



The California Surveyor

Institutional Affiliate of American
Congress on Surveying and
Mapping

THE VOICE OF THE LAND SURVEYORS OF CALIFORNIA

No. 39

FALL EDITION

1975

Monterey Bay Workshop

by Stanley R. Smith, L. S.

Continuing education was the theme as Monterey Bay Chapter conducted its first field workshop June 19th at the palatial villa of President Smith in the Aptos hills. Attending were seventeen land surveyor members, sorted guests and John Eaton, sutler, with his charming wife Greta.

The purpose of the expedition was the establishment of a CLSA monument of some permanence in the central area of the chapter, and the determination of its position upon the geoid and in the California State Coordinate System. It was the hope of the dedicating committee of seventeen that this monument attract like gatherings in the decades to come, a Mecca, if you will, to their sons and grandsons, surveyors all, who will make their own determination of the place this monument occupies upon the globe.



The monument selected was war surplus, fashioned of mild steel, magnetized, five inches diameter in circular section and in length five feet two inches. It bears a twelve inch gear at the base and boasts a fluted head. The magnetic type was chosen

(Continued on page 18)

NEWS BRIEFS

... The Feather River/Northern Counties Chapter will sponsor a one day conference and workshop at the Holiday Inn in Chico on November 22. The focus will be on Land Surveying Education and the Practical Practice of Land Surveying. Anyone interested in attending should contact George Pride; Star Route Box 68-A, Orland, Ca. 95963.

... The Central Coast Chapter has formed a Surveying and Professions Practice Committee to promote professionalism, assisting professionals and non-professionals alike in reaching this objective. This committee is attempting to field complaints made to the San Luis Obispo County Surveyor's Office.

... Registration is now open for the A.C.S.M.—C.L.S.A. Retracement Workshop to be held October 10 and 11 in San Diego. Enrollment will be limited to 90 persons and it should fill up fast.

... The Professional Matters Division Co-ordinator is Raymond B. Thinggaard and the Committee Chairmen are:

James E. AdamsA.C.S.M.—C.O.S.A. Liaison
Eugene B. LocktonC.C.C.E. & L.S. Liaison
A. E. GriffenC.S.P.E. Liaison
Raymond B. ThinggaardBoard of Registration
Paul W. Lamoreaux, Jr.Status Improvement
Jerry M. IrbyLeague of Cal. Surveyors (South)
Harold B. DavisLeague of Cal. Surveyors (North)
Ray C. CarlsonLicense Examination
James N. DowdenNorth American Datum Revision

... The Convention Committee has designated the Airport Marina Hotel in Burlingame as the site for the 1977 annual convention.

... A special committee has prepared the first draft of a "Director's Handbook" in order to familiarize all new chapter representatives and directors with basic procedures. Chairing this committee is William O. Gentry.

... The San Diego Chapter of C.L.S.A. has been elected to membership in the Construction Industry Co-ordinating Council of San Diego. Tom Gade will serve as delegate to the Council. ▲

ORANGE COUNTY CHAPTER

by Tallas D. Margrave, L.S.

The Southern California Orange County and surrounding area held its first organizational meeting to establish its own official California Land Surveyors Association Chapter. The meeting, held on August 11th at First American Title Insurance Company in Santa Ana, was attended by 18 local CLSA members. Also present to offer their much appreciated suggestions and experience were Eugene Ehe and Richard Siegmund of the Riverside/San Bernardino Chapter and Don Bender, Treasurer of CLSA. As the first order of official business Tallas Margrave and Brad Brier were appointed interim chapter representatives. A Constitution and By-Laws Committee was appointed with the goal of having the chapter constitution and by-laws submitted to the Board before September and possibly ratified by the October Board meeting.

From the enthusiastic initial interest demonstrated at the organization the chapter should be well on its way by the time of this publication to providing a much needed local forum where problems of mutual interest can be discussed and where the exchange of viewpoints and information between county, city and private entities aimed at standardizing requirements and procedures can be achieved.

Meetings will be scheduled on a monthly basis. Anyone desiring to know more about this new chapter and when and where future meetings will be held should contact Tallas Margrave at (714) 556-7781 or Ruel del Castillo at (714) 834-3456. ▲

LEAGUE OF CALIFORNIA SURVEYING ORGANIZATIONS - NORTH SECTION

by Myron A. Lewis, L.S.

The Northern Region of the League of California Surveying Organization will continue to hold meetings on the third Thursday of each month. Afternoon meetings are held during the even numbered months with the remainder held in the evenings. Because of the wide area we are trying to represent, our 90-minute to two-hour meetings will very possibly include short committee meetings.

Our Chairman, Art Devincenzi, from Santa Clara County, has appointed three committees to prepare position papers on Accuracy, Record of Survey Form and Content and Survey Information Repository. At the present time the Committee Chairmen have been busy sending out questionnaires to obtain the required information for their work. Other committees on timely subjects, will be appointed as the attendance grows. We are presently trying to increase the participation from the private sectors in order to have a more evenly balanced organization. We are working along with the Southern Region of the League and will continue to do so.

Again, I must repeat, the League is not another organization to join but an organization already composed of a representative and/or his alternate from an existing survey organization.

For additional information about the League, contact Myron Lewis, City of Hayward Engineering Division, 22300 Foothill Boulevard, Hayward, California 94541. ▲

. . . . The League of California Surveying Organizations, Southern Region, is continuing to accept reports from its various committees in its effort to publish its Surveying and Mapping Standards Manual.

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 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

Winter Edition November 15, 1975

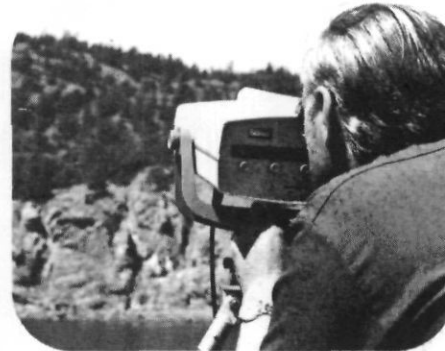
Spring/Convention February 7, 1976

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

Editor



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RECORD MAPS AS HOSTAGE DOCUMENTS

by Mike McDowell

ABSTRACT:

Processing maps in California has become a hopeless muddle for surveyors and citizens alike. A brief review of the background of this process reveals some of the problem areas and suggests a possible solution. The introduction of a Notice of Compliance would, basically, separate maps from the larger problem of controlling land development by public agencies as currently practiced. It should be possible to facilitate the whole process, allowing the public agencies to exercise their police power, without using maps as hostage documents.

Simply stated, my understanding of the purpose of maps (Subdivision, Parcel Map, or Record of Survey) is that they are a graphic definition, illustration, or description of particular boundaries, either present or in the future.

Over the years, we have watched the abridgement of private property rights as public concerns began to impinge upon the individual freeholder. Once the public concern was interested in the Sovereign only, in eminent domain and consumer protection. Now nearly every governmental agency has some quasi-judicial voice on the proper uses of private property.

But our subject of concern at this moment is the *process* of controlling land development instead of the larger subjects of land use and holding.

During the last 15 years or so, we have watched the struggle of the public sector gaining control of land development. The growth of the administration of subdivisions has been the most apparent case in point. We have also watched the awkward efforts to use the Record of Survey as the principal document of compliance; an effort which ultimately failed. Then there was the invention of the Parcel Map which has been evolving ever since its creation into what has now become an unalloyed monster of infinite proportions.

