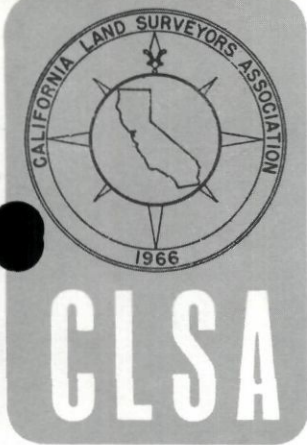


RECEIVED JUN 23 1975

The California Surveyor

THE VOICE OF THE LAND SURVEYORS OF CALIFORNIA



Institutional Affiliate of American Congress on Surveying and Mapping

No. 38

SUMMER EDITION

1975

1975 BI-STATE CONVENTION WAS HUGE SUCCESS

by Lawrence J. Cloney, L.S.

The most successful convention in the history of CLSA was held at the Sahara Tahoe Hotel at South Lake Tahoe this past March 6-8. The Convention was jointly sponsored by CLSA and the Nevada Association of Land Surveyors. This dual sponsorship helped account for the outstanding success, both in the attendance (about 525) and also in the quality and the professionalism of the guest speakers. These outstanding guest speakers were not only attracted from both states but also from other parts of the nation and were extremely able

to talk about and discuss "FUTURE DIRECTIONS IN SURVEYING."

"National Trends in Surveying" was the topic discussed by Bernard Hostrop from the BLM, Washington D.C., and by Walter Robillard, Chairman of ACSM Land Surveys Division (also with the U.S. Forest Service, Atlanta, Georgia).



"Surveying Education—More or Less?" was the topic covered by Richard Hauck (Two Year Program) from Pasadena City College, Dr. R. Ben Buckner of Ohio State University (Four Year Program), and Jim Self (Union Apprenticeship Program) of the Fresno area.

The new "California Map Act—Changed for the Good?" was discussed by Ted Fairfield of MacKay & Soms Engineering Firm of Santa Clara and by David McMurtry (League of California Cities) of Sacramento.

"The sky above—the earth below" was a panel discussion by Dr. Paul Tueller of the University of Nevada and Robert Altenhofen of USGS, Menlo Park.

"Electronic Data Processing—The Future is Now!"—a panel of Donald Gratz of Computer Graphics, Walnut Creek and Gil Wolf of

Hewlett-Packard, Santa Clara.

Certainly one of the high-lights of the program was the last conference—"Future Directions in Land Surveyor Registration." Not only were the speakers outstanding: Jim Jurkovich of the California State Board of Registration, Edward Pine of the Nevada Board and Walter Anderson of the Michigan Board of Registration for Land Surveyors (also Vice-President of NCEE and Professor at Michigan Technological University), but also an unannounced visitor was "outstanding;" Barbi Benton of PLAYBOY fame and one of the performers on the Sahara Dinner Show. She spoke briefly during the conference and thanked the Surveyors for attending "her show" the night before. A great deal of thanks is owed to all the speakers especially the four that traveled from out of state. These men were impressed with both the Convention and the Surveyors from the two states and certainly from their "word of mouth," they will do a great P.R. job for both Associations.

(Continued on page 5)

Land Surveyors

CLSA would like to extend our hardy congratulations to the following Land Surveyors who were successful on the Land Surveyor's Examination in November and have obtained their licenses. We would also like to welcome you into our organization. If you have not been contacted, please feel free to contact any of the officers listed on the back of this issue.

C.L.S.A. MEMBERS

- Anderson, William K., 2024 Norris Drive East, Fresno 93703
- Brooks, Alan R., 228 B Street, Nevada City 95959
- Campbell, Neal P., 1695 Sutter Court, Petaluma 94952
- Monson, Ronald P., Post Office Box 1378, Tahoe City 95730
- Palm, Lawrence A., 1324 El Rancho Drive, Santa Cruz 95060
- Patz, Edward P., 2927 Cambridge Drive, San Jose 95125
- Stoutenburg, Thomas W., 2247 Loch Lomond, Bishop 93514
- Giggy, Robert L., 4204 Kenny Street, Bakersfield 93307
- Hendrix, Virgil L., 8519 Yolanda Avenue, Northridge 91324
- Williams, John F., 2207 Rose Marie Drive, Bakersfield 93304

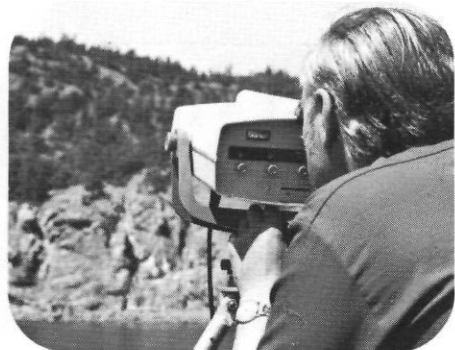
Northern California

- Barnhart, Richard D., 12510 Floradale Lane, Auburn 95603
- Brooks, Stephen M., 1750 Elm Street, Ukiah 95482

(Continued on page 9)



"When establishing my business I didn't feel I could afford this LUXURY, now I can't see how I stayed in business without this NECESSITY."



"Professional surveying requires good people using good equipment. Occasionally we have difficulty finding good people, not so the equipment, thanks to HP."

Now you can lease the new HP 3805 Distance Meter for less than \$115* per month.

Cost-conscious surveyors want measurement equipment that will give them fast, profitable production. But many are stymied by the high cost of investment capital. And that's where HP's new lease plan comes in. It gives you immediate access to the most advanced measurement equipment with no large outlay of precious working capital.

How the plan works. Suppose you want the HP 3805 Distance Meter, the automatic readout meter that cuts measurement time to six seconds—and cuts measurement costs by as much as 50%. Here's what the lease arrangements would be:

Down payment—First monthly payment.
 Monthly payment—2.778% of list price during years 1 through 3.
 —2.2% during 4th and 5th year.
 Period—5 years.

Purchase Option—46% of list price after 3 years, 5% after 5 years.

Example: HP 3805A Distance Meter . . . \$3,825.00

Optional battery pod and recharger 290.00

Down payment, monthly payment (2.778% of \$4,115) = \$ 114.31

Lease all the HP surveying equipment you need.

The example mentions the HP 3805 because it just happens to be our most popular distance meter. Probably because it has a built-in computer that averages 3,000 measurements in six seconds and a built-in battery that eliminates awkward cables—and a display that lets you read distance in either feet or meters at the flip of a switch. But you can also choose the HP 3800—which many surveyors consider unsurpassed for repeatable, first-order accuracy in shots up to 10,000 feet or 3,000 meters. In addition to distance meters and accessories, the lease plan may include the surveying calculators and peripheral equipment that can help you build a more profitable operation. For full details, call your local HP Sales Office or send us the coupon.

*Domestic U.S.A. price plus applicable taxes.

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NEWS BRIEFS

... The Education Committee of C.L.S.A. is currently preparing day seminars to be given in conjunction with local chapters on the Subdivision Map Act and on Boundary Law. Also under study are programs on Water Boundaries and on Management. All chapters are invited to participate in these programs by contacting the Education Committee.

... In order to get improved attendance and still adequately cover the legislature, the Legislative Committee is trying to restrict its meetings to once every other month. The committee could use more manpower and anyone interested should contact A. E. Griffin, Chairman, at 4812 Ipswich Court, Fair Oaks, CA 95628.

... Two bills in the Legislature are being sponsored by C.L.S.A.: AB-1511 to revise the Land Surveyors Act to put added emphasis on education, and AB-1866 to create a "California State Land Survey Authority." Chapter representatives have copies of this legislation and will present it at the chapter meetings.

... The Convention Committee has put forth the idea of possibly having a Regional Conference, in lieu of our Annual Convention, at some future date and to repeat the Conference about every ten years. This Conference would include the Land Surveyors Associations from all western states and would most likely be held in Las Vegas.

... Ray Carlson, Chairman of the License Examination Committee, has asked for questions to be submitted to him for the L.S. Examination's Professional Section. Anyone having any questions is invited to contact Ray at 1711 Terrace Way, Santa Rosa, CA 95404 or call him at 707-546-2665.

... Three new chapters are being considered for C.L.S.A., one at Eureka, one at Eureka-Arcadia, and another in Orange County. New chapters are always welcome and anyone desiring to form one should contact the Executive Secretary to C.L.S.A., James E. Adams.

... The San Joaquin Valley Chapter has initiated a discussion of the topic, "Does California Need a Land Court?" Their general consensus was that it was a good idea and they would like C.L.S.A. as a whole to consider the question.

... The Marin County Chapter is considering putting "Member of California Land Surveyors Association" on maps prepared by members of C.L.S.A. They have appointed a committee to investigate the above and see how this wording could best be used on maps, stationery, business cards, etc.

... A special committee has been created to define "Land Surveying." Any comments relating to the definition can be directed to Dan Chatfield, the committee chairman.

... The League of California Surveying Organizations, Northern Region, has begun work on their manual by forming committees to start work on the different sections of the manual. Initially, they will concentrate on Accuracies, Record of Survey mapping standards, Corner Records and Survey Information Repository.

... The League of California Surveying Organizations, Southern Region, is proceeding with the establishment and updating of their "Surveying and Mapping Practices Manual." Copies of the manual can be obtained by writing the League at Los Angeles Main Office Station, Post Office Box 2214, Los Angeles, CA 90013. The price is

... The Wisconsin Society of Land Surveyors is in the process of preparing a film on Land Surveying. A script has been prepared and they have a producer for the film. ▲

Metric Practice Guide

Reprinted from the A.C.S.M. Bulletin of February 1975.

The American Society for Testing and Materials (ASTM) has been publishing *Metric Practice Guides* since 1964. Revised editions have been issued at two year intervals. The National Bureau of Standards and the American National Standards Institute assist ASTM in the revisions and in recent years the *Metric Practice Guide* has been widely accepted as the U.S. standard. In the 1974 edition, published in November 1974, several changes were made in the numerical equivalents used for converting measurements made in U.S. Survey Foot units to metres. A footnote describing the use of the U.S. Survey Foot is included in this 1974 edition and is reproduced here.

"Since 1893 the U.S. basis of length measurement has been derived from metric standards. In 1959 a small refinement was made in the definition of the yard to resolve discrepancies both in this country and abroad, which changed its length from 3600/3937m to 0.9144m exactly. This resulted in the new value being shorter by two parts in a million.

"At the same time it was decided that any data in feet derived from and published as a result of geodetic surveys within the U.S. would remain with the old standard (one foot equals 1200/3937m) until further decision. This foot is named the U.S. Survey Foot.

