



The California Surveyor

Institutional Affiliate of American
Congress on Surveying and
Mapping

THE VOICE OF THE LAND SURVEYORS OF CALIFORNIA

NO. 34

FALL EDITION

1974

B.L.M. COOPERATIVE TRAINING PROGRAM

by A.E. "Ed Griffin, L.S.

The California State Office of the Bureau of Land Management is responsible for the multiple-use management of the Federal National Resource Lands within the State of California. This land comprises 15.5 million acres of rural lands.

The Cadastral Surveys Branch of the Division of Technical Services of the California State Office is responsible for the delineation of the boundaries of these lands. To do this job, we have a staff of 27 employees plus temporary employees we hire to fill out our field crews.

In order to improve our training and recruiting problems with the temporary employees, and to assist with the professional development of our land survey employees, we entered into a cooperative training agreement with the Oregon Technical Institute in Klamath Falls, Oregon.

In 1970, the first of the co-op students reported to work at the Bureau's Portland Service Center. During the first 3 years of the program, 22 Oregon Technical Institute students signed up for the program. In 1974, 19 students will be working for the Bureau in four different offices.

In 1973, the California State Office of the Bureau approached Fresno State University to inquire if they would be interested in establishing a cooperative work study program similar to that at Oregon Technical Institute. Doctors Matheny and Dominick and Professor Kulhan were most helpful in working out an arrangement that would accommodate a work study program. In early 1974, the cooperative agreement between the California State Office, Bureau of Land Management, and Fresno State University was signed. The program is open to Fresno State students with a Surveying and Photogrammetry major or the surveying option within the Civil Engineering major. The programs the students will follow are:

(Continued on page 12)

FROM THE BOARD OF REGISTRATION

Corner Record

The form for the filing of a "Corner Record" has been prepared as directed by Section 8773 of the Land Surveyors Act (1973 Legislative Session, Chapter 702). It has been approved by the State Board of Registration for Professional Engineers, and it is the recommended standard for all counties in California.

The Board has solicited suggestions from many sources in California who have knowledge and interest in this particular matter. Some input was received from other states in which similar filings are now in progress.

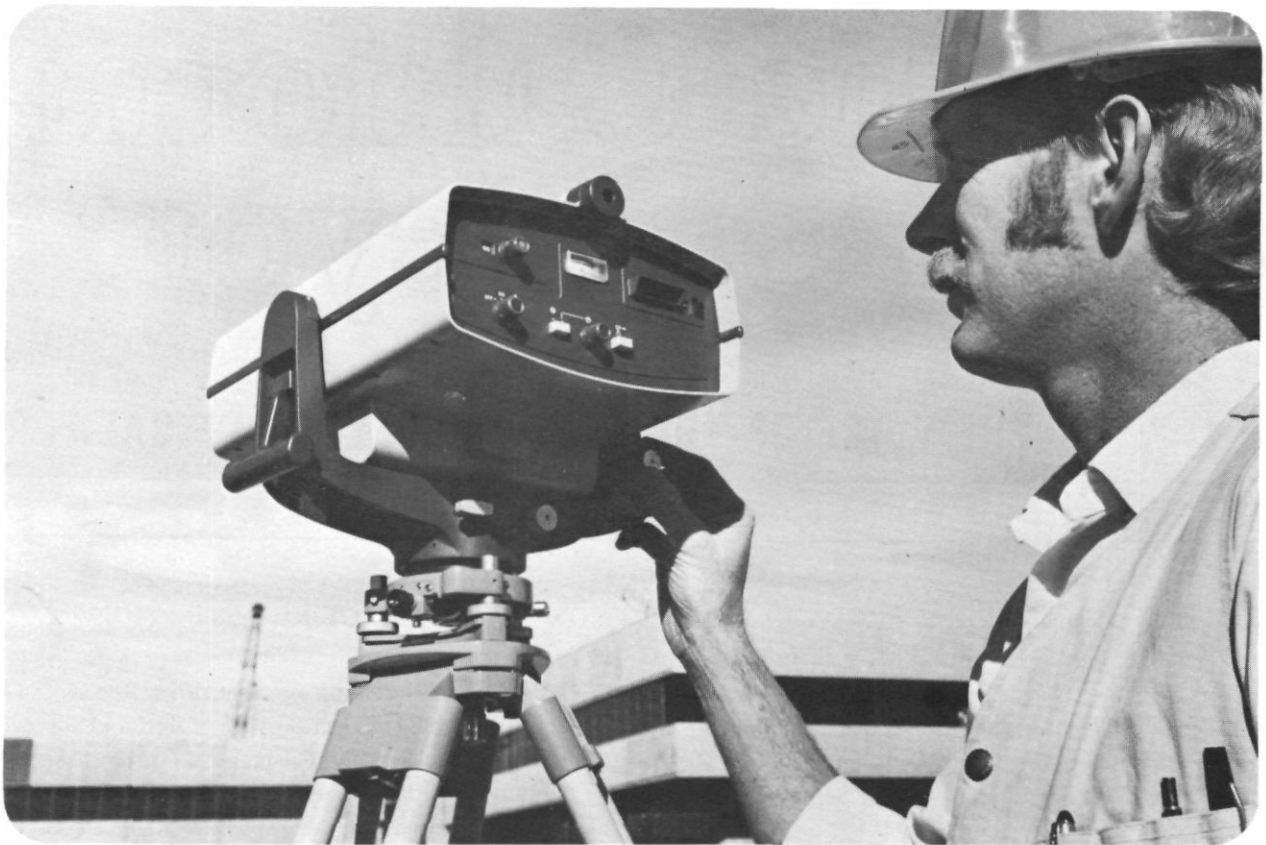
The Board offers the following suggestions and comments:

- a. The cost of reproduction and distribution in each county must be borne by each county in its own way. The Board of Registration has no authorized funds for this purpose.
- b. Section 8773.2 of the Land Surveyors Act provides that a charge be made for examining, indexing and filing the corner record which shall be the same as that collected for recording a deed. Costs may be recovered from the filing fees collected. The Board of Registration is not a party to the collection of fees in each county.
- c. The information contained in the corner record is expected to reflect the surveyor's best professional finding.
- d. The county official who receives the corner record is expected to accept and file the record as a matter of public information. Field review by the county official is not expected.
- e. All corner records offered for record should be accepted whether or not they are specifically required.
- f. Some duplication is expected. The Board suggests that duplicates be accepted. The law does not require a corner record for one that is already on file.

