

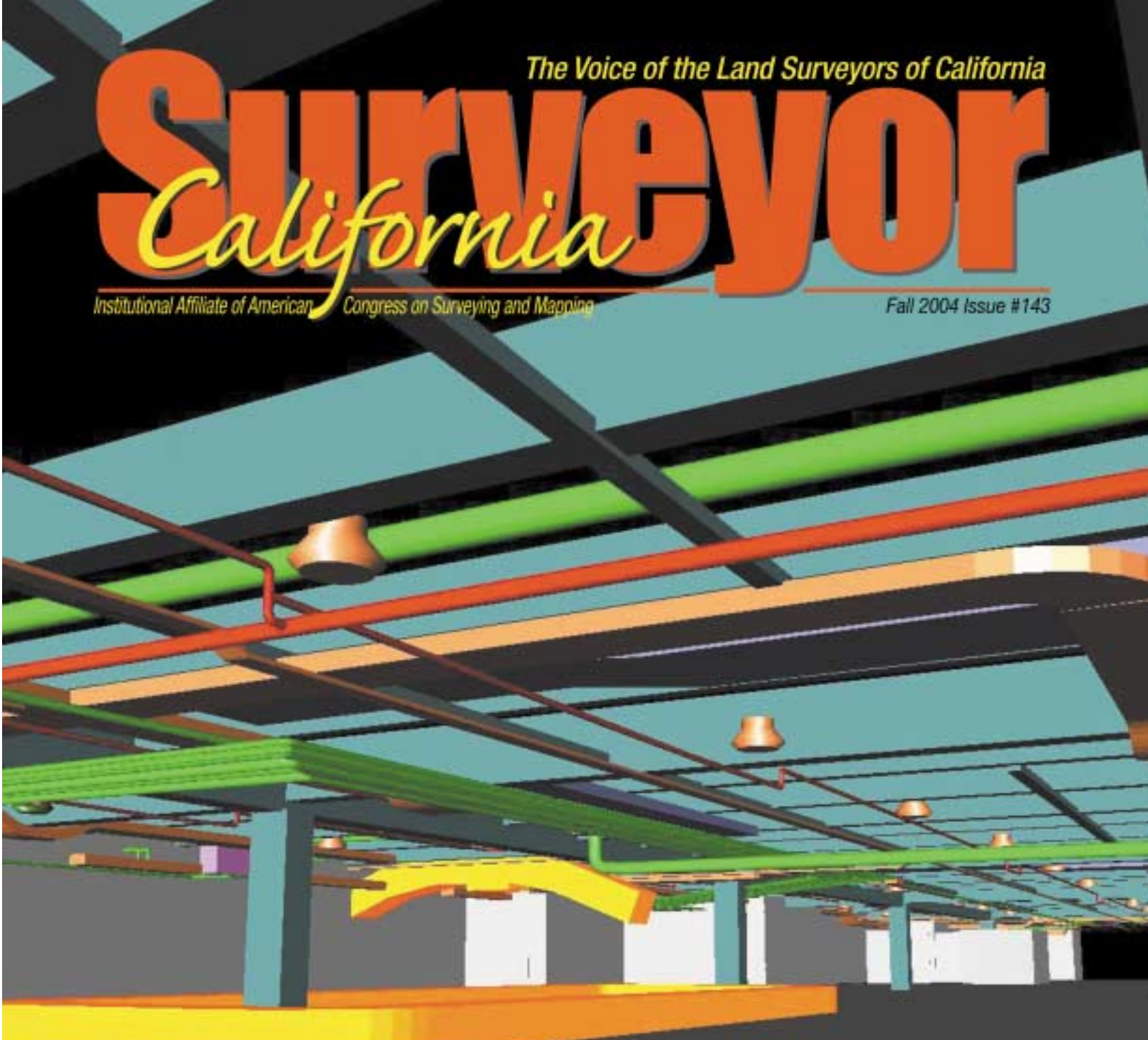
The Voice of the Land Surveyors of California

SURVEYOR

California

Institutional Affiliate of American Congress on Surveying and Mapping

Fall 2004 Issue #143



Laser Scanners

A Working Guy's Experience

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Center of Population Dedication

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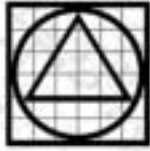
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“Recognizing that the true merit of a profession is determined by the value of its services to society, the California Land Surveyors Association does hereby dedicate itself to the promotion and protection of the profession of land surveying as a social 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:

Laser Scanners





Very interesting...

The California Surveyor wasn't doin' its job in "The Library." (Yes, I re-read the Cal-Surveyor after it shows up in my mailbox)

"Honey! Where's Bay Area!?", (A section in the San Francisco Chronicle), I hollered.

"Oh for cryin' out loud! Am I gonna have to replace the wall-paper, in there again?!" she objected.

On the front section of Bay Area a photo of Peggy Satterlee, with hands outstretched as if exasperated about something . . . in the background forested hill . . . a graveled one-lane farm-road . . . and overhead telephone lines, (or a crease in my newspaper). The caption: "Land-subdivision cases have far-reaching implications . . . Parcels from the past." The hamlet: Garberville.

"That's an understatement!" I thought to myself.

Ms. Satterlee was accompanied by her dog Putz - named after either of her two ex-husbands.

Ol' Peg, a 53 year-old grandmother, and her older brothers Bob and Norm own about 28,000 acres, known as Fort Seward Ranch, near Garberville. Their parcel stretches about nine miles along either, (adjoining each?), side of Highway 101 from the west fork to the east fork of the Eel River, according to writer Greg Lucas, of the San Francisco Chronicle.

Sounds like she's pretty upset with the neighboring ranch, know as the Tooby Ranch. Her neighbor, Bob McKee, purchased the 13,000-acre ranch in 2000 for about \$ 6.7 million! Apparently Ms. Satterlee filed suit against her new neighbor, claiming he subdivided the Tooby Ranch in violation of state land conservation and development laws!

Seems Ol' McKee figured out - there's a bunch of 'Patented-parcels' out there for the taking, er selling! And that's what he did. According to David Blackwell, Esq - McKee's attorney, the federally patented parcels were pre-existing legal parcels and do not create a subdivision.

Peggy and the County, (Humboldt), seem to think differently. Ms. Satterlee believes the patented parcels were collected to form a ranch and therefore the original patents were dissolved. Hmmm. Very Interesting . . .

Discussion: LS Test . . .

The Discussion page of our website has been inundated with debate regarding the dismal pass-rate on this year's PLS test. Some

lightly hint at CLSA's lassie-faire attitude towards the test. CLSA has and will be continuing to hound for fairness in the test. Editorials in Issues #121, #127, #137 & #138 of the California Surveyor have repeatedly harped test concerns. Also, you will notice that CLSA has markedly reduced seminar costs to members! Another future task that CLSA will be taking on, will be writing a bank of study questions and study seminars for the LS candidates.

One respondent suggested a legislative remedy. Not a bad idea. To share your concerns, write the CLSA Central Office at:

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New blood . . .

Ladies and gentlemen, I have some good news and some better news. First, the good news: Phil/Moi/Me/ Yours-truly/ will no longer be the editor of this wonderful journal. I feel, (and I'm sure you'll agree), it's time for some new blood . . . not to mention something unbecoming-of-a-gentleman-incident, regarding a pretty lamb dressed in fishnet-stockings, at a Stockton Inn. I've been interviewed for an editorship on another CLSA publication - the Canon Law Society of America. (Boy, are they in for a surprise!)

The better news- Ahhhh mo' better editor - Carl C. deBaca! For those that know Carl, he's a "doer" kinda guy! Not only is he smart - he's witty, and more important to the wonderful-people-that-put-this-thing-together . . . he's punctual! On behalf of our profession, a most sincere THANK YOU!, Carl!

One cannot express the copious benefits this volunteer job has bestowed upon me. I can honestly say, with absolute sincerity, that I have received much more than given in regards to this post. Many friendships have been struck over time - some with opposing viewpoints, but all are memories I will cherish to the grave.

If you truly love something, from fishing to flying you must involve yourself, to glean the most . . . for you to be . . . all that you can be. Otherwise - it's an occupation. Without jumping in feet-first, your "job" may seem like eternal Purgatory. If you're not a member of CLSA and NSPS, do yourself a favor - join and attend a meeting(s)/conference(s). And if you like what you see, get involved up to your eyeballs. Then you'll truly understand my poor attempt at putting these poignancies to paper.

It's been a hell of a ride. Thank you all! . . . Thank you! . . . Thank you! . . . Thank you! ❖

Letters to the Editor



Dear Mr. Danskin,

I started surveying for a small private firm for three years before I started working for county agencies. I have spent a total of five years in the field before coming into the office. I have been the Corner Record checker for a prominent California county for about six months. I have personally heard hundreds of complaints about the strict standards that I check for. I have to remind the surveyor that each item of contention is based on state law, not office policy.

One such complaint was about the requirement to submit a pre-construction corner record and a post-construction corner record, Business and Professions Code 8771. I read him the law word for word and he said "but that doesn't say I have to submit a pre and a post!" I will not bother you with a long dry quote of B&P 8771. The surveyor went on to say that neighboring counties do not require 2 corner records!

Do keep in mind that each correction letter is read by a Professional Land Surveyor, then viewed by the County Surveyor and signed by a Deputy County Surveyor. It's not as though I make up the P.L.S. Act.

Usually, the hot topics are "material discrepancies" and "insufficient record monumentation" (8765(d)), and showing references to record information (Board Rule 464(d)). A typical complaint is that I (the County) overly scrutinize the corner records. I cringe when I hear this. Imagine if the corner record was for your lot and you had a property dispute with your neighbor. Wouldn't you want to make certain that it was complete and accurate? Wouldn't you want to walk into a court of law and show the corner record with the confidence that it was an absolutely airtight record that no attorney could touch?

Another area of dispute is whether or not the law says you have to tag found monuments. B&P 8772 and 8773.3 lead many, including my self, to believe that you must set your tag on a "No Reference" and untagged object (pipes, chiseled X, lead and tack) that you choose to call a monument. The Board published a counsel opinion on the matter; however, after reading the opinion, it is clear the attorney did not understand the question. The published opinion states in part "Such an interpretation would result in the obliteration of the tags of previous land surveyors and would be illogical." The whole idea of tagging a found monument is that it does not already have a tag.

Consider this: Blacks Law says that a found "monument" is only a "monument" if it is of record and/or tagged (or something to that affect). Therefore, if a pipe is NOT tagged and there is NO RECORD of it, the pipe is just a pipe (Perhaps it was used to tie up old Mc Donald's goat). When the surveyor states that the found pipe is accepted as a corner, he is stating that the pipe is now a monument. By declaring it as such, he is making it a monument, and, therefore, must tag it. If the surveyor has the confidence to claim the pipe a monument, he or she should have (the balls) confidence to place their tag upon it. If the point is important enough to show on the corner record it is important enough to tag.

It is because of these wide interpretations that I believe the Board should be more directly involved rather than relying on a lawyer that may not understand the concept of setting a tag or working in the field. Also, for the same reasons, there should be mandatory education requirements that teach exactly the same interpretation of the P.L.S. Act to all students preparing to take the state exam. In fact, perhaps all Professional Land Surveyors should be required to take a legal update course prior to their license renewal.

Respectfully submitted,
Anne Onymus

More letters to the editor on page 24

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Thank You Phil!

Dear Editor:

We would like to take this opportunity to thank you for serving as editor of the California Surveyor magazine since 1998. Thank you for the humor and insight you brought to the magazine. Thank you for your hard work, dedication and commitment to CLSA and the land surveying profession. It has truly been a pleasure working with you!