"As a result all U.S. land measurement in U.S. customary units will relate to the metre by the old standard. All the conversion factors in these tables for units referenced to this footnote as based on the U.S. Survey Foot, rather than the international foot."

The following values involving the U.S. Survey Foot are from the "Alphabetical List of Units" in the ASTM Guide. The equivalents are in computer format with E for exponent with the indicated power of 10:

acre-foot (U.S. survey)	metre ³ (m ³)	1.233 489 E+03
acre (U.S. survey)	metre ² (m ²)	4.046 873 E+03
fathom (U.S. survey)	metre(m)	1.828 804 E 00
foot (U.S. survey)	metre(m)	3.048 006 3-01
league (U.S. survey)	metre(m)	4.828 042 E+03
mile (U.S. survey)	metre(m)	1.609 347 E+03
mile ² (U.S. survey)	metre ² (m ²)	2.589 998 E+06
rod (U.S. survey)	metre(m)	5.029 210 E 00
section (U.S. survey)	metre ² (m ²)	2.589 998 E+06
township (U.S. survey)	metre ² (m ²)	9.323 994 E+07

If anyone has a requirement for more than seven significant figures for conversion factors, such values may be derived from the standard of one U.S. Survey Foot equals 1200/3937 metre.

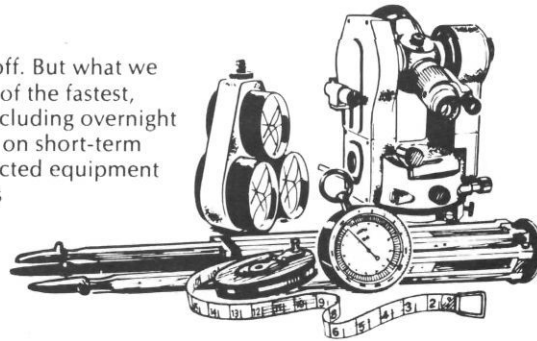
These numerical equivalents may assist the computer, but the surveyor needs broader guidelines. Acres should be expressed in hectares instead of metres squared. The use of the idealized section and township equivalents in metres squared or in hectares is questionable. Surely these larger subdivisions of the Public Land System need to be surveyed and the areas expressed in hectares, with the number of significant figures or decimal places consistent with the size of the tract and the value of the land.

REVISED ASTM METRIC PRACTICE GUIDE

The 1974 ASTM *Metric Practice Guide* contains a complete description of the International System of Units (SI), with rules for style and usage. The section on the historical development with the adopted definitions of the various units is very useful. The *Metric Practice Guide* (E380-74) is available from ASTM, 1916 Race St., Philadelphia, Pa. 19103. ▲

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We probably don't have to tell you that renting pays off. But what we would like to tell you is that Lewis & Lewis offers one of the fastest, most flexible rental programs you'll find anywhere, including overnight delivery to any of the fifty states, low rates (especially on short-term rentals) and complete recovery of rental costs on selected equipment through later purchase. Check our price list and try us next time — you'll see why we're really renting you profits, not just equipment!



EQUIPMENT	1st 10 DAYS PER DAY	AFTER 10 DAYS PER DAY	AFTER 90 DAYS PER DAY
*†CUBIC DM-60 CUBITAPE DISTANCE METER	\$ 25.00	\$ 15.00	\$ 10.00
†HEWLETT-PACKARD 3800A OR 3805 DISTANCE METER	25.00	15.00	10.00
*†K&E MICRORANGER DISTANCE METER	30.00	18.00	12.00
*†PRECISION INTERNATIONAL BEETLE 500 DISTANCE METER	20.00	12.00	8.00
*RETRO-RAY SINGLE PRISM ASSEMBLY FOR ALL DISTANCE METERS	1.00	.60	.40
*RETRO-RAY TRIPLE PRISM ASSEMBLY FOR ALL DISTANCE METERS	2.50	1.50	1.00
CUBIC DM-20 ELECTROTAPES — Two units	40.00	24.00	16.00
ELECTROTAPE TILTING HEADS — Two units	2.50	1.50	1.00
*KERN #173W TRIPOD WITH 5/8 x 11 ADAPTOR	1.50	.90	.60
*LIETZ #7512-50 OR EQUAL WIDE FRAME 5/8 x 11 TRIPOD75	.45	.30
*LIETZ #7311-35 TRIBRACH WITH OPTICAL PLUMMET75	.45	.30
*LIETZ #7311-38 5/8 x 11 TRIBRACH PRISM ADAPTOR50	.30	.20
*LIETZ #7312-45 TRAVERSE SET	5.00	3.00	2.00
*LIETZ TM-1A OR ASKANIA A-2a DIRECTIONAL THEODOLITE	15.00	9.00	6.00
*LIETZ TM-20C OR ASKANIA A-1a 20" REPEATING THEODOLITE	10.00	6.00	4.00
*LIETZ T-60D 1-MINUTE REPEATING THEODOLITE	10.00	6.00	4.00
*LIETZ BT-20 20" SURVEYORS TRANSIT	4.00	2.40	1.60
*LIETZ B-1 AUTOMATIC LEVEL	4.00	2.40	1.60
*LIETZ B-2 AUTOMATIC LEVEL	3.00	1.80	1.20
*CUBIC DM-40 AUTOTAPE WITH TWO RESPONDERS	300.00	150.00	100.00
MOTOROLA MINI-RANGER WITH TWO CODED TRANSPONDERS	200.00	90.00	60.00
EACH ADDITIONAL MINI-RANGER CODED TRANSPONDER	30.00	15.00	10.00
AUTOTAPE OR MINI-RANGER PRINTER	15.00	6.00	4.00
RAYTHEON DE-719 RECORDING FATHOMETER	25.00	15.00	10.00
RAYTHEON DE-119D RECORDING FATHOMETER	20.00	12.00	8.00
SPECTRA-PHYSICS LT-3 LASER TRANSITLITE WITH FAN BEAM ATTACHMENT	20.00	12.00	8.00
AMERICAN PAULIN MODEL M-2 SURVEYING ALTIMETER — 0 to 10,000 feet, 2 foot graduation	4.00	2.40	1.60

*New and used equipment available for purchase. Option to purchase included in rental agreement. Additional equipment available for rent or purchase — information on request. Authorized Lietz dealer.

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

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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1975 CONVENTION

(Continued from page 1)



Four social events were well attended and well received: the Exhibit—sponsored cocktail party on Thursday night was a “smashing” success; Mr. Joe Conforte, a “R” rated rancher from Nevada spoke at the Friday Luncheon to about 425 (the most ever at a meal function). He handled his talk (mostly questions and answers) in a very “professional” manner and certainly enlightened the many listeners; Doc Severinsen of the Johnny Carson Show was the headliner at the Sahara Dinner Show on Friday night and put on a great-lively show; and the Fashion Show at the ladies Sat. lunch was not only informational, but also very entertaining.



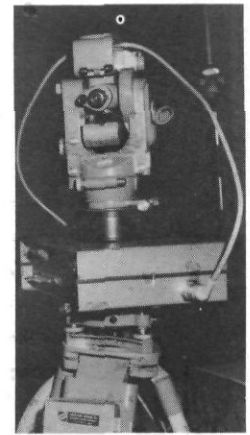
The weather cooperated by snowing before, during and after, but not really hindering the arrivals and departures. Lake Tahoe lived up to its advance billing and was extremely beautiful.

The exhibitors again provided a great commercial show. They were:

Advanced Computer Systems
 Aervoe Chemical Company
 Brunson Instrument Company
 Concap Computing Systems
 Cubic Industrial Corporation
 Dietzgen Corporation
 Forestry Suppliers, Inc.
 Hewlett-Packard Company
 Kern Instruments, Inc.



Keuffel & Esser Company
 Los Angeles Scientific Instrument Co.
 Mike Stella's Business Equipment
 Monroe Calculators
 Oakmans Surveying Supplies
 Olivetti Corporation of America
 Schonstedt Instrument Company
 Surveyor's Service Company
 Technical Advisors, Inc.
 Tellurometer—USA
 The Lietz Company
 Wang Laboratories, Inc.
 Wessco-Denver
 Zena Company



Certainly everyone that participated is owed a great deal of thanks. If there was enough room, then properly everyone's name should be listed, but since there isn't, then at least the groups have to be named and greatly thanked: the Convention Committee, the Sahara Tahoe and its staff, the guest speakers, the exhibitors, the many that donated all the great door prizes, and last, but without which there would have been no Convention—the many members and guests who really made a great “Tahoe Convention.” ▲

SURVEYING AT CHABOT COLLEGE THIS SUMMER

by Roy Watley, Jr., L.S.

Construction Surveying and *Route Surveying* will be offered at Chabot College in Hayward this summer. Students who are residents of California, as determined by State law and local policy, may attend Chabot College without charge. Both courses will be offered during the eight-week summer session which begins July 7, 1975. *Route Surveying* classes are scheduled for Tuesday nights from 7:00 pm to 9:50 pm and Saturday mornings from 9:00 am to 1:20 pm. *Construction Surveying* classes are scheduled for Wednesday nights from 7:00 pm to 9:50 pm and Saturday mornings from 9:00 am to 1:20 pm.

The following are the catalog course descriptions:

ROUTE SURVEYING

3 units

Horizontal and vertical curves; compound and reverse curves; spirals, earthwork. Prerequisite: Engineering 1C.

CONSTRUCTION SURVEYING

3 units

Principles of surveying with specific application to construction. Use of tape, level and transit in staking out pipelines, buildings, grades, etc. Prerequisite: Drafting Technology 50 (or equivalent), Mathematics 60A (or equivalent). Not open to students who have taken Engineering 1A. ▲

For instant ranging up to 8 miles. The long-range fully automatic RANGER III EDM meter.

Field Proven: The Ranger electronic distance measuring system has a valid history of success with state highway departments, federal agencies, civil engineers and leading land surveyors.

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.

Fully Automatic: Operators simply aim the visible laser beam at a retro-reflector, set the return light level, dial-in atmospheric and instrument corrections, and touch a button. Digital readout is displayed instantly.



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

Easy Operation: Ranger III provides simple and quick operation. Users enjoy substantial savings; lower training costs; more measurements and greater accuracy in less time; fewer personnel for field and office data reduction.

Lightweight, Rugged: Total weight—36 lbs. Helium neon laser light source, computer, and distance display unit are contained in single unit. Connects to a 12-volt storage battery by a single cable.

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

And Much, Much More: Now that we've exposed you to some of the Ranger's qualifications, why not judge them all for yourself? For complete details, just write us at Keuffel & Esser Co.

