

No Deductible — Basic Benefits. Blue Cross pays 80% of each hospital admission until Blue Cross payments reach \$4,000, then Blue Cross pays 100% of charges. 1. An average semi-private room for unlimited days. Includes drugs, ancillaries, radiation and chemo-therapy. 2. Intensive Care. 3. Mental — 30 days per calendar year. 4. Alcoholism & Drug Addiction — 30 days per calendar year. 5. Skilled Nursing Facility — 100 days per confinement. 6. Home Health Care — 100 visits per calendar year.

OUTPATIENT HOSPITAL (Emergency Room)

Pays 100% (no deductible) for illness if for first treatment of shock, acute poisoning or hemorrhaging; for accidents within 72 hours; or for surgery.

MATERNITY

Pays as any other illness for any member.

MAJOR MEDICAL

\$100 deductible per member per calendar year. 3 deductibles maximum per family per calendar year. Blue Cross pays 80% of the next \$5,000 of covered expenses, and then 100% thereafter per calendar year. Outpatient Psychiatric care — 50% of usual charges up to \$25 per visit up to 50 visits each calendar year.

RATES

Single Member	\$44.00
Member + 1 dependent	\$88.00
Member + 2 or more dependents	\$110.00

For information and application, contact:

Peter Wantuck
Bracken Life Insurance Agency, Inc.
P.O. Box 3648 — 22 Mooring Road
San Rafael, California 94902
(415) 457-3850

Calendar

November 13	THE LAND SURVEYOR AND PROFESSIONAL LIABILITY, Rawlins, Wyoming, sponsored by the Professional Land Surveyors of Wyoming.
November 13 - 14	LAND INFORMATION SYSTEMS I, Newark, New Jersey, co-sponsored by the New Jersey Institute of Technology.
November 16 - 18	AN OVERVIEW OF HYDROGRAPHIC SURVEYING, Miami, Florida, presented by the South Atlantic States Unit of the ACSM Committee on Marine Surveying and Mapping.
November 19 - 21	MARINE BOUNDARY SURVEYING, Miami, Florida, presented by the South Atlantic States Unit of the ACSM Committee on Marine Surveying and Mapping.
November 18 - 20	SURVEYING INSTRUMENTATION AND COORDINATE COMPUTATION, Cleveland, Ohio, co-sponsored by the Cleveland Chapter of the Professional Land Surveyors of Ohio.
December 2 - 4	PHOTOGRAMMETRY FOR THE LAND SURVEYOR and THE LAND SURVEYOR AND PROFESSIONAL LIABILITY, Las Vegas, Nevada, co-sponsored by the Western Federation of Professional Surveyors.
December 4 - 5	SURVEYING COMPUTATIONS, Iowa (location to be announced), co-sponsored by the Society of Land Surveyors of Iowa.

For information on ACSM workshops, contact: Education Director, ACSM, 210 Little Falls Street, Falls Church, Virginia 22046.

1982

March 17 - 19	CLSA ANNUAL CONFERENCE, Town & Country Hotel, San Diego, CA.
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Education

EASTERN MASSACHUSETTS ASSOCIATION OF LAND SURVEYORS SCHOOL OF SURVEY

The Eastern Massachusetts Association of Land Surveyors (EMALS) is offering a correspondence school in surveying. The Association has been working on this program for ten years and is still in the process of enlarging and improving it.

At present they have a correspondence school with about 200 students and six teachers. The curriculum consists of 13 courses including seven in survey math, one in legal aspects, one in drainage, two in photogrammetry and two in geodetic surveying. Each course has nine assignments and a final exam.

No course is further away than your mail box, and courses can be started at any time. A correct answer and the correct method are requirements for every assignment, and papers are returned as many times as necessary until they are correct.

Through an arrangement with the

University of the State of New York, about half of their courses are awarded semester hour credits toward either an associate or baccalaureate degree. The University will supply home study curriculums through which the balance of the credits for a full college degree can be obtained by home study. Also, CEU's (Continuing Education Units) are given for the successful passing of each course.

Courses are graded to all levels from the greenest rodman to the experienced professional surveyor, and many college graduates have taken the courses. The school does not aim to take the place of computers, nor do they depend on solutions by formulae. They stress the understanding rather the memorization of formulae.