UNDER THE NEW LAW

Since March 1, 1975, when the new parcel map provisions became law, many of us have experienced the incredible difficulty of trying to process and record Parcel Maps. In some instances, we have added whole new certificate sheets; we have changed certificate wording; and we have had to include additional certificates. So far, the problems have not been with the map itself, but with the certificates, the processing and the translations of law by the administering agencies.

Public agencies have a responsibility under the law to administer land development. Planning commissions, or their designated committees, levy conditions which must be met before development can commence. These conditions are usually the product of technical and administrative review by all concerned departments or agencies. As each of these conditions is satisfied by the developer, the project moves closer to final approval. As the law now stands, the hostage document, the control element, the administrative document of compliance, is the recordable final map.

If the simple purpose of the map is as I stated in my first paragraph, it seems curious that the map has become the document of compliance. It is my feeling that the map should be like any other levied condition and be available for recordation at the earliest time it is complete so as to conform within the time limits for processing as prescribed by law.

The major problem seems to be with the levied conditions. As usually administered, each requirement and condition is an unweighted contingency. Each condition must be met in all of its technical and administrative particulars or the development project is in jeopardy. With this fundamental operating attitude, the public agency either elects to have timed recordation of required documents in sequence, or simultaneous recordation of all documents. In either case, what has evolved as the last document to be released for recordation is the final map.

A POSSIBLE SOLUTION

One possible solution to present practices would be to promote a separate document of compliance. I would call it a Notice of Compliance. The Notice of Compliance would be the final and control document in the process. The notice would include the original conditions as well as the various sanctioning certificates of the appropriate agencies to indicate that all requirements have been met. If the project should abort before completion, a Notice of Non-Compliance could be recorded stating this fact as well as at what point completion stopped. When a project goes the full route, and all things are completed as specified and required, the notice would be recorded and would stand on its own merit as the evidence of approval and acceptance.

Further, the Notice of Compliance would be an appropriate item for entry within each Title Report and could be included by reference. Its entry would serve to provide notice to the owner of the development potential of the property. In cases of projects having failed prior to completion, the Notice of Non-Compliance would indicate the state of progress at the time of termination and what items remained for satisfactory completion.

Our maps were never intended to serve all of the administrative purposes incidental to land development. While the above suggestion introduces the possibility of another layer of paper work, it would free our maps from gathering proliferations of certificates and other administrative niceties and would preserve their timeless quality.

Reference: Subdivision Map Act (As amended April 4, 1975) See Chapter 7, 66499.35 (a), (b), (c), and (d). Existing provisions for a "Certificate of Compliance." I would like to see the removal and deletion of (d). Possibly, to accomplish the things suggested by this paper, the deletion of (d) would be sufficient. ▲

CALIFORNIA BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS

Written Examination Schedule

1976

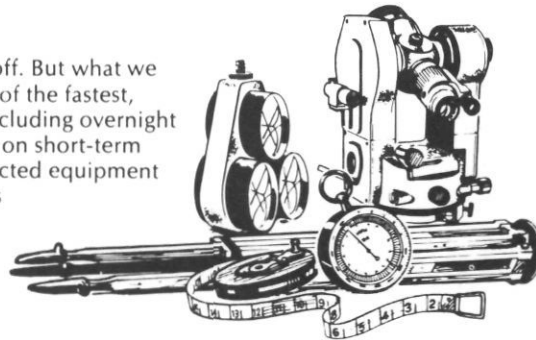
Examination Dates	*Final Filing Dates
Land Surveyor-in-Training—LSIT	
April 10, 1976	January 26, 1976
Land Surveyor—LS	
November 6, 1976	August 16, 1976

*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. ▲

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*†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
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RAYTHEON DE-119D RECORDING FATHOMETER	20.00	12.00	8.00
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Metric Recommendations for Land Surveyors

At an A.C.S.M. Metric Workshop held in March in Washington, D.C., Gunther Greulich, Workshop Chairman, issued a report with a number of recommendations for Land Surveyors.

It was recommended that the following suggestions be put into practice:

A. CADASTRAL SURVEYS (Boundary)

1. Beginning immediately, land surveyors shall place metric bar scales on all plans suitable for recording.

2. Beginning immediately, land surveyors shall show equivalent values for areas in square meters or hectares, depending on size of parcel of land, on all plans suitable for recording.

3. During the anticipated transition period, manufacturers of measuring tapes are requested to make available special tapes marked in feet on one side and in meters on the other.

4. **DEEDS:** Legal descriptions of existing deeds, record plans or plats are to be converted to the metric system only if and when conveyance or subdivision takes place.

5. In case of difficulties with lawyers or title insurance companies insisting on the english unit, the land surveyor shall add metric equivalents in parentheses.

6. **MEASURING TAPES:** Two standard lengths are desirable: 30m and 50m.

7. **AREAS:** Lot sizes are to be expressed in square meters. Large tracts of land are to be shown in hectares. The square kilometer is to be reserved for geographical or statistical purposes of large land areas.

8. **ANGLES:** The sexagesimal system (360° circle) is to be retained for two major reasons: Geographic coordinates (longitude and latitude) have not changed to the Grad system, electronic pocket computers are now so common and inexpensive that calculations are no longer a problem.

9. **BEARINGS & AZIMUTHS:** The majority of those present seemed to favor bearings over azimuths for property lines. The decision will have to remain with the individual surveyor or public agency.

10. **COORDINATES:** State plane coordinates are to be listed in metric equivalents.

11. SCALES:

- 1: 100 to replace 1" = 8' and 1" = 10'
- 1: 200 to replace 1" = 16' and 1" = 20'
- 1: 500 to replace 1" = 40' and 1" = 50'
- 1: 1000 to replace 1" = 80' and 1" = 100'
- 1: 2000 to replace 1" = 200'
- 1: 5000 to replace 1" = 400'
- 1: 10000 to replace 1" = 800'

12. **PAPER SIZES:** Since the main reason for adoption of the metric system is its simplicity, it was agreed to ignore the International (odd numbered) paper sizes. The following dimensions are close but seem more logical and desirable:

NEW SIZE IN mm	OLD SIZE IN INCHES
800 × 1200	
600 × 800 to replace 24" × 36"	

400 × 600

300 × 400

200 × 300 to replace 8½" × 11" and 8½" × 14"

B. ENGINEERING SURVEYS: (Construction)

1. **Bench Marks:** Beginning immediately, all official listings of elevations shall include the metric equivalent.

2. Surveyors are urged to show the metric equivalent of at least one of their key benchmarks on all topographic plans, starting immediately.

3. **Level Rods:** New metric rods shall have distinct features and markings to prevent confusion with yard level rods presently in use.

4. **Station and Offset:** In surveys and profiles, the meter will simply take the place of the foot. Station 1+00 being 100.00 meters from 0+0. Substation to be introduced as required. Offsets will be taken or shown at even metric distances from the baseline or wherever breaks in grade occur.

5. **Contours:** As needed, topographical plans shall show required contour intervals of the following magnitude:

0.5m C. I. to replace 1' C.I.

1 m C. I. to replace 2' C.I.

2 m C. I. to replace 5' C.I.

5 m C. I. to replace 10' C.I.