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



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RANGER

The Education of the Future Professional Land Surveyor

Part I . . . this is the first installment of a three part serialization of the presentation given at the California-Nevada L.S. Convention in March 1975.

by Dr. R. Ben Buckner
Department of Geodetic Science
The Ohio State University

Some say that Surveying is the oldest profession in the world. In contrast to this "oldest profession" idea, some view Surveying as an emerging profession in the midst of many growing pains. The many current debates and discussions on issues such as licensing requirements, ethics and standards, unionization, state statute definitions of Surveying, and education would seem to indicate that the profession is far from established. Surveying may be the last of the professions to have developed effective educational programs. This is an indication that the profession is still evolving. For many years Surveyors have been discussing and debating the alternative approaches for preparing a future Surveyor for the profession. The discussions will continue and we will go on experiencing growing pains. The ensuing discussion focuses on an approach to education of the professional Surveyor—the person who will either engage in private practice or be a key person in a governmental agency dealing with surveys or maps. Education of the professional will be contrasted with the scientific and technical approaches, and the discussion will hopefully give insight into the role of each approach in the continuing growth of our profession.

Surveying Defined

Textbook definitions of Surveying explain it as the art and science of measurements. Surveying could be viewed as the mechanical function of making measurements, and in fact, the general public image is of a person measuring with a transit and tape. Surveying is technical, to be sure, but there is more to it in practice than reading values from instruments.

To protect the public welfare, states have licensing requirements for practicing Surveyors. Legal definitions extend beyond the simple technical functions and into types of professional endeavors which require the exercise of judgment. Although they vary considerably, most statute definitions have some common features. They include original property line surveys, resurveys, land subdivision, topographic surveying and mapping, and the preparation of plats and descriptions of whatever has been surveyed. Many definitions spell out more detailed functions such as route surveys, hydrographic surveys, mining surveys, photogrammetric surveys, and control surveys.

Besides the textbook and legal definitions, an accurate definition of surveying might logically be compiled by considering what modern day Surveyors are actually doing. Electronic distance equipment, photogrammetric equipment, electronic computers and calculators, and other automated equipment have changed surveying practice considerably. Accelerated land development and high land values have increased the need for accurate surveys and maps. Today, land surveying firms are larger and more diversified than they were 50 years or even 20 years ago. Surveyors are actively performing services in property location, construction and engineering surveys, control surveys for mapping and other purposes, aerial photography, the preparation of photogrammetric maps, land planning or subdivision design and layout, computer services for other surveying and engineering firms, mining surveys, industrial surveys, hydrographic surveys, accident surveys, and other services. Besides the private practice ac-

tivities, Surveyors employed in various governmental agencies are involved in a variety of continuing activities requiring the latest scientific knowledge relating to measuring, studying and mapping the earth and the environment. Surveying as a profession can hardly be viewed as simple technical functions.

A New Image for the Surveyor

In most states, professional registration is in what is called "land surveying." As mentioned previously, the statute definition as well as the actual practice indicates that the modern Land Surveyor is a broad general practitioner. Based on this type of analysis of the definition of professional Surveying, we might observe that land surveying and property surveying are not synonymous. Property surveying is narrow, being only one part of modern land surveying. Land surveying includes all surveys made on or near the land surface. Besides the recognized functions listed previously, this could include environmental surveying and mapping of slopes, soils, geology, vegetation, land use, and other natural and cultural details. Such surveys and maps are needed by planners, landscape architects, ecologists, and others working with the environment. A practicing professional Surveyor is the logical person to make such environmental surveys and analyses for planning agencies and others.

The modern general practitioner Land Surveyor would know how to measure expertly for any purpose. He would understand error propagation and know how to control his errors to the extent feasible for each job and estimate his probable error for statements on plats of survey. He need not be a highly educated statistician to do this. He would understand photogrammetry enough to make maps or coordinate the efforts of other specialists. But, he need not be a research scientist in photogrammetry. He would be a geodesist to the extent necessary to perform control surveys within limited areas. But, he need not be involved in research concerning the earth's size and shape or gravity field. He would be a planner and designer to the extent necessary to lay out sane, efficient, and appealing new communities. But, he would not be a landscape architect or an urban planner and would work with such professionals for extensive landscaping and planning problems. He would know how to determine accurate directions but he would not be an expert astronomer. He would take pride in preparing maps and plats to make them portray the intended message in an appealing manner, but he need not be a highly educated cartographer. He would know how to program computers for surveying and land subdivision problems, but he need not be a mathematician or computer science specialist. He would understand drainage, sewage flow, alignment and grades of various forms of circulation necessary for land subdivision. But he would not be a structural, sanitary, transportation or other civil engineering specialist, nor need he be to make a living. The Land Surveyor envisioned here would be a property surveyor of the first order. He would understand property law and survey history toward conducting resurveys efficiently, but he would not be a lawyer or historian. He would appreciate preservation of survey evidence. He would be proud of his work and would identify his survey monuments with his registration number, place accurate directions on his survey lines, prepare clear and concise descriptions, place his surveys on public record, continue his education, seek to further improve his profession, and experience the joy of being a highly useful servant to the public. Add to all of this the logical function of being a terrain (land) or environmental surveyor and mapper and the new image of the Land Surveyor is complete. ▲

COMPARE



Here's prism accuracy you can buy or rent.

Our Retro-Ray reflectors are precision ground from BK7 Grade optical glass to a flatness of 1 fringe (2 seconds) by interferometer measurement. Combined with 40% more reflecting surface than currently available solid prisms, Retro-Ray's accuracy means we can *guarantee* ranging capabilities equal to or better than any other retro reflector on the market! But the biggest advantage we can offer you on the purchase of the Retro-Ray is that *you don't have to!* We'll *rent* you any combination of Retro-Ray equipment you need at rates you can afford. Then you can find out for yourself just how good it is. Later, if you decide to buy, we can apply a percentage of your rental costs to the purchase. So don't take our word on Retro-Ray — try it on your next job and see. We think you'll want to keep on using it! Call or write us for all the details.

Compare our prices and save:

Round Retro-Ray Reflectors (2 $\frac{7}{8}$ " aperture, $\frac{5}{8}$ " x 11 thread base)	
No. 101 (Single)	\$145.00
No. 111 (Triple)	\$395.00
Lateral Retro-Reflectors (2" x 4 $\frac{3}{8}$ " aperture, $\frac{5}{8}$ " x 11 thread base)	
No. 122 (Single)	\$165.00
No. 134 (Triple)	\$445.00
Prism Carrying/Storage Bags (high-visibility orange vinyl; padded)	
No. 201 (Single; round or lateral)	\$ 22.50
No. 202 (Triple; round or lateral)	\$ 25.00



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THE SAN JOAQUIN VALLEY SURVEYORS CONFERENCE

by Myron A. Lewis L.S.

The 14th San Joaquin Valley Surveyors Conference was held in the Student Union Building of the California State University at Fresno on March 28-29, 1975. More than 200 registrants attended this successful conference.

The meeting was opened on Friday morning by Program Chairman Professor K. Jeyapalan who introduced Dr. Davis Clark, Associate Vice President of the University, and Dr. James D. Matheny, Dean of the University's Engineering Department. The first speaker was Richard J. Mitchell from the County of Los Angeles who spoke on the topic "We Are Not on the Level." Dick showed examples of the conflict with the use of several tidal bench marks to adjust large areas with extreme differences in elevation. Roy Minnick from Sacramento talked about "Water Boundaries in California." Roy stated the state is the second largest property holder with 7,000 miles of boundaries. Also the state owns land in all but 2 counties. This property includes lakes, deltas, bays and on the Colorado River. It was suggested that surveyors contact the state for information on these properties. The morning program was concluded by a slide presentation of the "Washington Monument Resurvey Expedition" by George E. Gary from Carmel Valley. This project was undertaken in 1966 to determine and record the San Bernardino Base initial points. This was a cooperative effort by personnel from several agencies donating their services for a worthwhile project.

The Friday afternoon session was opened by Prof. Jeyapalan into several seniors and their projects: Larry Stone, EDM Calibration; Martin Patterson, Terrestrial Photogrammetry; Kurt Hoehn, Trilateration; Jim Fields, Ancient Survey Methods; Jerry Watson, Cave Surveying; Glenn Blase, Mineral Surveys; Pat Barthelow, Astro-Observation timing equipment; Pete Cohrs, Property Survey; and Davis Detjen concluded with "Who, What, Where Bar-B-D." The afternoon session was concluded with Tom Northrop, President of the Northern Region of California ASP, introducing Ed Sanborn the Southern Region President of California ASP and also Ray Mullen of USGS in Menlo Park. Ray reported on the ASP certification for Photogrammetrists and their Code of Ethics.

Saturday morning Professor Walt Rowland from the University introduced Fresno City Planner Ken Hohmann. The topic "Survey the Planning Process" was very informative. Mr. Rowland explained some of the problems created by different public agencies, districts, and utilities planning their future without a joint effort at comprehensive planning. By not sitting down together and getting involved in mutual future problems, a lot of duplication takes place and varied conflicting decisions are unfortunately made. He also stated that surveyors should take a greater interest in attending public meetings where property orientated decisions are made. The morning session was concluded by an open-house in the new Engineering Building at CSUF. The students and faculty did a good job of demonstrating the many modern pieces of survey equipment. CSUF has come a long way in a very few years.

On Saturday afternoon, the session reconvened to O'Neil Park adjacent to the campus for a picnic lunch. The sessions were concluded with a Surveyors' Olympics. This annual event lets the students compete with the conference registrants in the varied survey tasks.