(Continued on page 6)

ACSM-CLSA CADASTRAL RETRACEMENT WORKSHOP

NOVEMBER 7-9, 1974 - SACRAMENTO



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094/71

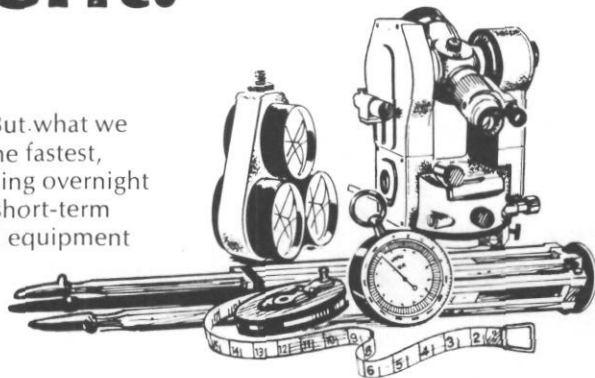
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 - I would like a demonstration of HP Surveying Products.
 - Please send me more information on Hewlett-Packard Surveying Products.

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EQUIPMENT	1st 10 DAYS PER DAY	AFTER 10 DAYS PER DAY	AFTER 90 DAYS PER DAY
CUBIC DM-60 CUBITAPE DISTANCE METER — Including power supply, altimeter, thermometer, two Kern tripods, one single prism assembly	\$ 25.00	\$ 15.00	\$ 10.00
HEWLETT-PACKARD H.P. 3805 DISTANCE METER — Including power supply, altimeter, thermometer, two Kern tripods, one single prism assembly	25.00	15.00	10.00
HEWLETT-PACKARD 3800A DISTANCE METER — Including power supply, altimeter, thermometer, two Kern tripods, one single prism assembly	25.00	15.00	10.00
RETRO-RAY TRIPLE PRISM ASSEMBLY FOR H.P. 3800A OR DM-60 CUBITAPE — Including Kern tripod with adaptor	3.75	2.25	1.50
RETRO-RAY SINGLE PRISM ASSEMBLY FOR H.P. 3800A OR DM-60 CUBITAPE — Including Kern tripod with adaptor	2.25	1.35	0.90
CUBIC DM-40 AUTOTAPE — Basic system including interrogator and two responders, tripods	300.00	150.00	100.00
AUTOTAPE THERMOELECTRIC GENERATOR — Propane power, 12 volts, 60 watts	20.00	9.00	6.00
MOTOROLA RANGE POSITIONING SYSTEM (RPS) — Basic system including two coded transponders	250.00	120.00	80.00
MOTOROLA MINI-RANGER — Basic system including two coded transponders	200.00	90.00	60.00
ADDITIONAL RPS OR MINI-RANGER CODED TRANSPONDERS	30.00	15.00	10.00
AUTOTAPE, RPS OR MINI-RANGER PRINTER — Automatically prints out ranges at three second intervals or upon command	15.00	6.00	4.00
RPS OR MINI-RANGER THERMOELECTRIC GENERATORS — Propane powered, 24 volt, 20 watts	10.00	4.50	3.00
RAYTHEON DE-719 RECORDING FATHOMETER — Portable, 12 VDC or 115 VAC, 410' depth range	25.00	15.00	10.00
RAYTHEON DE-119D RECORDING FATHOMETER — Portable, 12 VDC, 240' depth range	20.00	12.00	8.00
CUBIC DM-20 ELECTROTAPES — Two units including tripods, psychrometers and altimeters	40.00	24.00	16.00
ELECTROTAPE TILTING HEADS — Two units	2.50	1.50	1.00
SPECTRA-PHYSICS LT-3 LASER TRANSIT-LITE — Including fan beam attachment 12 VDC-115 VAC power supply and tripod	20.00	12.00	8.00
ASKANIA A-2e 1" DIRECTIONAL THEODOLITE — Including tripod	15.00	9.00	6.00
ASKANIA A-1e 20" REPEATING THEODOLITE — Including tripod	10.00	6.00	4.00
AMERICAN PAULIN MODEL M-2 SURVEYING ALTIMETER — 0 to 10,000 feet, 2 foot graduation	4.00	2.40	1.60
20" SURVEYORS TRANSIT — Including tripod	4.00	2.40	1.60
AUTOMATIC LEVEL — Including tripod	3.50	2.10	1.40

Minimum rental charge: \$10.00 exclusive of shipping charges. Rental charges commence on the day the equipment leaves Ventura, California, and terminate on the day the equipment is returned or shipped for return from lessee's location. Lessee pays all round trip shipping charges on rented equipment. Rates for longer periods available on request. Rates subject to change without notice.



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Accurate: The Ranger III is accurate to within ± 0.02 ft. $+2$ ppm for the limits of its range. Or from 3 feet to more than 8 miles.

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Measurements in either Feet or Meters: Conversion from one unit of measurement to the other is no problem. Simply change a switch position.

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Choice of Models: The Ranger III is shown here, but for shorter distances, you can also choose the Ranger II (from 3 feet to 4 miles) or the Ranger I (from 1 meter to 4 kilometers).

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For 3 feet up to 8 miles, the Ranger III meter stands alone.