Sincerely,
CLSA Central Office

Disclaimer: The above letter was never submitted to the editor. We knew our humble editor would not allow it to be published, so, the CLSA Central Office pasted it in just before printing. Thanks again Phil!

President's Message



President's Challenge

How does CLSA insure the preservation of our profession? We foster education and encourage every land surveyor to participate in the advancement of the profession.

The CLSA Education Foundation, which has consistently provided student scholarships, for the first time, has provided direct funding to support a surveying program. Without this financial support (\$15,000 over a two year period), the surveying program at Cal Poly Pomona would have been severely cut. CLSA Chapters including Riverside/San Bernardino and Humboldt Chapters have contributed to the Education Foundation to help offset this pledge. We hope more CLSA Chapters will contribute, through the CLSA Education Foundation, to this worthwhile program. The Education Foundation also relies on the generosity of individual land surveyors. Our annual scholarship auction is currently our sole means of raising funds. If you would like to contribute, whether financially or in the form of a donation to the scholarship auction, please contact the CLSA Central Office.

The CLSA Website (www.californiasurveyors.org) receives an average of 5000 hits per month. Our site provides a portal to educate both land surveying professionals and the public. One of the sites most popular features is the CLSA Forum which makes available an easy to use medium for exchange and discourse on subjects ranging from eliminating the gray area of establishing new property lines by a lot line adjustment that are not shown on a record map without requiring a record of survey, to finding the basis for establishment of "swamp and overflow lands" given to the State by the US Congress and many subjects in between. The Forum also provides a free Classified Board where both employment opportunities and resumes can be posted. The latest edition is the "Professional Development Forum" which was created to provide an opportunity for Professional Land Surveyors to mentor associates in preparation for the LS examination. The "Find a Surveyor" search engine (list licensed CLSA members in private practice) and the brochure "How the Profession Serves the Public" are available to provide a means for the public to locate and consult with a land surveyor.

CLSA Workshops, provided to members at a substantial discount, offer a means of professional development and continuing education. This year's workshops included "Improving the Accuracy of Your Field Procedures" with James Reilly and the "Subdivision Map Act" with Mike Durkee, Esq. (Both were held in several locations throughout the state. Visit the Event Calendar on the CLSA Website for a list of upcoming Workshops) The annual CLSA Conference provides an array of technical sessions, workshops, hands-on training with vendors as well as a great opportunity to network with colleagues. We hope you join us in Las Vegas, Nevada for next year's joint ACSM-CLSA-NALS-WFPS Conference on March 18-23.

The CLSA Legislative Committee continues to monitor legislation as well as propose new legislation to protect and preserve the land surveying profession. Our national representation is through the National Society of Professional Surveyors (NSPS) to which we appoint a state governor, this year Armand Marois, President Elect. We were elated when our own Carl C.deBaca was appointed chairman of a NSPS NAFTA Mutual Recognition Document (MRD) between Canada and Mexico, which was revised to protect California from allowing unlicensed land surveyors from entering our state without passing our state specific examination. CLSA is represented regionally through the Western Federation of Professional Surveyors for which we have appointed two delegates, Ray Mathe and Pat Tami.

CLSA Public Relations: On October 16 the Center of Population dedication at Buttonwillow hosted by CLSA provided a once in a decade event allowing us the opportunity to educate the public about land surveying and further our goal of developing a public relations component. Special thanks to Tom Taylor and Mark Turner of Cal Trans, the U.S. Census Bureau, Don D Onofrio of California Spatial Reference Center (CSRC), Marti Ikehara our state National Geodetic Survey Coordinator, the Bakersfield Chapter who prepared a BBQ for all attendees and the CLSA Central Office staff for providing event planning and execution. The event hosted more than thirty guests, including the Mayor of Buttonwillow and a representative from the Kern County Supervisors office. A video of the dedication was taken by CalTrans and will be made available for public awareness programs on the CLSA Website.

Pay it Forward: Congratulations to this year's newly licensed Professional Land Surveyors (see page 26). I would like to remind each of these new surveyors of the mentoring and support they received from seasoned professionals and encourage them to pay it forward by providing guidance to those that remain in the ranks of examinees from which they have just been promoted. To all land surveyors, I challenge you to invest your time and skills in the interest of furthering the profession of land surveying.

We have had a full year of events and meetings and have set new goals that, although not all will be realized this year, will provide direction and guidance for the years to come. I would like to take this opportunity to thank the numerous individuals including the Central Office staff headed by our Executive Director, Dorothy Calegari, and all of our Committee Chairs for which the milestones reached this year would not have been possible without their support. My sincere appreciation to our Executive Committee who has logged a new record for miles traveled this year to represent our association and our positions on issues important to protect our profession. ❖

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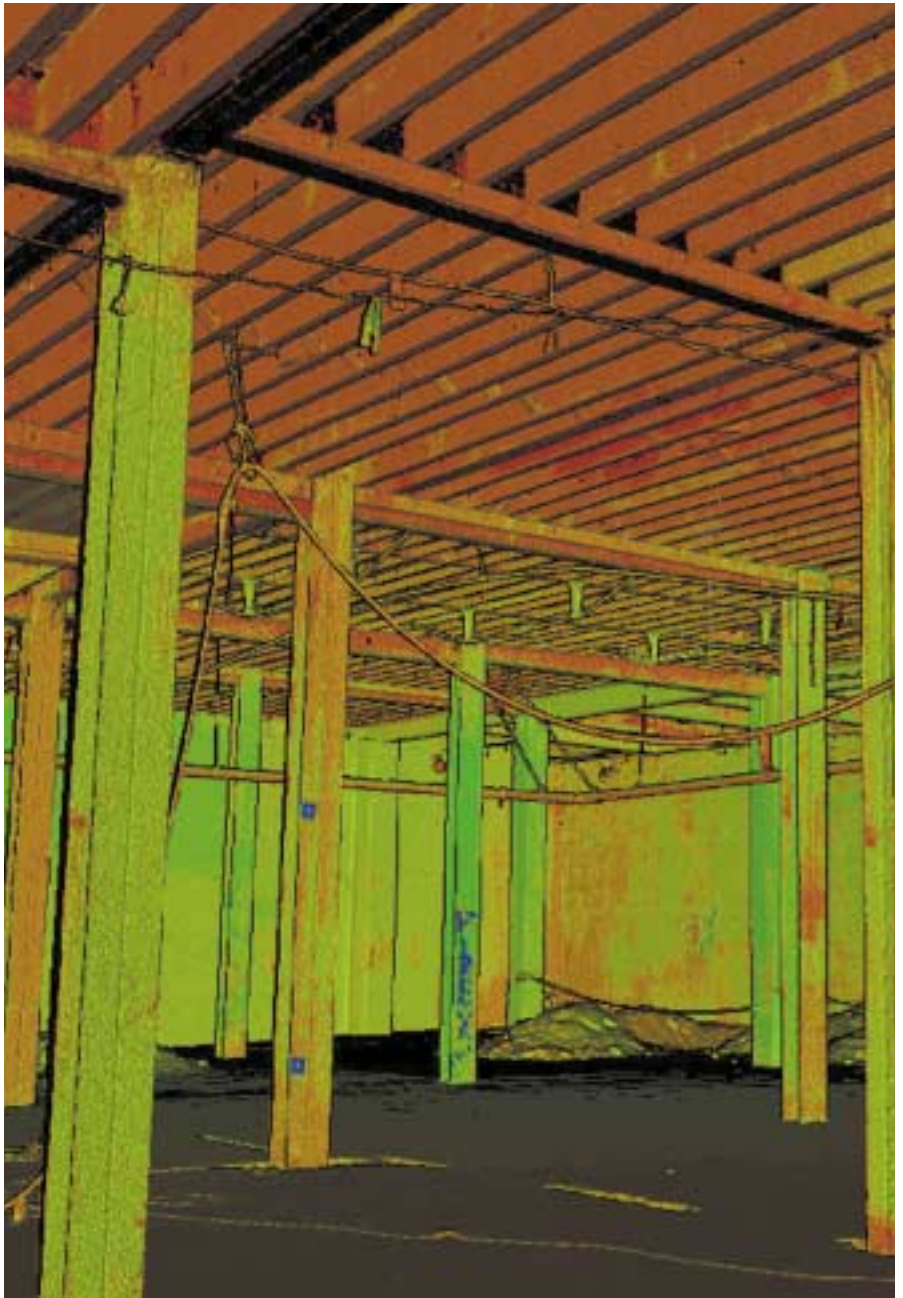
Many of us have been witness to the changes in surveying in the last 15 years, largely due to technology. Many of our younger surveyors do not recall a time when we did not have GPS, personal computers or data collectors. Each has vastly changed the way we practice surveying.

It seems that the next "big" thing working its way down the pike is laser scanning. I have been interested in scanning and following the development thereof for the last three years. I can draw many parallels with the advent of GPS. For instance, laser scanning is simple enough to operate and to get information (lots of information). But, the determining of the quality of the information, the adequacy of information and the making a deliverable product for a client are a few of the challenges.

Our company has completed several scanning project this year. We have partnered with a company, Inovx Solutions, on these projects. Inovx Solutions has been the scanning business for the past seven years. Their copious experience (over one-hundred and twenty projects) in laser scanning exceeds that of most companies working in the United States. Their experience and work has been primarily in the oil refinery business. For Inovx, scanning is actually a component of their software business. Their primary business is development of PlantLinx software used throughout the world by petrol-chemical companies.

In writing this article we are going to run through what we have learned about laser scanning to date.

Scanning in short, is collecting millions of X, Y, Z points configured in point clouds. These points are then modeled, which are mapped, into 2D and 3D drawings. In addition to mapping, the modeling is required to make the information manageable in standard CAD programs. On an average size project, it is not uncommon to have gigabytes of information; the raw data cannot be loaded into the CAD package.



Continued on next page

Our intention is to give our brethren some real world considerations based on our experience. Each topic we highlight could have an entire article written. We have chosen to touch on some the major components of scanning equipment and add in some considerations for the user of the equipment.

Phase based scanners:

Phase based laser scanners deploy the same technology as used in theodolites and interferometers. Phase based scan technology may also be referred to as 'amplitude modulation continuous wave (AMCW)' or 'phase-difference' methods. The methodology deploys a continuously emitted laser signal that is intensity modulated in amplitude by a sinusoidal frequency. Comparing the emitted and returned signal, a phase difference can be measured, which is directly proportional to the range (or distance) from the measured object. In addition, the reflectivity of the object can be measured directly, resulting in a black and white photograph like reflectance image.

Since the measurement depends on a phase measurement, only measurements within a 180 degree phase shift can be resolved unambiguously. Outside of this so called ambiguity interval, a phase and therefore range wrap-around occurs. Sophisticated phase based scanners employ dual-frequency modulation, where a lower modulation frequency is used to resolve the ambiguity over a certain range interval, and a higher modulation frequency is used to achieve accuracy, just like on a vernier scale.

Since phase based scanners are modulating and digitizing a continuous beam millions of times per second, many of these scanners have the capability of capturing measurements at speeds up to 625,000 points per second.


(If we run into each other, don't ask me about the previous section, it came from a vendor and makes as much sense to me as does to you. D.W.)

The scanners available have varying ranges of 20 meters to 100 meters. Equally, the speed of the scanners can vary greatly. The key to the scanner is the ability to integrate into a software package. It is similar to the differences between our vendors of conventional survey equipment i.e. Geodimeter/Trimble, Leica, Topcon etc. each has something to offer based on given criteria.