Conference General Chairman, Edward F. Kulhan, deserves to be complimented on arranging another fine San Joaquin Valley Surveyors Conference. ▲

LAND SURVEYORS

(Continued from page 1)

The following applicants passed the November 9, 1974 written examination for registration as Land Surveyor:

Brunner, Howard W., 4851 Petaluma Hill Road, Santa Rosa
Christofferson, John D., 1804 6th Street, Oroville 95965
Close, Earnest A., 2620 Mimosa Court, Santa Rosa 95405
D'Alo, Vincent J., 1440 B Henry Street, Berkeley 94709
Dean, Kenton A., 1129 McClellan Way, Stockton 95207
Francis, Perry G., 5048 Waterbury Way, Fair Oaks 95628
Hoffman, John F., Route 1, Box 235-C, Oroville 95965
Jeffries, Thomas L., Post Office Box 182, Valley Springs 95252
Nelson, Robert C., 516 Crestmont Avenue, Yuba City 95991
Nordahl, Lee M., 634 Sonoma Court, Livermore 94550
Sampson, Lawrence K., 4373 Cornell Way, Livermore 94550
Scapuzzi, Donald W., 2144 Green Street, #8, San Francisco
Schultz, Hubert R., 415 W. Elm Street, Lodi 95240
Smithwick, John M., 423 Eileen Drive, Sebastopol 95472
Weir, James W., Jr., 5321 A Park Highland Blvd., Concord

Southern California

Bailey, Randall S., 4820 Halsey Place, Riverside 92503
Baker, Robert A., 7784 Forrestal Road, San Diego 92120
Bennie, Roger E., 1703 Vann Court, El Cajon 92020
del Castillo, Ruel, 22852 Alturas Drive, Mission Viejo 92675
Dorsey, James R., 3761 Citronella Street, Simi Valley 93063
Forsberg, Russell W., 4334 Mt. Jeffers Avenue, San Diego 92117
Frank, Roger A., 813 Brooklyn Avenue, Placentia 92670
Greif, Casper J., 5141 Cheryl Drive, Huntington Beach 92649
Heilig, Gerald W., 941 Jefferson Street, Upland 91786
Hobbs, Joseph L., 7505 Cuyamaca Avenue, Lemon Grove 92045
Hurni, Gale W., 8605 Matterhorn Drive, Santee 92071
Kistler, William L., 999 Cheyenne Street, Costa Mesa 92626
Kleindienst, David J., 16129 Gledhill Street, Sepulveda 91343
Krepp, Charles M., 17927 San Fidel, Fountain Valley 92708
Large, William E., 6511 Belgrave, Garden Grove 92645
Leckey, Edward J., 1413 West Iowa Avenue, Ridgecrest 93555
Miller, Robert B., 1544 No. Hyland Avenue, Arcadia 91006
Milovic, Noel A., 1363 Wellington Avenue, Pasadena 91103
Motherhead, Michael, 8857 Swallow Avenue, Fountain Valley
Munnell, Lawrence B., 1442 Hepner Avenue, Los Angeles 90041
Musser, Ronald A., 5362 Mountain View, Riverside 92504
Nelson, Kenneth G., 930 W. Poplar, Oxnard 93030
Parks, Lawrence, 412 Debby, Fallbrook 92028
Plyler, Richard V., 601 Stephens Drive, Bakersfield 93304
Rumsey, John M., 23760 Via Helina, Valencia 91355
Schenet, Edward L., 10452 Woodbury Road, Garden Grove
Showalter, William, Post Office Box 1276, Running Springs
Smith, Roy D., 5172 Limerick Avenue, San Diego 92117
Van Vlear, Lauren W., 9906 Cabanas Avenue, Tujunga 91042
White, Gary W., 902 Maple Avenue, Pacific Grove 93950
Wise, Paul D., 630 E. Culver Avenue, Orange 92666
Wootton, Ronald W., 1302 Morning Glory Lane, Vista 92083▲

A.S.C.M. California Conference

... The 1975 A.C.S.M. California Conference will be held September 25-27, 1975 at Rickey's Hyatt House in Palo Alto, California. The conference will be co-sponsored by the Northern and Southern California Sections of A.C.S.M. and will include technical sessions, exhibitors, and Open House at U.S.G.S., among other activities.

PRESIDENT'S CORNER

by Joseph J. Scherf, L.S.

Have you ever wondered what happened to the driving spirit that built America? Where did we lose our willingness to help our neighbor, to participate in local affairs, to be involved in politics, to be concerned with what goes on around us. One of the biggest problems of our times is that people do not want to get involved.

Have our lives become so complicated that we haven't got the time? Or are we using this as a "cop out" to excuse our indifference? Do we really care about our responsibilities—or don't we give a damn about what is happening around us?

To be specific—you are a professional Licensed Land Surveyor. One of the obligations of a professional is that he belong to his professional societies. If we find excuses for not participating—are we "copping out?"

I have listened to most of the reasons for not belonging to a society. They range all the way from "I can't afford it" to "I don't like what you are doing," "What are you doing for me," "You aren't doing enough," and "You are doing too much."

There is one answer to all for these objections. *Get Involved!* Join and throw your weight around.

The California Land Surveyors Association is the only state professional Land Surveyor's society in California. There are about 500 members who are fulfilling their professional responsibilities. We have a hard working group of active *involved* surveyors running the Association. These people have families to raise, have to make a living, and carry on their other responsibilities and duties. Yet they find the time, energy, and money to contribute to their professional association.

I repeat: You are a professional Land Surveyor. You were helped by other surveyors to acquire your license. You joined a profession that was built by professionals. You are being aided today by professional Land Surveyors in CLSA and other organizations.

What are you as an individual doing to better your profession? What are you as an individual doing to better the professional societies? What are you as an individual doing to encourage professionalism in land surveying?

I am trying to awaken in you a desire to join me and others in CLSA in bettering our profession—yours and mine.

I would welcome your application to join CLSA. (It is in every issue of the California Surveyor.) I would welcome even more your comments in answer to this column. ▲

A REDETERMINATION

by James N. Dowden, L.S.

The National Geodetic Survey is undertaking the task of a readjustment of the North American Datum of 1927. This work is the result of the recommendations of the Committee of the National Academy of Sciences and National Academy of Engineering concerning their report to the Administrator of the Environmental Science Services Administration (ESSA) concerning the long range program proposed by the Coast and Geodetic Survey for a general adjustment of the Horizontal Control System of North America in order to bring it up to modern standards as an effective reference datum for present and future surveying and mapping needs.

This work is now in progress by the National Geodetic Survey with completion of the project scheduled for 1980.

Why a readjustment? As stated by the Committee of the National Academy of Sciences and National Academy of Engineering, "... A geodetic mapping datum is an engineered structure, subject to the stresses and strains of time."

In addition, with the international satellite geodesy program, a new figure of the earth is emerging which redefines our concepts of space, time, and the relative positions of points and objects on the surface of the earth.

Due to the fact that the present State Coordinate Systems will be materially affected by this work, if not abolished entirely, it is essential that our organization take a lead role in establishing a liaison with the N.G.S. and other concerned groups in order that the needs and desires of California Surveyors be advocated.

At the last Board of Directors Meeting on April 26th, the Association established a Special Committee on the Readjustments of the North American Datum whose objectives are:

1. Establishing a liaison with the National Geodetic Survey and other concerned organizations.
2. Monitor the progress of the work in order to keep the Association and its membership informed.
3. Draft remedial legislation to bring our present plane coordinates act in concert with the new system.
4. Initiate training sessions on the uses and applications of the new system.

An excellent paper by Joseph F. Dracup on the present status of this work is contained in the proceedings of the 34th Annual Meeting of the American Congress on Surveying and Mapping, March 10-15, 1974, at St. Louis, Missouri, Paper No. 74-375. ▲

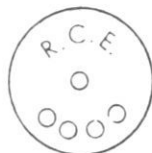
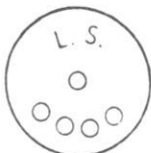
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PRAISE BE TO TERMINUS—THE DAY OF THE LANDMARK

by Roy Minnick

Do you believe in death penalty for anyone caught removing a boundary stone? The ancient Romans did.

In the days before maps, when commonplace ownership was identified on the ground by long-lasting, easily recognizable stones or posts, there wasn't any public record office to record a claim of ownership and hence no record-based resurveys were possible. In this situation, the most important means of identifying land ownership was to plant a marker, visible to all who passed by. Since these markers were the sole means of identifying property, their disturbances or removal made bad neighbors out of good and disrupted the peace and harmony of whole neighborhoods.

Successful boundary marker preservation depends upon two things: continual publicity to familiarize as many people as possible with the location and value of the marker and penalties to deter those few who would willfully disturb or destroy a marker.

The ancient Romans were a clever and resourceful people who were able to devise a solution that preserved their property markers in a most pleasant and satisfying way.

A god of landmarks was created and annual days of festivities were arranged in his honor. The god was named, appropriately enough, Terminus which, in Latin, means end, limit, or boundary.

Originally, each landmark boundary stone was a separately worshipped deity. Later Romans tended to worship one god of all landmarks who was represented on earth by each stone.

With a deity involved, setting a boundary stone soon became a ritualized festivity. Adjacent property owners, with their families, friends, and slaves, met at the site selected for the planting of Terminus. After the hole was dug, a fire was lit in the hole, and the blood of a victim was poured into the fire along with incense, honey, fruits, and wine.

In the meantime, Terminus, represented by the boundary post or stone, was anointed and draped with garlands of flowers. While the ashes were still hot the post was placed in the hole and dirt was tapped around the base to hold it upright. Girls danced around the stone while placing a curse on the would-be thieves and vandals. The whole ritual was dignified, but not solemn.

In addition to the curse, custom of the day allowed the slaying, on the spot, of any person caught moving or destroying a boundary stone. Possibly this liberty was abused by those with personal quarrels and quite possibly creeping civilization took its toll. At any rate, this harsh sentence was later reduced to a fine. The curse apparently remained in full force.

The Romans recognized both the value of public recognition of a boundary stone and the necessity to keep later generations apprised of the location of the boundary posts. Hence, at the end of every year, Romans held a festival called Terminalia. During the festival everyone met again at the stone. Each owner draped garlands of flowers over his side of the marker. An altar was set up, a sacrifice made and then eaten, along with cake, wine, and all of the other goodies of the day necessary for a party. Music was provided and everyone—servants and owners alike—danced and made merry as only the Romans could. With a yearly festival like that, who could forget the location of any boundary stone?

Numa Pompilius (715–672 B.C.), the second king of Rome, is credited with creating the god of landmarks, as well as many other gods. King Numa believed that fear of the gods was the only way to keep his barbaric people in line. To convince his people that the gods

were real, he pretended to take as his wife a divine nymph named Egeria, whom he allegedly met secretly at night in her garden to obtain inspiration.

Less divine were his Augures, who were responsible for interpreting the will of the gods. In their eyes, Terminus was a number one god. When a temple for the all powerful Jupiter was being constructed on Capitoline Hill, the contractor wanted to destroy a terminus post. The Augures refused. Instead they forced the contractor to build the temple around the stone, leaving a hole in the roof to keep the marker open to the sky. The Augures believed that the permanence of landmarks were an indication of the permanence of the Roman territory.

Of course, the philosophy of the permanence of landmarks is still with us, carried down from the ancients. We dogmatically follow the doctrine of the immovability of the boundary marked by an original monument, although without the religious power of the Augures we are unable to force a contractor to change his plans to preserve any landmark, no matter how important.

Unpleasantly for us, festivals have never accompanied the planting of our average boundary marker in the United States. No so in parts of tradition-minded England where a custom called "beating the bounds" is still observed.

Beating the bounds dates back at least to King Alfred (871–899 A.D.) and probably even back to the days when the Romans occupied England. It is observed on Ascension Day or during Rogation Days and it fulfilled the same need as the feast of Terminalia did for the Romans.

