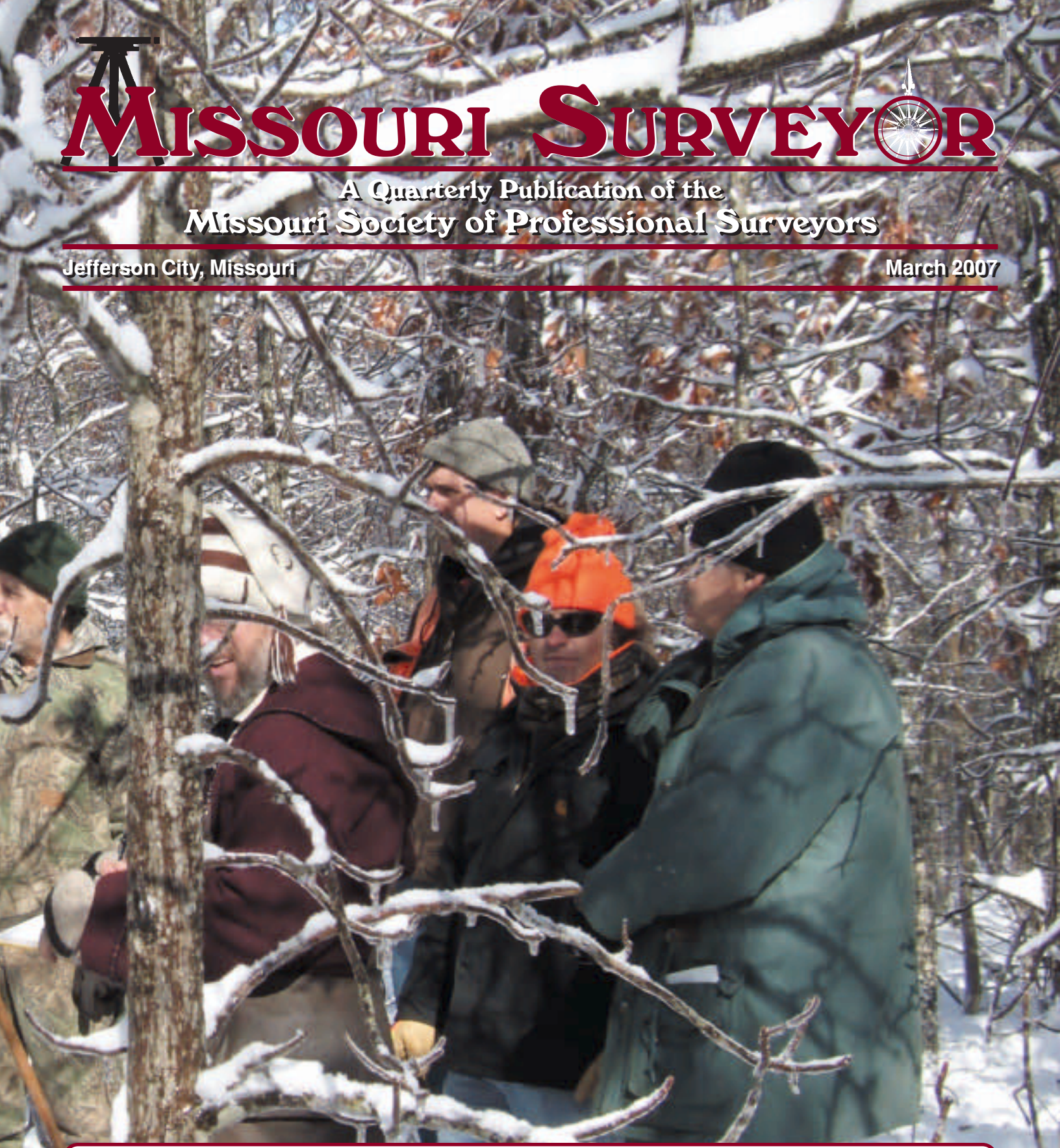
Missouri Surveyor

A Quarterly Publication of the
Missouri Society of Professional Surveyors

Jefferson City, Missouri March 2007



Cover photo by Bob Shotts

MISSOURI SURVEYOR

CALENDAR OF EVENTS

2006-2009

May 11-12, 2007
Board Meeting, Scholarship Golf Fundraiser and Education Workshop