All six of their staff are college graduates and four have masters degrees. Three teach college part-time; one is a full-time college professor; one is a retired professor of photogrammetry. All but one is or has been directly connected with

practical surveying.

The school sets two goals that each student can work toward. A Grade I Continuing Survey Education award is given for the successful completion of 14 CEU credits which includes required subjects. A Grade II award is given for the completion of 28 CEU credits.

Additional features include a system that will keep all your CEU credits on file for courses taken, workshops, etc., and a library for use by students.

If you are looking for a way to improve your professional knowledge and would like to accumulate a few credits that can be presented to a registration board or prospective employer, mail the form below and the school will mail you its latest brochure giving full details of its programs, requirements, costs, and how to enroll.

cut along this line

TO E.M.A.L.S. SCHOOL OF SURVEY 80 BOYLSTON ST., BOSTON, MASS. 02116

I am interested in your School of Survey and Library Reading Program and would like to know more about it. Please send a copy of your latest brochure to the name and address shown below. Please type or print your name and address, putting your last name first.

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Professionalism

THE PROFESSIONAL LAND SURVEYOR

By Roy Minnick

About the Author:

Roy Minnick has been surveying since 1955. Since 1968 he has specialized in property and water boundary problems, and is currently a Senior Boundary Officer with the California State Lands Commission.

Roy is founder and chairman of the Survey Technology Program at Sacramento City College, where he developed a six-unit course in Boundary Location Principles, as well as other courses.

He has authored several publications and is founder of Landmark Enterprises, a firm devoted to publishing and selling survey literature.

Professionalism lacks a clear definition for the simple reason that it is an attitude not only in the mind of the professional but also in the mind of those outside the profession. Mere acquisition of a license from the Board of Registration does not make a professional even though some immediate responsibilities and privileges are created. Neither does a proclamation by a group of licensees. Professional stature must, instead, be awarded by other professions, and by the public, as a result of the average licensed surveyor's conduct, integrity, honesty and superior knowledge in land surveying.

To be sure, laws and courtrooms accord certain status to a surveyor upon receipt of a license. Section 8761 of the California Land Surveyor's Act allows only a licensed land surveyor or registered civil engineer to take responsibility for survey maps, plats, descriptions or other documentary evidence generated by practicing land surveying. Legal penalties are attached to unlicensed or unregistered persons who pretend to do, or offer to do, land surveying. Courts recognize the Land Surveyor as a professional both as an "expert witness" and by holding the Land Surveyor responsible for exercising "average skill" and care.

While these are proofs of a standing different than that of a layman, it is not proof that Land Surveyor's eminence is equal to the professions of law, medicine and civil engineering. True professional standing re-

quires professional actions, attitudes and behavior by the average practitioner to earn professional stature in eyes of others.

One of the attributes of a professional is the ability to work with people rather than with things. For surveyors, superior ability in use of instruments and measurement is necessary, but purely technical. A practicing professional must, at least to a certain extent, desert his craft and learn to deal with people. Independent judgment and, with it, liability, is the sphere of activity of the professional; his technical expertise is presumed.

The layman seeks the professional for consultation because of the professional's ability to use independent judgment to solve a problem. Professional Land Surveyors, in their practice, can really offer nothing beyond their opinion, derived after reviewing a certain set of facts. It is not only with this "opinion" that the professional shoulders responsibility but must also be able to persuade other professionals to his way of thinking. Curtis Brown, in preface to the second edition of his book, "Boundary Control and Legal Principles", summarizes one attribute of the professional by saying, "The aim of the surveyor is first to know and second to appear to know. Appearing to know brings in the clients and knowing holds them."

There are other attributes of a profession that surveyors must consider, such as public service and trust.

The surveyor, while obligated to locate the client's property line, is also trusted, as a professional, by the adjoiner and the general public to locate the line to the best of his ability, based upon the facts of the case, and upon his professional judgment, even if it may be to the disadvantage of his client.