6. **Subdivision Design:** Recognizing that all past and present subdivision design standards have developed as arbitrary, yet practical, whole unit values (see 2 rod roads, 50 ft. road, 10 ft. easement, 20 ft. right-of-way, etc.), it is strongly recommended that this philosophy be retained in the future. ▲

C.L.S.A. MEMBERSHIP

C.L.S.A. MEMBERSHIP

Members as of July 1, 1975	572
Sustaining members	8
Regular Members	392
Associate Members	106
Affiliate Members	28
Student Members	38

Regular

Harold E. Karlson, LS

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James R. Fulton, LS

L. Dean Bailey, LS

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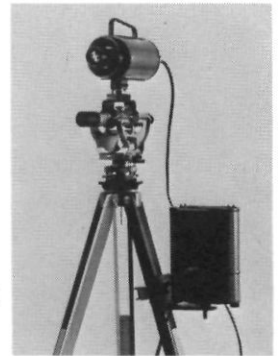
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MICRORANGER

Our Continuing Education for LS Registration

by Robert Johanning

Editor's Note: This article is a reprint from the Wisconsin Society of Land Surveyors Newsletter No. 82, May 1975. Robert Johanning is a Wisconsin Land Surveyor and serves on the Board of Directors of the State Society. The author is also chairman of the Photogrammetry Committee of the Land Surveys Division of A.C.S.M.

(SUMMARY OF THE FINAL REPORT AS SUBMITTED BY THE A.C.S.M. CONTINUING EDUCATION COMMITTEE AND KENTUCKY SECTION CONTINUING EDUCATION COMMITTEE ON QUALIFICATIONS FOR CONTINUING PRACTICE AS A LAND SURVEYOR).

1. The Committee feels that to provide leadership to enact this Program that A.C.S.M. should adopt a voluntary certification program for all its members. That A.C.S.M. should administer such a program through its Land Surveys Division and the Sections and Affiliates. That the Land Surveys Division could define the areas of certification needed to recognize Land Surveying Activities.

2. That A.C.S.M., through its publications, meeting programs, public relations take a strong stand and give recognition to its competent up-to-date members. This would be implemented if the Board would accept a Voluntary Certification Program that was recommended by the committee. The experience gained from implementing a Voluntary Program would be invaluable in preparing a firm policy for future State Laws.

3. The Committee envisioned that the A.C.S.M. Board would adopt the Report in principle and hold the final standards for advice to the Sections, Affiliates and various organizations. State laws implementing the qualifications for recertification probably would not be enacted before 1980 or 1985. If the Voluntary Program recommended above is adopted, it would be easy to move to a Mandatory Program in the event the mandatory requirement became a reality.

4. That A.C.S.M. would take an active stand, probably through NCEE, to promote some type of reciprocity between states in the event mandatory recertification becomes a reality. When state laws are revised to include recertification with relicensing, a three year delay should be recommended after enactment to allow practicing land surveyors to adapt to the new requirements. It is recommended that there be a staggering recertification so that only one third of the registrants are evaluated each year. A three year recertification is recommended for each land surveyor.

As the last course of action the Committee recommended that the A.C.S.M. Board adopt the qualifications for Continuing Practice as recommended by the Committee in the event mandatory requirements are imposed. These standards are also to be used for a Voluntary Program to be implemented by 1976.

The above, in essence, are the high limits of the Final Report and the conclusions that the A.C.S.M. Continuing Education Committee has formulated over a three year study of the Program of Relicensing by Recertification.

The qualifications necessary for Continuing Practice as a Land Surveyor would be based on a Recertification every three years made up of three measures of competency which are based on:

1. Evidence of current practice
2. Professional development
3. Education

These three measures of competency will be determined by a point system which will be published in detail in a future issue.

It is quite apparent from the reports from various Surveyors meetings throughout the United States that the membership at large would definitely favor a Recertification Program involving Continuing Education Units rather than a Re-examination procedure. With approximately 200 surveyors in attendance at a Joint Session of the Kentucky and Illinois Land Surveyors Meeting and at another meeting of approximately 100 Indiana surveyors their response indicated they favored the A.C.S.M. Final Report in regard to Recertification. ▲

NEWS BRIEFS

. . . . A proposal has been made to have C.L.S.A. sponsor the preparation of a "Legal Guide for The California Land Surveyor." The Sonoma County Chapter has made the proposal and has Richard J. Coughlan working on the basic preparations.

. . . . Paul W. Lamoreaux, Jr. has been selected as co-ordinator of the Convention Division. Heading the committees in that Division will be:

- Leonard A. Lindenbaum1976 convention
- G. Howard DyeFinance
- Ronald A. KabalinPublicity
- Ronald W. TurnerExhibits

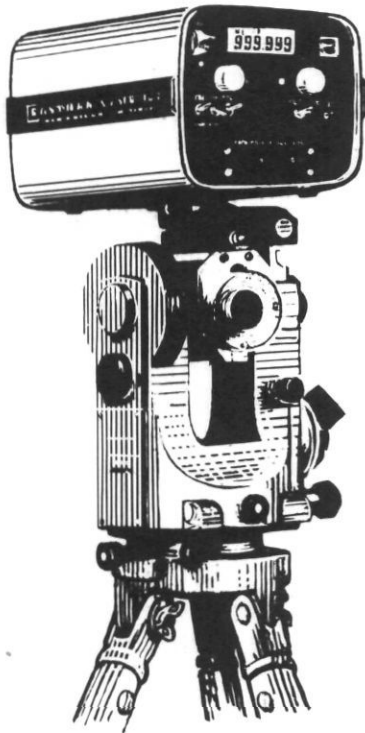
. . . . The script is completed, the contract is signed, and the stage is set for beginning the actual shooting of the Wisconsin Society of Land Surveyors film, "The Land Surveyor and You." It will be a 16mm, color, sound film with a running time of 22 to 30 minutes and scheduled to be completed by March 1976.

. . . . The Land Surveyors Associations of Kansas, Missouri, Arkansas and Oklahoma will hold a joint four state convention in February 1976. It will be held in Tulsa, Oklahoma and replace the individual state conventions of the associations.

. . . . On January 23, 1975 the Southeastern Association of Professional Land Surveyors became official. Six state associations, Virginia, Maryland, North Carolina, South Carolina, West Virginia and Tennessee, ratified the by laws. The Association is dedicated to serve the interests of Licensed Professional Land Surveyors.

. . . . University Microfilms, P.O. Box 1346, Ann Arbor, Michigan 48106, is an excellent place to purchase out-of-print books. The copies produced are Xerox copies of originals, trimmed to the size of the original, and hard bound as with any book. For example, *Public Land Surveys* by Lowell O. Stewart, originally published in Ames Iowa in 1935 is available from University Microfilm.

. . . . The Monterey Bay Chapter is offering three \$50 scholarships to students of surveying at local junior colleges. ▲



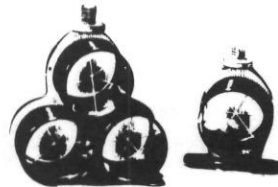
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The Education of the Future Professional Land Surveyor

Part II . . . this is the second 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

Professional Surveying Education As stated in the Taft-Hartly Act of 1947, a profession is a vocation:

Requiring knowledge of an advanced type in the field of science or learning customarily acquired by prolonged course of specialized intellectual instruction and study in an institution of higher learning, as distinguished from an apprentice or from training in the performance of routine, mental, manual, or physical processes.

The key words in this statement might be "advanced knowledge," "prolonged course of . . . study," and "intellectual instruction." The distinction between professional education and apprenticeship or training in routine processes is most significant. This sets professional education apart from technical training.

When some practitioners speak of curricula in surveying, they often mean property surveying. Such advocates would have students spend most of their time learning how to search for and evaluate property line evidence. With this approach, only the most basic mathematics would be taught. All subjects, including surveying, would be taught only to the extent that they relate to local property resurvey practices. The proponents of this idea are usually quite concerned that graduates will not be able to "go out and make a survey" on their graduation day. Those who feel that this is what is meant by professional education are either only trying to get the colleges to do the training that should be acquired mostly on the job during the "practical experience" phase of the education, or see the profession as a narrow field based on past practices and do not see a need for including many scientific aspects or topics designed to broaden the practice, or feel that professionalism can be attained through a pure technical approach and that to instill original thought through more varied and theoretical topics is unnecessary. The major weakness in this approach is that there is not much foundation for actually advancing or improving the profession. The principles and practice of modern surveying go beyond traditional property surveying. Such programs would fail as professional programs because of their irrelevance and narrowness.