July 13-14, 2007
Board Meeting and Minimum Standards Workshop
The Resort at Port Arrowhead
Lake Ozark, MO

October 4-6, 2007
50th Annual Meeting and Convention
Tan-Tar-A Resort,
Golf Club and Marine
Osage Beach, MO

December 1, 2007
Board Meeting, MSPS Office
Jefferson City, MO

May 8-10, 2008
Spring Workshop
Lodge of Four Seasons
Lake Ozark, MO

May 7-9, 2009
Spring Workshop
Lodge of Four Seasons
Lake Ozark, MO

John Alan Holleck, Editor

Notes from the Editor's Desk

by John Alan Holleck

I am setting at my desk wondering what I will say to open my quarterly dialogue with our loyal readership. It is the 23rd of March and unbelievably it is 60º. Better yet, this is the third day in a row of temperature above 50º. Of course, this is Missouri, after all, and tomorrow we could be knee-deep in snow. In fact, I can remember my first week as a chainman, in March 1975, working in a t-shirt and the following week, all bundled up and working in about one-foot of snow. However, that is the past and you are interested in the present, so on to the March issue of the *Missouri Surveyor.*

For the first time in a long time, our friend Patrick Lee is not the feature article as Lewis & Clark are finally returned from their Corps of Discovery. After the usual messages from your Editor and from President Terhune this month, we open with Andrew C. Kellie, Professor of Surveying at Murray State College, addressing the often talked about but seldom properly understood concepts of "Accuracy and Precision." Next, you might be intrigued by an "Unusual Legal Description Goes to Recycle Bin," then again you might not. Our old friend, Dr. Joseph V. R. Paiva follows with a Dialogue—Geomatics Community." Donald A. Wilson, New Hampshire land surveyor and conference speaker discusses his "Rules for Investigation." Rounding out the first-half of the March issue is a rather humorous article, "Summer Went to Sleep Today..." by Ron Provinsal, a land surveyor from Washington State.

Occupying the center of this issue is "Just Say No," about common business practices, which need further study written by Doctor, Professor, lawyer, land surveyor and engineer, Knud E. Hermansen. The "Hidden Multimillion Dollar Infrastructure" deals with the casual destruction of survey monuments causing delay and additional money due to re-staking them by Richard E. Waltrip, an Evergreen State land surveyor. Lee R. Hixon, multi-licensed western surveyor, discusses an interesting topic, "The Need for Dual-Stamped Maps" or recognizing all licensees' participation on a typical project, usually more than one surveyor. "The Dam Dilemma" by Dr. Herbert Stoughton reminds us of the affects of poor dam monitoring, which recently happened in Missouri. The final article, "Original Rectangular Surveys in Alaska" by David J. Langhoff, concerns a final surveying frontier in U. S. surveying with hazards similar to our early surveying history.

As usual, Sandy and I hope that you enjoy this new issue of the *Missouri Surveyor*. If not, since it is your statewide voice, please express your comments in the form of a Letter to the Editor. It is our aim to provide the best quarterly journal of all the state surveying associations and societies. Without your support and feedback, our efforts are wasted. Further, original article submissions are always welcome and encouraged. Thank you for allowing me to harangue you from my soapbox.

