

SURVEYOR

California

Winter 2006/07 Issue #149



Risk Management for Land Surveyors

*Article by Richard Hertzberg, CPCU, ARM
on page 24*

City of Chula Vista Surveyors Get on the Map

Article by Jose Luis Gomez P.E., P.L.S. on page 14



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CLSA-WFPS Conference 2007 Info and
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The quarterly publication of the California Land Surveyors Association, Inc. and is published as a service to the land surveying profession of California. It is mailed to all Licensed Land Surveyors in the State of California as well as to all members of the California Land Surveyors Association, Inc. The California Surveyor is an open forum for all Surveyors, with an editorial policy predicated on the preamble to the Articles of Incorporation of the California Land Surveyors Association, Inc. 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 Land Surveyors and their work.”

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On The Cover:

Risk Management for Land Surveyors



From the Editor



A real estate agent called my office and asked for help locating a property line. His client had recently contracted with an engineer for soils testing, and he wanted to be sure the testing, and future leach field, would be on his client's land. The property was a parcel described by deed and had not previously been surveyed of record. I explained the level of effort, and legal requirements, that would be involved in the work. I also provided a range within which my fee would likely fall. The real estate agent did not like the range. *No need to go to all that trouble*, he assured me. *Compass work* would suffice because his client only needed something *approximate*. I sensed the unlikelihood of our coming to terms. *Well then, do you know someone who is handy with a compass*, said I. *I know how to use a compass*, he chirped, *but, Mr. Wilusz, you have no idea of the liability involved.*

Actually, I do. In our profession we cannot hide from risk, but we can learn how to manage it. Vista International Insurance Brokers, CLSA's endorsed insurance broker, has offered to provide the California Surveyor with a column devoted to risk management for land surveyors. In this issue you will find a general overview of the subject, with future columns dedicated to answering your risk management questions. There is much to consider when building a successful loss prevention program, but it all boils down to one thing: It is easier to avoid a lawsuit than it is to win one. Submit your risk management questions to Central Office and start sleeping easier.

In this issue we are also testing the waters for another column. Michael Durkee, Esq., has graciously offered to provide answers to your Subdivision Map Act (SMA) questions. If you are involved in land development, from either a public or private perspective, consider taking advantage of this valuable opportunity. Mike's knowledge of the SMA is superlative, and having attended several of his seminars, I can tell you that his energy, enthusiasm and humor make a dry subject fun. Submit your questions to Central Office and prepare to win your next SMA battle.

In *Chaining the Land*, Second Edition, Bud Uzes describes the rich and diversified history of our profession in California. It's a history populated with extraordinary people, Land Surveyors, who made vital contributions to the world they lived in. It's a history we can be proud of. Now it's our turn to leave a similar legacy for those who will follow in our footsteps, the Land Surveyors of tomorrow. You can help by joining the many fine people who contribute to the success of this publication. The California Surveyor, and the future of our profession, depends on you. ♦





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President's Message



My first two messages were crafted primarily to update you on CLSA issues and my activities as President; more like a newsletter than a message, if you will. But in thinking about the subject matter for my third message, I decided something different is in order.

My visits to the chapters last year as President-Elect allowed me to get a feel for what matters to you on a chapter by chapter basis. This year, as President, I have had the opportunity to hear about issues that matter to Land Surveyors throughout the state, the nation, and even the world. Aside from purely local matters (record of survey fee structure, record of survey review, chapter participation), many of the larger issues were very similar. So I will share my perspective on one of those subjects that you have in common with Land Surveyors everywhere. The absolute number one land surveying issue that was brought up over the last couple of years was...

PROFESSIONAL PRACTICES

There are unlicensed individuals who flagrantly violate the law by providing land surveying services (property corner location, construction staking, and geodetic positioning using GPS, among other things). They continue to do so even while complaints to the California Board of Registration for Professional Engineers and Land Surveyors (BPELS) are pending. They continue even after enforcement action for that very violation! Another troublesome issue is that occasionally there are licensed Land Surveyors who step outside the bounds of the Professional Land Surveyors Act (PLSA). These violations sometimes include performing surveys without filing the required maps or records, and the setting of untagged monuments. Another professional practice issue I heard about was licensed individuals providing substandard practices. "Approximate" corners and boundary determinations based on poor evidence and procedures were typical complaints.

What to do? Anything? Yes! I see two distinct choices: 1) we can leave the complaint and enforcement process to BPELS and the District Attorneys, or 2) we can do something ourselves as professional, licensed Land Surveyors.

Choice number one has its drawbacks. Complaint review and enforcement by BPELS is

a time-consuming process, and to make matters worse, there is no shortage of complaints against licensees. If BPELS makes a finding that, indeed, there is a violation of the PLSA, they turn it over to the local DAs. But the DAs have their own workload with "real" criminals to prosecute. They understandably may see bona fide PLSA violations (misdemeanors) as a low priority compared to felonies and other serious crimes. For whatever the reasons, the lack of a quick response system that provides justice and relief can be frustrating.

Our second choice is that we – that's you, me, and the Land Surveyor next to you at your next Chapter meeting - can all take action. Our Association itself can help. If your Chapter has a local Professional Practice Committee (PPC), that's excellent. At last count, nine Chapters have implemented a PPC at some level. Some Chapters even have joint PPCs with a local engineering group.

IF YOU DO HAVE A PPC get involved. Use it. Many other professions have self-regulating bodies that provide peer review. Some Land Surveyors feel that filing a complaint against another Land Surveyor is like going against a brotherhood. That's bunk. If there is a serious violation and a complaint isn't filed, that is the real disservice to the public, the client, and the Land Surveyors who do practice in compliance with the law. We're familiar with acquiescence in land surveying matters, but acquiescence in unprofessional practice is tacit approval of those unprofessional issues. It hurts us all.

PPC action need not be relegated to complaint resolution. If you have a complex issue regarding a surveying matter, or a question regarding interpretation of laws or procedures, why not pose the question to other professionals for review? If nothing else, you will have a good benchmark of the local standard of care. For those Chapters that have them, local PPCs can resolve problems without the need to go any further. I've been a member of the Central Coast Chapter PPC for several years, and my experience is that the group is conscientious, objective and interested in preserving a professional demeanor when it comes to Land Surveying. Nearly all complaints presented have been resolved at the Chapter level to the satisfaction of the PPC, with no need for BPELS involvement. Everybody comes out ahead.

IF YOU DON'T HAVE A PPC, start one. We have a PPC at the Association level that keeps track of local PPCs and can tell you how each one operates. If your Chapter is interested in forming a PPC, you can consider various models of existing programs. Call CLSA's Central Office

and they will put you in touch with folks who can get you more information. I've heard some pretty insubstantial reasons against PPCs - witch hunt, personal vendettas, self-interest, star chamber – none of which have any place in a well-structured PPC.

The benefits of a CLSA Chapter PPC are many, among which are: 1) the public's perception that the Land Surveying profession does its own quality control on professional issues; 2) review of Land Surveying issues by local Land Surveyors who will apply the local standard of care; 3) an immediate and responsive resource for complaints, whether submitted by the lay public, a public agency or other Land Surveyors; 4) sanction of action through a group of professionals, rather than complaint by an individual. Another benefit is interest in Chapter activities. If your Chapter can offer a complaint process that is respected by other professionals, they will come to meetings to hear not only what issues are being brought up, but also how those issues are being resolved. At one of my Chapter visits last year, one of the more vocal opponents about formation of a PPC, who at the time wasn't even a CLSA member, agreed to join CLSA and participate in a PPC if it were formed. Now there's a membership recruitment mechanism!

The foundation of a CLSA Chapter PPC is involvement and investment. The PPC needs to have a sufficient number of members so that there is a broad consensus of opinion about the matters considered. A PPC needs to recognize conflict of interest and have the ability of a member to excuse him- or herself if that conflict exists. A PPC should limit itself to an objective review of violations of the Land Surveyors Act or other related professional issues, rather than the murkier subjective, or qualitative, determinations on professional products. The path toward resolution should be clearly prescribed to provide for benefit of doubt, yet must have mile posts that, if passed with no response or resolution, lead to a sanctioned next step. A possible last step in the absence of resolution would be for the PPC itself to file a complaint with BPELS. In my own discussions with local attorneys, local assistant DAs and with BPELS, any matter that has been reviewed by a group of professional Land Surveyors may have more expeditious treatment.