A SOLID FOUNDATION

On the opposite extreme from the exclusive property surveying approach is the type of program that emphasizes the scientific aspects of surveying. Proponents of this approach are difficult to identify, but observations indicate that they are primarily science-oriented educators. Surveying educators typically hold a Ph.D. degree and their interests are greatly in research. They frequently are inexperienced as regards the practice of surveying. The result is that courses emphasize theory. Applications, practical aspects, and legal principles of boundary relocations are all but excluded. Topics such as survey history are considered too mundane to include in such theoretical curricula. Such programs are probably very good as

stepping stones for students continuing in graduate school or seeking employment in research or governmental agencies. What is lacking is a foundation in practical problems to create student interest in the Land Surveyor as a general practitioner with a goal of serving the public at the "grass roots" level. Without such an orientation, employers may be disillusioned with institutions of higher learning in that graduates will be grossly incapable of "going out and making a survey." The need for private practitioners may not be filled as employers in practice may be reluctant to hire graduates and because students may become more interested in scientific research and theoretical endeavors and seek employment in such areas.

Survey science or survey engineering programs approach what is needed, however. With inclusion of additional courses to form the foundation for the general practitioner Land Surveyor, emphasis on practical as well as theoretical problems, and perhaps even a name change, these programs would be excellent. Such additional flavor may have to be developed by appointing faculty having both academic degrees and practical experience and whose main interest is in teaching, service, and scholarly endeavors. Such efforts would, of course, have to be evaluated for promotion in rank in lieu of research so as to attract and keep such faculty.

CALL IT "LAND SURVEYING"

This author suggests that the name of any degree be descriptive of the profession. There is little rationale for calling a professional degree "Surveying Science" or "Surveying Engineering." This places surveying subordinate to something else. Surveying should be the *noun* and not the adjective if our profession is going to continue to exist in its own right with its own unique registration and educational requirements. Professional registration does not exist in survey science or survey engineering. Confusion results from using such terms. The name of the profession is Surveying or Land Surveying.

Professional education in surveying differs from technical education. It is broader, more intense, more theoretical, and is designed to dilate the mind and ultimately advance the profession. Careful programming and attention to teaching methods is important to create the professional flavor. There are many surveying programs designed to train technicians. High level programs are found in graduate schools and are scientific in approach such as to groom undergraduates for graduate school. What is needed are sound undergraduate programs that can fill the gap between the technology programs and the scientific programs. The civil engineering programs do not accomplish this because they are sometimes too science oriented and because there is not room in such curricula to educate both Civil Engineers and Surveyors.

A professional curriculum should be consistent with the new image of the Surveyor as described previously. Desirable objectives should be to emphasize modern survey practice and broaden the base of land surveying expertise so as to make the profession somewhat more attractive to prospective students and enable graduates to be of substantial use to society upon graduation. It should be a policy to retain the best elements of traditional land surveying practice without compromising the objectives. Rational, professional, and ethical practices and

(Continued on page 11)

EDUCATION OF THE FUTURE PROFESSIONAL SURVEYOR

(Continued from page 10)

thought should be taught continuously within the program. Other principles would be to provide sufficient depth and flexibility in the program to enable students to complete another undergraduate degree or a Master's Degree in a related field within a reasonable time, and to keep the credit hours required such that students could complete the program in four academic years without undue hardship or strain.

A professional program in surveying should emphasize both the theoretical and practical aspects. It is important that the practical remain, or else the instruction is pure theory which by itself is of limited value. Science itself cannot be practiced as a profession. It must be applied. But without theory, philosophy of thought, and teaching approaches designed to make the student think, the professional ingredient would be missing. The courses should progressively develop the students in the several aspects of surveying and have a professional flavor throughout. They should not be just a series of topics, but should be an integrated body of knowledge designed to develop thought processes, to present ideas, and to teach facts.

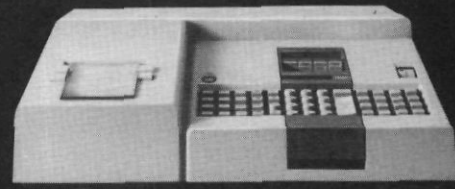
A CAREFUL BLEND

Professional education for the future Surveyor must contain a careful blend of technology, science, engineering, professional thought, and human values. The depth and breadth required is too much to cover in a two year technical program or within the framework of another program such as civil engineering.

The professional degree graduate will have similar technical education as received by graduates of technical programs. If he is employed in private practice, his immediate function may be essentially the same as the technical program graduate since field experience will be important to fulfill the spirit of the practical experience requirement for registration and since such experience is important toward developing his ability to direct technicians in the future and to make the transition from the academic to the real world. The real worth of a professional degree program graduate will be realized ultimately in directing survey operations from a departmental head level, as an owner of his own business, as a future educator or researcher, or as a key member of a governmental agency involved in surveying and mapping. After registration as a professional, he may continue to function effectively in the field as well as in the office. ▲

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EDITORIAL COMMENTS

by Walter G. Robillard,
Chairman, Land Surveys Division-A.C.S.M.

Today, many professions in all fields are being subjected to forces and influences entirely new and foreign. Men in their 30's and early 40's vaguely remember the long lines seeking employment, the concerned parents who would pray for snow in order that some work would be available, or the despair for the future of the 1930's.

The term *depression* struck fear in the minds of all. Today, this same pallor seems to be invading again. Recently, a friend tried to differentiate between recession and depression—his logic: Recession is when your neighbor is out of work—depression is when you are out of work. "Depression," states Webster of dictionary fame, "is a psychoneurotic disorder marked by *sadness, inactivity, and self-depreciation.*" This is the perfect description that seems to hang as a cloud of gloom over many in our profession today. Many seem to be wallowing in a slough of defeatism because they have never been faced by such circumstances before.

"Business is off"—"My profits are down"—"I've lost my job"—"Money is tight"—"Building is off"—all echo across our country like the beat of a drummer of a funeral dirge.

In my travels, I have witnessed all types of professions and their approaches to solutions—In all honesty, I cannot completely cast myself into the mood of despair. I do see professional signs of encouragement. First and foremost, our economic system is strong. Checks and balances insure that the despair of the 1930's cannot return. Although today we live in a volatile world where a decision in Egypt or Turkey affects our situation in America, we must realize that an optimistic attitude is the "Rx for Success."

In these times and in my travels, I have seen an attitude of hope, confidence, and faith in the future—Example: A 24-year-old instrument man, out of work for two months, drove 80 miles to attend a one-day short course and stated—"Boy, this slowdown gives me an opportunity to get more training that I couldn't get before;" or three firms—competitors—each sharing what little work they had and finally putting their four best men into one crew in order to keep them working; or an individual who founded a garbage collecting firm in order to be able to keep his survey crew employed.

These may be remote examples, but I rather doubt it. Historically, the land surveyor has approached each crisis in a true professional manner. This exhibits itself in the fact that *membership in the ACSM and in the State societies is continuing to increase.*

When things are fine, we accept membership as a necessity for congeniality. But what about times like these—the times that "try men's souls"—Professional association provides the opportunity to reinforce—to substantiate the profession. It is here—now—that a member can best reap the benefits of association in societies.