THE MISSOURI SURVEYOR

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*The **Missouri Surveyor** is published quarterly by the Missouri Society of Professional Engineers, to inform land surveyors and related professions, government officials, educational institutions, contractors, suppliers and associated businesses and industries about land surveying affairs. Articles or opinions appearing in this publication do not necessarily reflect the viewpoints of MSPS but are published as a service to its members, the general public and for the betterment of the surveying profession. No responsibility is assumed for errors, misquotes or deletions as to its contents. Articles may be reprinted with due credit given.*

President's Message

by F. Shane Terhune

Greetings fellow Surveyors;

Spring is here, for a few days anyway. The big thaw is in full swing here in Northern Missouri, and life has turned to mud. This is still better than the ice and snow we have been covered with for the last month, and I am tired of slipping and falling. I must be getting old or at least clumsier. The annual MSPS Capitol visitation day and Board meeting was held February 6th. We had a great group of Land Surveyors show up and visit with their State Representatives and Senators about the current legislative issues that concern us as Professional Land Surveyors. I want to thank each and every one of these persons for taking time off from their businesses for this important annual function. I believe this event always creates a good image for our Profession. I encourage anyone who has not participated in the past to do so next year. We can always use the help and you will enjoy it.

Right now each and every one of us needs to contact our State Senators about Senate bill 222 and 455. These two bills sponsored by Senator Chuck Gross of St. Charles Missouri propose to sweep excess state funds into the general revenue fund. This includes any excess funds held by the APELSLA Board of Registration. Yes that's right; all of us hard working people who pay our Professional License Renewal fees would be penalized for having a State Board of Registration who operates efficiently with the reasonable fees they collect. The State already skims off the interest money accrued on these funds each year to deposit in the general revenue fund. If Senate bill 222 had been in effect last year it would have swept $257,000 from our APELSLA board funds, or Senate bill 455 would have swept $1.3 million from our APELSLA board funds. All of us should be up in arms over this proposed legislation and as usual the Land Surveyors will have to carry the ball and get this legislation defeated. Our volunteer Legislative Consultant Rich Barr, PLS has already testified at a Senate hearing to defeat this legislation, but we still need to help ourselves out. Take a half hour and contact your Senator and urge them to say no to this proposed pilfering of our Professional License fees.

On a more positive note the ACSM Convention that MSPS is co-sponsoring will be held in St. Louis March 8th through the 13th. This is in our backyard and everyone should attend if you can. I have never been to one of these conventions and am looking forward to attending. It promises to be a good program.

On March 14th at the Capitol we will attend the Signing of the proclamation of Missouri Surveyors Week by Governor Blunt. If anyone would like to attend, put on your suit and tie and get your picture taken with the Governor. Contact Sandy so we know you are attending.

The Spring Workshop will be held Saturday May 12th at the Lake of the Ozarks. This year's program will address issues of easements and right of ways presented by speakers Eric Harris and Joe Willerth. It will be a good refresher and maybe some new insight for you old pros, but also a good learning experience for those potential Land Surveyor testees. The day before the workshop we will have a MSPS Board meeting, followed by a Golf fundraiser for the MSPS Scholarship fund. Dust off your clubs and come out and join the rest of us hackers for a round of golf. That's all I have for now and I hope to see you all on down the line.

Cover photo by Bob Shotts. 10th Annual Surveyor's Rendevous held December 1, 2006 — 4º at the section corner to sections 17, 18, 19 and 20, Township 34 North, Range 9 West, Phelps County, Missouri. Pictured left to right (starting on the back cover): Mike Manier, Don Lashley, Ryan Riggs, Ralph Riggs, Ralph Kliethermes, Tim Daugherty, Ray Riggs, Nathan Brown and Mike Flowers.

It's Basic: The Importance of Accuracy and Precision

by Andrew C. Kellie, PLS

The first day of surveying class is pretty predictable. It follows the pattern of many university courses. The instructor reads the syllabus, explains the grading, and then goes on to define key terms. Among the key terms commonly defined are *accuracy* and *precision*. Wolf and Ghilani (2006) define precision as "the degree of refinement or consistency of a group of observations". Accuracy is defined as "the nearness of observed quantities to their true values" (Wolf & Ghilani, 2006). These definitions are discussed on the first day because making measurements that are both precise and accurate is basic to surveying.

Perhaps not surprisingly, the distinction between precision and accuracy comes as a surprise to most students, because it seems that non-surveyors often consider the terms to be synonymous. Although students accept the first-day-of-class round of definitions, it is very difficult for them to appreciate the bottom line, dollars-and-cents relationship these terms have to surveying practice.