Software:

OK, so now you have millions of point accurately representing in 3-D your scope of work. Now what? Today it is rare that a building survey or topographic survey will be satisfied with a gigabyte of pixels. Many clients like the idea of the 3-D data but want or need 2-D plans and sections. The programming is continuously being developed to enable AutoCAD and Microstation users to generate useful and familiar drawings and models. Users of CAD integration software can work directly in their familiar CAD software programs using plug-in applications like CloudWorx™ from Leica to extract points, measurements, surfaces, features, line work, and models from point clouds. These add on programs allow the users to manage the large amounts of data collected.


Continued on next page



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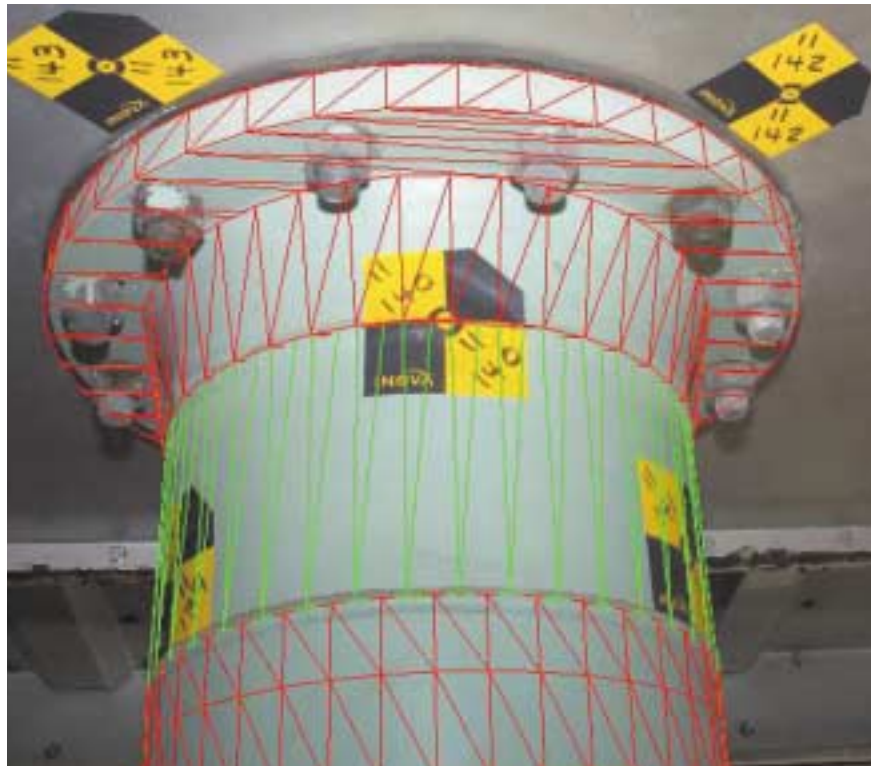
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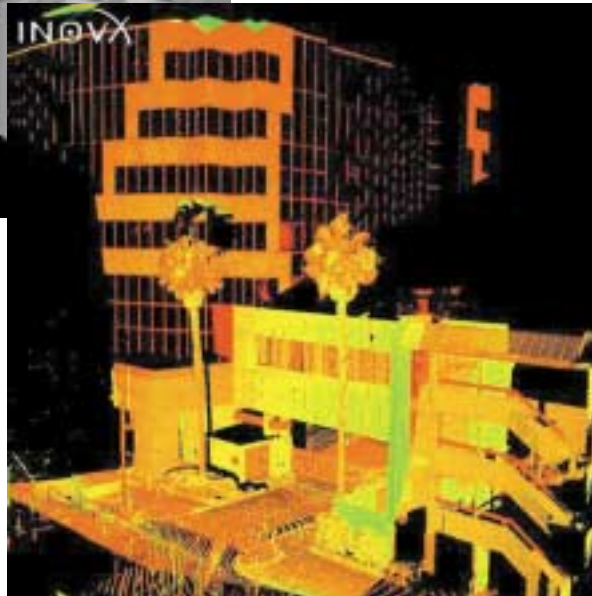
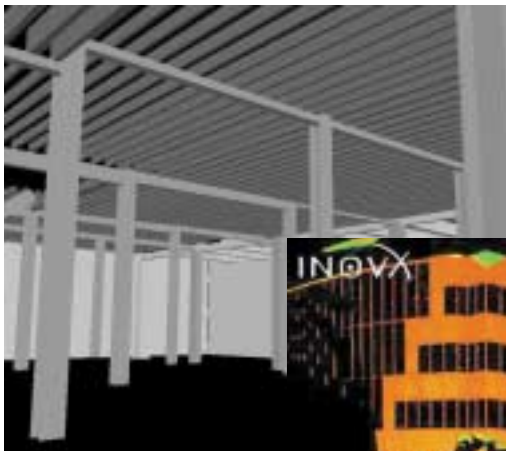


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We have all been privy to the many "field to finish" programs presented through the years. As with any other software, the user needs to evaluate their individual needs and choose the package that will best fit. For those of us that use automated line work in our topographic mapping, the ability to do the same is available in scanning software programs. But, most of us did not start out using that functionality; we loaded our points into our CAD program and connected the dots. The same will hold true with scanning software.

The real learning curve in mapping/modeling is working in 3D. Most surveyors and engineers have traditionally worked in 2D. The tools used in 3D are unfamiliar to many of us. Navigation of a 3D model allows us to look at data from many different perspectives and is required to accurately map the data. Viewing and mapping the data from a typical plan view is nearly impossible. For example, we will typically collect cross section data i.e. top of curb, flowline, lip of gutter, and have text data overlapped in the drawings.

In scanning, we have much more data and the differential data, in plan view, is stacked vertically. For example, when scanning a building, the CAD file has the upper building corner, the building edge, the bottom building corner and any ornamental information. This may be represented by a few thousand points. The procedure is to rotate the drawing on an axis and identify the points needed to map. These not only present challenges for the surveyor, but equally for the client.


When evaluating software packages, we recommend that the users ask the vendors about their client base. Who uses their packages? By in large, the petroleum industry and the architects have spearheaded the development market. Therefore, these packages specially cater to their needs. Think about this, when looking at scanning ads, how many pipe ways, tanks and buildings have you seen? How much of your business is surveying pipe ways? That is not to say that scanning of a conventional project is not practical, it surely is, but how the software handles the information is very key.

Power requirements and Laptops:

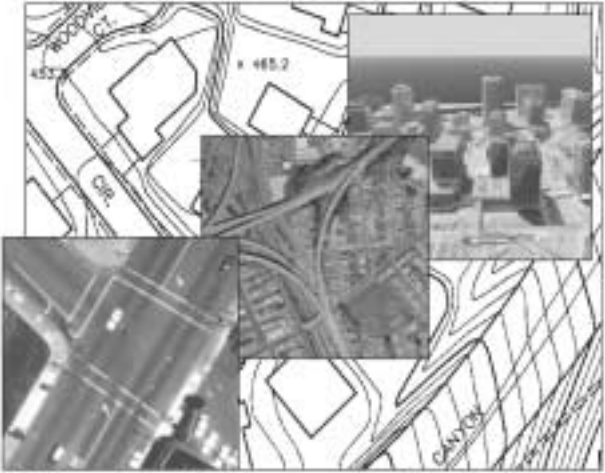
Most laser scanners available today can run on either DC battery power or 110/220 volt AC power. When operating from external battery power, most laser scanning systems can be equipped with enough battery power (2 or more external batteries) to facilitate a complete shift (8 hours or more). For many civil applications this scenario is ideal. However, it is important to keep in mind that many scanners are controlled by either a Laptop PC or PDA device. These are either linked by a physical network line or wireless connection. Most PC's today are not capable of running 8 hours or more remotely and therefore may require some added power considerations. It is not uncommon for service providers to require some AC power or utilize vehicle DC power to get through the day collecting data. This is an important consideration when planning a project as sometimes it may not be possible to gain vehicle entrance or AC power may not be readily available. To assure a smooth project start and timely execution – be sure to consider your actual power needs up front. Don't be caught powerless!

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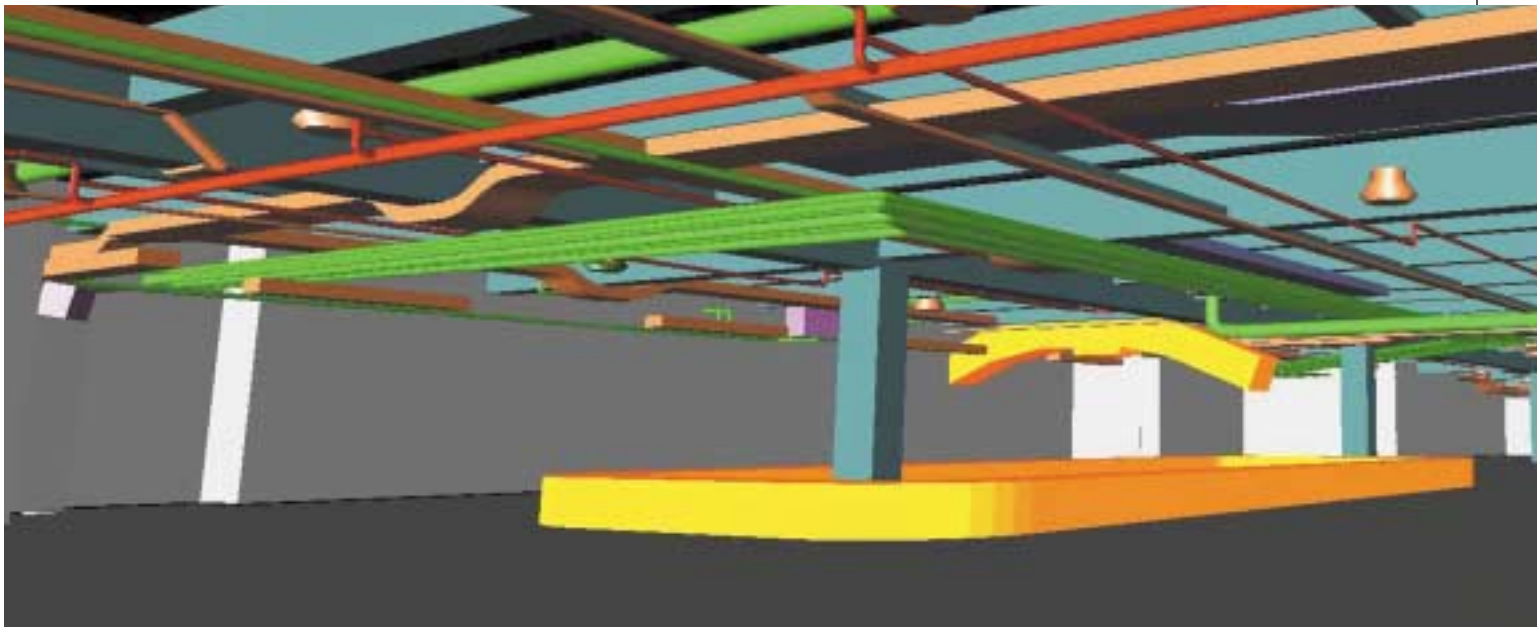
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Work hours and project logistics:

Scan anywhere any time? Maybe... When planning a laser scanning project – remember – unlike discrete survey where one point is targeted and then collected, the scanner is basically taking a 3-D photograph of everything around it. A tremendous benefit clearly is that this is a non-contact non-disruptive method of obtaining large volumes of accurate and localized data. By the nature of the way in which data is collected – laser scanning can acquire positional data in places where a person does not need to or can't gain access to, e.g., streets, highways, and bridges can be fully documented without the need for costly and dangerous lane closures.