The professional surveyor's obligation to the client is limited to gathering all of the facts of the case, and applying experience, education, and judgment in deciding upon a course of action or in the solution of the problem. The obligation does not permit distortion, omission or fraud to allow a more satisfactory solution for the client.

The professional surveyor, it is clear, has an obligation to both the

client and to the public, if a position of trust and professional eminence is to be attained.

In addition, every professional Land Surveyor has an obligation to every other professional Land Surveyor. Professional stature for all surveyors is affected by individual actions. Hence, no surveyor should act in any way that will bring discredit to the profession. This includes demeanor, appearance, honesty, integrity, reasonable fees for service performed and unfair business practices.

In summary, professionalism is a state of mind on the part of both the practitioner and the layman. The practitioners must persuade, by individual and collective actions, that both their conduct and service are truly professional, that knowledges and skills are comparable with other practitioners, that they are honest and impartial, and that surveyors' fees are reasonable for the services performed.

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FELLOW MEMBERSHIP NOW OFFERED

CLSA is now offering a Fellow Member grade of membership. The first person to take advantage of this has been William O. Gentry, CLSA's president. The criteria and an application for Fellow Membership are given below:

CALIFORNIA LAND SURVEYORS ASSOCIATION

FELLOWSHIP APPLICATION

FELLOW MEMBER GRADE — Annual Dues \$144.00

Shall have a valid California Land Surveyors or Photogrammetric license.

FELLOW MEMBER: Any Corporate member who has 15 years cumulative membership in this Association, or holds a Bachelor's degree in Surveying from an institution recognized as conferring such a degree by the California State Board of Registration for Professional Engineers and has 10 years cumulative membership in the Association, or has been licensed by the State of California as a Land Surveyor prior to the year 1960 and has 5 years cumulative membership in the Association shall be eligible to apply for the Class of Fellowship Member of the Corporation.

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1. Date _____ Corporate Member From _____ To _____

2. Name _____ County _____

3. Address _____

City _____ Zip _____

4. Mailing Address _____

City _____ Zip _____ Length _____

and

5. Occupation: Private Practices _____ Public _____ Type of Services _____

6. Name of Firm or Agency _____

7. Address _____

City _____ Zip _____

8. Title of Major _____

9. California licensed or registered certificate No. _____ Date Certified _____

10. Other registration(s) _____

11. Signature of Applicant _____

12. References (Minimum 5 Corporate Members):

Please Mail To: 'California Land Surveyors Association'

P.O. Box 9098, Santa Rosa, CA 95405

Tel. (707) 539-3633

First year's Annual Dues are pro-rated from date of application

Letters

ERRATA

Editor:

A technical error has been discovered in my article entitled: "Operating Principles of a Burt's Solar Compass," which appeared in the Summer, 1981 edition of THE CALIFORNIA SURVEYOR. On page 14, 3rd column, are two references to "sidereal time" which correctly should have been "apparent time."

I apologize for any inconvenience this may have caused.

Sincerely yours,
F. D. Uzes

To: The California Surveyor
Re: Memorandum, published in
edition of Summer 1981, No.65,
page 21.

I have long held the personal opinion that in this country, where the law of the land maintains a provision for change (ratification being only a majority consensus), one is forced into one of three actions if one is dissatisfied with the current law. To wit: 1) change the law, 2) stop complaining, 3) leave, if too lazy to do the first and unable to do the second.

With this in mind I would like to address the article entitled "MEMORANDUM" on page 21, No. 65, of

The California Surveyor", main title "LICENSING". Column one, first paragraph of text asks: 1) What is BLM authority to resurvey federal land? (newly acquired or not), 2) If state law holds over federal law?

Let's take No. 2 first: According to the Constitution of the United States of America (effective March 4, 1789) federal law reigns supreme, states second and individuals third (amendments; Article X — ratified by three-fourths of the states Dec. 15, 1791). the only exceptions are the "Bill of Rights" otherwise known as the Amendments to the Constitution, (mentioned above). So much for who holds over whom.

About item No. 1 — If you read Title 43 of the U.S. Codes you will find that Article 2 describes the authority vested in the BLM which is created in Article 1. Access to records is provided in Article 13, along with the fact that a polite phone call yields the same effect, usually. (See also Articles 38, 41, 42, & 45).