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RANGER

BOARD OF DIRECTORS MEETING

by M.K. Welch, L.S. Secretary

The meeting of the Board of Directors of the California Land Surveyors Association was held at the Royal Inn near San Francisco International Airport, Saturday April 27, 1974. The meeting was called to order by President Joe Scherf at 10:15 a.m.

ATTENDANCE

President, Joseph J. Scherf Present
 Vice-President, Harold B. Davis Present
 Secretary, Michael K. Welch Present
 Treasurer, Donald E. Bender Present
 Immed. Past Pres., Eugene Lockton Present
 Executive Secretary, James E. Adams Present
 Director, Robert L. Carpenter Present
 Director, Lawrence Cloney Present
 Director, A. E. Griffin Present
 Director, Richard J. Stephan Present
 Director, Roy Watley, Jr. Present

Chapter Representatives

Bakersfield, Donald E. Ward Present
 Central Coast, Robert Leger Absent
 East Bay, Ray J. Peters Present
 East Bay, Donald Bunce Absent
 Eastern Sierra, Robert P. Baron Present
 Feather River, John H. Ashbaugh Absent
 Lake/Mendocino, Kenneth L. Haskew Present
 Marin County, Eugene Lockton
 (Immed. Past Pres.) Present
 Monterey Bay, James M. Prendergast Present
 Mother Lode, Frederick Kett Absent
 Northern Counties, Dan B. Chatfield Present
 Sacramento, Donald H. Dackins Absent
 San Diego, William Karn Present
 San Diego alternate, Charles A. Wooldridge Present
 San Fernando Valley, Leonard A. Lindenbaum Present
 San Joaquin Valley, William O. Gentry Present
 Santa Clara/San Mateo, Earl R. Cross Present
 Santa Clara/San Mateo, Paul W. Lamoreaux, Jr. Present
 Sonoma County, Ray C. Carlson Present
 Tahoe, William B. Marum Present

Don Bender submitted a written report with five major recommendations as follows:

1. Retain an accountant to obtain tax exempt status for the Association and file the required information returns.
2. Retain an association legal counsel.
3. Initiate required constitution and by-laws changes.
4. Incorporate the Association.
5. Obtain liability insurance to cover all areas of Association activity.

A discussion developed as to how to pay for these items and some budget categories were cut in order to provide an estimated \$2,7000.00 total cost.

The budget was approved as adjusted with a \$23,103.00 total expenditure this year. Item one of Mr. Bender's report was approved with a \$1,100.00 estimated expenditure. The remaining four items were referred to the proper committees for study.

Resolution 74-05 was passed and it directs that the budget be presented to the Board by October of each year and that the Treasurer be assisted in this task by the five directors-at-large and the Vice-President.

Resolution 74-06 was passed, it will create the *President's Advisory Committee* to develop material and ideas between quarterly Board meetings. The committee will consist of people selected by the President. A resolution proposed by the Sacramento Chapter to provide one year gratis membership to new Land Surveyors was defeated. A proposal to allow Civil Engineers full membership to CLSA was referred to the President's Advisory Committee and will be placed on the next agenda.

It was noted that as of March 31, 1974 there were 486 members.

The League of California Surveyors is a confederation of organizations presently consisting of a northern and southern division. It evolved out of the American Public Works Association's Committee to establish a handbook on surveying.

The Education Committee will be sending a representative to the 8th National Surveying Teachers Conference in June at Pennsylvania State University.

The Legislative Committee has noticed the tempo pickup in the Legislature in recent weeks. Several bills will be before the committee next month.

Chuck Wooldridge submitted the Convention Committee's preliminary financial report and also stated that the papers from the convention were being typed and they will be provided to each chapter.

President Scherf added Bill Marum to a committee consisting of Past President Lockton, Ed Griffin and Homer Banks. They are to review Mr. Lockton's questionnaire and submit it to the Board for approval by the next Board meeting.

The Board was advised that our professional relations work with the City of Los Angeles was progressing satisfactorily.

President Scherf stated that he would like to see CLSA take the initiative on mapping standards.

The next Board meeting will be July 20, 1974 at the Airport Marina Hotel near the San Francisco International Airport. ▲

BOARD OF DIRECTORS MEETING

by M.K. Welch, L.S. Secretary

The Board of Directors Meeting was called to order at 10:05 a.m. Saturday, July 20, 1974 at the Airport Marina Hotel, Burlingame, California.

ATTENDANCE

President, Joseph J. Scherf Present
 Vice-President, Harold B. Davis Present
 Secretary, Michael K. Welch Present

(Continued on page 14)

- g. Filing of corner records should be *encouraged* in any way possible. This program can become meaningful if the records are filed and if they are accepted within an atmosphere of cooperation.
- h. Indexing can best be done by using the Township and Range System as a basis. At this time filing by the California Coordinate System is not suggested.
- i. The request for California Coordinate System Coordinates has long-range value. The coordinate system provides a means whereby all public land corners can ultimately be digitized and programmed into the computer. This is deemed to be a worthwhile objective. At the present time it is not expected that much more than a beginning can be made toward this objective. Counties are urged to encourage use of the Coordinate System wherever practicable. It should not be demanded where compliance will not be forthcoming.
- j. It should be recognized that there is no wholly effective way to force a surveyor to prepare and file a corner record. An atmosphere of cooperation is strongly advocated to provide a climate wherein the surveyor is willing to prepare and file the corner record, and wherein the receiving official will accept it willingly. The program will probably not be effective if the climate becomes adversarial or hostile, between the various involved parties.
- k. It is recommended that the corner record be reproduced on field book quality paper. (Mylar or cloth are quite acceptable).
- l. Microfilming of corner records is suggested if you have access to this kind of equipment.
- m. Records should be examined promptly in each county office. A 20-day period should be adequate within which to examine the map and to file it for record. A copy may then be returned to the surveyor.
- n. All public and private entities who perform surveys are expected to contribute to the program. Federal agencies are exempt from state law. Contributions from federal agencies may be encouraged and accepted when offered.
- o. The terms "filed" and "recorded" are deemed equivalent in connection with the corner record.
- p. Suggestions for improvement are solicited.