The officers and committee members of the Land Surveys Division offer their continued support to your organization and members to help in any way they can, whether it be to furnish speakers, information, or moral support. Membership in professional societies is an investment in the future. ▲

Letters to the Editor

Dear Editor:

Re: CLSA Summer Edition page 15

Would someone please tell John Pedri that the reference to the office doing surveying in early history is the "General Land Office" *not* Government Land Office.

Perhaps he is the one who is submitting this rather stupid question on L.S. exams (ie., What does G.L.O. stand for?) Had I answered "General" instead of Government as Mr. Pedri uses I'd have been a L.S. 1 year sooner.

Reference page 3, Manual of Surveying Instruction, 1973.

Andy Johnston

Dear Editor:

In the 1975 Summer Edition of the California Surveyor, Mr. John Pedri lists a number of reasons why requirements for filing maps differ in various jurisdictions. Quoting Mr. Pedri "Uniformity can come if surveyors work together and request the board to adopt survey and mapping guidelines as policy."

Perhaps we should start by making a major overhaul of the Land Surveyor's Act. Land Surveyors will continue to disagree until they have an act that is less subject to interpretation. Presently we disagree on the meaning of sections that seem most simple to interpret; how can be possibly agree on the other sections.

To illustrate this ability to agree amongst ourselves, I refer to Mr. Ray Peters' article in the heretofore mentioned edition of The California Surveyor. He clearly believes that under present law, the county surveyor has a very limited mandate to check maps submitted for recordation: "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." I would interpret Section 8766 (a) to mean that all county surveyors must check for mathematical accuracy of record maps or be in nonconformance with the act themselves. Also I believe that Section 8766 (b) and 8764 (f) give the county surveyor an extremely broad mandate in checking maps.

Practicing land surveying in rural counties where records of any type are either inaccurate, out of date, incomplete, non-existent or all of the above, to urban counties like Alameda where research of existing records is a major task completely changes the nature of map checking. Guidelines from the board would help.

Regarding complaints of extraneous material required to be placed on maps, Section 8764.5 clearly states that "no other certificates or statements shall appear on the map except those of a technical nature affecting the locations of the survey lines or monuments represented on the map."

Gilbert G. Barbee
L.S. 3592



PRESIDENT'S CORNER

by Eugene B. Lockton, L.S.
Immediate Past President

ON "MEMBERSHIP"

Try not to think of the word only as it applies to joining the California Land Surveyors Association, it always has had a far greater importance than belonging to any single group. It has provided the coercive force which guides behavior. It has channeled conduct into an approved form. It takes over when conscience fails. And it was well established many millions of years before Uncle Homo Australopithicus patented his homestead in the Olduvai Gorge. In short social organization has been the impelling directive force for biological survival. It still is.

It takes its power from identification of the individual. It destroys anonymity, the cloak in which wrongdoing finds the concealment with which to escape responsibility.

As surveyors, it touched us when the mandate went out to tag all points set. We were forced to abandon the old practice of setting an unidentifiable corner which served to get a fee from a client, though perhaps not to truly mark the corners best position. So why did that little old brass disc upgrade our work? Because we faced the risk of being caught with less than the best workmanship. Not by being caught by the lay public which was not a part of our society. Not by being caught by the Board of Registration which wasn't either. We faced the risk of being tripped up by a local surveyor, one of us, whose respect we had hoped to hold.

Now here's the key thought. The Brass Tag society was too big to be fully effective. Of course the records could disclose any particular tag-setters identity but he did not necessarily come into that effective sphere of influence which could exert pressure upon his work standards. What was needed was some form of a true society, a group of individuals of common origin, mutually identifiable and demanding of one another's respect. Such is the local CLSA Chapter.

We are reluctant to give full credit to our founders for the foresight in 1966 which was to establish our present organization's role in the field of surveying. Certain it is that in 1966 there was a clear need for unanimity of purpose and action. It is also axiomatic that when a need arises, a means of fulfillment will follow. We think now that the local chapter may prove to be a greater force for ethical and professional development than the founders had expected of the state organization.

It is obvious that the local chapter type of organization could not long continue without the clout provided by the central structure. Both are now functioning in a manner that assures survival and bids fair to elevate the surveyor from his century old stagnation to the ever quickening pace of progress pursued by our fellow professionals.

All of us? No. Only those who can screw up the courage to become one of a peer group, simultaneously critical and tolerant of one another and all, not just our present five hundred, all working toward a better service to the public.

So we say to the many surveyors across the State, "Get into CLSA before it passes you by." ▲

STOLEN SURVEY EQUIPMENT

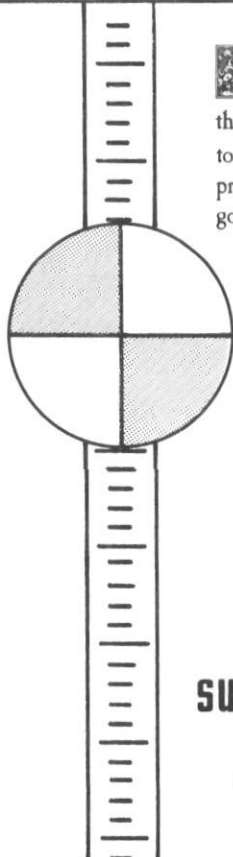
On July 8, 1975 in Fort Bragg a Division of Forestry survey crew had their equipment stolen from their vehicle. Anyone with any information with regards to the theft or the location of the equipment is asked to contact, James C. Conkright, Division of Forestry, 1416 Ninth Street, Room 1550, Sacramento, CA. 95814.


The equipment stolen was:

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4. Three Prism Adapters—Kern Interface—Model No. 11412A.
5. Three carrying cases for Prisms and Accessories—Model 11420D (Hewlett Packard).
6. K&E Surveying Transit (P51375) Lightweight—Serial No. 163890.
7. McCulloch Chain Saw, Model 10-10 with 16" bar, Serial No. 1124872. ▲


DIVISION COORDINATORS

... William Karn is Coordinator of the Membership Services Division and A. E. Griffen and C. A. Wooldridge are serving as coordinators of the Legislation and Education Division, respectively.



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History of the California Surveyor General's Office

by James N. Dowden, L.S.

The State Constitution of 1849 provided for the election of ". . . a Surveyor General, to be elected in the same manner and for the same term as the other constitutional officers of the Executive branch of the Government. The duration of the executive status of the office of the State Surveyor General was at the discretion of the Legislature."

On December 22, 1849, Charles J. Whiting was elected by the Legislature as the State's first Surveyor General, and assumed office that day.

Since that date, 15 men served as the State Surveyor General until the office was abolished by the Legislature at the recommendation of the then incumbent, W. S. Kingsbury—in 1929. The duties and functions of the former officer as developed through the years, being transferred to the newly created State Lands Division, in the Department of Finance.

In addition to the State Surveyor General, California being a public land state, a United States Surveyor General was assigned to the California Land District to supervise the survey of the Spanish and Mexican Land Grant claims and the vast area of public domain.

As history records, the State's population was exploding and the demand for orderly settlement of conflicting land and mining claims was high.

The two Surveyor Generals in California played an important and primary role in the orderly identification and disposition of the public lands and private claims.

The State Surveyor General's primary function in the early days was to set up and maintain the basic land records of the State, compile an official map of the State, and to assemble statistics from the various county assessors as to the population and agricultural productivity of California.