I believe if we are to rise to true professional stature in the eyes of the public and the world, we need to demonstrate that we, Land Surveyors, can, do and will keep its own house in order. The higher level of scrutiny and a higher standard of performance must not come from legislated ethics, or board rules, or statutes. It should come from us, from within our profession. ❖

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[DEEDS]

[ASSESSOR MAPS]

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Lessons from the Masters

As a veteran surveyor of 43 years, I am fully aware of the important role of mentorship in our profession. I had several good mentors in my early career and a few new ones at various stages since. Over the past decade, two giants have been my mentors, and have taught me innumerable lessons. They are, respectively, Roy Minnick and Bud Uzes.



L: Roy Minnick, PLS, 1937-2004

R: Bud Uzes, PLS, 1934-2006

Long admired for their knowledge, professionalism, wisdom and tact, Roy and Bud have stood as icons in our profession. As historians, teachers, and collectors of surveying references and equipment, Roy and Bud served the public diligently, first as state employees, and later as private sector experts. They represented numerous clients in both civil and federal courts and presented thoroughly researched and articulately prepared expert testimony.

One unique experience involved a boundary dispute that found Roy and Bud on opposite sides of the issue being litigated. As fate would have it, I was asked to participate with Roy. The experience was especially rewarding for me, as Roy guided me through evidence gathering, court exhibit preparation and the psychology of expert witness testimony. A curious twist was my being deposed, and later questioned in court, by a long-time friend, attorney John Briscoe. Adding to the experience

were the numerous and challenging questions, posed by Bud, through attorney Briscoe. This case had all of the excitement of the "Battle of the Titans". Roy and Bud had separate, though similar, plans for victory, each correctly anticipating his opponent's next move. In the end, attorney Briscoe and Bud won the Judge's favor. Roy, however, felt confident that the case could have been reversed if allowed to be appealed. We'll never know.

A couple of years later, Bud provided a workshop on this case. I contacted Bud, informing him that I wanted to attend, "just to keep him honest". Before and during this workshop, I learned more about courtroom presentations, and evidence gathering, than I had learned in all my prior courtroom experiences combined. Bud invited me to dinner the night before, and the next day I sat in the front row. He not only told me how he successfully won the case, but also shared valuable insight into his research methods and courtroom presentation techniques. Bud is the only fellow professional I've met that could beat you in the race, and make you enjoy the loss.

It isn't often that we get the privilege to work closely with those we admire. However, at a subsequent workshop in 2004, I had such an opportunity with Bud. It proved to be a highlight in my career, as well as a delightful experience. We presented the background behind a case that was settled out of court – leaving both of us with a lot of questions and wondering what decision the judge would have made on behalf of our individual clients. We corresponded frequently in preparation for the workshop, and met personally to fine-tune the details. Once again, Bud's breadth of experience quickly surfaced. A key element in his preparation for expert witnessing was his exhaustive pursuit of evidence. Being the mentor that he was, he provided me with the accompanying textbook citations in order to illustrate his philosophy. He also gave me the accompanying list, which he developed, showing minimum research sources and potential considerations for a thorough boundary resolution. It is yet another example of Bud's distinguished legacy, a legacy of devotion to the betterment of our profession.

Continued on next page

Duty of a Surveyor in California

"Although without final authority, the surveyor when employed on a resurvey must act as judge and jury, collecting the evidence, hearing the testimony, interpreting the law and then making a decision consistent therewith. Questions relative to faulty surveys, obliterated monuments, contradictory testimony, disputed boundaries, riparian rights, inconsistent deed descriptions, erroneous plats, and legal decisions may be involved."

(Clark on Surveying and Boundaries, 2nd ed., introduction *.)

Chandler v. Hibberd (1958) 165 Cal.App.2d 39

Majority Probability

In every case of property line determination, whether physical or record, it is absolutely necessary, for correct title interpretation, to assemble all the facts, record and survey, including possession control, concerning the property and its boundaries; with this data, set up all the probable or possible theories of position, considering fully the physical, engineering, title and legal factors and their interrelation; ascertain a solution which will fit the *majority of the analyses* most closely. This is the theory of majority probability and normally will produce the most satisfactory results. There are certain cases in which other factors will take the place of majority probability,

example: the fixing of a definite boundary line by agreement and deed; or decree of court determining a boundary by testimony and evidence or other matters stranger to the title or survey and not of record. (William C. Wattles, Land Survey Descriptions, Los Angeles, 1956, §702, p. 79.)

The theory of *majority probability* (advanced by William C. Wattles in his book Land Survey Descriptions) whereby all factors are balanced, giving each its proper weighted value, forms a logical approach to a complex deed problem. Mathematical correctness, location of monuments, location and age of lines of possession, superiority of one call over another, previous survey records, the seniority of adjoiner deeds, common customs of other surveyors, and all other factors must be examined, weighted, and balanced to arrive at a proper location.

(Brown's Boundary Control and Legal Principles, 4th ed., §11.47, p. 294.)

John "Steve" Parrish, PLS, is an active author and lecturer on the Public Lands Survey System. Retired after 31 years with the United States Forest Service and Bureau of Land Management, he is currently a project manager for Tri State Surveying in Sparks, NV.

Continued on next page

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Preliminary List of Survey Litigation Preparation Tasks - Minimum Research Sources and Potential Considerations

Prepared by Francois D. "Bud" Uzes, PLS
Provided Courtesy of John "Steve" Parrish, PLS
California Surveyor 2006

Surveyor's duty to Client, Society & Profession	Present Standards of Practice	Current Vesting Deed	Miscellaneous County Surveyor Office Records		
Historic County Surveys	Complete Chain of Title & Surveys	Historic Local Surveys Unrecorded	Historic Standards of Accuracy		
Current & Historic Deeds & Surveys of Adjoiners	Original Field Notes	Official Field Notes	Field Tablets	Additional USBLM Field Notes	
Current Government Survey Practice for Public Lands	Historic Government Practice	Current BLM Manual Instructions	Prior USBLM Manuals and Letter Instructions		
USBLM Casebook	Congressional Act of 1805	USGLO Cadastral Special Instructions	Published Boundary Authorities – Historic	Federal Law 43USC752	
USGLO Land Patent Records	National Archives Homestead Entry Files	County Road Viewers Reports	USBLM Master Title Plats	Private Field Notes	
Published Boundary Authorities – Current	Unpatented Public Domain Lands	Survey Authority of County Surveyor	Long Term Acquiescence		
Quasi Judicial Function of Surveyors	Fraudulent Survey Practice – Benson and Others	California Boundary Practice	California Case Law	Agreed Boundary Doctrine	
Found Corners Not Original	Found Corners Are Original	Fence Dating	Fences Used as Boundaries	Fences as Enclosures	
Personal Interviews	Estoppel	Match with Topography	County Histories	Adverse Possession	Tree Dating

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City of Chula Vista Surveyors Get on the Map



A Map compiled by the City Surveyors and the GIS Section was chosen for inclusion in ESRI's 2005 Map Book, Volume 20 and the World Wide Web. What started out as a local inventory of the City's Horizontal-Vertical Control network database, ended up being recognized as an International Map.

In 1995, City Surveyors, 'custodians' of survey monuments, filed Record of Survey (RoS) 14841 that officially established the foundation for the City's Survey Control Network. This Network was critical for the creation of base map layers planned for the city's new GIS program. This was particularly important for it was recognized at the time that the city was entering an era of significant growth.

Subsequent to the RoS, a subdivision manual was written that incorporated the standards for the City's Survey Control network. In conjunction with the subdivision manual, the City of Chula Vista's municipal code requires that development perpetuate and extend the city's horizontal-vertical control to a one-half mile and one-quarter mile density.

The horizontal control is First Order-C category and the vertical control is Third Order. City survey staff, in partnership with GIS staff, designed an Access database to create event themes, which depict the current network on existing and planned development. This six-month effort was subsequently used to inform developers of their survey monuments requirements to the network. This map is intended to present an illustrative depiction of the relationship of survey monuments to current and future residential growth in eastern Chula Vista.

The long-term goal of this endeavor was to make this information available to the public via the city's Internet site. This long-term endeavor was accomplished in March 2006. The public web site depicts the City's horizontal-vertical control and makes the information available in a form. This horizontal-vertical control information is used to compile maps, improvement plans, and grading plans.