The Land Surveyor Committee

The newly revised corner record form submitted to the Board by Board Member Pedri. Mr. Pedri will send copies of the form to staff for transmittal to agencies using the form.

President Oliphant directed Mr. Pedri to draft replies to certain letters that the committee has for consideration and present those drafts to the Board for approval at the next Board meeting.

Disclosure of Information by Ad Hoc Committees

It is the intent of the Board of Registration for Professional Engineers in appointing ad hoc committees to assist the Board in a special project, to limit the ad hoc committee to the stated purpose of the project and withhold from such committees the authority to discuss the subject matter of the project outside of

the committee or to speak on behalf of the Board on any matter unless specifically authorized to do so.

Retired Registrants

It was moved, seconded, and carried that the Board follow the procedure on the issuance of "retired" registrations as submitted by the Executive Secretary. ▲

NEW LOOK FOR SURVEYING

Surveying at its most sophisticated has become geometronics, a beneficiary of space age technology transfer. Any Rip Van Winkle surveyor awakening at this month's meeting in St. Louis of the American Congress on Surveying and Mapping and the American Society of Photogrammetry might as well have awakened on the Moon.

The technology of remote sensing, developed in the Earth Resources Technology Satellite (ERTS) and Skylab programs, produces photographs that record up to six spectra from visible light through infrared to microwave. The multi-spectral prints and transparencies, viewed separately and in various overlay combinations, tell more about Earth's resources and measurements than ever before detectable.

Aspects of the multi-spectral technology have been available for some time (ENR 10/12/72 p. 43). But commercial development of the system awaited availability of precise six-camera exposure (for accurate overlays), multi-spectral scanner-transmitters, and the satellites and Skylab from which to aim the sensors.

Besides this multi-spectral technology, today's geometronics have electronic distance measurement devices in 30 models that weigh as little as 4 lb, in contrast to the original 400-lb model introduced 20 years ago.

There was a time, a dozen or so years ago, when leaders in surveying had to argue to keep their specialty a recognized, respectable part of civil engineering. Today, it would be well if all specialties within civil engineering were advancing as rapidly, technologically, as is surveying at its frontiers.

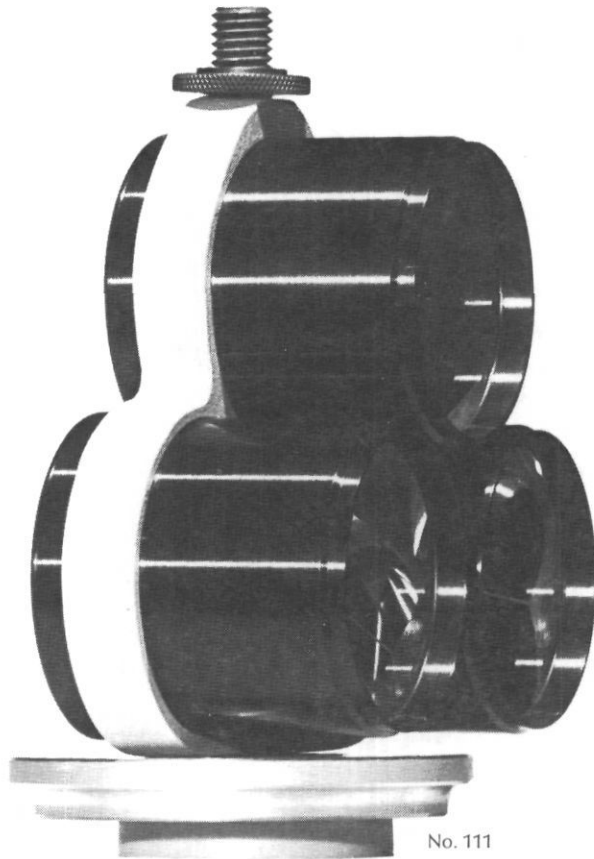
ENR March 28, 1974 ▲

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No. 111

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Retro-Ray Price List:

Round Retro-Ray Reflectors (2 7/8" aperture, 3/8" x 1 1/2" thread base)	
No. 101 (Single)	\$145.00
No. 111 (Triple)	\$395.00
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No. 122 (Single)	\$165.00
No. 134 (Triple)	\$445.00
Prism Carrying/Storage Bags (high-visibility orange, padded, vinyl coated)	
No. 201 (Single; round or lateral)	\$ 22.50
No. 202 (Triple; round or lateral)	\$ 25.00

Please send me complete information on your Retro-Ray reflector rental program.

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COMMENTS AND LETTERS, From In, Out, and Around

STUDYING THE EMERGENCE OF A PROFESSION LAND SURVEYING

(Editor's Note: The following is a summary of remarks made at the annual convention of the Michigan Society of Registered Land Surveyors February 22, 1974.)

Walter T. Anderson
Vice-President-Director, NCEE

The author, a professional engineer member of registration boards, has been involved with the registration of land surveyors for eight years. Experiences and observations in this role have made it possible for him to view the profession of land surveying in an objective way and have given rise to the observations of this paper.

A profession may be identified by certain marks. These marks include the following: Education, Internship, Legal Recognition, Code of Ethics, Public Trust.

Let us view these marks for the profession of land surveying. Item 1, Education, is now being identified and implemented at the baccalaureate-degree level. The older form of education, that of civil engineer, is no longer applicable since the land surveying content of civil engineering curriculums has been reduced to an insufficiency for the profession of land surveying.

Michigan's baccalaureate-degree requirement for registration, which will become effective on January 1, 1977, is a strong force for the establishment of land surveying curriculums leading to a bachelor's degree in land surveying. This does not rule out other degrees and curriculums which have strong options in land surveying. The fact is that land surveying now has a clearly identified educational requirement for entry to the profession.