In surveying practice, precision is something that is of daily use to a surveyor. After all, the surveyor has to calculate the precision of each boundary survey and attest to the results of the calculation on the plat. When survey measurements are precise, we know they are repeatable. If we were to perform the survey again, we should obtain substantially the same results.

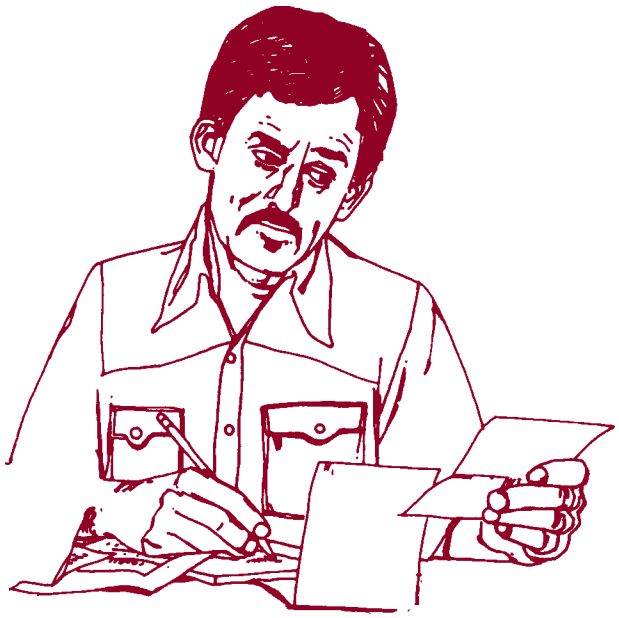
However, in addition to being precise, survey measurements also have to be accurate. There are two aspects to accuracy. First, the measurements have to be made with calibrated equipment. This ensures that the measurement reflects national measurement standards. Second, the measurements have to be made in the right place. Measuring in the right place is fundamental to having a useful measurement. If the measurements fail either of these tests, they are *inaccurate*.

A CAUTIONARY TALE

Consider the following scenario. Your firm has been retained to stake the location of a new machinery foundation in a steel mill because, as the plant manager insists, "This has just GOT to be done right!"

It's a relatively simple job: mark the four corners from the plant control network and the millwrights will take it from there. The crew uses a steel tape to set out the machine foundations to avoid the +/- 0.02 foot error inherent in the EDM unit. They measure each distance twice, check the diagonals, and carefully mark the positions on the floor. Everything checks. It looks like nice, precise, "quality" work. Sure to please.

They have hardly left the job before you get a call from "Bronco", the millwright foreman. Contrary to expectation, Bronco is NOT pleased. According to him, the measurements



by the survey crew don't agree with his measurements, and besides that, if the machine is put in the place your crew has marked, it won't line up with the other machines in the assembly line. You reflect on the satisfaction one receives from dealing with happy clients and dedicated employees, repair *tout de suite* to the plant, and pull the crew off the job at which they just arrived in order to redo the work at the mill.

A check shows that the steel tape your crew used was one that had been cut with a brush hook and repaired. It seemed too good to throw away, but the result was that a damaged tape was used for the staking because nobody noticed it in the excitement of working in the unaccustomed surroundings of a steel mill. The crew redoes the work with a *calibrated* tape and you calculate the precision as 1/50,000.

This looks good now — except to Bronco, who keeps insisting that the steel will *still* miss the new machine if he puts it in the position just marked. Belatedly, you check the measurements to the plant control. Each measurement is precise. To check further, you measure to other control. After lots of yelling back and forth – steel mills seem to engender loud conversations — you find that the crew has measured from control points on the *third* column line instead of on the *fourth* column line. Yet another set of measurements based on the correct control *and* using the calibrated tape results at last in measurements that are both precise and accurate. You finally got it right — except, of course, for the part about "profit", "repeat clients", and "word of mouth".