As in any project team, the following individuals were instrumental in this endeavor:

John Montes de Oca- LSIT, Survey Technician II
Lorenda Lee- GIS Specialist

Bob Blackwelder-Lead Programmer Analyst
Jack Hurlbut- GIS Specialist

The following are web site links to the Map Book volume & City web sites:

<http://www.esri.com/mapmuseum/index.html>

Horizontal/Vertical Control Networks

City of Chula Vista State and Local Government



In 1995, city surveyors, the custodians of survey monuments, filed Record of Survey (RoS) 14841 that officially established the foundation for the city's Survey Control Network. This network was critical for the creation of basemap layers planned for the city's new GIS program. It was particularly important because the city was entering an era of significant growth at the same time.

<http://209.242.148.132/public/Client/PublicKiosk1/index.html?appconfig=SurveyMon>



Continued on page 32

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My Total Station Battery has Alzheimer's... And That's A Good Thing!!



How many times have you heard the phrase, “My battery pack is holding a memory”? Being in the battery business, this is something we hear all the time. This term is used to explain the tendency of a rechargeable battery to remember the point up to which it was discharged over several cycles, before full discharge was attained. Subsequently, the battery behaves as if this point is the point of full discharge. This is a generally misunderstood phenomenon and a term often misused to explain various battery problems. There are many scientific and theoretical explanations for why rechargeable batteries behave poorly at times. But in a practical sense, these problems can be analyzed and addressed without having to have a degree in chemical engineering. So, if your battery has “Alzheimer’s”, based on the explanation above; it’s a good thing.

“Memory Effect” is essentially caused when a rechargeable battery is recharged to full capacity, then used in the field to a point where the battery never reaches full discharge before being placed on recharge again. For argument’s sake, let’s imagine a battery being a container of sugar, where you fill it up and then use what you need before refilling it again. If you constantly use only the top portion of the container and refill it with new sugar, the remaining portion you have not touched in a while begins to get stale. The same is true for a battery. The remaining charge you never allow the instrument to access, over time starts to stagnate.

Initially, the charge in a battery is at a uniform voltage throughout the cells. The voltage begins to drop immediately after removal from the charger. If all the charge in the battery is not consumed before recharging, the portion that is left unused continues to drop in voltage and becomes “stale”. Eventually, the voltage in this “stale” portion drops so low that when your instrument is finished gobbling up all the “fresh” charge, it hits this “stale” portion like a brick wall. The instrument is confronted with a sudden drop in voltage, at a level below the “low battery” indicator threshold. The battery cannot power the instrument now without being recharged again.

The only way to recover the performance of the battery is to somehow remove that “stale” charge in the battery and restore a fresh new charge. Unfortunately, some total station manufacturers have designed their instruments and chargers in a way that makes it almost impossible to correct this problem. Chargers with a “discharge” function built in may not work to correct the problem at this point either. The low voltage point of stale charge will also cause the discharge operation to cease prematurely, leaving the stale charge still in the battery. In a case like this, a battery service shop with the proper equipment, can analyze the battery, remove the stale charge and solve the problem.

Trying to live with the problem will only make it worse and can actually ruin the chances of correcting the problem at all. Just like the container of sugar example, eventually this stale part will become so solid and entrenched in the battery that it will permanently ruin that part of the battery and diminish its ability to accept a usable charge again. What also appears to happen is that the portion of the battery that is able to receive fresh charge, now goes through many rapid cycles and in effect “wears out” that portion of the battery prematurely. You are now left with a container of hard packed stale sugar at the

“Memory Effect” is essentially caused when a rechargeable battery is recharged to full capacity, then used in the field to a point where the battery never reaches full discharge before being placed on recharge again.

bottom, with the top part of the container so worn out that it can barely contain the new sugar you keep replenishing it with.

Here are several things that can be done to avoid this problem. Some I am sure you have heard before, but they are still worth repeating.

1. Always fully discharge the battery each time you use it in the field. Number all your batteries and learn the run-time of each one through regular use. If you still carry enough battery power with you for the next day’s work, wait and use that all up before recharging again. Always avoid recharging any batteries that have not been fully run down.
2. At the first sign of a sudden decrease in performance, set that battery aside until returning to the office. At the office, put this problem battery back into the instrument and set the instrument on a heavy battery demand operation (like “tracking mode” measuring against a prism). Now run the instrument to the point where it shuts off on its own from lack of battery power. Wait five minutes and repeat the procedure. Repeat this until you feel the instrument has drained as much as possible from the battery. Now put the battery on charge (preferably a slow charge, if your charger has that setting).
3. If storing the instrument away for a week or two, do not recharge the battery until the night before it is needed in the field again.

Continued on next page

4. If storing the instrument for a month or two, or even longer, charge up the battery before storage and then once a month until the storage period is over. Every second month, fully discharge the battery before recharging.

5. Always let the battery reach room temperature before recharging. Excessively cold batteries will resist being charged and actually fool auto shut-off chargers into thinking the battery is fully recharged when in reality it is not. When the battery is not allowed to fully recharge over many cycles, you may end up with the same problem as the "memory effect".

Within the last few years, many instrument manufacturers have switched to Nickel Metal Hydride (NiMH) cells in their battery packs instead of the old industry workhorse, NiCd. The main advantage of NiMH cells is the ability to hold much more charge in the same size cell as the equivalent NiCd and they are more environmentally friendly as well. NiMH cells have also been touted as not having the memory effect problem of the NiCd cells. However, our experience has shown that this is not always the case. Although they may resist the effect from taking hold as easily as NiCds, the same maintenance procedure should be followed...always fully discharge the battery before recharging again. NiMH cells also have one big drawback compared to their NiCd counterparts - their internal resistance is higher.

The internal resistance of a cell will govern how readily it will accept a charge when applied, and how easily it will release that charge while maintaining its voltage when required to do so. Internal resistance also explains why NiMH battery packs sometimes get much warmer during recharge than NiCds. Since internal resistance is a problem that gets worse with the age of the cell for both NiCd and NiMH, designing the instrument and charger to meet these demands is a difficult balancing act, with some manufacturers having done a better job at it than others.

A NiMH charger that is designed to charge the battery in a 10 to 14 hour period will always do a better job of topping up the battery than a charger that is designed to do it in 2 to 3 hours. The internal resistance of the battery will always force the charger to apply a higher voltage during recharging to overcome the resistance. This resistance is more pronounced during a fast charge procedure than during a slow charge. Eventually the charger is forced to such a high voltage that it assumes the battery is recharged and shuts off, never recharging the battery to its full potential. As the NiMH battery gets older, the problem gets worse. It is always best, if your field working procedure allows for it, to choose a slow overnight charger cycle. Many OEM chargers for NiMH cells offer both fast and slow charge cycles. Also, chargers that monitor the internal temperature of the battery during a fast charge seem to do the best job of recharging the NiMH batteries quickly.

Another point worth mentioning is the idea of replacing old NiCd cells in a pack with NiMH cells, during a re-cell procedure. This is only recommended if you have just that one battery to run your instrument. You must also be prepared to accept that NiMH cells do not maintain original performance through as many cycles as NiCd cells. But since the NiMH

cells start out with the ability to hold much more charge than their NiCd counterparts, the advantages of the NiMH cells are still something worth considering. Unfortunately, your old NiCd charger may never properly recharge the NiMH cells to their full potential because it was not designed for the different requirements of the NiMHs. Even at less than 100% performance, however, the greater capacity of the NiMH cells will generally be realized if that battery is properly maintained from the beginning. In reality though, many users will just add this NiMH battery into a mix of other NiCd batteries being carried into the field for the instrument. Our experience has found that in short order, the NiMH battery will get "lazy" and settle into a performance that is no better than if it had been re-celled using NiCd cells. The advantages of converting to NiMH cells over the original NiCd cells would be lost, not to mention, this "misfit" battery pack now has a diminished life cycle.

The final bit of advice I can give, similar to the advice we often get from our own doctor: batteries stay healthier through regular exercise on a daily basis!

Arthur Dias, B.Sc., is a founding partner of Dias & Dias Electronics and www.surveybattery.com. His company has been repairing battery packs worldwide for surveying equipment for over 11 years now.