Item 2, Internship, is clearly defined as that part of professional training which follows education. Earlier, a person could enter the profession of land surveying by engaging in a long period of internship without educational experience. The resulting history of experience which a candidate presented to the registration board was often difficult to evaluate for conformity to statutory requirements. It is expected that the well-educated land surveyor will now have easily identifiable responsible experiences during his internship period.

Item 3, Legal Recognition, has been greatly strengthened in Michigan by the establishment in 1970 of a separate board of registration for land surveyors. Additional laws have put duties on the Michigan board to establish standards and controls on

the profession; it is of interest to note that the architect and professional engineer registration boards do not have similar duties.

Item 4, Code of Ethics, has been implemented by furnishing each new registrant a copy of a *Code of Ethics*, as published by the Engineers Council for Professional Development. If the Michigan registration board is granted proper rule-making power through amendment to the registration act, it will adopt a Code of Professional Conduct for registered land surveyors.

Item 5, Public Trust, is a quality which the land surveying profession has long enjoyed. The public employs professionals to do things which the public cannot do and does not understand. In so doing, the public puts its trust in the professional person. Land surveying is completely identifiable in filling this criterion of a profession.

The emergence of land surveying as a profession is easily identified by the following happenings:

1. The revision of the Michigan registration act in 1970 created a separate registration board.

2. The Michigan land surveying board has achieved national status as an affiliate member of the National Council of Engineering Examiners.

3. The revision of the Michigan registration act in 1969 made the baccalaureate degree a requirement in 1977.

4. Programs leading to the baccalaureate degree appropriate to the profession of land surveying are being established.

5. A need for accreditation for land surveying curriculums has arisen and is being done by the Michigan board until a national accrediting agency is established.

6. National examinations for the registration of land surveyors are published by the National Council of Engineering Examiners through its Land Surveying Committee. These examinations are being used by a majority of registration boards, including Michigan.

7. The *Model Law* publication of the National Council of Engineering Examiners contains three versions — one for Professional Engineers, one for Land Surveyors, and one for Professional Engineers and Land Surveyors combined.

In conclusion, land surveying is clearly identified as a unique, emerging profession. Older land surveyors question this conclusion, preferring to state that land surveying is an old profession which is now re-emerging. This observer is pleased to recognize both points of view.

NCEE Bulletin No. 139 ▲

ACSM CALIFORNIA CONFERENCE

The Northern and Southern California Section ACSM would like to invite any and all to our 1974 Joint Conference being held on October 18th and 19th, at the Riviera Hotel in Palm Springs.

A fine group of speakers, talking on a number of interesting topics, will satisfy the technical appetite, while a myriad of survey and mapping exhibits will whet our curiosity about their many new innovations.

We must not forget the social aspect of a conference. Friday will find a tummy tempting luncheon, highlighted by an address by the ACSM National President.

Friday evening's banquet will be the finest yet, featuring good music and professional entertainment following a delicious dinner.

Saturday's luncheon will compare very favorably with that on Friday, followed by the afternoon session.

The conference is climaxed by an informal dinner and cocktail party at the top of the tram, which should be of special interest to all. The price of the tram dinner ticket also includes the tram ride up and down.

This should prove to be the best Joint Conference yet, of which there have been many fine conferences in the past.

For further information write:

Southern California Section, ACSM
P.O. Box 631 — Main Office
Los Angeles, California 90053



SURVEYING CALCULATORS

Bulletin No. 5952-9100 gives details on Hewlett-Packard's full line of Surveying Calculators. The illustrated brochure outlines capabilities of the HP-35 and HP-45 Pocket Calculators including listings of available surveying routines for these popular little giants. Corresponding information is given on the HP-46 Desk-top Calculator with a built-in printer for general purpose computations. The new HP-65 Fully Programmable Pocket Calculator is described with a programming example and listing of 34 pre-recorded magnetic program cards contained in Survey Pack I, one of six application pacs available to the user. Specifications, software library and peripheral information is covered on the HP9810 Surveyor Series Calculators with details on each model configuration. Also included, is detailed information on the HP9830 All Purpose Calculator with data on surveying computations, subdivision plotting, management control operations and other civil engineering computations.



DEADLINE DATES FOR THE CALIFORNIA SURVEYOR

Winter Edition November 16, 1974

Convention Edition January 18, 1974

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

Editor

right on

REPRESENTATION

by Roy Watley, Jr., L.S.

During the short period in which I have attended CLSA board meetings, I have been surprised on several occasions to hear various comments on representation. For instance, about a year ago a chapter representative stated, after a vote was taken by the chapter members on an issue to be discussed at the next board meeting, that he could not express a consensus of the group to which he was opposed. On a different occasion one board member stated that the members of the board know enough to make decisions without polling the membership.

What is the purpose of having representatives? Should a representative pursue the interest of his chapter or the whole organization? Do representatives represent individuals or groups? Is the charge of the representative to carry out a mandate or to reflect the image of the represented or is it to demonstrate accountability.

Upon attempting to uncover the answers to these questions, I found that there were no simple answers, just more complex questions.

Kenneth Janda stated that "it was undesirable for representatives to act contrary to public opinion. But at the same time, it was obvious that complete reliance upon public opinion in governmental policy making was also likely to have undesirable consequences. The voters' ignorance or misunderstanding of the facts involved in the issues, their inclinations toward selfishness in promoting their own interests, and their tendencies toward hasty and ill-considered actions were cited as factors that would lead to unwise or unjust governmental policies if the representatives were merely to act in accordance with their constituents wishes."¹

Communication between the representative and the represented appears to be a problem of considerable concern. The lack of input from the represented is part of the communication problem. The deaf ear of the representative is another part.

Edmund Burke's classic 'Speech to the Electors of Bristol' in 1774 set forth a conception of the proper role of the representative as one who ought to respect his constituents' opinions, who ought to prefer their interests above his own, but who ought *not* to sacrifice his unbiased opinions in deciding for the good of the nation."²

RIGHT ON ED!