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It's Basic (continued)

IMPROVING PRECISION AND ACCURACY

With this happy story as background, let's take precision and accuracy one step at a time. We have defined precision as the degree of refinement of a measurement, but even casual observation quickly shows that the degree of refinement in any set of measurements must depend both on the instrument employed *and* the technique of the person using it. For example, we would expect to obtain more precise angular measurements with a 5" theodolite than with a 1' transit. This follows because the 5" theodolite has a greater degree of refinement in measurement than the 1' transit. However, if the person using the equipment employed a control network with sides 60 feet in length, any difference in the precision of the instruments would be purely illusionary.

If precision depends on both the instrument and the measurement technique employed, it follows that by insisting on proper technique the surveyor should be able to increase the precision of work done. For example, we know that the more measurements we make of a quantity, the closer the average of the measurements will approximate the "true" value of the quantity. The corollary here is that if distances are measured in both directions on each traverse line, improved precision should result. Likewise, requiring the crew to use fixed targets for distance and angular measurement, and rod levels to keep the level rod vertical during leveling, should yield better precision than if these field techniques were not specified. A side benefit of standard measurement *procedures* is that one can eliminate a whole series of recurring problems just by specifying *how* work is to be done.

If precision depends on both the instrument and the measurement technique employed, it follows that by insisting on proper technique the surveyor should be able to increase the precision of the work done.

Accuracy is another matter. Accurate measurements can only be made with equipment that is both working properly and that has been calibrated. For example, one can quickly check the operation of an automatic level by a simple peg test. This can be done before or after running the level loop. If done prior to the day's work, the peg test will tell if the level is operating properly before doing the work. If done after the work doesn't close, the peg test may show the instrument wasn't operating properly. Then at least you'll know it was the level. Your call.

EDM equipment, in particular, needs to be calibrated. Calibration involves comparing measurements made with the EDM unit against a known standard. The standard of comparison is, of course, a calibration baseline (CBL) established by the National Geodetic Survey (NGS). An important feature of an NGS calibration baseline is that it is tied to the national measurement standards, in essence, during a calibration you are comparing your instrument to the standard of measurement used by the United States. This is rather awesome when one reflects on it — particularly for people in the measurement business. We take measurement standards for granted, but what effect would it have on commerce if each town in the United States were to use a different set of measurements? What effect would it have on the land net if each boundary survey were done without reference to the standard?

EDM equipment calibration doesn't come without cost. Experience here at MSU has shown that it takes approximately four hours to run a complete calibration sequence on a four station CBL. However, this is true whether one instrument or several are calibrated because of the setup and moving time required. Further, since the stations on the CBL are nearly collinear, it is helpful to have someone at each station to turn the reflector on- or off-line during each measurement sequence. The solution to all this moving, turning, and measuring is to make a social event of the calibration. We do this in the Purchase Chapter each year. One Saturday in September (to avoid heavy refraction problems) is designated as Calibration Day and we calibrate everything in sight. To be sure, Calibration Day is a *surveyors'* social event, but a social event nonetheless. (The location of Kentucky calibration baselines, together with appropriate technical data, is available from the Web site maintained by Ross Mackay, the NGS Kentucky State Geodetic Advisor, at http://ngs.ky.gov.)

Use of the Global Positioning System (GPS) doesn't obviate the need for good surveying. If you use rapid static mode, you can compute the precision of your work in much the same manner you would for a traverse. This is a fine check on the precision of the work and we would not want to leave home without it.

As to the accuracy of the GPS, I refer you to the measurements described at the steel mill above. Recall that the crew mistakenly measured from the third column line instead of from the fourth. Recall, too, that the mistake was detected by measurement to other control. With GPS, the control stations are satellites from which measurements are made in much the same manner as the measurements to

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It's Basic (continued)

the column lines described above. Computers get viruses and satellites get sick, and we would certainly not want either to degrade the accuracy of our work. To check the accuracy of critical control, it would seem that measurement from a different column line — i.e., constellation of satellites — would disclose where gross problems exist in your work. Two sets of measurements — made at different times of day — will address the accuracy question nicely.

An important feature of an NGS calibration baseline is that it is tied to the national measurement standards. In essence, during a calibration you are comparing your instrument to the standard of measurement used by the United States.