The bounds beating, or "ganging day," as it was sometimes called, was observed by the priest and church wardens leading a group of boys around the parish perimeters. At each boundary stone the boys were beaten with green boughs. In some instances, the boys' heads were banged against the boundary stone. One cannot help but wonder if the severity of the beating was related to the boys' behavior during the rest of the year. Who could blame a priest or warden, harassed all year by the pranks of healthy boys, if they "beat" the boys with a little extra zeal.

The theory behind "beating the bounds" was this: If the boys were beaten by or on the stone, they would more likely remember its location. Boys were selected because they lived longer than girls. Besides, girls, in those preliberation days, were considered to be little more than sex objects and seldom held real property interest.

To assure a good turnout for the procession around the bounds, a festival was held after the beating. ▲

NEWS FROM THE BOARD

by Ray Thinggaard, L.S.

The Board of Registration has established an Ad Hoc Committee for Accreditation of Curricula and Curricula Study for Land Surveying. The Committee is to make its report to the Board in July.

The Board is exploring procedures by which all engineers would be required to list their registration numbers in yellow page advertisements. This would tend to alleviate the problem of firms and individuals acquiring listing under headings which they are not registered.

In a policy statement concerning interpretation of the Land Surveyor's Act the Board stated where adequate records and monuments exist on adjoining tracts, the monuments shall be field located and referenced.

EDITORIAL COMMENTS

THE PAST—THE PRESENT—AND WHAT

by *Walter Robillard,*

President of the Land Surveys Division of A.C.S.M.

No place in the history of America have we exhibited ancestor worship as a religious exercise. Yet each individual points with pride to the accomplishments of members of his family who now enjoy the eternal peace that must come to each of us.

What a shock—What a disappointment if we suddenly realized that we had no past—There was no future—and we existed only for Today—That is what some allied professions believe should be the story of Surveying.

The yardstick of time of the Surveyor is long and inscribed with many notable accomplishments. We could start with the New World, but failure to mention the accomplishments of Egyptian surveyors who replaced obliterated corners inundated by the Nile, or who oriented the great pyramids without the aid of optical equipment, or who measured base lines to a precision of 1:10,000 using knoted ropes would deprive us of the very foundation of our profession.

We perhaps were finally tempered during the reign of the Caesars of Rome and Constantine the Great, when Roman Agrimensors were given the cloak of jurisprudence and thus separated once and for all the surveyor, whose foundation became the law, from the engineer who relied upon measurements.

In our brief past, the American Surveyor was given the authority to create boundaries from the uncharted wilderness and thus the fibers of the "cloak" were rewoven, and one of the greatest surveys of history was commenced and the philosophical separation of engineering and surveying was reinforced and widened.

Today we do not wish to detract from the notable accomplishments of the engineering profession, but we must point with pride to the parity of the distinct profession of surveying. The mechanical object placed upon the moon to investigate the last uncharted wilderness was christened "Surveyor I" and not "Engineer I." We see allied professions attempting to entice into their organizations men who proudly place L.S. after their names, but history has repeatedly supported a separate and distinct profession. This must remain. In no way can a surveyor exist within an organization whose primary philosophy is contrary to the precepts of the law under which the surveyor exists.

At the local level, the surveyor must remain autonomous within a State Surveying Society and at the National level only one organization must speak with knowledge and authority for all who embrace the disciplines of surveying and cartography. Let that be A.C.S.M. who already is acknowledged as a leader.

The very element of size is insignificant for dedication and capability will replace any deficiency. After all, only thirteen men caused the greatest philosophical revolution in the world. Imagine what a unified profession of 20,000 individuals fired with determination could possibly accomplish. ▲

STANDARDS MANUAL?

by *Michael S. McKissick, L.S.*

In spite of their individualism and independence, Land Surveyors are going to have to take a long, hard, conscientious look at this idea of a surveying and mapping standards manual. The work that is being done, primarily by The League of California Surveying Organizations, could prove to be one of the most important tools in raising the level of professionalism in surveying.

The incompetent or delinquent surveyor has long been the bane of

(Continued on page 14)

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."

Advertising

Commercial advertising is accepted by "The California Surveyor" and advertising rates and information can be obtained by contacting the Editor, P.O. Box 3707, Hayward, CA 94540.

Classified advertising is published at the rate of \$2 per line for members of C.L.S.A. and \$4 per line for non-members and should also be directed to the Editor of "The California Surveyor."

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," P.O. Box 3707, Hayward, California 94540.

EDITOR: Michael S. McKissick, L.S.

P.O. Box 3707

Hayward, CA 94540

DEADLINE DATES FOR THE CALIFORNIA SURVEYOR

Fall Edition August 16, 1975

Winter Edition November 15, 1975

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

Editor

THE PRIME INGREDIENTS OF SURVEYING STATURE

by C.A. Wooldridge, LS, PE

If we ever hope to see the status of our profession improve, it's about time we do something about it. We can proclaim our professionalism 'til the end of time, and we may be lucky enough to retain our present place in the eyes of the public. Self-indulging claims may produce an ego boost for claimant, but won't help our stature in the eyes of the public.

Any respect the surveyors obtain will be based on the impression one of us individually receives from friends, neighbors, clients, or whoever we have dealings with. If enough of us can make a good enough impression on enough acquaintances, there will be no reason for concern about status improvement.

One problem facing the profession is the quality of our work. Almost every society concerned with surveying is concerned with the decline in the quality of surveys. Any one who has studied the history of our profession in California should not be surprised. We, the surveying profession, have brought it on ourselves.

We have let survey education virtually disappear. We have produced a full generation of untrained or poorly educated surveyors. As technology and theory have increased, the available education to evaluate and utilize them has decreased. What little schooling some of us have did not leave time for general education nor much humanities. No wonder we aren't considered with the same esteem as doctors, lawyers, or professors.

Your CLSA Education Committee makes this challenge. When the Board of Registration publicizes its curricula accreditation criteria, check the requirements against your education. Can you meet today's entrance requirements for your profession?

Only by our own efforts can we achieve the stature we believe our profession deserves. In our case, there may be some validity to the assumption that compulsory continuing education is warranted. How long has it been since you were a student in a formal class? Do you know all you should, or could about the practical aspects of today's technology?

Have you kept abreast of the "new" laws governing boundary location as "written" by court interpretation? How does the Kent or Stearns case affect your decision on the next, or last, boundary problem? What is material evidence and how does it differ from just plain evidence?

Are you a good businessman utilizing the best and most effective management techniques? Or are you, like most surveyors, more concerned with the legal or technical problems? Can you explain adequately to a client or taxpayer, if you're a public employee, the reasons why photogrammetric methods may solve his boundary problems the most efficiently (or why they're not acceptable, nor maybe applicable)?

Your local college may have just the course that you need to be more effective. If so, we'd like to hear about it. Please drop us a note telling us what your school offers. Even more important, tell us what you'd like that they don't offer. We stand ready to work with you and them to make needed courses available.

We are also prepared to work with your Chapter to present a Saturday workshop on specialized areas of surveying. Your Chapter Representative and your Chapter President recently received information to this effect. Formal training in the broad field of surveying in each of its facets is the name of the game. We're ready to play; are you?

The now famous Retracement Seminar, co-sponsored by ACSM and CLSA is scheduled to be given in San Diego on October 10 and

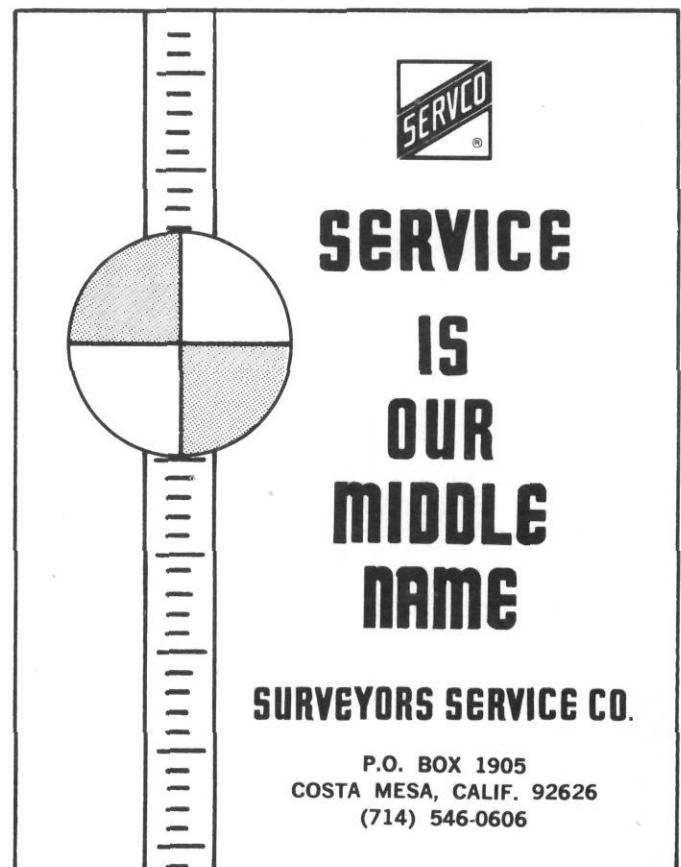
11. The following year it will probably be presented in Oregon (along with several other states). If you don't receive your registration data by the end of August, inquire. Registration will again be limited so don't wait too long.

Your Education Committee has also been working with and serving on an ad hoc committee of your Board of Registration to determine the requirements a school must meet to gain recognition for its graduates when they apply for license examination. They proposed a new law, which the Legislative Committee has introduced and they're ready to help push for its passage. It will require a BS Degree in Surveying, or six years experience, to qualify to take the LSIT Examination. That's the extent of the activities they are involved in this year on your behalf. To volunteer to serve on the committee, comment on any of the programs, or inquire about any of them, drop the Education Committee a note; Chuck Wooldridge, 7053 Wandermere Drive, San Diego, California 92119. Who knows? We may even raise the level of the surveying profession in California eventually. ▲

NEWS BRIEFS

. . . . The Department of Consumer Affairs has published a most informative article on the availability and use of the Small Claims Court. The article is entitled "The Consumer and the Small Claims Court" and can be obtained from the Department of Consumer Affairs, 1020 "N" Street, Sacramento, CA 95814.

. . . . Tom Sprague of Beaver Dam, Wisconsin, was the recipient of the "Land Surveying Excellence Award" at the A.C.S.M. Convention in Washington, D.C. on March 12, 1975. Nominations for next year's award are now being accepted and should be referred to the Board of Directors of C.L.S.A.