CONGRESSIONAL GRANTS

As the public land surveys were extended simultaneously from the three initial points established in California, the Surveyor General's role was expanded to include the acquisition and disposition of the Congressional Land Grants made to the several States by Congress. These grants in California, which upon survey and subsequent selection were:

1. 500,000 acres for Internal Improvements Act of September 4, 1841 (5 Stats. 453).
2. 2,190,500 acres of swamp and overflowed lands—Act of September 28, 1850 (9 Stats. 519).
3. 46,080 acres (72 Sections) for a University Act of March 3, 1853 (10 Stats. 244).
4. 6,400 acres (10 Sections) for Public Buildings Act of March 3, 1853 (10 Stats. 244).
5. Sections 16 and 36 of each federally surveyed township for support of common schools—Act of March 3, 1853 (10 Stats. 244).
6. 150,000 acres for Agricultural and Mechanical Colleges—Act of July 2, 1862 (12 Stats. 503).

In addition, in later years, the State Surveyor General's office assumed the management control over the so-called sovereign lands of the State, being the tide and submerged lands within its borders.

The State Surveyor General's office never was actively engaged in survey field work—per se in that most required

field work was either performed by the various County Surveyors as deputies, or was contracted—such as the eastern boundary surveys of 1860-62 and 1889-90.

In several instances, the Legislature provided for special boards and commissions to deal with specific problems, and geographical areas such as the Board of California Land Commissioners (1853); the Board of Swamp Land Commissioners (1861); the Board of State Harbor Commissioners (1866); the Board of Tideland Commissioners for San Francisco Bay (1868); and more recently the Colorado River Boundary Commission (1953)—to name a few.

All of these boards and commissions produced surveys and maps from one degree to the other—the most extensive of which was the Board of Tideland Commissioners for San Francisco Bay.

That Board's authority provided for the survey and disposition of all the salt marsh, tide and submerged lands in San Francisco Bay lying within 5 miles of the exterior boundaries of the City and County of San Francisco to the line of 9 feet of water at the lowest stage of the tide.

CHIEF SURVEYOR

The survey and platting of this vast tract of land was ably handled by the Board's Chief Surveyor, George F. Allardt.

By and large, the survey and subdivision of the nearly 2.2 million acre swamp and overflowed land grant to provide for an orderly sale and subsequent reclamation was the biggest challenge facing the early Surveyor Generals.

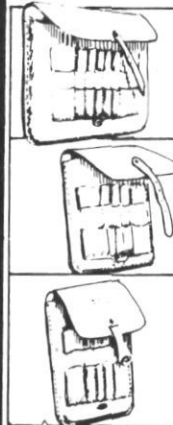
Where field work was required, the statutes provided that the applicant seek out and pay the local County Surveyor for the necessary survey and purchase application procedures.

This data was then forwarded to the State Surveyor General

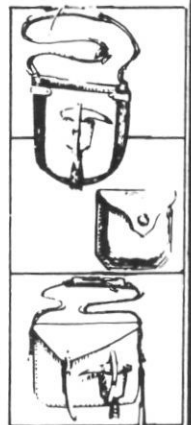
(Continued on page 15)

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CALIFORNIA SURVEYOR

(Continued from page 14)

who performed the ministerial task of approving or disapproving the application and maintaining the records of the transaction. In all, some 10,000 parcels were sold into private ownership by this method.

By the 1890's, most of this work was completed and the State Surveyor General's role gradually shifted to one of land management.

With the passage of the Land Surveyors Act in 1891, the State Surveyor General administered the registration and licensing provisions of the Act until this function was transferred to the newly created Board of Registration for Civil Engineers and Land Surveyors in 1931.

With the abolishment of the office of the State Surveyor General by the Legislature and the creation of the State Lands Division in 1929, the role of that part of the executive branch of the State of California passed into history.

With the passage of the State Land Act of 1938, the Chief of the Division of State Lands was supplanted by a State Lands Commission consisting of the Lieutenant Governor, Director of Finance and the State Controller—the State Lands Division being the operating agency of the Commission.

Essentially, the State Lands Commission and Division is to the State of California as the Bureau of Land Management is to the National Government.

The extensive records of the State Surveyor General are now in the custody of this Commission and are of primary interest to the title industry and in a lesser sense to surveyors involved in retracement work.

A partial list of such records would include:

1. Original plats and field notes of the surveys of the

Swamp and Overflowed land and Tidelands.

2. Original maps and field notes of the survey made by the Board of Tideland Commissioners for San Francisco Bay.

3. Maps, plats and field notes of the various surveys of the exterior boundaries of the State, including the offshore and contiguous zone boundaries.

4. Maps, plats and field notes of various county boundary surveys (not a complete collection).

5. Maps, plats and field notes of mean high water and ordinary high and low water surveys executed by the State Lands Division, and approved by the Commission.

6. Complete record of all Commission approved boundary line agreements establishing the ordinary high and low water marks bounding private lands abutting navigable waters.

7. Mineral and non-mineral leasehold interests approved by the Commission.

8. Boundaries of the statutory grants of tide and submerged lands to political subdivisions of the State and transfers of control and possession.

In addition, though mainly of historical interest, is the collection of biannual reports of the State Surveyor General spanning the years 1850 to 1929. ▲

ADMINISTRATIVE DIVISION

... Eugene P. Ehe is Coordinator of the Administrative Division, with the following persons serving as Chairmen of that division's committees:

Kenneth Burton	Fiscal and Administrative
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THE JUDICIAL FUNCTIONS OF SURVEYORS

by Thomas M. Cooley

Chief Justice, Supreme Court Michigan, 1864-1885

Editor's Note: This is the first installment of a two part presentation of an article originally published in the Michigan Engineering Society Journal (University of Michigan) and then again in the A.C.S.M. Surveying and Mapping, April-June 1954, Vol. XIV No. 2.

When a man has had a training in one of the exact sciences, where every problem within its purview is supposed to be susceptible of accurate solution, he is likely to be not a little impatient when he is told that, under some circumstances, he must recognize inaccuracies, and govern his action by facts which lead him away from the results which theoretically he ought to reach. Observation warrants us in saying that this remark may frequently be made of surveyors.

In the State of Michigan, all our lands are supposed to have been surveyed once or more, and permanent monuments fixed to determine the boundaries of those who should become proprietors. The United States, as original owner, caused them all to be surveyed once by sworn officers, and as the plan of subdivision was simple, and was uniform over a large extent of territory, there should have been, with due care, few or no mistakes; and long rows of monuments should have been perfect guides to the place of any one that chanced to be missing. The truth, unfortunately, is that the lines were very carelessly run, the monuments inaccurately placed; and, as the record witnesses to these were many times wanting in permanency, it is often the case that when the monument was not correctly placed, it is impossible to determine by the record, by the aid of anything on the ground, where it was located. The incorrect record of course becomes worse than useless when the witnesses it refers to have disappeared.

It is, perhaps, generally supposed that our town plats were more accurately surveyed, as indeed they should have been, for in general there can have been no difficulty in making them sufficiently perfect for all practical purposes. Many of them, however, were laid out in the woods; some of them by proprietors themselves, without either chain or compass, and some by imperfectly trained surveyors, who, when land was cheap, did not appreciate the importance of having correct lines to determine boundaries when land should become dear. The fact probably is that town surveys are quite as inaccurate as those made under authority of the general government.

RECOVERING LOST CORNERS

It is now upwards of fifty years since a major part of the public surveys in what is now the State of Michigan were made under authority of the United States. Of the lands south of Lansing, it is now forty years since the major part were sold and the work of improvement begun. A generation has passed away since they were converted into cultivated farms, and few if any of the original corner and quarter stakes now remain.