Finally, there is the question as to where to make the measurement. Unfortunately, there isn't always a Bronco around to check that element of our work. This seems to be particularly true in boundary retracement. When retracement is the work of the day, it would seem that careful and thorough deed research, a diligent search for all the evidence on the ground, and timely contact with adjoining owners would at least contribute to improved accuracy of the work.

Making survey measurements that are precise and accurate? It's basic!

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References cited

Wolf, P.R. & Ghilani, P. (2006). Elementary surveying. Wiley, NY

Reprinted from "Interior Angle" (Kentucky), October 2006

PROFESSIONAL LAND SURVEYOR

The Land Survey Program, Department of Natural Resources' Division of Geology and Land Survey in Rolla, Missouri is seeking applicants for a "Land Surveyor I" position.

QUALIFICATIONS AND INFORMATION

- Licensed as a professional land surveyor in Missouri
- Experience in land or geodetic surveying
- Some overnight travel required with travel expenses reimbursed
- Extensive benefit package including health/life insurance, vacation and sick leave, cafeteria and deferred compensation plans
- Starting salary: $37,896 (probational level)

Application must be made through the Merit System by contacting:

Office of Administration
Division of Personnel
Harry S Truman Building
310 West High Street, Room 430
P.O. Box 388
Jefferson City, MO 65102

Phone: (573) 751-4162
Fax: (573) 751-8641
Email: persmail@mail.mo.gov

or their Web address at www.oa.mo.gov/pers/

You may also contact:

J. Michael Flowers, State Land Surveyor
O. Dan Lashley, Chief Cadastral Section
Land Survey Program
PO Box 250
Rolla, MO 65402-0250
Phone: (573) 368-2301

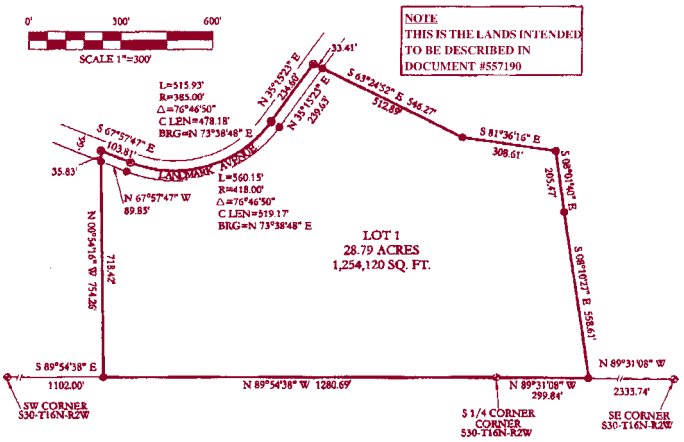
Unusual Legal Description goes to Recycle Bin

Earlier this year the word was out that an unlicensed property owner, or an acquaintance, had done something that surveyors had predicted would happen, sooner or later: attempt to perform a survey of their property using a hand-held GPS unit. In this case, the GPS unit's findings were used to write a legal description, with latitudes and longitudes precisely measured to six decimal places. Since the area of the parcel was not incorporated into the legal description, we conclude that the scrivener's hand-held unit did not have a key to click to crank out its area. There was more to it than just writing a legal description — the legal was used and incorporated into a warranty deed, and recorded, with the blessings, evidently, of all interested parties.

In the meantime, we have better news to report: the county surveyor advised the parties what the Wisconsin Statutes and Administrative Code have to say about survey requirements, and as a result, a certified survey map (CSM) was prepared and a new deed recorded.