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EDITORIAL COMMENTS *(Continued from page 12)*

the surveying profession. One of the primary reasons for this is the inability to confront him with some concrete concept of minimum standards of performance. It should be possible for the profession as a whole to arrive at a consensus of opinion of what is the least acceptable level of performance for a Land Surveyor. I think this should be one of the primary goals of those who are working on this manual.

Minimum standards, however, are not to be misconstrued as being ideal standards. All of this work must be approached with a realistic, open minded attitude, realizing that the important thing is to create a workable, useable, fair set of standards. It is to no one's advantage, and does nothing to strengthen the profession to publish or sponsor standards that cannot be realized.

We need some clearcut gauge by which we and the public at large can analyse the professional services of the Land Surveyor. To this end, we need statewide commitment on the part of Land Surveyors to follow this through to a conclusion which will be in the best interest of the whole profession. ▲

SQUIB FOR THE SURVEYOR

by Gene Lockton, L.S.

ANTINOMY—A word with which more C.L.S.A. members should become acquainted. Although usually referring to laws, it describes the irreconcilability of one rule to another. Unless we learn to eliminate it from our procedures, it may eliminate us. "Exempli gratia" as we Romans say—from among our members we select certain individuals whom we designate as "Committeemen" and charge with a special assignment. About midway, they invariably return to the Board to ask for "Direction." They can't independently make a decision! That, in itself, is not culpable; many people cannot make decisions. Inasmuch as they were put on the committee because the President believed that they were the best qualified to come up with

the right answers, they should have had the confidence to go ahead.

Antinomy exists because these same people respond to another committee's product with a myriad of specific changes, recommendations and endless suggestions, all put forth with the greatest confidence—no problem at all in giving direction now. Perhaps if we cannot decide upon a wise course of action, we should not be so generous with our wisdom when someone else has made a decision. After all—good decision making is not always easy and should be encouraged. It's the backbone of our vocation. ▲

The Compass Reprinted from the West Virginia Surveyor No. 34.
by John E. Walker, New Orleans

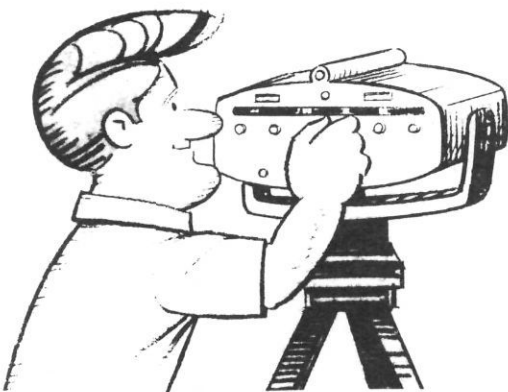
Last week a puzzled abstractor asked me the question—"What is a compass?" He was not referring to the sensitive needle used by surveyors and mariners alike, but to a unit of measurement frequently encountered in St. James and St. John Parishes, and perhaps in other bayou parishes as well.

The term stems from a do-it-yourself surveying device used by the planters in the parishes to measure fields and to establish the location of new drainage ditches. Persons desiring to measure a quantity of land would construct a large compass of the type used by a draftsman to transfer a desired measurement from a graphic scale to a drawing. Navigators use the same device but call it a divider. These home-made compasses were constructed of any convenient lumber at hand, and were designed to measure a fixed distance between the two points, originally a toise of 6 French feet, and later 6 English feet.

Two men were required to walk the device along, rotating it on first one point and then the other until the required distance had been marked off. Eventually the name of the device was substituted for the distance that it was designed to measure, and the term then crept into deeds in the parishes above mentioned, and perhaps others as well. On one occasion I asked an old gentleman in Lafourche Parish about the compass, and he responded—"Oui, Le Toise"—so apparently its use was fairly widespread in southwest Louisiana.

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THE DUTIES OF A COUNTY SURVEYOR IN CALIFORNIA



*by John Pedri, County Surveyor,
County of Tuolumne, and Land Surveyor
Member of the Board of Registration
for Professional Engineers*

Surveying first appeared in the State statutes in the early 1860's and was called the Platting Law. This law was enacted primarily for the perpetuation of monuments, for it was about this time that California was being surveyed by the Government Land Office into townships and sections and there was a need to perpetuate these monuments and other old established boundaries, such as rancho lines, and the like.

Most surveyors were at this time deputized by the Surveyor General of the State. Not until 1891 did the first "Land Surveyor Act" appear. This act started the first licensing of land surveyors and set up mapping requirements.

The present law governing county surveyors was written around 1905 to 1907 in what was then called the Political Code, since changed to the Government Code. Except for a very few alterations, this law remains unchanged. The stated function and duties of a county surveyor remain similarly unchanged except for other duties as outlined in other State codes such as The Business and Professions Code (Land Surveyors Act, Subdivision Map Act) Election Codes (for preparing precinct descriptions and maps, reapportionment of supervisorial districts, etc.) Government Code (re special assessment districts, Health and Safety Codes and Street and Highway Codes) to name a few.

Since 1907, county surveyor's offices have been disappearing from various counties, being replaced by public works directors, county engineers, road commissioner—county surveyor and so forth. This replacement should not, however, minimize the importance of functions of the surveyor's office outlined in the Government Code and other codes.

If the duties of a surveyor's office are under the direction of these other department heads, it should not reduce the efficiency of this office or the qualifications of the personnel assigned to perform the functions of this office. These personnel should, in fact, be thoroughly familiar with the discipline of land surveying and its requirements. The person in charge of the surveyor's office should be able to budget, plan and establish the most efficient means of carrying out the requirements and duties spelled out in the law. He should be an experienced Land Surveyor, whether he is licensed as an RCE or LS. To have someone in this position with little or no experience would be a disservice to the surveying profession and to the public who benefit from the expertise of this office.

The various functions of this office should never be buried in other departments such as planning, maintenance, or other non-related departments, as these other departments often do not have the expertise to cope with surveying problems and at best would only tend to produce an inferior service. Records in this office should be complete, properly indexed, and readily retrievable. A counter staff of experts should also be available to assist persons who have need of the information.

A county surveyor is responsible to other departments such as clerk's office, assessor's office, and road department. This responsibility often involves mapping. A base map program should

therefore be established. This program may employ the use of photogrammetry and would be efficiently carried out by a county surveyor's office since mapping is closely related to land surveying. It would be foolish for various departments to do their own base mapping, since this would be a duplication of effort that many times cannot be integrated.

Other responsibilities of a county surveyor are to cities, which may ask the county to perform functions by mutual agreement, such as processing subdivision and parcel maps, as well as mapping. The performance of these functions should be encouraged, since smaller cities are often neither equipped or have the expertise for orderly processing of these maps and land surveying data.

A county surveyor should be responsible for the remonumentation of streets, roads, and other government monuments which have been destroyed or are in danger of being destroyed. His office should establish the basis of new surveys such as horizontal and vertical in sufficient numbers and intervals as to be made readily usable to individuals and other agencies.

One of the important functions of his office, which varies from county to county, is the processing of maps, both under the Subdivision Map Act and the Land Surveyors Act.

The Land Surveyors Act spells out the responsibilities of the private surveyor. The "Record of Survey" is a picture diary of what a surveyor did in the field. This map is technically his own personal map; he will have to defend it in court. The Act makes it mandatory for him to file the "Record of Survey" with a county surveyor after he makes a survey. The county surveyor checks to see that it is technically correct; he has a quasi-judicial function in the sense that he should examine a map and determine whether it will hold up in court and, at the same time, he should be as impartial as possible.

The Board of Registration for Professional Engineers has written a letter requesting counties the help in reporting incompetency, negligence and other violations to the Board. A county surveyor could be the Board's main asset in the enforcement of land surveying.

County surveyor reviews should be uniform throughout the State since the Land Surveyor or Civil Engineer are licensed by the State. The surveyor should also be free to practice in any county without having to learn a new procedure everytime he changes counties.

Where subdivision maps are concerned, various local requirements may differ concerning improvements, lot size, roads and public utility easements. When filing Parcel Maps or Subdivision Maps, the field surveying requirements are the same as those on a "Record of Survey." The main enabling provisions of the Subdivision Map Act are for design and improvements.

How can we achieve uniformity of surveying procedures in this State? One suggestion is to look at the law. The "Record of Survey" must conform to the Land Surveyor's Act, which is administered by the Board of Registration for Professional Engineers. When a "Parcel Map" is based on a field survey, it shall conform to the Land Surveyors Act. This conformance would place these surveying and mapping practices under the jurisdiction of the Board of Registration. Uniformity can come if surveyors work together and request the Board to adopt survey and mapping guidelines as policy.

Listed below are some of the reasons why we need standards and guidelines.

1. Standards—survey, mapping, accuracy, instrumentation, etc.

(Continued on page 16)

THE DUTIES OF A COUNTY SURVEYOR IN CALIFORNIA

(Continued from page 15)

2. There are no complete guidelines in the State to render assistance to a surveyor in the performance of his profession.
3. There is a need for a complete up to date technical interpretation of court decisions, of which many in the surveying profession are not aware.
4. A need for an interpretation and analysis of existing and constantly changing laws that affect surveying.
5. There are no uniform educational standards for training a land surveyor.
6. There is a need for a determination of the responsibilities of those in private practice and the limitations and responsibilities of those in governmental agencies that supervise their work.
7. Guidelines are needed to enable the Board of Registration to determine the competency of a surveyor when a complaint has been issued against him. The guidelines will also aid the Board in the interpretation of the Land Surveyors Act and the parts of the Subdivision Map Act relating to surveying.
8. Seminar and workshop materials for continuous education in the surveying profession need to be developed.
9. There should be some suggested ethical guidelines for both private and public professional land surveyors.

The following is a list of questions that have been raised during the last two years, all have had more than one interpretation from various counties, indicating the need for uniformity.

1. Should a city engineer have an opportunity to review a "record of survey" done within his city?
2. Should the requirements of a "record of survey," "subdivision map" and "parcel map" be fairly uniform throughout the State?
3. Is a "record of survey" that has been recorded, showing a division of land, still valid if no parcels have been sold or does it require a "parcel map?"
4. What effect does an assessor's "parcel map" have on ownership and land boundaries in a quiet title action?
5. Where does the final responsibility lie for accuracy of the assessor's "parcel map?" (See Sections 27557 and 27559 of the Government Code.)
6. Should a reestablishment of a lost corner be set in the field?
7. What is accuracy?
 - a. Symbol — "1-10,000" or $\pm \frac{1}{2}$ ' for position?
 - b. Should we adopt standards of accuracy and what should we base them on?