On the other hand, it is still important to consider the activities that take place in or around your scope of work. Take into account the actual environment in which you will be collecting data. Though laser scanning is a non-contact rapid data collection technology – remember, you can only scan what the scanner can see. If the area you are documenting has heavy traffic during certain times of day, extreme temperatures, excessive noise, vibration, or any extended activity or disruption, we suggest it may be worth considering an off-hours data collection schedule for some or all of your project. Even working a premium time schedule (evenings and weekends) may prove to be more cost effective. For example, our team recently completed a project for a commercial airport where certain times of day employees and vehicles were continuously moving through the area. These activities significantly hampered our ability to document the areas of interest and sometimes blocked our access completely. We coordinated our activities with our client and the terminal representative and ended up collecting the data at night. Though night data collection was not our first choice – it did prove to be the most efficient and ultimately saved time and money for the project.

As an aside, the scanners are their own light source, which means it works the same in light as in the pitch black of night. Recently we surveyed the interior of an old gutted out hotel. Being gutted, means that we did not have much in the way of lighting. We were running three scanners on one floor at 9:00 PM, we could not see each other unless we had our flashlights on, but the place looked like a disco with thin green scanning lights crossing in all directions.

Control Surveying for Scanning:

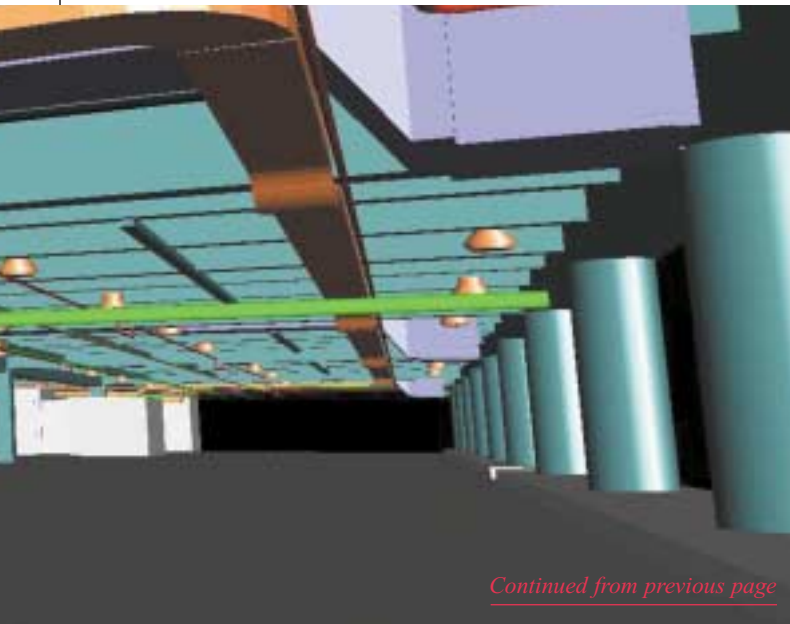
Horizontal and vertical control for scanning employs the principles we have learned in photogrammetry. The scanner collects X, Y, Z, but it has little sense of where it is from scan to scan or within a given coordinate system. The mating of the scans are called cloud registration. The coordinate system is introduced in the office procedures. As with conventional survey control, there are varying schools of thought and procedures. We employ a method that requires us to use 3-5 targets per scan; similar to a fully controlled model in photogrammetry. As in photogrammetry, it is best not have the targets in a straight line, horizontally or vertically. The control should envelope the scan.

As a matter of efficiency, we have developed some procedures. A million point scan takes roughly 12 minutes and often times we are scanning several views from the same position, we are only rotating the scanner horizontally (using a Cyra 2500). That being the case, we perform our horizontal and vertical control simultaneously. We set up the survey instrument, out of the scan view (incidentally, the scanner scans up and down as opposed to left to right) and position the targets while the scanner is scanning. The control and scanning are completed at the same time. This assumes employing a two man crew. We like the idea of our people keeping busy, if they are not doing control, they are standing around waiting for the scanner. It becomes a little more complicated when running multiple scanners.

Now understand scanners position points relative to each other within 2-4 millimeters. Most of our standard conventional survey equipment is capable of positioning within 8-10 millimeters. I am sure you see the problem.

Early on, we would double determine our control, process the data through Star*Net (using good procedures) and the folks doing the modeling would tell us that our control was not good. Our typical conversation went like this; "Dave, we have a problem with your control." By how much I ask? We have "6mils." Well guys, it doesn't get any better. What do you want us to do about it?

Continued on next page



Continued from previous page

We could write an entire article on precise control, so we will limit it a couple of tips. Set the control points on the face of a structure i.e. wall, tank, etc. enough control so that at any given time you can have 3-5 points. Understand that when scanning, you most often are not doing large areas and that scanner has a limited range. We use targets with a sticky back and a 1/16th" hole in the center. Record and horizontal and vertical angles directly to each of these points, then place a precise prism on the point. We use the standard peanut prism fitted into sleeve about 4" in length, (the exact offset is calibrated), sight the target and guide the glass on line for a distance. These simplified procedures eliminate our largest sources of error; height of instrument measurement, tribrach bubbles, optical plummets and staff bubbles. We seldom set or occupy a known point on the ground; the error is in transferring it to the instrument.

By the way, we have a Leica TCA2003, which is a arc second, 1 mm, 1 ppm instrument which has eliminated the troublesome "We have a problem with your control" calls.

Another control procedure is known as Cloud to Cloud Registration; this is the transferring known points in one scan to another scan in the overlap areas (similar to photo identification in photogrammetry.) We utilize this procedure when doing the exterior of high rise building, as it is not possible to set targets on the face the building on the 8th floor. Cloud to Cloud eliminates the need to set targets in each scan scene. But, it does make the office work a lot more labor intensive. It becomes a matter of managing resources and schedule. We prefer our field guys to control the model while waiting for the scanner, as opposed to tying up our CAD operators for a few extra days. One word of caution with Cloud to Cloud Registration, the conventional control is being pushed out; therefore, any inherent error is magnified. Remember Survey 101, the short back sight to a long foresight lesson? Be careful to look at the control from a survey stand point, sure the software will produce an answer, but how good is it? If all of our control was at the base of a 15 story building and we produced it up 150' feet vertically and 250 feet horizontally, we have found errors in excess of 0.5' feet. To eliminate this potential problem, build redundancy into the scan scene and position easy identifiable points with conventional methods.

Continued on next page

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Continued from previous page

Deliverables:

One of the most challenging aspects of the data is presentation. How do we present this data in a hard copy format that is intelligible? As surveyors, the closest standard experience is plotted cross sections or contours. Our plans to date have several different orthometric and elevation views complete with dimensions and callouts.

When the CAD user looks at the digital drawings (for example; looking at a building from the front) the user also sees through the building and the features in the back. It is difficult to differentiate features in a 3D wire frame. So, our answer is to shade and render the drawing, set cut off planes horizontally and vertically. Once we have crossed that hurdle, can the client read and understand the plans? We are constantly evolving and developing hard copy plans that serve the client and as provide detailed information not presented in the past. The mechanical and architectural professions undoubtedly have something to offer us.

Final Thoughts:

The technology is available and the demand is growing. Currently, we know of four other firms in Southern California using scanners. We are entering the next phase of technology that is going to change the way we do business. It will undoubtedly have growing pains. But, how many of those reading the article could go back to the days before GPS? The market for this equipment will develop and the clients will be asking for this technology. ❖

If you have any questions about scanning, please feel free to contact us at:

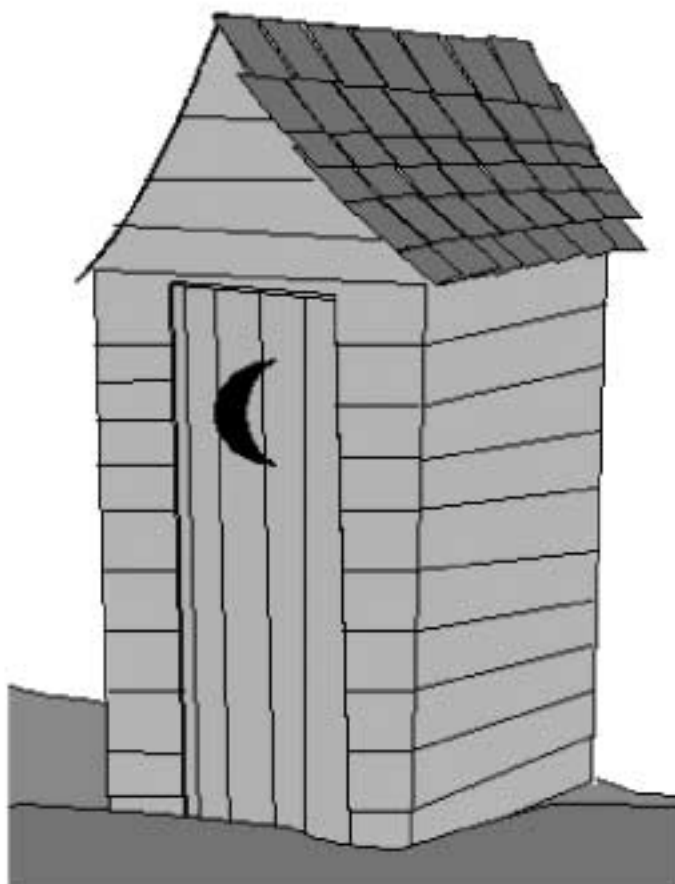
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Defending Encroachments

What do you do when your client telephones to tell you that her neighbor has just informed her that he had a survey made and it showed that a long-standing improvement that she had always believed was located entirely on her property in fact encroaches on his land? Can she do anything to keep it there, despite the encroachment? There are several doctrines designed to give some relief to owners in this predicament, but three cases reported in this issue clearly weaken and narrow that help. Rather than proceed case by case, I will go at matters doctrine by doctrine.

Duration of Encroachments

Three Years: Permanent Encroachments Under CCP §338

One way to protect an encroachment is by showing that it is permanent and has existed for more than three years. That should bring it under the limitations period of **CCP §338(b)**, which covers “[a]n action for trespass upon or injury to real property.”

Miller & Starr state this as a straightforward rule (6 Miller & Starr, California Real Estate §14.14 (3d ed 2000)), and it is commonly cited as such by our appellate courts (see *Field-Escandon v DeMann* (1988) 204 CA3d 228, 251 CR 49); but that is not how two cases reported in this issue view it. First, *Harrison v Welch* (2004) 116 CA4th 1084, 11 CR3d 92, reported on p 73, declares that this view reflects a “flawed” reading of an old supreme court decision. According to Harrison, seeking to remove a permanent encroachment from land is really an attempt to recover the land itself, and therefore comes under the five-year statutes for those kind of actions, not the three years of **CCP §338**. Second, according to *Kapner v Meadowlark Ranch Ass’n* (2004) 116 CA4th 1182, 11 CR3d 138, reported on p 73, no time period applies when the encroachment is on a way shared by others, rather than just a neighbor’s land, because the lack of any exclusive possession in such a case means there is no trespass that would trigger the statute.

Harrison and Kapner raise the question: If the three-year period did not apply in those cases, what kind of lawsuits are subject to it? An owner seeking to remove an encroachment is inevitably also seeking to recover possession of the land the encroachment occupies. Can the three-year statute be saved by limiting its application to actions for monetary rather than injunctive relief? While this may sound silly, the silliness is really intrinsic to the statutes themselves, which create overlapping three- and five-year periods for the same wrong. No distinction is going to make much sense, and now we have cases pro and con on whether three years is enough or too little—hardly a firm ground for basing legal advice about commencing litigation.