¹ Janda, Kenneth, "Representational Behavior," International Encyclopedia of the Social Sciences.

² *ibid.*



Retracement Workshop

CONTINUING EDUCATION AT ITS BEST!

Caravan Inn

NOTES FROM A.C.S.M.

A memorandum from the national headquarters of the American Congress on Surveying and Mapping, dated July 9, 1974 has the following items of interest to members of the California Land Surveyors Association:

1. An advertising policy was considered and approved in March 1974 meetings of the Land Surveys Division and ACSM Boards. The new policy is as follows:

“Advertising shall be limited to lower case listing in the white and yellow pages of the telephone director.

“Display advertising of any type is prohibited.

“Brochures outlining qualifications shall be factual and may be supported by a listing of actual projects which have been completed.”

2. The Land Surveys Division also urges surveyors to examine the text of the “mortgage loan inspection” as a means of meeting some requirements associated with the transfer of land title. A report concerning the subject was published in the December 1973 issue of the ACSM Journal, *Surveying and Mapping* (page 536). A follow-up on the matter will appear in the August issue of the ACSM Bulletin.

3. The “Manual of Instruction for the Survey of Public Lands” (1973) prepared by the Bureau of Land Management, U.S. Department of the Interior is available upon request from ACSM offices and will be mailed post paid on the day of receipt of said request when accompanied by check or money order for the proper amounts. The charge is \$7.55 for each copy and requests should be mailed to ACSM National Headquarters: 430 Woodward Building, 733 — 15th Street, N.W., Washington, D.C. 20005.

This manual may also be ordered from the U.S. Government Printing Office for the same cost.

4. The Land Surveys Division of ACSM is anxious to obtain first-hand information on the experiences which land surveyors have had with OSHA cases. If you have had inspections and been cited, it would be helpful to them if you would send information concerning the experience to: OSHA Committee Chairman, William I. Shafer, 8633 W. 90th Terrace, Overland Park, Kansas 66212. ▲

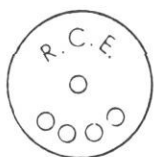
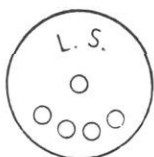
**RETRACEMENT WORKSHOP
ACSM-CLSA**

First Day	November 7, 1974
8:30-9:00	Introduction and welcome.
9:00-9:20	Historical background. Why the workshop?
9:20-10:20	The history of the G.L.O. System.
	Break
10:30-11:15	The history of California surveys.
11:15-12:30	Lunch
12:30-2:00	Retracement surveys
2:00-2:30	Section subdivision
	Break
2:45-4:15	Evidence, recovery and interpretation.
Second Day	November 8, 1974
8:30-4:30	Aerial photography and surveying.
	Types of photographs.
	Geometry of an aerial photograph.
	Discussion of corner recovery using aerial photos.
	Classroom use of aerial photos.
	Use of precise photogrammetric applications.
	The entire day devoted to discussing the use of aerial photographs and their application to surveying.
Third Day	
8:30-9:30	Retracement of metes and bounds, and state subdivision surveys.
9:30-10:30	Field notes, corner records, and record of survey plats.
	Break
10:45-12:15	Ethics and liability, boundary disputes, and court presentations.
12:15-1:00	Summation. ▲

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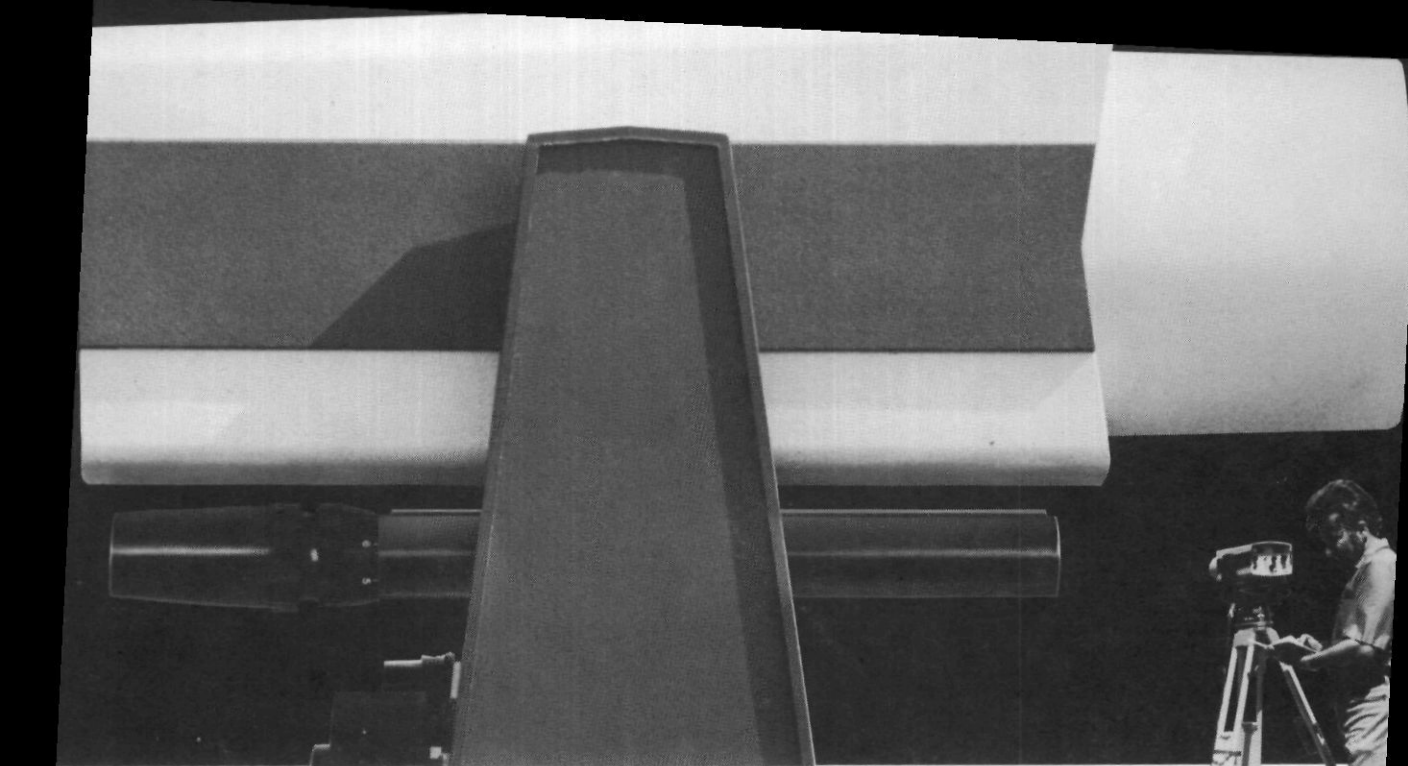
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B.L.M. COOPERATIVE TRAINING PROGRAM