8. When would a modern method of measurement with higher degrees of accuracy entail the movement of a monument or acceptance of same when the monument was set properly by less accurate methods?
9. Should there be some guidelines for each county in developing a depository of survey information and requirements in the personnel handling of this information?
10. Should there be mapping guidelines of the Subdivision Map Act? If so, the following are some items that should be determined.
 - a. Should there be a uniform method of handling land projects and undivided interest subdivisions?
 - b. When can a "parcel map" be compiled from record and survey data at the same time?
 - c. Can a "parcel map" be compiled from record and survey data at the same time?
 - d. When and who should file an amended map and under what circumstances?
 - e. What information should be shown on "parcel maps" and "subdivision maps?"
 - f. Can a "parcel map" resubdivide a portion of a subdivision or change any lot lines?
 - g. What does a "subdivision map" or "parcel map" truly represent and why are we cluttering it with other data not pertinent to the conveyance of title?
 - h. Should a "reversion to acreage" be filed first, before resubdividing or parceling?
 - i. Can the residual parcel on a "parcel map" be sold first, with the owner retaining the parcel created on the map?
 - j. What constitutes a lease, as used in Section 11535 of the Subdivision Map Act?
11. Various associations are in the process of developing or have developed monumentation guidelines. Would it be beneficial to have them as practical and uniform as possible?
12. How far removed from the field and office work being performed can someone be and still use the term, "under my direction?"
13. On a "record of survey," should the surveyor show all encroachments and occupation lines that may conflict with his determined boundary? ▲

... Quote from a C.P.R.R. Transit Book dated 1891: "came back to sweet home and found the boys all loaded to the neck."

CALIFORNIA LAND SURVEYORS ASSOCIATION



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C.L.S.A. MEMBERSHIP

C.L.S.A. MEMBERSHIP

Membership—April 1, 1975

Regular members.....	369
Associate members.....	84
Affiliate members.....	24
Student members.....	40
Sustaining members.....	8
Total members.....	525

New C.L.S.A. Members—First Quarter 1975

Regular

Pasquale Benenati, Jr., LS	Tallas D. Margrave, LS
Raymond L. Dowell, LS	William R. Nothomb, LS
Glen R. Ferguson, LS	Charles E. Robb, LS
Robert L. Floyd, LS	Larry A. Stack, LS
Ted Gehringer, LS	Donald F. Troy, LS
John W. Hamby, LS	Gary L. VanNess, LS
Everett Clyde Hubbard, LS	Joseph E. Waters, LS
Ronald A. Kabalin, LS	

Associate

Steven D. Apker	Darryl Vance Olson
Richard M. Bishop	Edward P. Patz
John Richard Cadiente	Clifford E. Phipps
Worthington Earl Detwiler	Charles E. Price
William R. Dvorak	Andrew L. Rieland
David J. Franco	Clifford S. Schuring
Dan D. Harrison	Mark L. Sinnick, Jr.
Andrew J. Koltavary	Dennis Sonnenschein
Dennis Miller	Walter Strate

Affiliate

Charles J. Beck	David F. Magee
Dairus E. Eason	E.G. "Will" Wilkinson

Student

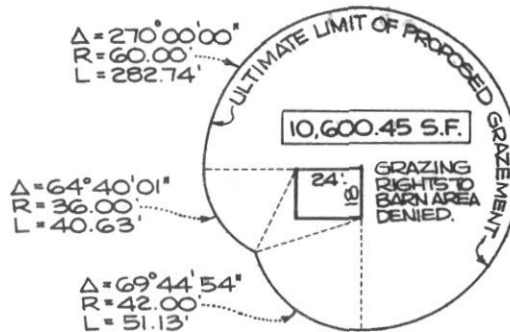
George Misersky

A THOUGHT

How important are you? Even though my typewriter is an old model, it works quite well except for one of the keys. I wish many times that it worked perfectly. It is true that there are times that it worked perfectly in the past; and even now there are forty-one keys that function well enough. But that one key does make a difference. Sometimes it seems to me that an organization is somewhat like a typewriter . . . especially if not all the parts are working right.

You may say to yourself, "Well, I am only one person, I don't make or break a program." But it does make a difference because any program, to be effective, needs the active participation of every member. So, the next time you think you are only one person and that your efforts are not needed, remember my typewriter and say to yourself, "I AM A KEY PERSON IN OUR ORGANIZATION; I AM NEEDED, VERY MUCH." ▲

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DATA HEREON WERE COMPILED FROM VARIOUS SOURCES AND DOES NOT REPRESENT A SURVEY OF THE PROPERTY.

Above solution by Wm. J. McGee, Land Surveyor.

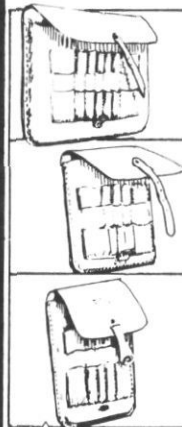
The Surveyors Service Company presented each person, who submitted a correct answer to the "tethered cow" problem, with a copy of ITW's handy pocket sized "Trig Tables" and Lufkin's "Chairman's Handbook." Many thanks to Leighton Keeling for sponsoring the problem.

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CARL A. STEFFENS San Diego	GERALD MON San Bruno
HANS KOCH Fresno	RUEL DEL CASTILLO Mission Viejo
ED LECKEY Ridgecrest	JAMES R. SWEENEY Diamond Springs
WALTER WILLIAMS Redlands	KENNETH LEWIS Watsonville

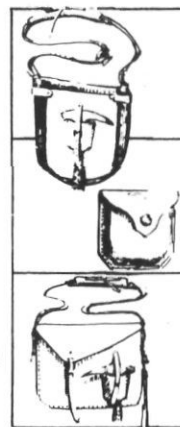
(Continued on page 18)

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Hans Koch, of Fresno, receiving the Brunton compass at the C.L.S.A.—N.A.L.S. convention in Lake Tahoe.

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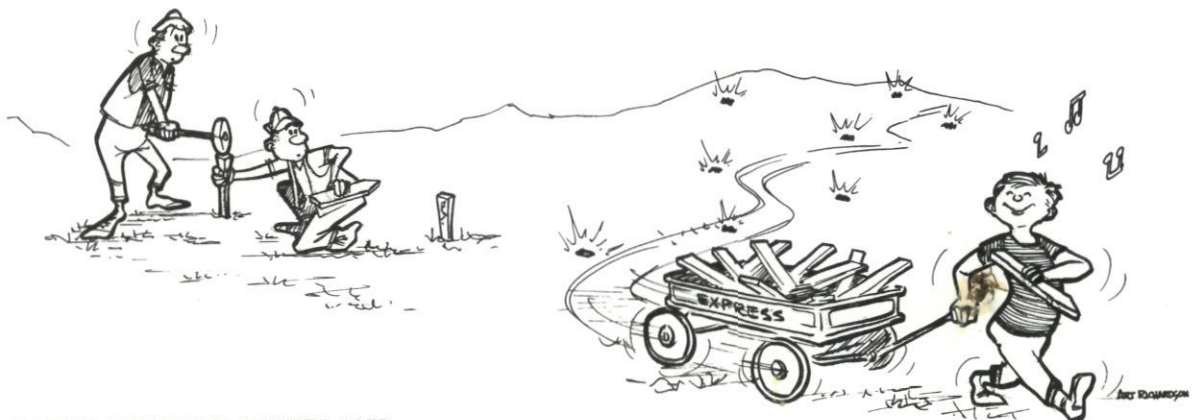
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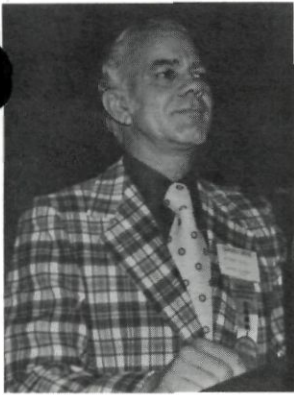
THE MODERN LAND SURVEYOR

1. A modern Land Surveyor must know how to measure expertly for any purpose. He must understand error propagation and know how to control his errors to the extent feasible for each job and estimate his probable error for statements on plats of survey. He does not need to be a highly educated statistician to do this.
2. He needs to understand photogrammetry enough to make maps or coordinate the efforts of other specialists. He does not need to be a research scientist in photogrammetry nor does he want to be.
3. He is a geodesist to the extent necessary to perform control surveys within limited areas. But, he is not involved in research concerning the earth's size and shape or gravity field.
4. He is a planner and designer to the extent necessary to lay out safe, efficient and appealing new communities. He is not a landscape architect or urban planner but works with such professionals for extensive landscaping and planning problems.
5. He knows how to determine accurate directions but he is not an astronomer.
6. He takes pride in preparing maps and plats to make them portray the intended message in an appealing manner but he is not a highly educated cartographer.
7. He knows how to program computers for surveying and land subdivision problems but he is not a mathematician or computer science specialist.
8. He understands drainage, sewage flow, alignment and grades or various forms of circulation necessary for land subdivision. But, he is not a structural, sanitary, transportation or other civil engineering specialist.
9. The Land Surveyor discussed here is a property surveyor of the first order. He must understand property law and survey history toward conducting resurveys efficiently, but, he is not a lawyer or historian.
10. He appreciates preservation of survey evidence to the degree that he is proud of his work and identifies his survey monuments with his registration number, places accurate distances and angles on his survey lines, prepares clear and concise land descriptions, places his surveys on public record, continues his education to further improve his profession and experiences the joy of being a highly useful servant to the public.

Author: Dr. R. B. Buckner,
Professor of Geodetic Science at Ohio State University,
Columbus, Ohio



SURVEY MAP STANDARDS: AN INTOLERABLE SITUATION



by Ray J. Peters, L.S.
Peters and Verdugo, Inc.
and Immediate-past Land Surveyor
Member on the Board of Registration
for Professional Engineers

I am in favor of the recordation of maps, ones which contain a sufficient amount of information to enable a surveyor to retrace established lines. Professional surveyors throughout the State are probably in favor of such maps.

In 1878, a Professor Lesley wrote, "The Geological Survey must, therefore, use the almost worthless maps, County Maps, and Township maps, which exist, rudely run as their lines have been by irresponsible men, on cheap money contracts, rapidly and carelessly platted afterwards, and finally forced together recklessly and without judgment, so as to come within county lines, which are themselves false and sometimes half a mile away from their true places." Here we may see the beginning of the thinking that eventually resulted in the Land Surveyors Act.

Finally, after much rumbling and grumbling, the Legislature adopted the first Land Surveyors Act, on March 31, 1891. The Act stated, in part, ". . . within sixty days after a survey relating to the sale, or subdivision of lands, the retracing or establishing of property and boundary lines, public roads or trails, original cemetery or town sites, and their subdivisions has been made by a licensed Surveyor, he shall file with the Recorder of the County in which such survey or any portion thereof lies, a record of survey. Such record shall be made in a good draftsmanlike manner, on one or more sheets of firm paper of the uniform size of twenty-one by thirty inches. This record of survey shall be either an original plat or a copy thereof, and *must contain all the data necessary to enable any competent practical Surveyor to retrace the survey.*" (Emphasis added.)