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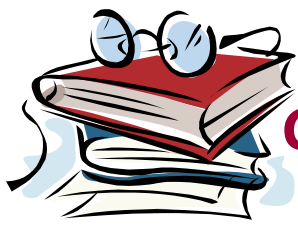
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Chaining the Land

Second Edition, Revised

A History of Surveying in California By Francois D. Bud Uzes, PLS

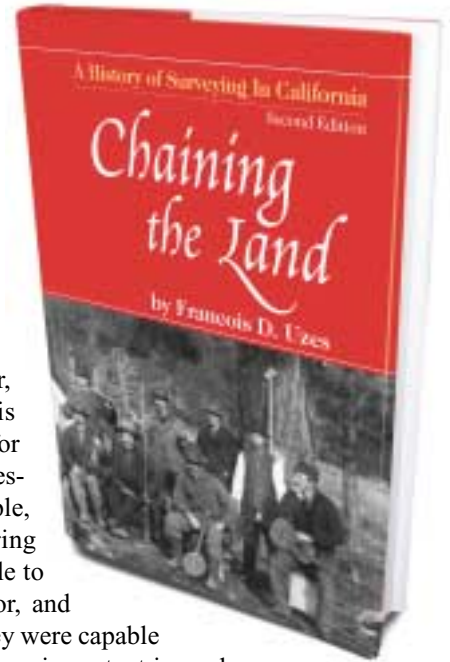
Surveying in California has a rich and diversified history. While many early surveyors became expert woodsmen and mountaineers, they were not really like most trappers and cowboys who lived a similar frontier life. Many of those in responsible charge were among the best-educated men of their time, and were accustomed to the pleasures of a comfortable existence. The two-sided world to which they adapted was of their own choosing. They avidly chose an exhausting and exciting life of adventure in the marking and mapping of California's frontier lands. The tasks they faced challenged their minds, ingenuity, skills and endurance. This differed from most other outdoor activities where technical, mathematical and drawing skills were rarely necessary.

When the first edition of *Chaining the Land* was published in 1977, it provided a unique insight into the work of California's pioneer land surveyors. The long-awaited second edition delves further into bringing together the people, tools, procedures and events that contributed to the development of social order in the Golden State. Five new chapters have been added, increasing the total to twelve. The new chapters include biographical sketches of pioneer surveyors, early geodetic surveys, military and geographical surveys, railroad surveying and the accuracy expected in early surveys. This has ventured into early surveying practice and includes a treatment of surveying and subdividing of government public lands in California, including the former and current inconsistent practices of those charged with that work. The appendix has grown from sixteen to twenty-seven documents.

For the land surveyor, the information in this book may prove useful for the performance of professional work. For example, knowing what measuring instruments were available to the 19th century surveyor, and the precision to which they were capable of measuring, could be very important in analyzing the error of closure in an old survey. Another example is that cognizance of the fraudulent public land surveys is very helpful in the treatment of an unlocatable corner, which actually may never have been set. The old axiom retracing the footsteps of the original surveyor can best be done with knowledge of the original surveyor, his abilities, instruments, hardships, dedication, reputation, and the directions under which he worked.

Surveyors, however, are not the only ones who will appreciate this book. Attorneys, geographers, title examiners, realtors, and students of land matters in California, will find it both interesting and informative. It is a pleasure to read, copiously illustrated with historic photographs, and will be a welcome addition to your bookshelf.

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Title Research 101

Interview with Timothy A. Hanson

Vice President and Chief Title Officer, Placer Title Company

Placer Title Company is a full-service title and escrow operation, serving Northern California from over 60 branch locations in 16 counties. Founded in Placer County, California in 1973, it is now one of the largest independent title agencies in the West, and the only independent title insurance company licensed in all 58 California counties. On October 24, 2006, I met with Tim Hanson, Vice President and Chief Title Officer, at his office in Roseville.

JPW: Thank you for taking the time to meet with me, Tim. Since our professions are so interrelated, Land Surveyors would benefit by some insight into what title companies are all about. Can you give me an overview of what you do?

TAH: We as a title company are licensed to perform escrows, do title searches, and issue a title insurers insurance policy. We assess title and make offers to our clients to insure them subject to specific title policy exceptions and exclusions. It's all about managing risk, because if you're trying to search a piece of property for a perfect title, you're almost never going to find it. There will be a glitch someplace. There might be a problem with the patent, or some defect that we insure over. Two title insurance companies can look at the same title and set different exceptions up in their policies based on the risk they're willing to take. As far as research goes, we typically search tax records, real property records, recorded and unrecorded maps, and documents filed in municipal and superior court, and bankruptcy court.

JPW: What kinds of maps do you use in your research?

TAH: We keep scanned copies of recorded maps, such as subdivision maps and records of surveys, and we use vendors to organize the data. Our vendors have trained technicians in India who examine the maps and post information geographically to our account. The underlying property is generally the first thing they look for, but other references, such as underlying sectionalized land, ranchos and filed maps, and owners' names are considered as well, if shown on the map. In this way the maps are cross-referenced and we can execute a search using different criteria. A good thing for surveyors to keep in mind is that more information on their maps is better than less. This is especially true for records of surveys, which don't necessarily impart constructive notice. If there's a record of survey on a piece of property we're insuring, we want to be able to find it.

Our commercial departments have sectionalized land maps, swamp and overflowed lands maps, railroad maps, highway maps, flood maps; you name it. If we need information for a search that we don't have on hand, we rely on contacts we've made over the years with state and local agencies, railroads, BLM, or whatever, to obtain what we need. When necessary, we'll go to the County, or the courthouse, to plug in any gaps. This could be particularly important for high liability transactions, or for properties that are not in well-defined areas. It just depends.

JPW: What are your most important survey-related issues?

TAH: We're very interested in physical conditions that may provide evidence of unrecorded real property interests, prescriptive rights and adverse use. We want to know about encroachments and lines of occupation that are in conflict with record boundaries. There might be driveways, paths, and utilities serving adjacent properties without written easements. There might be fences that are not coincident with the property lines, property lines that pass through houses, or any number of things not disclosed of record, but that would be shown on a survey. If we don't except these conditions from policy coverage, and someone suffers an actual loss from a covered matter as a result, we have to write a check.

JPW: Why do title companies want a copy of the parcel or final map prior to filing?

TAH: Because we want to know what we're insuring. I had a situation where a client forgot to tell us he changed his parcel map from three to four parcels. Among other things, that created access and easement issues that had significant consequences. We also like to review the technical data on the map. The quality of the map checking varies between counties, and even the best map checker can miss something important. Or I may see something that I'd like to talk to the surveyor about. If there's an issue, we want it resolved before the map is filed. If necessary, I'll even walk the ground, with map in hand, to visually inspect the property. In one case, which was in connection with a multi-million dollar policy, I found physical evidence of an old unrecorded easement that still encumbered the land. Evidently, the surveyor didn't see what I saw, and he didn't show the easement on the map. Although this last instance involved an ALTA/ACSM survey map and not a map intended for recordation, the principle is the same. The more eyes that review a map the better.

Continued on page 22

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JPW: How did you get good at it?

TAH: As with anybody, in any business, it's about taking a personal stake in your work. Getting good at anything takes effort. It depends on how much you read, how much you study, how many outside sources and seminars you go to on your own time. I don't know of a chief title officer who got where he got by just coming to work, going home, and not applying himself.

JPW: Do you have any advice for surveyors?

TAH: Absolutely! Communicate with us. There's no such thing as too much communication. If you need more information for your boundary resolution, the title officer will be more than happy to help. And it goes both ways because the surveyor may have information the title company does not have, not only about boundary and encroachment issues, but also regarding the client's intentions for the property. Even a client who does not deliberately withhold information may forget to tell us something important, or not realize the information is relevant. More information is always better.

JPW: That's for sure, and the information you shared with me today is a perfect example. Thank you! ♦

John P. Wilusz, PLS, PE is editor of the California Surveyor and is in private practice in Citrus Heights, CA.



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Risk Management for Land Surveyors



What does 'risk management' really mean?

Risk management entails an analysis of all your business exposures to the possibility of loss and determining how best to handle those exposures. This can be done by avoiding risk (removing the exposure), reducing the risk (with loss control measures), transferring the risk (with insurance), or retaining the risk (with deductibles or self-insurance strategies).

You say you're very careful and know how to avoid risk and you don't need to worry about it. Well it's good to be careful but you better worry about risks that could damage you and your business and your reputation.

Application of sound risk management practices will help you control your exposures and associated costs and add more profit to your bottom line.

You need to manage your risks and not let your risks manage you.

Reducing Risk

Risk management starts with identifying your specific risks and controlling them or at least not being surprised by them. You have to set your own unique standards, develop the policies, and document the procedures that will reduce your exposure to loss. Your loss control program may include workplace and field safety, office security, workstation ergonomics and employment practices.