Five Years: Ejectment or Adverse Possession Under CCP §§318, 323, 325

Under **CCP §318**, an action for the recovery of possession of real property can only be brought by someone who possessed the property within five years of filing suit; so, if the offending



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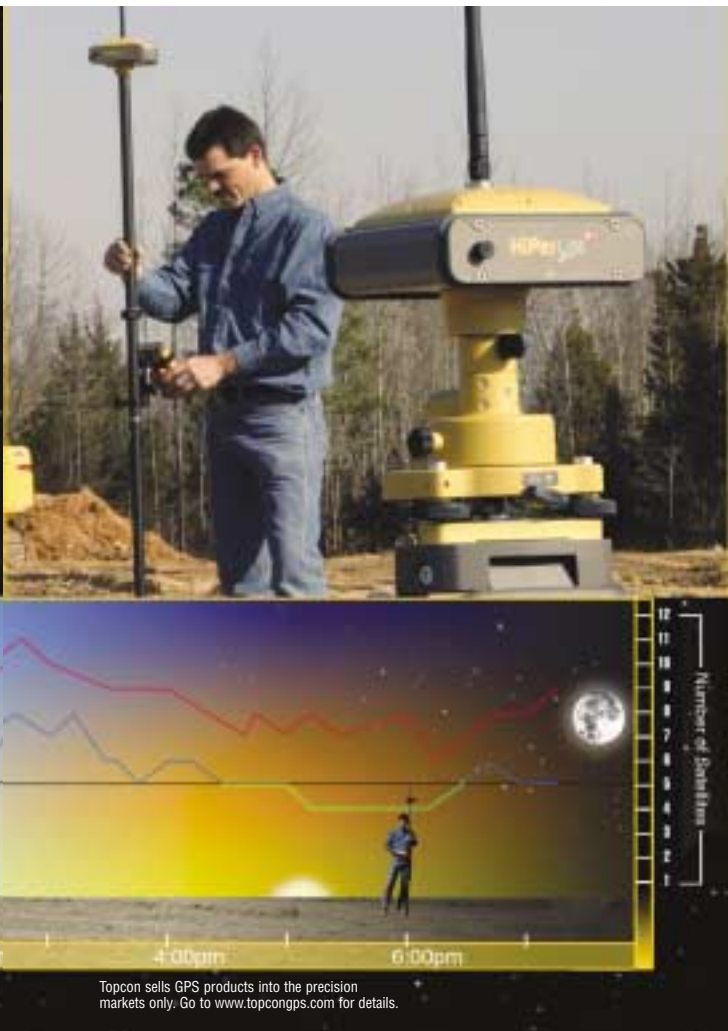
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structure has existed for at least five years, can your client claim that the duration alone is enough to protect it? *Harrison v Welch* also rejects that argument, ruling that this five-year statute on ejectment cannot be separated from its companion five-year statutes for adverse possession (CCP §§323 and 325). Your client must show not only five years of possession, but five years of possession during which the judicial and statutory standards for adverse possession were also met. For example, the encroachment had to be open and notorious (a judicial requirement; see, e.g., *Kunza v Gaskell* (1979) 91 CA3d 201, 210, 154 CR 101), as well as protected by a substantial enclosure or cultivated and improved (a statutory requirement; see CCP §325). The mere passage of five years, alone, gets your client nowhere.

We can't blame the courts for being silly here. There is simply no way to reconcile one statute that says five years of dispossessing is enough (CCP §318) with two others that say five years of possessing is enough only if additional requirements are also met (CCP §§323 and 325). Unlike the three-year/five-year difference, the outcome in this case is clear—five years, alone, never wins; despite the language of CCP §318, there are simply no circumstances where that section will apply.

Adverse Possession: Tax Payments Requirement

Theoretically, if an encroachment survives long enough, it can become invulnerable to attack under CCP §325, as a protected adverse possession. Your client has to show that her encroachment was open and notorious, continuous, uninterrupted, hostile, and under a claim of title; most of which can be generally satisfied by the mere existence of the encroachment itself. (Everybody can see it, it's always there, and she has always believed that it belongs to her.) But CCP §325 goes on to require her to “have paid all the taxes, State, county, or municipal, which have been levied and assessed upon such land”—and this requirement is a killer.

In 1948, Justice Traynor held that an occupant of the wrong lot could establish adverse possession despite having paid taxes on the lot next door, since both he and the assessor had mistakenly assumed that the house he lived in was on the lot that he owned; the legal description on the tax assessment rolls was not controlling for CCP §325 purposes. *Sorensen v Costa* (1948) 32 C2d 453, 196 P2d 900. That holding should have meant that an owner of improved property, whose improvements stretch beyond her lot line onto the vacant parcel next door, should also be able to satisfy the tax payment requirement of CCP §325 if the lot next door continued to be assessed as vacant land and her own lot assessed as improved. Since *Sorensen*, however, the supreme court has rejected that common sense assumption and required some “direct evidence” that the encroaching improvements were considered in the assessment. See *Gilardi v Hallam* (1981) 30 C3d 317, 327, 178 CR 624. From the language in *Gilardi*, it appears to me that the *Sorensen* presumption applies only in parcel mix-up cases, i.e., when each owner's house is entirely on her neighbor's lot, and not when there are partial incursions that arise because of misunderstood lot lines.

The tax requirement in encroachment cases is unlikely to be satisfied. Michael Slattery at the San Francisco City Attorney's Office told me that our assessor's office would not know how to generate a bill to the encroacher in such a case and would, instead, send a supplemental bill to the next door neighbor, as record owner, if an assessor actually saw the improvement. (He did call to my attention Rev & T C §610, which provides that a second person may add her name to the tax roll as an

assessee, for adverse possession purposes; but he, like me, suspects that the provision applies only when the adverse possessor is occupying an entire parcel belonging to someone else, not just infringing on a part of it. He also pointed out Rev & T C §2188.2, allowing separate assessments for landowners and improvers, but opined that it would not enable the owner of an infringing building to pay taxes on just that part of her neighbor's land.)

The combined effect of our tax rules and case holdings is to rule out adverse possession protection in all encroachment cases. Only a possessor who sits on an entirely wrong lot and pays the taxes properly assessed to it can be protected by the statute (and perhaps also persons claiming adverse possession under color of title under CCP §323 (“claiming a title founded upon a written instrument, or a judgment or decree”), rather than CCP §325 (“not founded upon a written instrument, judgment, or decree”); §323 has no similar tax payment requirement).

This difficulty cannot be blamed on the statute; it is strictly the result of some judicial rule making. The legislature may have been at fault initially for adding a completely unrelated tax payment requirement to adverse possession law at the behest of the railroads 150 years ago, but it was the judiciary that construed that requirement so as to inhibit the statute from accomplishing its most beneficial purpose—legitimizing long-standing improvements that unwittingly encroached.

Prescriptive Easements

Unlike adverse possession, the requirements for prescriptive easements do not include payment of taxes (primarily because we have no statutory codification of this old common law concept).

However, the encroaching defendant in *Harrison v Welch*, supra, was not allowed to claim a prescriptive easement for her woodshed and landscaping because, according to the court, those easements would have been exclusive, and therefore possessory rather than usufructuary (i.e., pertaining to the right to use another's property) interests. That meant the easements had to qualify under the adverse possession statutes—where they were doomed to fail because of the tax payment requirement.

Excluding exclusive interests from the category of prescriptive easements is a fairly new doctrine, originating with *Raab v Casper* (1975) 51 CA3d 866, 124 CR 590. No statute mandates such a distinction. Despite noting that “the difference between prescriptive use and adverse possession is sometimes obscure” (51 CA3d at 876), the *Raab* court then made a hard and fast distinction between them and outlawed the protection of prescription for any heavy uses, such as encroachments, which came close to amounting to possessory interests.



Continued on next page

Thus, encroachments lose either way: They fail as prescriptive easements because their exclusivity makes them possessory, and they fail as possessory interests because they are not separately assessed by the taxing authorities. Owners of these interests are in trouble, and time is not on their side.

Agreed Boundaries

In *Tremper v Quinones* (2004) 115 CA4th 944, 9 CR3d 672, reported at p 80, the owner of a 180-acre parcel encroached 660 feet, planting cacti and making other improvements on the unimproved 170-acre parcel of his neighbor. One of his defenses appeared to be that there was an agreed boundary between the parcels; given the courts' hostile treatment of encroachments under the prescriptive easement doctrine, it is not surprising that the trial court rejected the agreed boundary contention here. There originally was an unqualified rule that agreements regarding boundaries can be inferred "from the long-standing acceptance of a fence as a boundary" (*Ernie v Trinity Lutheran Church* (1959) 51 C2d 702, 708, 336 P2d 525); that rule, however, has become confined to cases in which the true boundary cannot be ascertained from the records (*Bryant v Blevins* (1994) 9 C4th 47, 55, 36 CR2d 86). Modern surveying technology makes that a most unlikely situation. See Bernhardt, Deeds on the Ground or Words in the Deed: *Bryant v Blevins*, 18 CEB RPLR 141 (Apr. 1995).

It may be that the agreed boundary doctrine will be applied only when there is proof of an actual agreement; and producing that evidence will become even more difficult as the years go by and the original neighbors move away or die off, since such agreements are usually oral. (One can hardly expect lay people to have put their boundary line agreements in writing when the reason for resorting to an oral agreement in the first place was their inability to understand the written boundary descriptions in their deeds. Just what were they supposed to say in this new writing?) That means that the older the encroachment, the less likely it is to gain protection under agreed-boundary law.

Good Faith Improvements

Finally, if all the above claims to defend the encroachment fail, can your client gain some relief as a good faith improver? In *Tremper v Quinones*, supra, the offending cactus farmer was allowed to remove his improvements, as CC §1013.5 provides. (In some cases, however, it may be impractical to remove the improvements; CCP §741 provides for leaving the improvement in place and giving the good faith improver an offset for the enhanced value of the land improved. But there is often no enhancement for an encroaching woodshed, and the offset applies only when the neighbor seeks damages rather than removal—which is the neighbor's call, not the encroacher's.)

Thus, an encroacher not only lacks the option of paying for the removal of the encroachment, she also may be unable to even retrieve it. As fixtures, improvements to a neighbor's property belong to the neighbor. See CC §1013. (For example, in *Harrison v Welch*, supra, the trial court properly held that *Harrison* now owned the trees that *Welch* had planted on his land.) You can't remove what now belongs to your neighbor just because you originally put it there (unless you are a tenant and it constitutes a trade fixture).

Civil Code of Procedure §871.5 permits a trial court to effect an "adjustment of the rights, equities, and interests of the good faith improver [and] the owner of the land . . . as is consistent with substantial justice. . . ." I take this to include the possibility of forcing the neighbor to sell the disputed land to the encroacher. But the right to such relief is discretionary and therefore quite uncertain. (And, as *Tremper* shows, the encroacher, even when she wins, has to pay attorney fees, as well all removal damages if she is allowed to take the improvement

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back). At best, an innocent improver confronts a large expenditure to correct her mistake.

None of the Above

None of the encroachers in the cases discussed above were intentional land thieves. Indeed, they almost never are. They are usually owners who made improvements that they wrongly believed were within their own property lines, or are purchasers who assumed that what they saw was what they were buying until a neighbor's survey proved them wrong. With effective adverse possession and prescription laws, people can generally purchase property according to what they see, and assume that the long-standing walls and fences represent legal boundaries. However, as the doctrines that protect such expectations are increasingly weakened by hostile court decisions, the need for surveys increases correspondingly.