The emphasized phrase best illustrates, I think, the purpose of the Land Surveyors Act. That purpose is no longer written in the Act.

It must be assumed that the Land Surveyors Act was promulgated for the same basic reason as any law: to serve the interests of society. In order to better serve those interests, it was determined that a record of survey map should measure a certain size (among other things) and that it must contain all the data necessary to enable any competent practical surveyor to retrace the survey.

The reason for the record of survey map is, then, to perpetuate a chart of the surveyor's work, including the monumentation that he placed on the ground.

The basis for recorded maps in California (be they records of survey, final subdivision maps, or parcel maps) is the Land Surveyors Act. All of the practice of surveying is contained in that single law: Chapter 15, Division 3 of the Business and Professions Code, Sections 8700 through 8805.

It should be noted that certain sections of the Subdivision Map Act do make reference to the Land Surveyors Act; namely, Section 11566 (monuments) and Section 11576 (parcel maps).

The Land Surveyors Act is administered by the Board of Registration for Professional Engineers. Much of it deals with the licensing of surveyors and with the practice of surveying. However, Sections 8762 and 8766 call on the county surveyor to administer that portion dealing with the examination of the map. Each separate county and city must then interpret the Act. The technical interpretation is left to the city engineer or county surveyor whose opinion (most often) becomes the law in that community. (The elected supervisors or councilmen usually accept his opinion.) The city engineer or county surveyor can, therefore, be very powerful. Public works' staff members and private surveyors must beat a path to his door.

Now, there are 58 counties in California and 408 incorporated cities, a possible total of 466 separate interpretations of the Land Surveyors Act. The private surveyor faced with varying and seemingly arbitrary requirements regarding, for example, the informational content of record of survey maps must, at times, ponder whether there are indeed 466 separate requirements. Whatever the actual number, certainly the private surveyor is confronted with numerous differing interpretations of the Act—a situation which is unlikely to serve the public interest. How did this situation develop?

Since the signing into law of the first Land Surveyors Act in 1891, it has been amended many times; its present, perfected form is the result of 83 years of revisions. Today, the Land Surveyors Act is so perfect that it took the Board of Registration and the State Attorney General a full year to determine whether or not Section 8762 requires a surveyor to file a record of survey every time he puts wood into the ground. (Even then, the Attorney General bowed to the Board's decision—that it was *not* necessary. Subsequently, I understand that the California Land Surveyors Association is proposing legislation intended to clear up the matter—but I don't think it will.) Perfection marches on.

Initially, the Act specified that all maps should be recorded, for there were, at that time, no officially recorded maps. In 1929, the Act was modified to allow the recordation of maps to be *permissive*, instead of mandatory. That amendment stated, in part, ". . . nothing in this section shall require record to be made of surveys of a preliminary nature, or when the survey reproduces, without material change, survey lines, and boundaries of parcels as they appear on maps which have been filed in the office of the County Recorder or County Clerk."

The function of a survey map is to provide data necessary to retrace the survey. It is not a function of the map to serve as a title re-

(Continued on page 20)

CALIFORNIA BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS

Written Examination Schedule

1975

Examination Dates

*Final Filing Dates

Land Surveyor-in-Training—LSIT

November 8, 1975

August 18, 1975

Land Surveyor—LS

November 8, 1975

July 14, 1975

*Applications filed after the final filing date specified will be considered for the following examination.

NOTE: This schedule is subject to change at any time without prior notice.

SURVEY MAP STANDARDS

(Continued from page 19)

port, nor as a list of approval conditions. Although it is not generally acknowledged, it should be noted that the surveyor does not have the right to establish boundary lines. He does not have the right to pass judgment relating to the ownership of land. Such judgments are made by the courts.

Section 8762 of the Act states, in part, that "Any record of survey filed with the County Surveyor shall after being examined by him be filed with the County Recorder." The Act does not further define the nature of this examination. However, Section 8764.5 goes on to cite the certificate that the county surveyor must attest to: "This map has been examined for conformance with the requirements of the Land Surveyors Act. . ." Clearly, then the "examination" is limited to those requirements stated in the Act. It does not state that a county surveyor must examine the Act to determine if a proper survey has been conducted.

Now, the law relating to surveys states that a survey is represented by *points on the ground*: "Calls on plats for distances, angles, or surface are informative terms to aid in the location of monuments; the monuments mark the lines as run." (Brown—2nd Edition, *Boundary Control and Legal Principles*)

Decisional law states, "A plat is a subdivision of land into lots, streets and alleys, *marked upon the earth and represented on paper.*" (Emphasis added.) (McDaniels v. Mance, 47 Iowa 504)

Similarly, "The monuments or marks placed upon the ground by the surveyor in making a survey constitutes the survey, and the courses and distances are only evidence of the survey. Although evidence based on courses and distances from other known points is admissible as evidence to fix a corner, where no corner is found, it is not admissible to change the location of an original corner of the survey when found." (Gordon v. Booker, 97 Cal 586)

The conclusion is that the survey is *on the ground*; the plat is but a *representation* of the surveyor. The county surveyor is empowered to check the plat, not the survey, not the judgment decisions of the surveyor.

A county surveyor must, then, *examine* the map for conformance with the law. The map must show permanent monumentation, in sufficient quantity to allow a surveyor to relocate the lines and points. It must show evidence found, basis of bearings, material discrepancies, distances and bearings, scale, etc. Most county surveyors believe that they must check for mathematical accuracy. They should also check for sheet size, legibility, and for the required certificates. That is the extent of their mandate.

In many instances the mandate is exceeded. The years have so compounded the "examination" requirements that the end result is a map so cluttered that it no longer accomplishes its desired end of leaving an advisory chart for the retracement surveyor. The map has become a title report, and a repository for all the seemingly incidental whims of the various jurisdictions. For example, one county requires a statement on parcel maps as to the iron or manganese content of the water supply and a consequent statement as to whether or not "hardness may be encountered in the water on this property." Is such a statement necessary to enable a competent surveyor to retrace the survey?

In another county, we have for many years been filing parcel maps for a particular client. He is incensed by the extraneous detail required on the maps. They have become so cluttered that boundary lines are difficult to follow through all the notes. He actually pays us to prepare

two maps: one for the county surveyor, and one for him.

I am not suggesting that the county surveyor become lax in his responsibilities. I am suggesting, however, that many jurisdictions have become so caught in their zeal to "properly examine" maps, and that political bodies have become so insistent on using a map for anything but a boundary map, that the original purpose has been forgotten.

I consider monumentation most important. As long as the job has been monumented, it can be reconciled. If monuments are in place, they represent the survey, not the map.

It would be useful if a county surveyor made spot checks to determine if the surveyor has actually set the monuments. Even if they are in all the wrong places, I would rather have monumentation and an imperfect map than lack of monumentation and an "examined" map.

Certainly, however, the county surveyor must be able to exercise his judgment as to the values of the information he seeks—in conformance with the law, and in conformance with the requirement that the map contain all the data necessary to enable any competent practical surveyor to retrace the survey. Yet in his zeal, he often loses sight of that intent and adds extraneous requirements.

Perhaps it would be helpful to have a consensus of opinion—one best arrived at by conference among both "public" and "private" surveyors. The profession is getting restless on the subject. The California Land Surveyors Association is to begin work on a list of "standards" relevant to survey maps. A new organization, the League of California Surveyors, is citing just such an effort as its prime concern. Certainly, a statewide set of standards, compiled by a consensus of private and public surveyors, and arbitrated by a standing committee would do much to correct the present unsatisfactory situation. ▲



Editor's Note: Due to an oversight the Lietz Company was omitted from our feature article, "Know Your Sustaining Members," in the convention issue of the California Surveyor. In an effort to correct that omission, we are featuring them in this issue.

In 1882, Adolph Lietz founded the company bearing his name which is now the oldest manufacturer of surveying instruments in the western United States. Lietz instruments played a significant part in the "building of the West" having been used on major engineering projects throughout the state of California including the construction of the Golden Gate Bridge. Lietz theodolites were used on many of the primary triangulation projects throughout the state.

Now one of the major suppliers of surveying instruments and equipment in the United States, Lietz products are available from more than 150 Authorized Distributors nationwide. As the exclusive importer of Sokkisha surveying instruments, Lietz is able to offer everything from builders instruments to sophisticated theodolites including the unique digital theodolites which display vertical and horizontal angles electronically and instantaneously to form a completely automated survey system.

Headquartered in Carson, California, Lietz maintains a sales and service office in Burlingame in the Bay Area and an eastern warehouse and service facility in Cinnaminson, New Jersey. Expert repair and maintenance service on all makes of instruments is provided at each location and a staff of friendly, helpful employees stand ready to serve all members of the California Land Surveyors Association. ▲

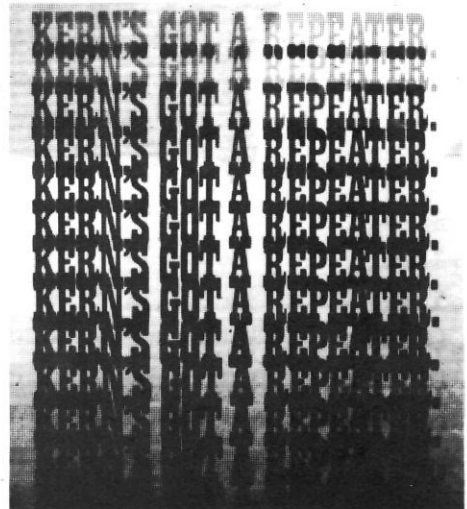
THE 1975 CONVENTION—FINAL LOOK



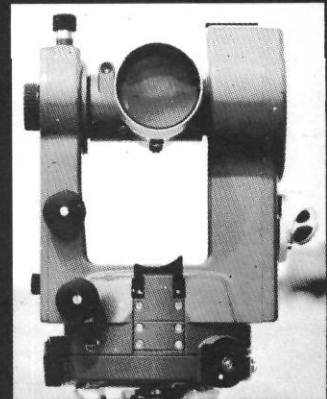
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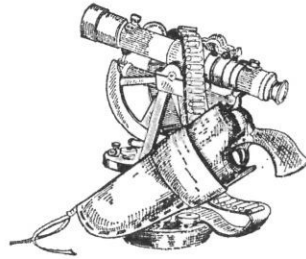


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The California Surveyor

Published Quarterly by the
CALIFORNIA LAND SURVEYORS ASSOCIATION

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