(Continued from page 1)

CO-OP PROGRAM IN SURVEYING AND PHOTOGRAMMETRY

FIRST YEAR

Fall

Engr. 26	Engineering Graphics
Math 75	Mathematical Analysis I
Chem. 2A	Introductory General Chemistry
Engl. 1	Composition
P.E.	Physical Education

15 units

Spring

Phys. 2A	General Physics
Math 76	Mathematical Analysis II
Chem. 2B	Introduction General Chemistry
Hist. 11/12	American History
P.E.	Physical Education

15 units

Summer

Free

SECOND YEAR

Fall

C.E. 1, L	Plane Surveying
C.E. 3	Photogrammetry
Phys. 2B	General Physics
Geol. 1, L	Physical Geology
Jour. 17	Introductory & Publications Photogrammetry

16 units

Spring

C.E. 2, L	Advanced Plane Surveying
C.E. 4	Machine Computing & Computer Programming
C.E. 5	Photogrammetric Instrumentation
Speech 3	Fundamentals of Oral Communications
Geog. 4	World Geography
P.E.	Physical Education

16 units

Summer

Free

THIRD YEAR

Fall

C.E. 102, L	Geodetic Surveying
C.E. 104	Boundary Control & Legal Principles
E.E. 104	Basic Electronics
Geog. 112	Aerial Photograph Interpretation
P1. Si.	Political Science
P.E.	Physical Education

16 units

Spring

A.E. Co-op Work Study

Summer

A.E. 3 Co-op Work Study
3 units

FOURTH YEAR

Fall

C.E. 105	Advanced Survey Computations
C.E. 107	Electronic Distance Measurement
Geog. 115	Cartography
Hum.	Humanities

12 units

Spring

C.E. 101, L	Route Surveying
C.E. 103	Advanced Photogrammetry
C.E. 108	Geodesy
U.R.P. 100	Introduction to Urban and Regional Planning
Hum.	Humanities

15 units

Summer

A.E. Co-op Work Study

FIFTH YEAR

Fall

A.E. Co-op Work Study
4 units

Spring

C.E. 106	Cartographic Techniques and Map Reproduction
C.E. 180	Senior Project
Engr. 161	Legal Aspects of Engineering
Engr. 182	Engineering Writing
Geog. 111	Map Interpretation
Jour. 113	Public Relations

12 units

CIVIL ENGINEERING SURVEY OPTION

FIRST YEAR

Fall

Engr. 26	Engineering Graphics
Math 75	Mathematical Analysis I
Chem. 1A	Gen. Chemistry & Qualitative Analysis
P.E.	Physical Education

14 units

(Continued on page 13)

B.L.M. COOPERATIVE TRAINING PROGRAM

(Continued from page 12)

Spring

Engr. 70	Computer Programming
Math 76	Mathematical Analysis II
Chem. 8	Elementary Organic Chemistry
Phys. 4A	Mechanics and Wave Motion
Hist. 11/12	American History
P.E.	Physical Education
17 units	

Summer

Free

SECOND YEAR**Fall**

C.E. 1, L	Plane Surveying
C.E. 20	Engineering Mechanics: Statics
Math 77	Mathematical Analysis
Phys. 4B	Electricity, Magnetism, Heat
Pl. Si.	Political Science

Spring

C.E. 2, L	Advanced Plane Surveying
M.E. 31	Engineering Materials
Math 81	Applied Analysis
Phys. 4C	Light and Modern Physics
Geol. 1, L	Physical Geology
17 units	

Summer

Free

THIRD YEAR**Fall**

C.E. 102, L	Geodetic Surveying
C.E. 121, L	Mechanics of Materials
C.E. 150	Transportation Planning and Design
M.E. 112	Engineering Mechanics Dynamics
M.E. 116, L	Thermodynamics-Fluid Mechanics
16 units	

Spring

A.E.	Co-op Work Study
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Summer

A.E.	Co-op Work Study
3 units	

FOURTH YEAR**Spring**

C.E. 104	Boundary Control and Legal Principles
or	
C.E. 105	Advanced Survey Computations
C.E. 130	Theory of Structures
C.E. 132	Reinforced Concrete

Soc. Sci.

Hum.

15 units

Social Science

Humanities

Fall

C.E. 123, L	Soil Mechanics
C.E. 142	Water Supply and Wastewater Engineering
E.E. 110, L	Magnetic and Electric Circuits
M.E. 136	Thermodynamics-Fluid Mechanics
P.E.	Physical Education

Summer

A.E.	Co-op Work Study
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FIFTH YEAR**Fall**

A.E.	Co-op Work Study
4 units	

Spring

C.E. 124	Concrete Laboratory
C.E. 133	Steel and Timber Structures
C.E. 180	Senior Project
Engr. 160	Engineering Economy
Engr. 182	Engineering Writing
Soc. Sci.	Social Science
Hum.	Humanities
P.E.	Physical Education

During 1974, four co-op students from Fresno State University are working for the Bureau. These students are all assigned to field crews as full-time temporary employees. They are given the highest rating for which they qualify, and they receive the standard per diem rates while in the field.