Article 52 comes to the point at hand in its paragraph No. 1 — "Skillful Surveyors" begin the key to the whole issue. I'll return to this in a moment.

Column 2 of "Memorandum" recites Article 772 of 43USC and proports in the very next paragraph that individual rights — expressly stated — were not intended, but that States Rights were meant. HOW DARE

HE! The author of that text is obviously a bonafide nincompoop.

With that said, let us return to "Skillful Surveyor". A note of interest is that there are 50 states (50 ways of doing things) and only one federal law — but few if any surveyors (state licensed) are truly that familiar with federal survey laws.

Article 52 gives the Government the right to hire talent rather than play games with local fuddy-duddies. And so it should be.

Before a state licensed lawyer may practice in federal court, he must pass the test and receive a federal license — and so it perhaps should be for surveyors. BUT until the law is so enacted and/or until Article 52 is repealed, amended or otherwise changed, I suggest that to keep the money in the local surveyor's pocket (as the memo desires), the local surveyor be satisfied to challenge the "SKILLFUL"ness of "Skillful Surveyor".

The acquisition of a state-granted license does not confer godship upon its recipient. It generally signifies passage of MINIMAL ability.

I prefer that the government be forced (through proper means) to aspire to the highest ideals and employ those truly good at their profession — licensed or not. Because in the future we will all benefit.

Steven L. Turner

New Members

NEW MEMBERS

APRIL 1 Through MAY 31st, 1981

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NEW GEODIMETER 122 — THE EDM WITH A VOICE

Geodimeter 122, "The EDM with a Voice," uses the measuring light beam to carry the operator's instructions to the rodperson.

The instrument has all the capabilities of the machine it replaces, Geodimeter 120, plus these new features: Unicom, the built-in one-way voice communication; Track-Light (which allows the rodperson to stay virtually on line), high precision mode (arithmetic mean readings down to 0.0001 meter), increased range (2.2 miles to a triple prism) and improved vertical angle sensor accuracy. Like Geodimeter 120, it features data recording capability (with Geodat 120 recorder), fast tracking and instantaneous, automatic horizontal distance.

The voice communication feature means that the operator and rodperson need not be burdened with walkie-talkie radio equipment, and hands are left free for equipment operation. The light-beam transmission requires no FCC license and is unaffected by weather or other interference.

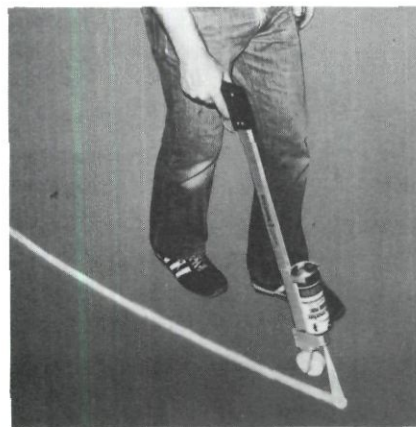
As an option, Geodimeter 122 can be equipped with AGA's Remote Object Elevation. This enables the operator to measure the height of distant objects, such as power lines, by placing a reflector directly below and elevating the instrument from ground target to the peak. The only calculation necessary would be adding two displayed figures: horizontal to ground and horizontal to peak.

For more information, contact AGA Geodimeter, Inc., 385F Bel Marin Keys Blvd., Novato, CA 94947; (415) 883-2367; Telex: 330 495.

BELT BOX & HANDLE FOR MARKING PAINT

FOX VALLEY MARKING SYSTEMS, INC. has announced the development of their new BELT BOX, a convenient way for work crews to carry paint and chalk.

Just slide the BELT BOX onto your belt, position it where it's most comfortable and drop in a can of aerosol paint. The paint goes where you go: never left behind and always at your fingertips for instant use.



Your crews have both hands free to get the job done — with less time wasted.

Also, from Fox Valley, a NEW EASY MARKER HANDLE, redesigned for complex control, comfort and rugged use for marking on all surfaces.

No accidental discharge with the plated steel protective hood over the spray tip, the working mechanism is contained within a heavy gauge steel housing.

The handle grip gives control, comfort and balance for free hand lines.