Clients have always been well advised by their attorneys to pay for a survey before making improvements close to the lot lines. And now, perhaps, they should also be advised to pay for a survey even when purchasing the property in the first place, unless they are really sure that the fences, walls, improvements, and even landscaping, are nowhere near the boundary lines that those incomprehensible words in their deeds describe. ❖

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More Letters to the Editor



Dear Editor: 19 August 2004

While waiting to see my surveyor, I found in his waiting room the California Surveyor. With my appointment time at hand, I quickly flipped through the magazine. A few days later I went to my Main Library to review your survey magazine more closely. My librarian said they do not carry it, (the magazine). I would think the Main Libraries in this great state of ours should have a copy of your informative magazine, as it would "enlighten" we consumers as to the duties, obligations, etc., of your interesting profession.

Sincerely,
Jaque Dumas

Thanks for your input, Jaque! Sounds like a good idea to me! - Ed

Dear Editor:

I received a fascinating call from a surveyor in Red Bluff, who recognized, with glee, the last cover of the California surveyor. Well . . . he informs me there's much more to the story! Like a story behind other published stories! When things slow, I'm gonna tax Tom's brain and we'll put together a future follow-up to the CLSA News.

Thanks for the awesome commentaries!

Sincerely,
Jack Daniels

Jack, is this going to require a meeting in a Nevada brothel to get the rest-of-the-story? - Ed

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Exam Stats

Well the results are in and they're not too pretty. In fact it seems to be the typical dismal passing rate for PLS examinees. Two years ago in the September 2002 Focal Point we began raising questions, and looking for ideas and opinions. In the following October and November issues we examined the exam process. Little feedback has been returned except for grumbling I hear over tears in the beer. FYI the grumbling goes deeper than just the failing candidates. BPELS is taking a hard look at the situation and new ideas are emerging in hopes of improving the passing rate. No, the ideas aren't to make the exam easier, but there is talk of implementing a "three strikes and you're out" rule to attempt to ensure the perpetual test takers are truly qualified to be sitting for the exam. There's also the possibility of educational requirements and longer time requirements regarding experience. These are just a few of the ideas being circulated. What are yours?

Land Surveying Exams

National PLS

Tested 262
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 Fail % 48.85%
 Cutscore 70
 Possible 100

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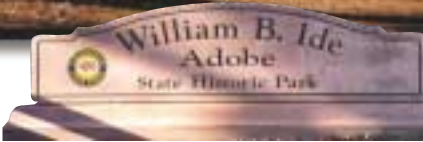
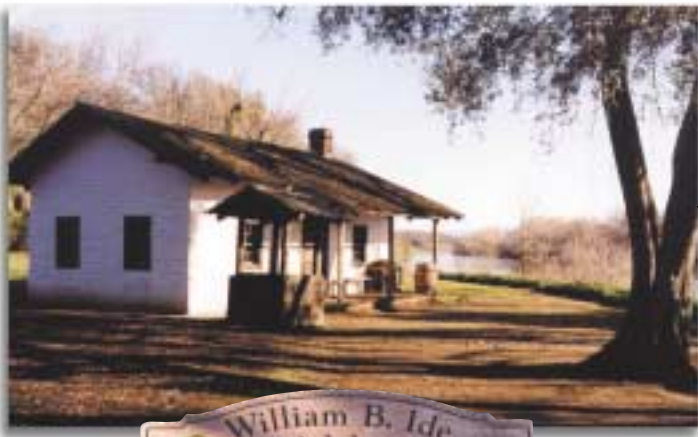
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Guess which famous Surveyor Occupied this Home?

Guesses:



My guess is Marc Van Zuuk occupied the house shown on the cover of the California Surveyor.

The cozy cabin with its roofed wellhead in the sylvan glade on the bank of a crystal pond leaves little doubt as to the identity of this Famous Surveyor. It's clearly the home of an avid outdoorsman who believes that, if a man does not keep pace with his companions, perhaps it is because he hears a different drummer; let him step to the music which he hears, however measured or far away. The Famous Surveyor is, of course, Roger Frank of Johnson-Frank and Associates, Anaheim, California.

Could the "famous" Surveyor have been Theodore Judah? He was well known for the location first railroad over the Sierra Nevada Mountains and points east.

I thought perhaps Bob Hart, but I will guess Honest Abe Lincoln.

My guess is Leander Ransom. The fellow who set the principal point atop Mt. Diablo in 1853 +/-.

The Answer Is...

William B. Ide - Rancho de la Barranca Colorada, Red Bluff, California

The following was all plagiarized by Phil Danskin, PLS



“General Richard B. Mason, military Governor of California, deemed it necessary to appoint official land surveyors to prevent or at least minimize disputes. The first such appointment, on May 7, 1847, was William B. Ide, as Land Surveyor of the Northern Department of Upper California.” (Chaining the Land, by Francois Uzes. Bud, are you ready to do another reprint?)

William Brown Ide, the first and only "President" of the California Republic, was born on March 28, 1796 in Rutland, Massachusetts. His early years were spent moving around New England with his family. He had very little formal education and apprenticed with his father at the trades of carpenter and joiner.

He married Susan Haskell at Northborough, Massachusetts in 1820 and continued working as a carpenter. Guided by his father's example, Ide followed the frontier as it gradually moved westward.

It was 1833 when William and Susan Ide move their family from Massachusetts. They went first to Kentucky, then to Illinois, Ohio, and back to Illinois. They heard many stories about Oregon's rich soil. A farmer could plant three crops a year there, it was said, and grow wheat as tall as a man, or beets that were three feet round.

On April 1, 1845, the family left Illinois bound for Oregon. Ide was 49 at the time. At Fort Hall, (in what is now Idaho), after hearing tales of Indian troubles in Oregon and cheap land in California, Ide decided to go to California instead of Oregon. Following a laborious journey over the mountains, they arrived at Sutter's Fort on October 25, 1845.

After making arrangements for housing with Peter Lassen, the Ides traveled north and settled near present-day Vina, California. Two weeks later, they found themselves evicted in favor of Lassen's nephew. In desperation, they joined with three single men and spent a miserable winter in a hastily constructed log cabin.

The Ides settled in Red Bluff in the spring of 1846. During that winter, a rumor spread that the Mexican government planned to evict all illegal American settlers. In June, 1846, Ide joined a band of Americans who advanced on the pueblo of Sonoma and captured Mariano Vallejo, the Mexican Comandante of Northern California. Sonoma was taken without a shot, and on June 14, 1846, the Bear Flag was raised and Ide was chosen to lead the new California Republic. After 24 days, the Bear Flaggers learned that the United States had declared war on Mexico. On July 9th, they raised the American flag and joined with the U.S. forces to capture the rest of California.

After the war, Ide returned to his Rancho de la Barranca Colorada near present-day Red Bluff, California. He made a fortune in the Northern Mines in the lull between the discovery of gold in 1848 and the Gold Rush of 1849.

Susan Ide managed their isolated ranch while her husband was absent. Her children helped as she cared for the family, tending the garden, and looked after the cattle. For months, the only news she had of her husband came from rumors of passing strangers. Susan Ide's death came in 1851.

When Ide returned in November and he became involved in local government. He helped to organize Colusa County, (now known as Colusa & Tehama Counties). At the time of his death, (of smallpox), in Monroeville, California in December, 1852, the pioneering Bear Flagger held several elective and appointive offices in the government of Colusa county in Northern California.

Source: The sign out front of the William B. Ide State Park & website <http://www.ideadobe.tehama.k12.ca.us/index.html>

Congratulations to those that answered correctly!

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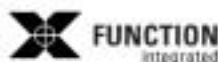
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Introduction to the NAFTA Mutual Recognition Document



This is intended to bring California surveyors up to speed on what the NAFTA Mutual Recognition Document (MRD) for land Surveyors is, how it was created, how it is being revised and where it is in the process. The original MRD was the culmination of a six year process involving the National Society of Professional Surveyors and the Canadian and Mexican surveying organizations, and while being a very good document overall, it contained some serious flaws regarding the mechanism of reciprocity. These flaws caused a vocal block of survey organizations mostly from the west and led by California, to object to the document as currently written. NCEES heard these objections and raised some issues as well, causing NSPS to form a MRD Review Committee. What exactly is the MRD, you ask? The document's preamble contains a good explanation:

"The North American Free Trade Agreement encourages "the relevant bodies in their respective territories to develop mutually acceptable standards and criteria for licensing and certification of professional service providers and to provide recommendations on mutual recognition to the (NAFTA) Commission". The key element of the agreement is reciprocity. Neither party can impose conditions which are unreasonable for the other to meet. Within the spirit and context of the NAFTA, this document sets out standards, criteria, procedures and measures for mutual recognition which:

- a. *are based on objective and transparent criteria, such as competence and the ability to provide a service;*
- b. *are not more burdensome than necessary to ensure the quality of a service; and*
- c. *does not constitute a disguised restriction on the cross-border provision of a service. Provisions under this document apply to nationals of Canada, the United States of America, and the United Mexican States who are licensed to practice surveying in their respective jurisdictions."*

Essentially, the MRD is a document that sets the ground rules for cross-border practice of surveying by any jurisdictions in the three countries that choose to sign the document. The NSPS would sign the document as the Representative Organization of the United States but the regulating boards of each state must also sign the document for that state to be considered party to the MRD.

Brief history of development of MRD by NSPS

- 1992 – NAFTA was signed between 3 countries (U.S., Canada and Mexico)
- 1993 – NSPS formed a NAFTA Committee to explore ramifications of the Agreement. A similar committee was formed in Canada.
- 1996 – NAFTA Committee opened communications with Canada and Mexico.
- 1997 – NSPS sent letter to U.S. Trade Commission informing the Commission that NSPS would be speaking for U.S. Surveyors in negotiating a Mutual Recognition Document (MRD).
- 1998 – A formal meeting with the 3 countries was held.
- 1998 to 2002 – 8 meetings held. 7 different drafts of the NAFTA MRD were produced. The 7th draft was considered complete and was presented to the NSPS Board of Directors. The NSPS Board of Directors accepted the NAFTA MRD and directed that it be sent to the U.S. Trade Commission and NCEES for review.
- 2003 - CLSA received and reviewed the NAFTA MRD for the first time and sent a letter objecting to the two-tiered system and lack of guarantee of minimal competency provisions. NCEES was copied on the letter.
- 2003 - NCEES forwarded the NAFTA MRD to the United States Council for International Engineering Practice (USCIEP) as well as having it reviewed by legal council. NCEES sent a letter to NSPS on December 22, 2003 outlining their concerns and encouraging NSPS to collaborate with NCEES, Member Boards and CLSA in addressing these concerns prior to signing the agreement.

Continued on page 32



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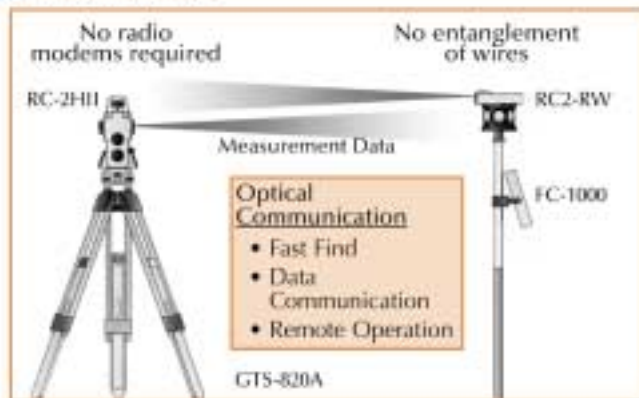


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Introduction to the NAFTA Mutual Recognition Document

2004 – In the face of objections raised by CLSA, NCEES, and WFPS, NSPS president John Fenn appointed committee to review the MRD. He selected a CLSA member to chair the committee. The Committee was charged with finding ways to revise the document to make it more amenable to the various United States but was directed specifically not to rewrite the entire document. The first meeting of the newly formed NAFTA MRD Review Committee was held in Nashville on April 16, 2004. The new committee, during introductory discussion quickly separated into two factions, the first being the three members of the previous committee who were relatively resistant to any material changes to the MRD and the second, henceforth referred to as the ‘western bloc’, which generally agreed with the aforementioned objections to the MRD. Though there were clearly opposing points of view at the outset, the meeting was productive and compromise language which resolved most of the CLSA objections was developed over 3 meetings lasting some 11 hours.