Special emphasis is being placed on training these students while they are with the Bureau. They will be rotated through the various jobs on the survey crews so that they will get a variety of experience. During the second season, they will be required to assume the more responsible positions on the crew. They will start out cutting brush and clearing line, followed by chaining and running the instruments, both angular and distance. As they progress, they will have an opportunity to assist with the calculations and prepare the rough draft field notes. During the student's second tour, he may be assigned to an investigation crew searching for corner locations using photographic interpretation and delineation procedures.

The benefits derived from the cooperative education training program are many and varied. For the student, it is a chance to see his theoretical training used in a practical working situation. It gives him a chance to earn some money to help with his educational expenses. He has an opportunity to establish contacts with members of his future profession. The Bureau benefits by having a reliable source of seasonal help with an interest in

(Continued on page 14)

BOARD OF DIRECTORS MEETING

(Continued from page 5)

Treasurer, Donald E. Bender	Present
Immed. Past Pres., Eugene Lockton	Present
Executive Secretary, James E. Adams	Present
Director, Robert L. Carpenter	Present
Director, Lawrence Cloney	Present
Director, A.E. Griffin	Present
Director, Richard J. Stephan	Present
Director, Roy Watley, Jr.	Present

Chapter Representatives

Bakersfield, Donald E. Ward	Absent
East Bay, Edward A. Boris, Jr. for Don Bunce	Present
East Bay, Ray J. Peters	Absent
Eastern Sierra, Robert P. Baron	Absent
Feather River, Jack Ashbaugh	Present
Lake/Mendocino, Kenneth L. Haskew	Absent
Marin County, Eugene Lockton	Present
Monterey Bay, James M. Prendergast	Present
Mother Lode, Frederick W. Kett	Present
Northern Counties, Dan B. Chatfield	Present
Riverside/San Bernardino, Jim McGillvray	Present
Sacramento, Don Dackins	Present
San Diego, Chuck Bratcher	Present
San Diego, Bill Karn	Present
San Diego Alternate, Charles A. Wooldridge	Present
San Fernando Valley, Leonard A. Lindenbaum	Absent
San Joaquin Valley, William O. Gentry	Absent
Santa Clara/San Mateo, Frank Raymond	Present
Santa Clara/San Mateo, Earl R. Cross	Absent
Sonoma County, Ray Carlson	Present
Tahoe, Bill Marum	Present

The minutes of the previous meeting were approved as amended. Don Bender submitted a written Treasurers Report and added that we currently have \$9,816.35 in funds available. He updated us on his efforts to gain tax exempt status and incorporate our organization. Mr. Bender also asked the Board to allow the treasure a 30% overrun in his budget. It was approved.

The Administrative Division Report was presented by Robert Carpenter and he submitted a written FAM Committee report. He said that our Constitution and Bylaws could use a major revision.

Dick Stephan presented the Education Committee Report. He submitted a written report that Mr. Ray Peters prepared, relating his account of the 8th National Surveying Teachers Conference which he attended. Mr. Stephan stated that one of his committee goals is to assemble a group of educators and draw up some curriculum guidelines.

Some members suggested that maybe surveyors need to educate the public as to what surveying is.

Larry Cloney submitted a written Convention Committee Report and indicated progress in the planning of the Tahoe Convention.

Larry said that they have been thinking of putting on some

one day seminars to stimulate the surveying profession.

Legislative Committee Report was submitted by A.E. Griffin and he commented on a few bills, next year the prospect of C.S.P.E.'s proposal as well as a possibility that plan "A" could come up, should keep the Legislative Committee busy.

Hal Davis, under Professional Matters, reported that liaison with other groups is taking place. He also discussed our efforts to alert surveyors locally and nationally about the Department of Labor's actions regarding the definition of the Land Surveyor.

Membership Service Report was presented by Roy Watley. Roy stated that one of his committee goals is to obtain 75-80% of the Land Surveyors in California in CLSA. Gene Lockton will help him in this effort as Chairman of the Membership Committee. One of the methods Roy hopes to help bring in new members and keep them, is by preparing programs for chapter meetings.

The first resolution of the day was presented by Bob Carpenter and it was to grant Civil Engineers full membership in CLSA. A discussion took place that indicated less tension between Surveyors and Civil Engineers than earlier days. Mr. Carpenter withdrew his resolution stating that it was not urgent.

Gene Lockton made a motion to submit a questionnaire to the general membership to poll their opinions on several subjects. The motion failed.

A resolution passed by the Northern Counties and Feather River Chapters on the advisability of a paid executive secretary for state CLSA. The Secretary was directed to draft a resolution prior to the next Board Meeting.

Under New Business Joe Scherf pointed out that if there was going to be any state wide mapping standards he wanted CLSA to be in the fore-front. It was pointed out that the League of California Surveyors were trying to work on that problem and that our members would be very active in that group.

It was decided to help pay some of the cost of John Pedri's trip to the NCEE Meeting since the state was not going to support the trip.

Joe Scherf and Chuck Wooldridge thought that we should have a committee that would involve its self very close with the Board of Registrations activities.

Hal Davis felt we should recognize Roy Minnick for the work he is doing in the publication of survey related materials. ▲

B.L.M. COOPERATIVE TRAINING PROGRAM

(Continued from page 13)

cadastral surveying and with some academic training. We benefit by creating a number of academically trained and experienced surveyors, a few of which we hope to be able to recruit. We hope to have the opportunity for some input into the institutions on course content, which will help to meet the Bureau's needs. We also hope to develop other programs with the colleges that will be mutually advantageous. The college benefits by being able to offer programs that are more responsive to their students' needs. They will be able to offer the students that need some practical experience to supplement their academic training a chance to acquire such background. ▲

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