You have to recognize what could happen that would hurt your business financially and physically. You need to anticipate what could put you out of business or make it very hard for you to do your work efficiently and cost effectively.

Risk Management Techniques

Risk management is asking yourself a bunch of **'what if'** questions and trying to answer them.

Risk management is about care, quality and professional excellence.

First, you start by identifying and assessing the risks that you as a Land Surveyor face every day (damage to or theft of valuable equipment, field injuries, auto accidents) and some that you may never see (loss from earthquake, flood or fire).

Next, you have to determine your ability to deal with the risks you've identified. How much can you afford to lose? How much can you spend to replace or repair the anticipated damage? How much insurance do you need and can you afford it? Is there insurance to cover your risks?

Look carefully at your operations. Consider your property, inland marine, crime and premises liability exposures along with your professional liability (E&O), automobile liability, workers compensation and health insurance exposures. Don't forget watercraft and aircraft exposure, either. Succession and retirement planning are worthwhile, too.

Continued on next page

Once you identify your risks you have to decide how to handle the exposures. Here's how:

- **Avoid the risks**-don't take the job or use a well-insured subcontractor to do the work
- **Control the risks**-be real careful how you work, implement safety training, know who you work for and who works for you, review you losses and claims to prevent them from happening again
- **Retain the risks**-with self insurance or large insurance deductibles
- **Transfer the risks**-using insurance or indemnity agreements
- **Monitor the results**-with cost/benefit analysis to see if your is successful.

Helpful Hints

Use checklists and exposure surveys to make sure your risk management and insurance program is being properly implemented.

- *Always keep your insurance applications, summaries and policies handy.*
- *Make sure your subs carry adequate liability insurance.*

- *Always use written agreements. Make sure you have limitation of liability clauses in those agreements.*

- *Implement your own quality control and safety procedures.*

- *Do drug testing. Get motor vehicle reports (MVRs) on your drivers.*

- *Have in-house continuing education programs.*

Review all of your implemented risk procedures regularly and make sure they are working for you.

In most cases, you or the person you designate as risk manager has to handle that function along with many other work duties, financial planning and budgeting.

When you throw in a little OSHA compliance, some claims management, employee safety and security evaluations, contract management and disaster recovery planning, you or your designee is very busy.

It's your business. You love it and want to do it well with an eye to superb safety and risk control. Remember you are the expert surveyor and being conscious of sound risk management principles will make what you do and how you do it more successful and profitable. ❖

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Rod Heights PARTS 2 and 3

In Part 1 I discussed the finer “points” of standardizing your rods. So, now that you have all the points on your rods standardized, there are two steps left to make your adjustable rods and prisms interchangeable.

As discussed in Part 1, there are two types of rods, the adjustable and the non-adjustable. I’m not really concerned with the non-adjustable rod here as the scale is set to read to a reference point on the rod (the flat part on the threaded part) and you then add the vertical offset of whatever you put on top of the rod – GPS antenna or prism.

But, if your circumstances are like mine, your different adjustable rods require different heights to place the center of the prism or the phase center of the GPS antenna at the same height as the scale reading on the rod.

PART 2 – STANDARDIZED RAW ROD HEIGHTS

The concept is to make adjustable rods the same height to receive a standardized prism assembly and be at the height as shown on the rod scale.

First, determine a common rod height for all your rods that, when combined with a standardized prism assembly, will measure what the rod scale says if you change prisms. I decided on a “raw rod height” that measures 5.60’ when the rod scale is set to 6.00’

First I set the rod to 6.00’ as read on the scale. I then measured from the rod point to the surface where the prism assembly seats on the rod and added spacers to make it exactly 5.60’. Call this the “raw rod height”.

That means all my standardized prism assemblies would have to measure exactly 0.40’ from the bottom of the prism mount to the center of the prism in order for the rod to measure 6.00’ when the scale says 6.00’.

Since you cannot measure the raw rod height directly from the point (tapes bend), lay the rod on a flat, fairly level surface and provide a measuring point that is perpendicular from the point itself. My solution was to clamp a carpenter’s square to the bench and use that as the measuring point as shown in Photo 2-1. You ought to be able to get the desired raw rod height to be within 0.003’.



2-1

I found that among acceptable spacers with a 5/8” diameter hole are plastic washers, brass or dense fiber oil pan drain washers and nylon hex nuts. Metal washers, I found, were pretty inconsistent, but you might find one that is the right thickness. Get the 5/8” nylon washers and nuts at a good hardware store or online supplier. Get the brass washers from an auto parts store. Put the threaded nut on top to secure the spacers onto the rod. A useful tool to have when measuring spacer thickness is a digital caliper with read out to at least 0.001 inches or 0.1 millimeter. You can find them for about \$20.

Photo 2-2 shows various spacers, Photo 2-3 shows spacers used on various rods to make the rod a fixed raw rod height of 5.60’ when the rod scale reads 6.00’.



2-2



2-3

Once you get your rods all measuring 5.60’ when they are set to 6.00’ on the scale, the next step is to get all your prism assemblies standardized to a height of 0.40’.

PART 3 – STANDARDIZED PRISM HEIGHTS

The concept is to make prism assemblies the same height so that when placed on a standardized rod, the total rod height from tip to center of prism is what the scale reads.

I used 5/8” hex coupling nuts for the spacers since they are available at any decent hardware store and they’re cheap. But

Continued on next page

they are probably not the right length and they are manufactured with ends that are not perpendicular to the threaded portion. If the end is not at right angles to the axis of the threaded portion, it can cause the prism to be off center up to 0.01'. So you will have to machine the ends in a lathe ("facing") or have a machine shop do it for you, and machine the spacer to the right length. There are male/female adapters available in different lengths from survey supply manufacturers that could be used instead of making your own. Fortunately, my machinist buddy Chuck let me use his lathe for about an hour or so for the very modest price of a six-pack of cold ones one weekend afternoon.

Cut a stub of 5/8" x 11" all-thread to about 1" long and screw it about 1/2" into one end of the spacer so you can screw the spacer into the prism yoke. I also drilled and tapped a 10-32 hole for a set screw to hold the stub in place.

Photo 3-1 shows prism assemblies with spacers on the bottom. Note that for different size prisms, there are, of course, different length spacers. Also note the set screw and stub in the end of the spacer. Photo 3-2 shows the spacer being "faced" in a lathe.



3-1

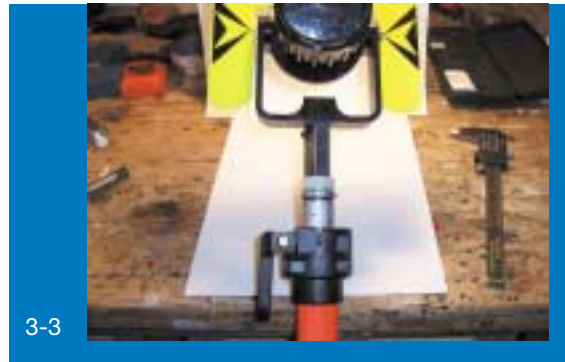


3-2

Since the manufactured height of a prism yoke is about 0.255', this means the hex spacer has to be 0.145' long, but it will vary between prism manufacturers.

Another thing to check is the "square" of the yoke. After dropping the rod a few times, the yoke might deform so that the center of the prism isn't exactly over the center of the threaded part. Makes good angular work a little tough. Even if the rod were perfectly plumb, a prism center off the vertical axis of the rod by 0.01' is 7 seconds at 300'.

Photo 3-3 shows one of the standardized prism assemblies on top of a standardized rod, which is on top of a standardized point.



3-3

Think this is a lot of work to go through for a rod that is accurate (with a little patience) to about 0.003'? Maybe. Each little systematic error might only be worth a penny, but if you add enough pennies together, you get a dollar. ❖

Robert J. Reese, PLS, is CLSA President and owner of Reese Water & Land Surveying Services, San Louis Obispo, CA

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Facts:

I have an existing 5 lot industrial parcel map with 4 buildings and a common area lot. Since the time the map was filed, our client has decided that all 4 building lots need to increase by 2 feet in each direction. In order to do this, we will need to adjust the lot lines of all 4 building parcels and the common area.