For further information, call Thomas J. Smrt, President
FOX VALLEY MARKING
SYSTEMS, INC.

Outside Illinois call FREE:
800-323-4770

GEODIMETER INTRODUCES MODULAR-DESIGN EDM

Geodimeter 116 EDMs delivered from Sweden after September 1 offer a new modular design allowing the customer to specify from one to five optional features.

The new features are:

1. Extended range — doubling the basic one-prism range to 1.2 miles. (This option must be factory-ordered.)

2. Increased vertical angle sensor accuracy — to $\pm 20'' \pm 20^\circ$ MSE and adjustable to theodolite within $\pm 5''$.

3. Remote Object Elevation.

4. Unicom.

5. Track-Light.

All options, with the exception of increased range, can be installed on new Geodimeter 116 EDMs by AGA service centers here and in Pine Brook, NJ.

For more information, contact AGA Geodimeter, Inc., 385F Bel Marin Keys Blvd., Novato, CA 94947; (415) 883-2367; Telex: 330 495.

LAND MEASUREMENT COMPUTER FOR AUTOMOBILES

Micron Corporation of Houston, Texas is introducing a unique land measuring computer that allows one man traveling in a vehicle at up to 55 mph to do both linear and area measurements.

This compact, dash-mounted unit, called the MICRON SURVEYOR, has no moving parts or batteries to wear out. The integral calculator can be easily programmed to compute area, volume and even material cost of agriculture, utilities, paving, recreation, construction, forestry,

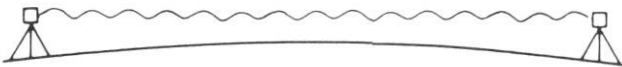


transit or any other industry that needs fast, accurate, economical land measurement.

The low cost of the instrument can easily be recovered the first time it is used through time and labor savings.

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(Continued on Page 26)



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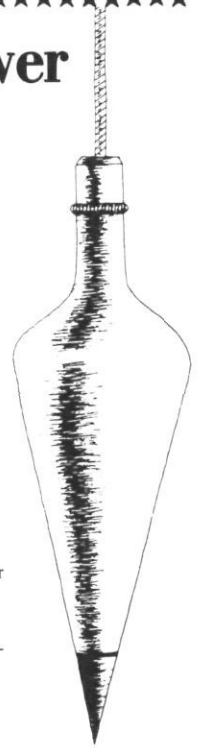
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- 2. *Tide and Current Glossary*—U.S. Department of Commerce, N.O.A.A.—National Ocean Survey (1949) Revised 1975. Special Publication No. 228. . . \$ 0.75 ea.
- 3. *Insurance Wetlands*—A Study of Wetland Problems in California.
 Members: \$10.00
 Non-members: \$15.00
- 4. *Coastal Zone Map #TP-00189—Florida, Palm Beach County, Lantana to Boynton Beach—1:10,000 (1970)*
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- 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.
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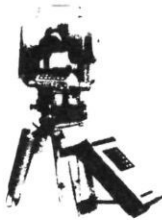
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Hewlett Packard 3808 Distance Meter	50.00	1,200.00
Tellurometer CA 1000	35.00	700.00
Cubic DM-60 Cubitape	25.00	450.00
Cubic DM-20 Electrotape*	40.00	700.00
Wild DI-10 Distomat Mountable with T-2	20.00	300.00

Positioning Equipment:	DAY	MONTH
Motorola Mini-Ranger with two Coded Transponders* **	250.00	3,500.00
Each additional Mini-Ranger Transponder	50.00	500.00
Cubic DM-40 Autotape	200.00	3,000.00
Cubic DM-40 Autotape, Modified	300.00	4,500.00
Printer for Autotape	15.00	150.00
HP 5150 Thermal printer for Mini-ranger or 3 range Autotape	50.00	500.00

Optical Surveying Equipment:	DAY	MONTH
Lietz BT-20 Transit, Optical plummet, 20" horizontal, l'vertical	6.00	120.00
K & E Transit (20" & 1')	5.00	100.00
Wild T-2 Theodolite (1" direct reading)	20.00	550.00
Lietz B-1 Engineers Automatic Level	6.00	100.00
Wild NA2 Automatic Level	15.00	150.00
Zeiss Ni2 Level	15.00	150.00