Summary Report on results of Nashville meeting

The NSPS, recognizing the effort that was expended on the original document, asked the review committee to identify possible revisions and changes that could bring the western states to the table but specifically asked the committee not to undertake a wholesale re-writing of the MRD. Given this direction, the committee discussed what could be done to make this document palatable to western and U.S. surveyors and hopefully to licensing boards.

Given that a re-write the entire document was out of the question, the western bloc felt the line in the sand would be that reciprocity should only go as far as providing an opportunity for a licensed land surveyor from another jurisdiction to sit for the state-specific examination and language accomplishing this was put forth for consideration.

Within the current draft MRD, the functions of Land Surveying as the practice is defined and protected in many western states, are divided into Boundary Surveying (Part II) and Geomatics (Part III). CLSA initially objected to this since it does not reflect California law. Certain member states of the Western Federation of Professional Surveyors (WFPS) objected for similar reasons. But what the MRD says and what the preparers actually want can be distilled to this: Boundary surveyors (Part II) would have to meet a host jurisdiction’s requirements for licensure and non-boundary surveyors (Part III) might not, if the functions described in Part III are not regulated by the host jurisdiction.

The western bloc proposed adding language in Part III that would indicate that some states’ definitions of land surveying include the functions identified in both Part II and Part III and that for those states, such as California, reciprocity could only extend as far as qualifying an applicant for the state-specific examination. With such an examination, minimal competency would be demonstrated. It was then proposed to add a schedule C to the document providing a place for jurisdictions to sign if they found they could not sign on to the more lenient Schedule B.

At the meeting, the NCEES representative serving on the review committee noted that adding criteria for testing would help remove many of the objections that his organization raised and he suggested that perhaps the licensing boards could help find a way to make this work.

Committee work since Nashville

The committee members have worked via email, honing the language regarding the major issues and are close to achieving concurrence on all issues. The members of the new committee who served on the previous committee have been anxious to share this work with the CCLS and the Mexican surveyors as well, but the committee chair and the NSPS president both feel that the document should not be shared and acted upon by the neighboring countries until it is complete and accepted by NSPS. That will take place in all likelihood at the fall meeting in Maryland. Once accepted by NSPS, it can be given to Canada and Mexico for review and forwarded to the U.S. Trade Representative. It will also be sent to NCEES for dissemination among the state regulating boards. As noted earlier, these boards must sign on for the MRD to have any effect. If the boards don’t sign, this document is dead on arrival.

Conclusion

It is generally true that the sole concern of a state’s Board of Professional Engineers and Land Surveyors with respect to the MRD is protection of the public. However, nationwide mobility and cross-border mobility as provided by the MRD, would be desirable to most Licensed Land Surveyors, if it could be accomplished without exposing the public to those not minimally competent to practice the profession. The major leap of faith required by licensing Boards would be in recognizing that a current valid and unrestricted license to practice land surveying in a NAFTA jurisdiction would be a sufficient qualification for sitting for a host jurisdiction’s exam. This is a significant consideration but it is not without merit. A key concept to remember is that this MRD does not differentiate between signatory jurisdictions, so that Ottawa and Iowa, if both are signatory to proposed Schedule C, must be viewed the same by the host jurisdiction, if it also signs the MRD. If a state-specific examination given to someone who already holds a license in another jurisdiction is a sufficient determinant of minimal competency, (and CLSA believes this is so), then comity would tend to be more uniformly recognized. *

The revised MRD will be published in the next issue of the California Surveyor.



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Center of Population Dedication

The U.S. Census Bureau completed the compilation and analysis of the 2000 decennial census data. Until the completion of this analysis not many people had ever heard of Buttonwillow, California. Buttonwillow, an agricultural community located approximately 30 miles west of Bakersfield near the junction of State Highway 58 and Interstate 5, has become known as California's "Center of Population".

WHAT IS THE CENTER OF POPULATION?

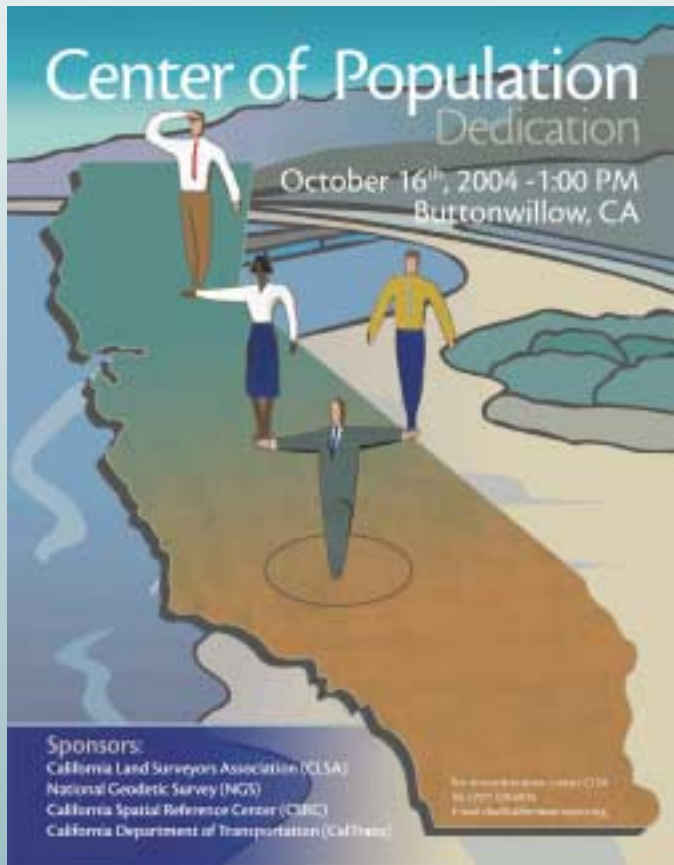
If you put the entire California population of 33,871,648 on a teeter-totter, the Center of Population would be the balance point, assuming California was flat and everyone weighed the same. This is many miles from the state's geographic center and has a special significance. The Center of Population is an indication of where the State is headed.

The California Land Surveyors Association (CLSA), in cooperation with the National Geodetic Survey (NGS), California Spatial Reference Center (CSRC), California Department of Transportation (CalTrans) and U.S. Census Bureau have set a commemorative geodetic control monument at the Buttonwillow roadside rest area along southbound Interstate 5 in Kern County.

To commemorate this event, a dedication ceremony was held at the monument site on October 16, 2004. The event provided an opportunity to showcase improvements in Global Positioning System (GPS) technology, the adaptation of that technology by Land Surveyors, and the ability to develop cooperative initiatives between the private sector, federal, state and local surveying and mapping professionals.

Special Thanks to the Bakersfield Chapter, CLSA!

The Bakersfield Chapter, CLSA generously donated their time to prepare a BBQ for attendees.





Speakers in descending order:
 - Robert C. Hart, PLS - CLSA President
 - Mart Ikehara
 - Census Bureau Rep.
 - Mark Turner
 - Don D'Onofrio

Happy Birthday 9414290!



Images:
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Center for Operational Oceanographic
Products and Services (CO-OPS)
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Telephone: 1-301-713-2877 or 2890
Fax: 1-301-713-4437
Website: <http://co-ops.nos.noaa.gov>
E-mail: Stephen.Lyles@noaa.gov

“In it's way, it was a pioneer of the global system” Ben Sherman, N.O.A.A.

Carl Nolte, columnist to the 28 June 2004 issue of the San Francisco Chronicle, reports that the Presidio Tide station has a turned 150! The station lies within a nondescript small white marine building topped with a red roof and . . . surely copious bird droppings. Ah the smell of sea.

First records at the Presidio Tide station were put to paper on 30 June 1854. Brest, France has the only other continuously recorded tidal data - toute le monde! A real hydrographic gem in the eyes of N.O.A.A. Tidal gauges are of paramount importance to the global shipping community . . . and commerce. How else would one inexpensively import large quantities of illegal aliens? Exploitation too, requires proper planning and a reliable tide station!

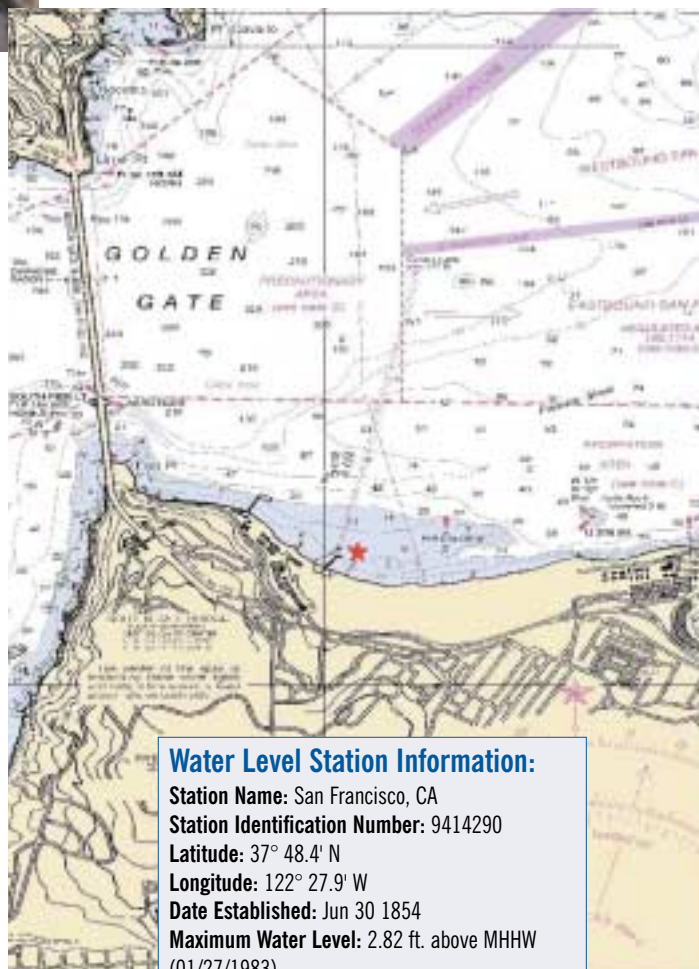
Large shipping vessels draw so much water, commerce is sometime is served only at times of the High (tide). Shipping from around the world make their deposits and pickups at the various ports in the San Francisco Bay . . . all the way to Stockton, liken Hindenburg-sized monstrosities seen on the morning of a New York Thanksgiving Day parade. Only these monsters require accurate science to be certain the manifests are safe - without harm to ship nor environment.

In 1807, President Jefferson established the Coast Survey - the precursor to today's N.O.A.A. The Coast survey was instrumental in charting harbors and coastlines in an effort to reduce Cutty on the Rocks! (Although some like it neat.) Between 1950 to 1854, during the gold rush era, 26 ships were wrecked on the approach to San Francisco Bay.