Questions and Answers:

1. Can we do one lot line adjustment and adjust all 5 lots?

Under the old law, a Lot Line Adjustment was allowed between **two or more** existing adjacent parcels, where the land taken from one parcel is added to an **adjacent** parcel, and where a greater number of parcels than originally existed was not proposed. The resulting parcels only had to conform to local zoning and building ordinances. The Lot Line Adjustment rules were changed approximately 5 years ago (Senate Bill 497, adopted in 2001). By its own terms, the new law limits Lot Line Adjustments to "A lot line adjustment between **four or fewer** existing **adjoining** parcels..." Gov. Code § 66412(d). As such, one Lot Line Adjustment application could not address 5 lots.

2. Can we do two [or more] lot line adjustments, adjusting Lots 1, 2, and the common area and then adjust Lots 3, 4, and the common area again?

The answer to this question is much more involved and confused and ultimately hinges on the text of the local Map Act ordinance. Under the old law, a Lot Line Adjustment was allowed between **two or more** existing **adjacent** parcels, where the land taken from one parcel is added to an adjacent parcel, and where a greater number of parcels than originally existed was not proposed. The resulting parcels only had to conform to local zoning and building ordinances. Many commentators argued that Lot Line Adjustments under the old law were "ministerial acts" outside the scope of CEQA and other regulations. When the law was changed (Senate Bill 497, adopted in 2001), several questions arose regarding the

meaning of the new law, including the ones you raise. Unfortunately, no clarifying response from the Legislature ever took place. What we are left with is absolute confusion. In short, whether an owner may adjust the lines of five or more existing parcels by filing a series of discrete applications for four or less parcels is often contingent on the local Map Act ordinance. For example, some jurisdiction simply limit each Lot Line Adjustment application to 4 parcels, but they

will allow multiple applications, thereby ultimately allowing the adjustment of as many parcels as requested (through multiple applications). In contrast, other jurisdictions allow only 4 parcel adjustments (total) for the entire time the applicant owns the property! Under California law, a subdivider is prevented from evading the tentative and final map requirements under Section 66426 by making successive divisions of four or fewer parcels each. Although this prohibition against "quartering" applies to the determination between whether a parcel map or tentative map is required, its application to Lot Line Adjustments is unknown. The purpose of the anti-quartering rule appears to be founded on the idea that the taxpayer should be protected from undue burdens caused by improper development. Since most Lot Line Adjustment are for purposes other than development, the anti-quartering rule should not apply. There is nothing explicitly in the new law that prohibits multiple Lot Line Adjustment applications.

Unfortunately, different local agencies will likely have different interpretations of the "four or fewer" requirement, thereby leading to inconsistent application of this requirement throughout the state.

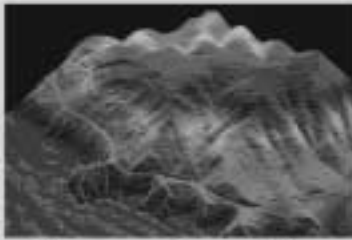
3. Is there another way to "adjust" the lines without having to do a tentative map and subsequent parcel map?

I have heard of a couple of creative solutions. Because the new Lot Line Adjustment law has been inconsistently interpreted and applied, some jurisdiction that want to allow more than 4 lot line adjustments have elected to enact new local regulations that are not adopted within the scope of

Continued on next page

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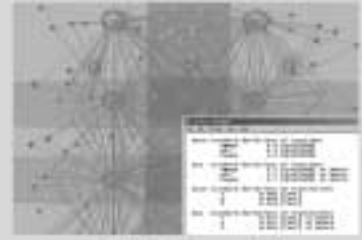
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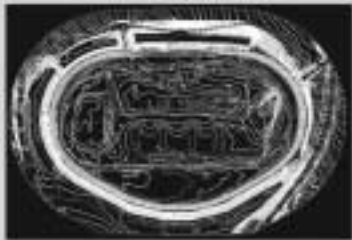
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Continued from previous page



the Lot Line Adjustment law's § 66412(d), but instead are adopted under the city or county's police power, using Map Act § 66499.20 _ when the land is held in common ownership. I am not sure if that approach does not have pre-emption problems.

A more legally supportable approach may this second alternative: I have heard that some jurisdiction have enacted "special" local regulations placed within their local Map Ordinance that allow for the approval of a "no condition" parcel map or tentative/final map (depending on the number of lots involved), if the proposal is for the simple adjustment of existing lot lines (and not to allow new development). Under this approach, the new adjusted lots are shown on the face of a new recordable map (parcel map or final map as the case may be), and pursuant to the Map Act's §§ 66499.20 _ , upon recordation, the relevant recorded map merges and re-subdivides the old lots, creating the new (adjusted) lots that are shown on its face. ❖

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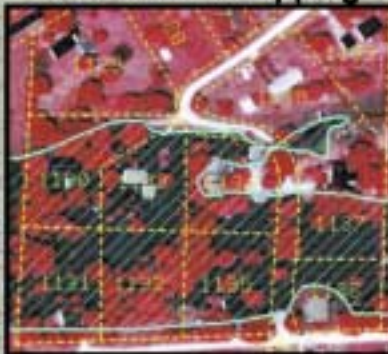
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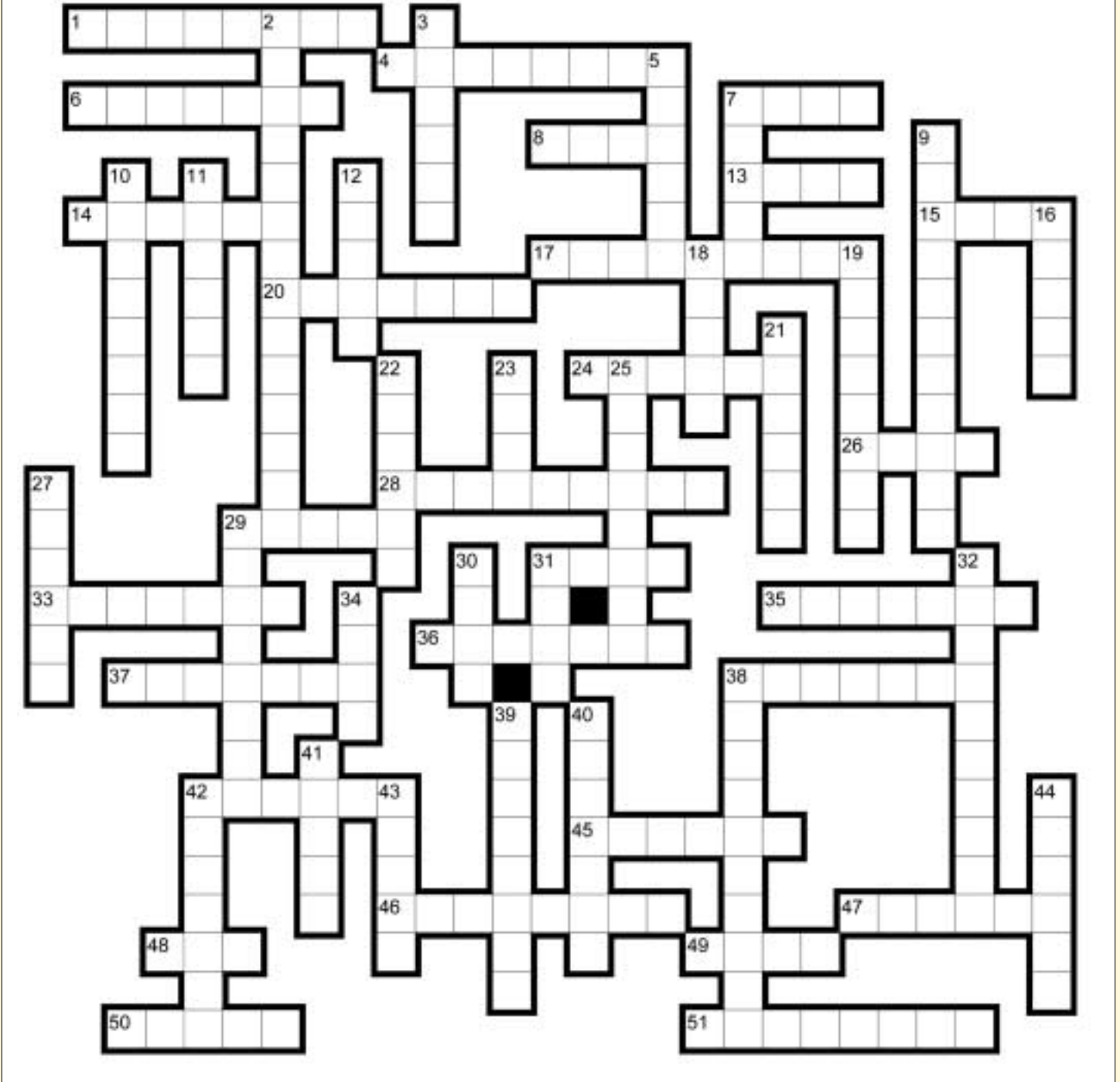


Crossword Puzzle

By: Ian Wilson, PLS

CLSA Crossword Puzzle #2

Created with EclipseCrossword — www.eclipsecrossword.com



Ian Wilson, PLS is the president of Ian Wilson Land Surveying, Inc., in Temecula, CA. His practice specializes exclusively in boundary and topo surveys. He has worked in both private and public sectors for small firms in California and Caltrans, respectively. As well as being a licensed land surveyor, he and his wife, Laura, are newly certified SCUBA divers. They are looking forward to "getting wet" on future trips along coastal California and around the world.