The corner and quarter stakes were often nothing but green sticks driven into the ground. Stones might be put around or over these if they were handy, but often they were not, and the witness trees must be relied upon after the stake was gone. Too often the first settlers were careless in fixing their lines with accuracy while monuments remained, and an irregular brush fence, or something equally untrustworthy, may have been

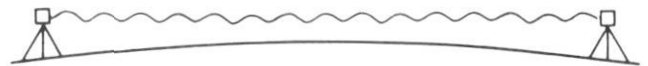
relied upon to keep in mind where the blazed line once was. A fire running through this might sweep it away, and if nothing was substituted in its place, the adjoining proprietors might in a few years be found disputing over their lines, and perhaps rushing into litigation, as soon as they had occasion to cultivate the land along the boundary.

WHAT YOU GET

If now the disputing parties call in a surveyor, it is not likely that any one summoned would doubt or question that his duty was to find, if possible, the place of the original stakes which determined the boundary line between the proprietors. However erroneous may have been the original survey, the monuments that were set must nevertheless govern, even though the effect be to make one half-quarter section 90 acres and the one adjoining, 70; for parties buy, or are supposed to buy, in reference to these monuments, and are entitled to what is within their lines, and no more, be it more or less. While the witness trees remain, there can generally be no difficulty in determining the locality of the stakes.

When the witness trees are gone, so that there is no longer record evidence of the monuments, it is remarkable how many there are who mistake altogether the duty that now devolves upon the surveyor. It is by no means uncommon that we find men, whose theoretical education is thought to make them experts, who think that when the monuments are gone the only thing to be done is to place new monuments where the old ones

(Continued on page 19)



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Madson's Rules for Land Surveyors

Editors Note: The author, Carlisle Madson, is a Land Surveyor from Hopkins, Minnesota and a member of the Wisconsin Society of Land Surveyors.

Rule One: To avoid liability the surveyor should err on the side of safety. Always try to do a little more than an ordinarily prudent surveyor would do under the circumstances.

Rule Two: It is the land surveyor's duty to correctly locate and mark property lines as described in a deed furnished him and to relate lines of possession to title lines. The surveyor cannot and does not assume the responsibility of proving that a given deed is correct and legal; that is a function of an attorney or court of law.

Rule Three: Search and search well! If it is there, find it. If it isn't, be able to say with certainty that it isn't there.

Rule Four: Liability results when the surveyor fails to do correctly the thing that he purports to do.

Rule Five: The surveyor is a fact finder. He goes upon the land armed with all the documentary evidence that is available and searches for markers, monuments and other facts. After all the evidence, facts, measurements and observations are assembled, the surveyor must come to a conclusion from the facts.

Rule Six: Never set a corner in disagreement with improvements without first satisfying yourself that you are not only right, but that your "right" will prevail in court if necessary.

Rule Seven: Discovery of a County Surveyor's monument does not relieve the surveyor of the obligation to look further. The County monument is only proof in the event that superior evidence cannot be discovered. Therefore, the surveyor must seek all other evidence and use the official monuments as though they were the last resort.

Rule Eight: The conclusions that flow from the evidence may produce proof. Evidence in itself is not proof of a fact; a conclusion or inference that may be drawn from evidence is the proof. In coming to conclusion or inference that may be drawn from evidence is the proof. In coming to conclusions from evidence, the most important need of the surveyor is the ability to recognize and know what is the best evidence of that available.

Rule Nine: The best evidence of a monument's original position is a continuous chain of history by acceptable records, usually written and dating back to the time of the original monumentation. A found monument without a background history is of little value as evidence; and, a set monument is worthless if unidentifiable in the future.

Rule Ten: In civil cases having to do with land surveying and real property, it is only necessary to prove a "preponderance of evidence"; It is not necessary to prove "beyond a reasonable doubt" as in criminal cases.

Rule Eleven: It is of the utmost importance that a surveyor seek and find all of the evidence at the time of the initial survey, and this must be done irrespective of costs. The major cause of disagreement between surveyors relates to the lack of discovery of all available evidence. If every surveyor uncovered all of the evidence, differences would be reduced to

a minimum, and their surveys would have a finality of location!

Rule Twelve: A surveyor may be able to compute, make drawings, use instruments and stake engineering projects, but, until he understands property line law and the law of evidence, he is not qualified to make property locations. ▲

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MONUMENT DAY AT MONTEREY BAY

(Continued from page 1)

in preference to other models available due to its adaptability in the calibration or indexing of the compass declination ring. This particular monument is said to have been used by the Naval Construction Battalions, the Cee Bees, in the South Pacific during World War Two.

The monument was centered over a sub-surface mark by two transit lines intersecting at nearly right angles and well tamped home. After the setting, two geodimeter crews were mustered and a position carried from a USC&GS monument some 8,000 feet distant, through the president's garage with its attendant hazards, the president using the garage as a night time kennel. Although the site commands a clear view of Polaris, the sun, Highway One and Loma Prieta Peak, overcast skies prevented confirmation of the obtained position by astronomic means or any other.

The same skies occluded the scheduled demonstration of two second solar azimuth by Joel Radio, surveying instructor at Monterey Peninsula College.

The loyal seventeen then repaired to the monument to consecrate the same by the affixation of their respective tags, one saying "This will be the tagdest monument I ever did see!" President Smith remarked that since the subject had been left unattended during the midday revels the contemplated act would constitute the tagging of a found monument as the Board of Registration interprets Sections 8762 and 8772 of the Land Surveyors' Act. All the surveyors then tossed their tags in the air and shouted "HAZZANGA!" in emulation of the old Mexican custom of throwing dirt to sanctify a landmark.

Gathered later before the fireplace the group heard Baldwin describe and demonstrate his retracement of a Land Office survey and listened to Stan Nielsen recount his adventures as a member of the county planning commission. These were well received.

During the entire day Mr. John Eaton, our guest and local representative of all the instrument makers displayed his wares and wrote orders. Mr. Eaton who has served our area for over thirty years is a well loved and highly respected friend.

Memories, methods and momentos of yesteryear became alive upon inspection of the museum display. Compasses, chains, scribed stakes and witness scabs lay in mute historic splendor, reminding us of greater men than we.

Mike Beautz a civil engineer guest won the door prize, a box of Mark IV railroad spikes furnished for the event by the Southern Pacific Railroad Company.

It being the third Thursday the workshop adjourned to the



regular monthly meeting at Seascape Lodge a scant distance away.

Under new business it was suggested the workshop be held each year and a fresh determination of the position obtained. The monument would then be moved to the new position. This suggestion will be referred to a Chapter Monument Committee to be appointed by each successive president.

On November 17, 1851 U.S. Deputy Surveyor Howe passed within one hundred feet of the monument on his way toward the Mount Diablo Meridian where it enters Monterey Bay. He was on his thirty-third day from Mount Diablo and in his one hundred and eleventh mile, having detoured through Chittenden Pass in order to avoid the "worthless and impassable" lands South of Los Gatos.

Another workshop will pursue the footsteps of Deputy Howe.

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JUDICIAL FUNCTIONS

(Continued from page 16)

should have been, and would have been if placed correctly. This is a serious mistake. The problem is now the same that it was before: to ascertain by the best lights of which the case admits, where the original lines were. The mistake above alluded to is supposed to have found expression in our legislation; though it is possible that the real intent of the act to which we shall refer is not what is commonly supposed.

An act passed in 1869 (Compiled Laws, 593) amending the laws respecting the duties and powers of county surveyors, after providing for the case of corners which can be identified by the original field notes or other unquestionable testimony, directs as follows:

Second. Extinct interior section corners must be reestablished at the intersection of two right lines joining the nearest known points on the original section lines east and west and north and south of it.