Part of the Southeast Quarter of the Southwest Quarter and the Southwest Quarter of the Southeast Quarter, Section 30, Township 16 North, Range 2 West, Monroe County, Wisconsin, more particularly described as follows: Commencing at the Southwest corner of the Southeast Quarter of the Southwest Quarter (SE1/4 of SW 1/4); thence easterly along the South line of the forty, 1,102 feet, more or less, to GPS waypoint, Lat. 43.827330, Long. -90.666967, which is the point of beginning; thence continuing easterly along the South line of said Section 30, 1,592 feet, more or less, to GPS waypoint, Lat. 43.827326, Long. -90.660929; thence Northerly 487 feet, more or less, to GPS waypoint, Lat. 43.82828655, Long. - 90.661033; thence Northwesterly 298 feet, more or less, to GPS waypoint, Lat. 43.829516, Long. -90.662515; thence Westerly 552 feet, more or less, to GPS waypoint, Lat. 43,830118, Long. - 90.664425, which is the centerline of the town road now known as Drysdale Road; thence Southwesterly and Westerly along the centerline of said town road 820 feet, more or less, to GPS waypoint, Lat. 43.829455, Long. -90.666968; thence Southerly 775 feet, more or less, to the point of beginning.

This is the same property as prepared by a licensed land surveyor



LAND SURVEYOR IN TRAINING

The Land Survey Program with Department of Natural Resources' Division of Geology and Land Survey in Rolla, Missouri is seeking applicants for a "Land Surveyor in Training" position.

QUALIFICATIONS AND INFORMATION

- Enrolled as a Land Surveyor in Training in Missouri
- Experience in land or geodetic surveying desirable
- Some overnight travel required with travel expenses reimbursed
- Extensive benefit package including health/life insurance, vacation and sick leave, cafeteria and deferred compensation plans
- Starting salary: $35,148 (probational level)

Application must be made through the Merit System by contacting:

Office of Administration
Division of Personnel
Harry S Truman Building
310 West High Street, Room 430
P.O. Box 388
Jefferson City, MO 65102

Phone: (573) 751-4162
Fax: (573) 751-8641
Email: persmail@mail.mo.gov

or their Web address at www.oa.mo.gov/pers/

You may also contact:

J. Michael Flowers, State Land Surveyor
O. Dan Lashley, Chief Cadastral Section
Land Survey Program
PO Box 250
Rolla, MO 65402-0250
Phone: (573) 368-2301

MO Colleges/Universities Where Land Surveying Coursework is Available

The following list will be updated quarterly as new information becomes avialable.

Longview Community College - Lee's Summit, Missouri
Contact: Ken Eichman
Longview Community College
Science and Technology Bldg.
500 Longview Road
Lee's Summit, Missouri 64081
816-672-2283

Florissant Community College - St. Louis, Missouri
Contact: Ashok Agrawal
Florissant Community College
3400 Pershall Road
St. Louis, Missouri 63135
314-595-4535

Missouri State University - Springfield, Missouri
Contact: Thomas G. Plymate
Southwest Missouri State University
901 So. National
Springfield, Missouri 65804-0089
417-836-5800

Mineral Area College - Flat River, Missouri
Contact: Jim Hrouda
Mineral Area College
P.O. Box 1000
Park Hills, Missouri 63601
573-431-4593, ext. 309

St. Louis Community College at Florissant Valley
Contact: Norman R. Brown
St. Louis Community College at Florissant Valley
3400 Pershall Road
St. Louis, Missouri 63135-1499
314-595-4306

Three Rivers Communitiy College - Poplar Bluff, Missouri
Contact: Larry Kimbrow, Associate Dean
Ron Rains, Faculty
Three Rivers Community College
2080 Three Rivers Blvd.
Poplar Bluff, Missouri 63901
573-840-9689 or -9683
877-TRY-TRCC (toll free)

University of Missouri-Rolla - Rolla, Missouri
Contact: Distance & Continuing Education
University of Missouri-Rolla
conted@umr.edu
103 ME Annex
Rolla, Missouri 65409-1560
573-341-4132

University of Missouri-Rolla - Rolla, Missouri
Contact: Surveying Courses in Civil Engineering
Dr. Bill Schonberg, Chairman
University of Missouri-Rolla
Dept. of Civil Eng.
civil@umr.edu
1870 Miner Circle
Rolla, Missouri 65409-0030
573-341-4461

University of Missouri-Columbia, Missouri
Contact: Lois Tolson
University of Missouri-Columbia
W1025 Engineering Bldg. East
Columbia, Missouri 65211
573-882-4377