CLSA Remembers



Dick Hogan, PLS at Jenner, CA

CLSA is sad to announce the passing of Richard Dick Steven Hogan. Dick Hogan passed away Monday September 18, 2006. He is survived by his children Michael Richard Hogan, PLS 7362, Suzanna Mayo, Melinda Hogan, and Patrick Hogan and numerous grand children. Richard started surveying in high school at the age of 16 and was in the 2nd Marine Engineer Battalion. After that he worked for the State of California, both as a Senior Engineering aide and Photogrammetrist. In 1956 he opened his own land surveying business in Sebastopol.

Dick Hogan was instrumental in the formation of CLSA and was CLSA's first President. Below is an excerpt from an article which appeared in the 35th anniversary edition of the *California Surveyor*:

The roots of the present California Land Surveyors Association stem from two separate organizations: (1) a tri-county group called "Sonoma, Lake and Mendocino Counties, Engineers, and Land Surveyors," and (2) the "California Association of Licensed Surveyors" in Sacramento. The Sonoma, Lake, and Mendocino organization was really the group responsible for forming the statewide association. It had existed for many years. Dick Hogan, later to become CLSA's first president, had belonged to the tri-county group for nearly eight years. He described it "as a pleasant, rather loosely organized bunch that, about every few months, would get together for a cocktail dinner and a program, usually at the Old Occidental Hotel in Santa Rosa." Their main topics of discussion were "tough surveys, developers, and unpaid accounts."

The group determined there was enough interest to form a statewide organization and the California Licensed Land Surveyors Association was formed, the CLLSA, later shortened to CLSA.

Dick was well respected in the surveying profession and his community. He will be sorely missed.

To contribute to the Dick Hogan Memorial Scholarship fund Make checks payable to CLSA Education Foundation and mail to
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Dick Hogan, PLS and son

Memoirs of Richard S. (Dick) Hogan

Due to an early opportunity, while still in High School, I became a surveyor, and was in the 2nd Marine Engineer Battalion (with a surveyor classification) in that 1943-46 wartime era. My strung out higher education started in 1946 at the San Bernardino Junior College and ran through a series of classes during my working career in Sacramento JC; classes at University of California, Berkeley; Santa Rosa JC, and was completed at Sonoma State University with History Major, at the age of 55, I did not graduate, because I thought it time-wise unproductive to take the last few units of Senior Class requirements. I continued to take night school classes on the JC level for selected courses such as computer science, art classes, sculpture, digital photography, and classes in ancient history, all of my life. Between 1948 and 1955 I worked for the State of California, both as a Senior Engineering aide, and Photogrammetrist work statewide. In 1954, I passed the Cal state license examination, and became a Licensed Land Surveyor. I married Gay (Hopkins) Hogan in Sacramento. We moved to Pasadena where I worked for a large aerial mapping company in western US. In 1956 we moved to Sebastopol CA, there starting a small surveying firm, and my four children came along, Melinda Ann 1955, Suzanne Gay 1959, Mike Richard 1961, through to 1964 when Pat William Hogan was born. My small enterprise prospered, and in 1965 I entered into a partnership with Paul Schoch, (then the City Engineer). I learned to fly, and we had an Engineering-Surveying & Aerial Mapping firm. (Hogan, Schoch and Associates)

We formed a corporation, and were very successful. Employing at one time as many as 15 persons. Our work included mapping of the northern Golden Gate Bridge approach, and aerial mapping of the traffic lanes at the tollgates. In Sonoma County, we performed numerous projects for the County, (including mapping the entire Bodega Bay). We averaged about 200 surveying projects a year for boundary disputes, subdivisions, and many projects for mapping of County and City roads. Paul Schoch resumed as a contract City Engineer for Sebastopol and for many years similarly acted for the City of Cotati. There were many combined operations for City purposes, and we mapped the entire city of Novato, as well as aerial mapping in Reno, Nevada, Ocean City, and worked as far south as Bakersfield, and north to the Eureka area. We constantly added new innovative equipment such as the early electronic long distance measuring device (the Tellerometer) and the first Zeiss aerial camera north of San Francisco, the latest in very large copy camera, and Stereoscopic Mapping machines. Our clients included the State of California, numerous Cities, Counties and large private developments, such as surveying, mapping of 4 miles of the lower Russian River. We owned subsequently three single engine aircraft, and processed as much as 16,000 feet of aerial film. I achieved a Commercial Instrument Pilot license.

In 1989 approximately, we decided to sell our corporation, and did so. Both Paul and I downscoped into private consulting offices at our own homes, and as I write this (2003) both of us continue to perform small projects on a semi-retired basis locally. I currently also am a contract surveyor for Sonoma County. ♦

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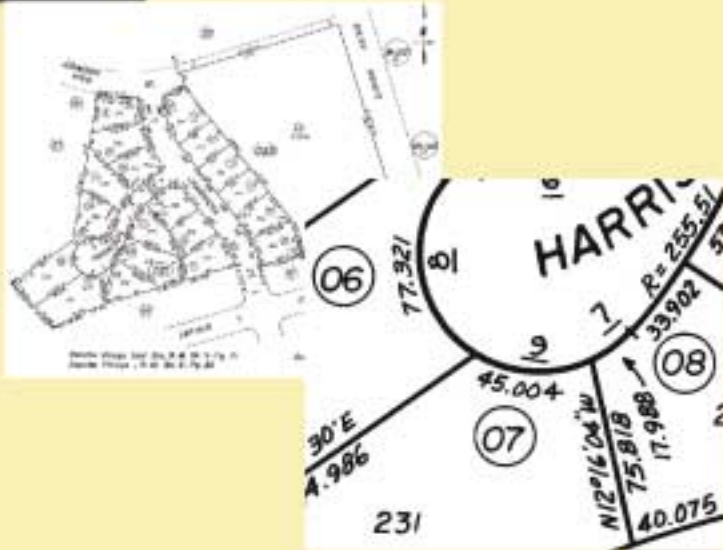
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The goal of the California Land Surveyors Association is to promote and enhance the profession of surveying, to promote the common good and welfare of its members, to promote and maintain the highest possible standards of professional ethics and practice, and to elevate the public's understanding of our profession. CLSA represents all Land Surveyors, whether they are employees or proprietors, whether in the public or private sector.

Representation

LOCAL: Your local chapter represents you in local issues. Through your chapter representative to the State Board of Directors, the individual member can direct the course CLSA will take. **STATE:** The Surveyor is represented at the state level through an active legislative program, legislative advocate, and liaison with the State Board of Registration. **REGIONAL:** CLSA is an active member of the Western Federation of Professional Surveyors. This Federation is composed of associations throughout the western United States and addresses regional issues. **NATIONAL:** Through institutional affiliation with the National Society of Professional Surveyors and the American Congress on Surveying and Mapping, CLSA is represented at the national level.

Educational Opportunities

CLSA presents annual conferences which provide technical and business programs, as well as exhibits of the latest in surveying and computing technology. Seminars and workshops are presented to assist in continuing education. CLSA publishes the California Surveyor magazine and the CLSA NEWS to keep the membership abreast of changing legislation, legal opinions, and other items which affect our profession.