Third. Any extinct quarter-section corner, except on fractional lines, must be reestablished equidistant and in a right line between the section corners; in all other cases at its proportionate distance between the nearest original corners on the same line.

The corners thus determined, the surveyors are required to perpetuate by noting bearing trees when timber is near.

To estimate properly this legislation, we must start with the admitted and unquestionable fact that each purchaser from government bought such land as was within the original boundaries, and unquestionably owned it up to the time when the monuments became extinct. If the monument was set for an interior section corner, but did not happen to be "at the intersection of two right lines joining the nearest known points on the original section lines east and west and north and south of it," it nevertheless determined the extent of his possessions, and he gained or lost according as the mistake did or did not favor him.

EXTINCT CORNERS

It will probably be admitted that no man loses title to his land or any part thereof merely because the evidences become lost or uncertain. It may become more difficult for him to establish it as against an adverse claimant, but theoretically the right remains; and it remains as a potential fact so long as he can present better evidence than any other person. And it may

often happen that notwithstanding the loss of all trace of a section corner or quarter stake, there will still be evidence from which any surveyor will be able to determine with almost absolute certainty where the original boundary was between the government subdivisions.

There are two sense in which the word extinct may be used in this connection: One, the sense of physical disappearance; the other, the sense of loss of all reliable evidence. If the statute speaks of extinct corners in the former sense, it is plain that a serious mistake was made in supposing that surveyors could be clothed with authority to establish new corners by an arbitrary rule in such cases. As well might the statute declare that, if a man loses his deed, he shall lose his land altogether.

But if by extinct corner is meant one in respect to the actual location of which all reliable evidence is lost, then the following remarks are pertinent:

1. There would undoubtedly be a presumption in such a case that the corner was correctly fixed by the government surveyor where the field notes indicated it to be.

2. But this is only a presumption, and may be overcome by any satisfactory evidence showing that in fact it was placed elsewhere.

3. No statute can confer upon a county surveyor the power to "establish" corners, and thereby bind the parties concerned. Nor is this a question merely of conflict between State and Federal law; it is a question of property right. The original surveys must govern, because the land was bought in reference to them; and any legislation, whether State or Federal, that should have the effect to change these, would be inoperative, because of the disturbance to vested rights.

4. In any case of disputed lines, unless the parties concerned settle the controversy by agreement, the determination of it is necessarily a judicial act, and it must proceed upon evidence and give full opportunity for a hearing. No arbitrary rules of survey or of evidence can be laid down whereby it can be adjudged. ▲

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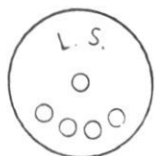
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PASSING OF THE CATENARY

by Eugene Lockton, L.S.

Something over a quarter century ago, a prospective land surveyor was posed the problem of computing the chord of a catenary, given its length, weight per foot, tension, temperature, coefficient of thermal expansion, Young's modulus for steel and the current Dow-Jones average. I couldn't solve the problem then and I can't solve it now.

At that time there was no Coastal Commission, no B.C.D.C., no ABAG, no Parcel Maps, no E.D.M.I., no E.I.R., no B.A.R.T., no electronic computers and Planners only planned. Dr. Wild had recently developed a theodolite with a unique vernier employing a tilting optical flat in the principal axis of its reading microscope, but none of the surveyors in this county had as yet seen one. Lawyers had given up abstracting titles for more lucrative fields but were still lousing up deed descriptions. The State of California had not yet enacted legislation declassifying Land Surveyors from professional status. The American Congress of Surveying and Mapping had attained the age required for children to enroll in grammar school; the California Land Surveyors Association was 18 years in the offing and photogrammetric surveys were yet to outgrow radial line control.

From these observations one may reasonably conclude that the measure of competence needed to protect the Public in matters related to surveying requires reassessment. The Keeper of the Keys is the Board of Registration. Its written examinations provide the screen which sets the minimal degree of expertise with which the Public can be served. There are many, this writer included, who believe the Board has not kept up with the changing demands progress has imposed upon our craft. True the Board has been willing to forget about the catenary and recent examinations show a clearly detectable upswing in the degree of difficulty in obtaining a land surveyors license. But not enough!

Today's surveyor is an attorney for the subdivider. The constantly changing requirements relating to the partition of land place him in this position if he is to fulfill his responsibilities to the public. As an example a client has a right to know, early in the process of subdivision, that some of the lots may not be built upon unless the dwellings are constructed with sod roofs. It is the surveyor's duty to provide this information, else he damages the client who has prejudices about sod roofs.

As it stands now, anyone who hires a surveyor is strictly on his own. The State has assured him of no more than that his man can pound wood in the ground at the appropriate points. It may be necessary, as it has been in several other occupations, for an autonomous agency to step in and provide a scale for the degree of competence that the public is entitled to expect from a surveyor who has sought classification. There is a growing pressure to use "Certified" as a modifier indicating superior qualifications. The A.S.P. provides this distinction within its membership. Local medical societies grant a place on the hospital staff only to those deemed competent. Engineers in various specialized fields of manufacture also use this form of guaranty.

CLSA exists only for the purpose of improving surveying practice in California. If this be our goal we will be remiss if we do not undertake to set levels of performance above those used in the Board's sub-professional examinations. ▲

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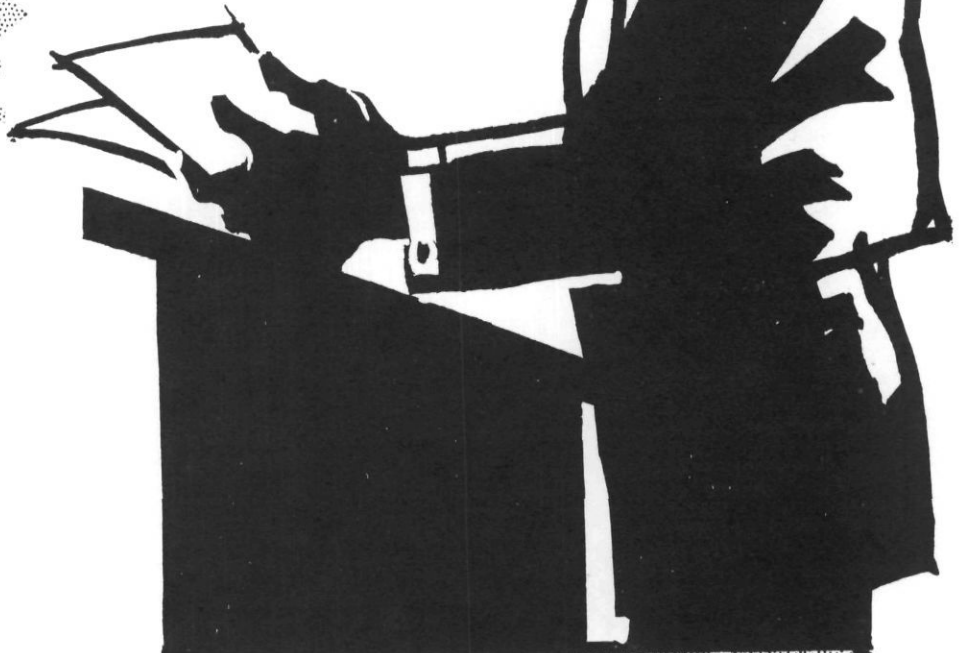
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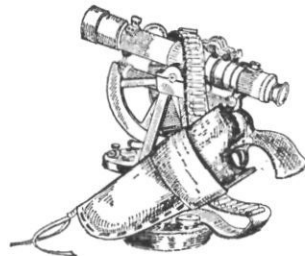


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