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Raytheon DE-719 Recording Fathometer*	25.00	500.00
Raytheon 723 Precision Survey Fathometer* accuracy .25 pct. to 250 fathoms	50.00	600.00
Raytheon DSF-600 Deepwater Fathometer	200.00	2,000.00
EG&G Mark 1-B Side Scan Sonar* **	500.00	4,000.00
EG&G Uniboom Sismic Profile* **	400.00	3,000.00
EG&G Sparker (1000 joule)* **	400.00	3,000.00
Braincon-Histogram Recording Current Meter	50.00	500.00
Teledyne-Gurley Current Meter	25.00	250.00
Honeywell Sea Scanner	50.00	500.00
Shipek Sediment Sampler	50.00	300.00

Miscellaneous:	DAY	MONTH
American Paulin Altimeter M-1	4.00	100.00
American Paulin Recording Barograph	15.00	150.00
Triple Prism reflector assembly	3.00	65.00
HP 9815 Surveying Calculator with Software	30.00	300.00
Super Cobra (portable drill)	60.00	650.00
GE Radios (Porta-mobil and Master)	10.00	100.00
Power Plants (110 & 12 V)	15.00	150.00
Telan Thermal-Electric Generator, 30 day endurance unattended with 100 lb. propane bottle	25.00	250.00

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(Continued from Page 7)

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It's not states that we're dealing with,
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California's a state of America's
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And must stay there intact for our
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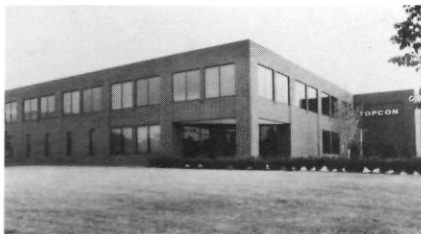
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New Products

(Continued from Page 21)

stalled in about 30 minutes. It is fully warranted, with a 30-day total refund policy.

For further details contact Micro Corporation, P.O. Box 19698, Houston, Texas 77024, (713) 932-1405.



TOPCON MOVES TO NEW CORPORATE HEADQUARTERS

Topcon Instrument Corp. of America has moved to a new U.S. corporate headquarters building at 65 West Century Road, Paramus, New Jersey.

The two-story brick structure will house sales, service and parts depart-

ments, inspection and warehousing facilities, and U.S. corporate offices for the surveying instrument division as well as for the company's ophthalmic instrument division.

Included in the construction was a special collimator system, used for instrument testing, that rests on its own independent floating foundation to prevent vibration from affecting its calibration.

Two separate showrooms are located on the first level to display the full lines of the surveying and ophthalmic instrument divisions. Executive offices and conference rooms, as well as the computer room and a resource library are on the upper level.

FLEXIBLE MARKING POSTS

Carsonite International announced the introduction of a new line of Roadmarker CRM-375 delineator posts made from a flexible composition of glass fiber, marble, and thermo setting polymers which will not rust, rot or become brittle



from cold or ultraviolet exposure.

The Roadmarker, which can be used to mark and guard control points, installs in seconds using a hand-held pipe driver; it is flexible and resilient, thereby resisting removal by vandals or vehicle impacts. The preapplied reflective sheeting and permanent colored posts provide daytime and nighttime visibility.

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Advertisers' Index

	Page No.
AGA	4
Allied Surveyor Supplies	25
Brunson Instrument Co.	6
California Land Title	22
C&R Manufacturing	23
Clark County Personnel	26
Disco-Tech	22
Electro-Dist. & Assoc.	22
Electronic Survey Rentals	24
Hadco Instruments	23
Haselbach Surveying Instruments	25
Industrial Pipe & Steel Co.	24
Kern Instruments, Inc.	26
Keuffel & Esser	3
Kreuger Engineering	25
Sierra Cybernetics	9
Surveyors Service Co.	8
Swiss Precision Instruments	27
Western Engineering & Surveying Systems Co.	13, 14, 15

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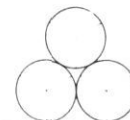
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