Our western whorigotta, (surveyor), cousins in Japan need to know the effects of tides between the shores of the two most seismic-active continents in the world. The next major tsunami could affect F.E.M.A. insurance rates all the way to Stockton! This all due in part to the accurate . . . continuous . . . tidal: Presidio #9414290. Throw in a eight-pointer on Richter's scale and it could affect flood insurance rates of some real estate in Nevada. (Now he's pullin' your tale, er, tail - folks. It's his last, we'll cut him some slack.)

El Niño made its presence known by shaking Presidio's drum. It was twitchin' like a wino with the Dts...an editor with the...it was plain-ass ugly, folks! Interestingly, Presidio recorded it's highest tide ever, on 27 January 1983. Eight point seven eight - at the Gate! (8.78 feet!) Not a day to be doing some live voltage electrical work in your back-yard beside a canal. (This occurred during a downpour associated with El Niño.) The lowest tide for OI' Presidio was on 17 December 1933 - a whoppin' Minus two point niner feet!

The next time you bury your keel in Bay mud like a plow behind OI' Blue, you have only yourself to scold - 'cause Presidio's been doing her job for over one-hundred-fifty years! ❖



Water Level Station Information:

Station Name: San Francisco, CA
Station Identification Number: 9414290
Latitude: 37° 48.4' N
Longitude: 122° 27.9' W
Date Established: Jun 30 1854
Maximum Water Level: 2.82 ft. above MHHW (01/27/1983)
Minimum Water Level: -2.88 ft. below MLLW (12/17/1933)
Mean Range: 4.10 ft.
Diurnal Range: 5.84 ft.

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Here's Some Important Information About CLSA

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

CLSA provides a fully staffed central office which is available to answer questions or to provide up-to-date referrals concerning legislation, educational opportunities, job opportunities, or other issues concerning our membership. Professional liability insurance programs are available to members.

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CLSA Remembers

Roy H. Minnick, PLS 3415



Born on November 7, 1937, and passed on September 29, 2004. Survived by: Jean, his wife of 38 years; daughters Kim Williams; Nancy Williams; and three grandchildren. Roy was the devoted "Papa" to Stephen Jessica, and William and leaves numerous friends and colleagues. Memorial services will be held at 11:00 am, Saturday, November 13th, at the Sterling Hotel, 1300 H Street in Sacramento, California. In lieu of flowers, the family requests that any donations be made in his memory to: Survey

Technology Program at Sacramento city College; California Foundation for Land Surveying Education (CFLSE) 13681 Newport Avenue, Ste. 8 Tustin, CA 92780-7815.

Since September 1994, as the waterways and boundary specialist, Roy consulted with First American underwriting staff on matters relating to tidelands, waterways, land survey matters in United States, Canada, Mexico, and other countries served by the Company, Recently, the duties had expanded to provide an array of consulting services involving land boundary determination and location, review and preparation of land descriptions, and facilitating title and boundary settlements.

Between 1992 and 1994, he was in private practice consulting on land survey problems for private clients.

From 1962 to 1992 Roy was employed principally by the State Lands Commission in Sacramento. Between 1988 and 1992 he served as the Supervisor of the Commission's Land Location and Boundary Section.

Roy had been a surveyor since 1955, in both office and field. He had been a property boundary surveyor most of that time, and during the last 30 years has specialized in land title and boundary problems, many along waterways.

Courts had accepted Roy as an expert Land Surveyor a number of times, and he had frequently acted as a consultant in boundary research.

Roy became personally interested in promoting surveying education. His interest in this quickly grew and he went on to become a national leader in promoting the education of students and surveyors, and in making all varieties of instructional materials more readily available.

Roy formed Landmark Enterprises in 1976 and soon became the principle supplier of surveying textbooks on a national scale. Through this company he published a large variety of surveying related materials including problem solving workbooks, instructional manuals, glossaries, handbooks, historical works, etc.

Roy was founder and chairman of the Survey Technology Program at Sacramento City College and in that capacity developed and taught courses and seminars in various aspects of surveying.

The American Congress on Surveying and Mapping had accepted papers a number of times for presentation at the national convention. He had also given hundreds of speeches and seminars throughout the United States. He had written a number of articles and reviews for professional journals, and was the founding chairman of the editorial review board for the American Congress on Surveying and Mapping and a past member of the editorial review board for the American Cartographer.

Over a period of years Roy assisted in the preparation of examinations for Land Surveyor and Land-Surveyor-In-Training for the National Council of Engineering Examiners and the California State Board of Registration for Civil Engineers and Land Surveyors.

Roy was the author of "Ownership, Title, and Boundaries" (1975, 1987), "Water Boundaries for Surveyors in California" (2nd edition, 2000) and "Land Descriptions" and contributed to "Standard Handbook for Civil Engineers." In addition to co-editing and authoring several chapters of "Surveying Handbook," Roy edited more than twenty other books in surveying and survey-related subject areas. He had also published a number of articles in professional journals.

Roy was licensed to survey in three states and had many active memberships in Societies and Associations. ❖

ROY MINNICK MEMORIAL SCHOLARSHIP

The CLSA Education Foundation has established a Roy Minnick Memorial Scholarship fund.

The Education Foundation would like to take this opportunity to thank CLSA and the Northern Counties Chapter, CLSA Each contributed \$1000 to establish this fund

Donations should be made payable and mailed to:

CLSA Education Foundation
Attn: Roy Minnick Memorial Scholarship Fund
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Santa Rosa, CA 95405

Continued on next page

Joaquin "Jay" Rafael Pastrana III LS 6973

Jay passed away on June 12, 2004, at Sutter Roseville Hospital after a long, courageous battle with Pancreatic Cancer. Jay is survived by his loving wife, Anne, and his children Olivia Rose and Joaquin Rafael, IV. He is also survived by his mother, Lynne Roberts; his father, Joaquin Rafael Pastrana; his brother, Marcos Pastrana; his sister-in-law, Rhonda Pastrana; his adoring niece and nephew, Sara and David Pastrana; and many extended family and friends. Jay was a dedicated and meticulous land surveyor who worked for the California Department of Transportation, The Bureau of Land Management, and other public and private entities. In his most recent position, Jay was a supervisor for the California Department of Transportation, North Region Office of Surveyors, Survey Data Center. He was a visionary for data management and GIS. He was well known for his tenacity to understand all aspects of land surveying and for his successful management of projects. He will also be remembered for the way he cared for his employees and their professional growth. He will be dearly missed by all who knew and loved him.

Al DeVoe, LS 3079

Eagle Scout, and decorated veteran of WW II, departed at the age of 81 on Wednesday, September 15th, after a long bout with prostate cancer. Originally from Bristol, Pa., Al received the Bronze Star and the Combat Infantry Badge for his service with the 88th Infantry in North Africa and Italy during World War II. In 1947, he was a smokejumper in Cave Junction, Ore., while attending college. He graduated with a B.S. in forestry from the University of Washington and then surveyed and cruised timber in Oregon and California. Working in the area led him to open a Nevada City surveying office, which he owned from 1959 to 1968. He continued to work in the area until 2003. During this period, he worked for the U.S. Navy Engineering Command West Coast as chief surveyor for 10 years and then taught Engineering Construction at Sierra College for five years. He is survived by his wife of 54 years, Betty; daughters and sons-in-law, Karen and Jim Ford, and Barbara and Bob DeVoe-Peterson; daughter, Jane DeVoe; son, Tim DeVoe; grandchildren Wesley and Katherine DeVoe-Peterson; and brothers James and William. Memorial contributions may be made to the: China Mission/Chung Wah Cemetery 120 Biscayne Way Folsom, CA 95630, or the charity of the donor's choice. GOODBYES

This editor knew Roy Minnick from seminars attended over my always-continuing, professional development. As surveyors, we are fascinated when we come across intimate details of a surveyor's life. I wished I could have "recorded" Roy's memorial service, as it contained details of a surveyor who was a giant of a man. Tall, lanky, with a permanent and sincere smile. Listening to the speakers, consisting of friends, family, surveyors, and clergy, it was apparent that Roy touched all of our lives in a very positive and personal way. Not only is Roy's passing a great loss to our profession, but to humanity. Attending Roy's memorial, one felt as though they were attending the services of the likes of Meriwether Lewis - surrounded by the most respected and admired professionals of the time.

Nancy, one of Roy's daughters spoke of his simple pleasures . . . homemade root beer . . . making bread . . . security . . . humbleness . . . and much more.

In 1962, Bud Uzes was Roy's "supervisor" during their employment with the California State Lands Commission. Bud shared Roy's history . . . How he got his start in surveying . . .

Bud also gave an analogy that "supervising" Roy was likened to the game of curling. Curling is similar to the game of shuffleboard, save, the puck is a forty pound piece of Blue Hone granite. Needless to say, when a smooth bottomed forty-pound piece of rock is hurled along a sheet of ice - it goes where it wants. The "sweeper's" duty is to sweep ahead of the stone in hopes the stone goes near a vector the sweeper hoped for. Well . . . Bud relayed that "supervising" Roy was likened to the sweeper ahead of the curling stone. The curling stone being ROY! The sweeper being Bud!

Numerous other friends and family spoke . . . and basically told of similar stories . . . Roy Minnick: a brilliant professional . . . who thought on his feet . . . loved his Apple, (computer) . . . motivated others to further their education and/or licensing . . . shared wisdom freely . . . historian . . . and much more . . . most of all - tackled all of life's challenges with a smile on his face. We'll miss you Roy - California's Meriwether Lewis!

For a Sequoia of a surveyor to have accomplished what he did, all with that beaming smile, he had to have the support of a loving and understanding family. From all that knew Roy - our most sincere condolences to his family and friends.

Continued on next page

CLSA Remembers

Ben Buckner - Johnson City

Dr. R. Ben Buckner, 65, of Johnson City, passed away Saturday, October 9, 2004, following an extended illness at his residence. Born on October 29, 2004, in Taylorville, IL, he was the son of the late Henry & Hazel Huffmaster Buckner. Dr. Buckner has five college degrees, including a Ph.D. in Civil Engineering from the University of Wisconsin and in 2003 received his Bachelor's degree in Theatre from ETSU. Ben was a professor, author, business owner, marathon runner, actor, licensed surveyor, and musician. He was a member of Cornerstone Church. Dr. Buckner developed two surveying programs at Ohio State University and developed the surveying program at ETSU. He recently received the Lifetime Member Award from Johnson City Community Theatre, one of nine awards ever given. Ben is survived by his wife, Teresa Haynes, Johnson City; two sons, Brian & Mark Buckner, Portland, OR; a daughter, Katie Buckner, Fairfax, VA; two sisters, Corrine Neer, St. Louis, MO, and Joyce Mills & her husband, Wilbur, Taylorville, IL; a brother, Henry Buckner & his wife, Marian, Shepardstown, WV; a cousin, Jolene DiMenna & her husband, Richard, Bridgeview, IL; and several nieces and nephews. In addition to his parents, he was preceded in death by a sister, Rosalie Wooster. A Celebration of Life Service will be held at 7 PM, Tuesday, October 12, 2004, at Cornerstone Church with Dr. Barry Burns officiating. Music will be under the direction of Pastor Ann Burns. His graveside and interment service will be held at Mountain Home National Cemetery. Pallbearers will be Steven Newman, Tony Newman, Grant Newsome, Tim Newsome, Jerry Jones, and Wilbur Mills. In lieu of flowers, memorials may be given to Cornerstone Church, 102 Cornerstone Drive, Johnson City, TN 37604, or to Dr. Ben Buckner Surveying & Mapping Scholarship Fund, ETSU, Attn: Jeff Anderson. Condolences and memories may be sent to the family through our Web site, www.tetrickfuneralhome.com.

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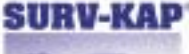





















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