Business and Professional Services

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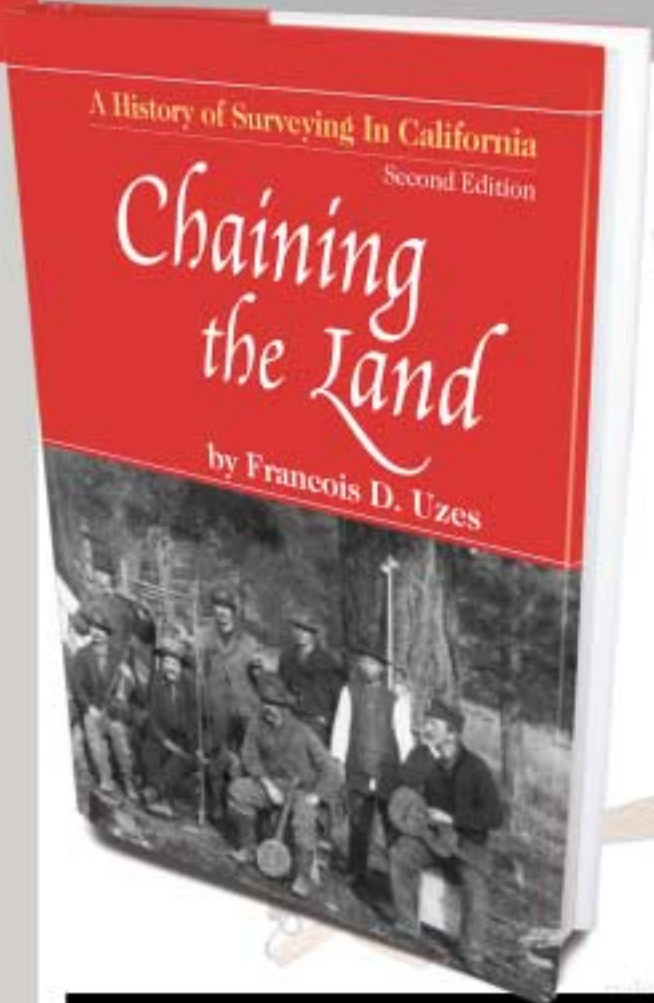
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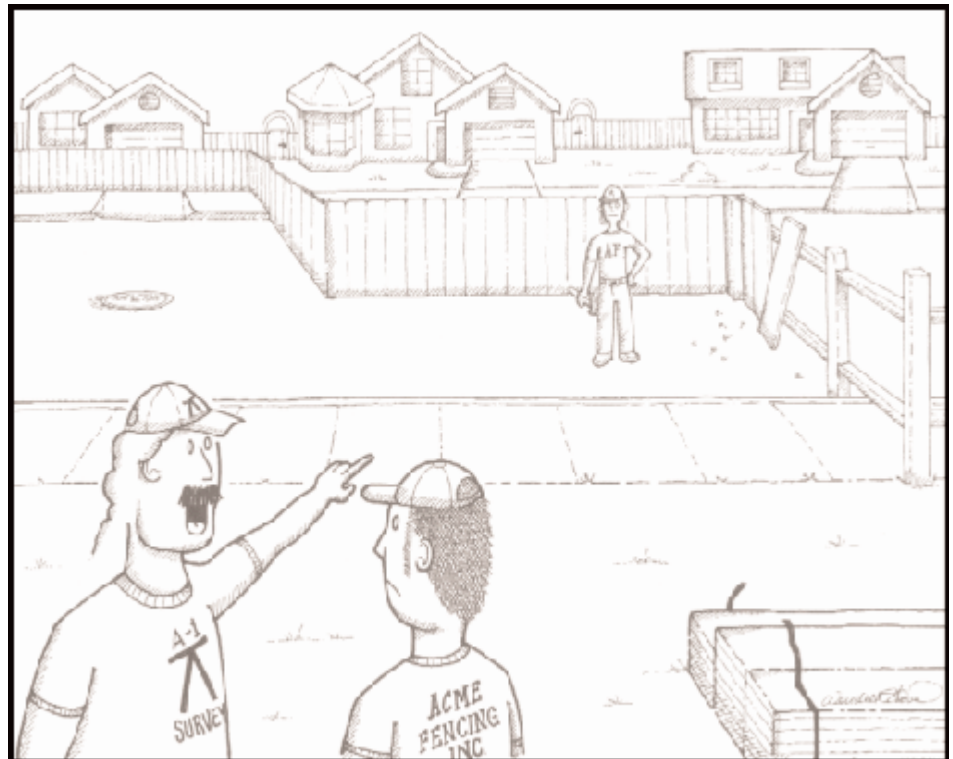
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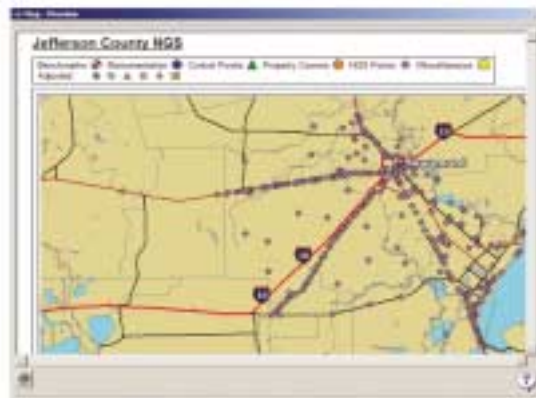


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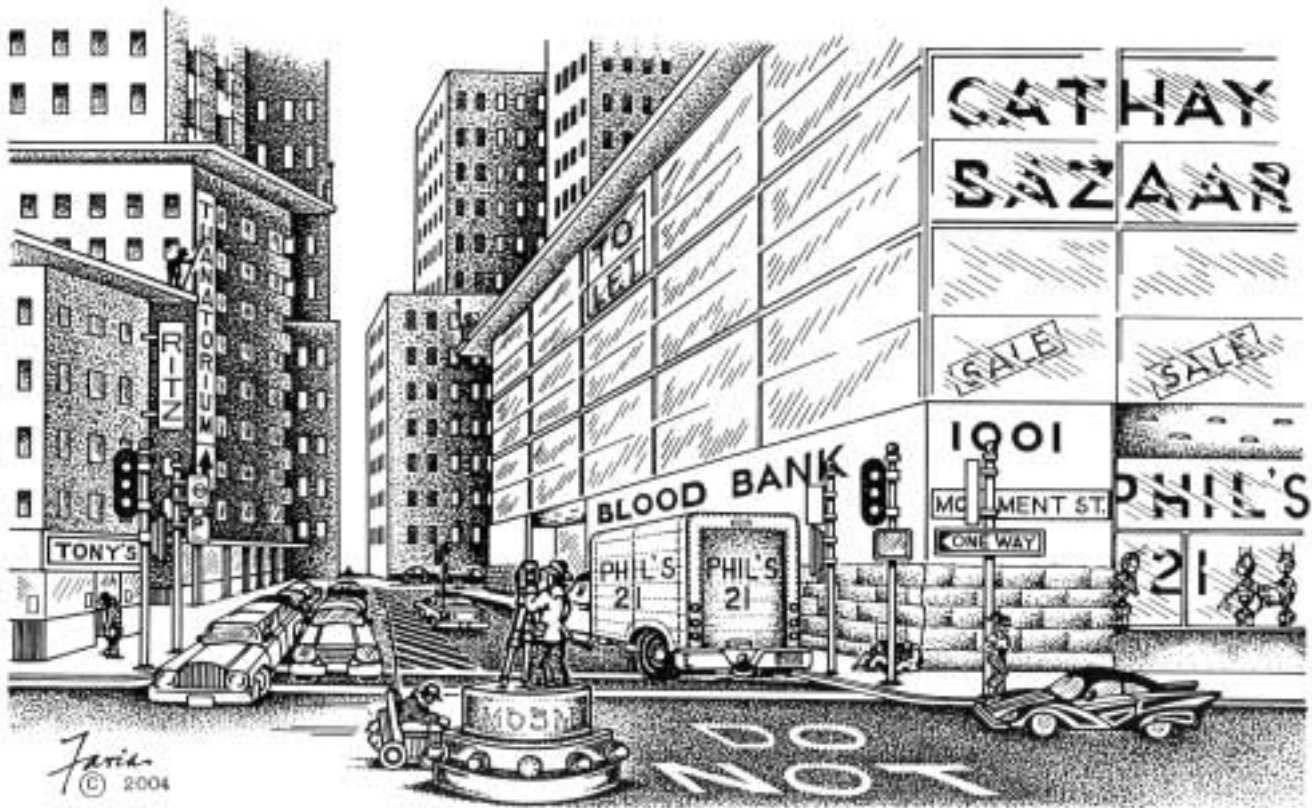
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