Missouri Southern State College - Joplin, Missouri
Contact: Dr. Tia Strait
School of Technology
3950 E. Newman Rd.
Joplin, MO 64801-1595
1-800-606-MSSC or 1-417-782-MSSC

Geomatics Community Dialogue

by Joseph V.R. Paiva, PhD, PS, PE

There's a nationwide problem looming (what, another one?) that is finally getting a little bit of attention. But, in my opinion, it isn't getting enough attention. The fact is, the number of licensed surveyors is decreasing steadily. I don't know the exact statistics for New York, but in most states the number of new registrants seems to be anywhere from one-half to a fifth the number leaving the ranks due to retirement, death, change of profession or other reasons. These statistics may not be as bad as it seems if the actual number of registered surveyors practicing is quite a bit smaller than the total number registered. Also, if we studied the registrations of all states we would see duplication due to people holding licenses in more than one state.

I would like to hear from NYSAPLS members: who is experiencing shortages in qualified, licensed help? What surveying work that used to be done with licensed individuals in the field is now being done with unlicensed individuals in the field with a licensed individual acting as the "responsible charge?" Is the apparent drop in the total licensed surveyors impacting pay scales for licensed and unlicensed surveyors? Is this decrease affecting how much one can charge for services or what a client is willing to pay? Does anyone foresee a "crunch," and what would that crunch be exactly? Does anyone view the tightening supply of licensed surveyors to be a good thing? Write to me, I would like to hear from you.

The National Society of Professional Surveyors (NSPS), ACSM and the National Council of Examiners for Engineering and Surveying (NCEES) are concerned.

The National Society of Professional Surveyors (NSPS), ACSM and the National Council of Examiners for Engineering and Surveying (NCEES) are concerned. I'm not sure exactly how they view the problem and its impacts. But they are concerned enough to have invested in the development of communications tools to be used in making vocational decisions.

NSPS developed speaker's kit which includes a powerpoint slide show you can present entitled: "Measuring the World Around Us, A High-Tech Career in Professional Surveying." You can download various files from www.acsm.net.This kit is also available free to any NYSAPLS members by calling their office to request it. It includes a presentation CD, brochures, pamphlets and various presentation aids so that you can introduce secondary education students, even college students, to the world of surveying.

Regardless of what you think of the "problem," and even if you don't think it is a problem, hopefully you agree that the development of this program is a good thing. Hopefully you won't stop there. Download the materials, write and request the brochures, and talk with guidance counselors and placement offices in your neighboring schools and colleges to make a presentation. Even if each of you does one presentation a year, think of how much good you can do for our profession as well as society in general.

In case you haven't figured it out, I do think there is a problem. And I think encouraging people to join the profession is a good thing to do. But I think the problem runs deeper. Most people don't realize the contributions of surveying professionals: they don't know what they do, how they do it, or the value society gains from the activities of surveyors. Sure, the average person on the street will tell you that surveyors measure land or property or something like that. But it stops there. Regardless of what they think surveyors do and provide, the little most known tends to trivialize the body of knowledge that must be possessed in science, mathematics, history, technology and skills used to analyze, evaluate, judge and report. Can this lack of understanding partially explain why people protest so much to what surveyors charge? Does it explain why surveyors have a hard time charging adequately for what they provide? Regardless of whether a surveyor's work is property boundary, engineering, topographic mapping, or control, it seems these difficulties are pervasive. These problems are sometimes used as the explanation for why surveyors (licensed and unlicensed) are not compensated as well as their engineering brethren. Sometimes the low pay is used to explain why the problems with "lack of appreciation" exist. Which came first? At www.surveyingcareer.com, the excellent NSPS site that helps people understand careers in surveying, the claim is made that the average compensation of all "mapping scientists," according to the U.S. Department of Labor, is actually slightly higher than the average compensation of all civil engineers.

Here's the difficult part for me. When I talk with surveyors it often turns out they themselves don't understand their role in society. They don't really have an appreciation for what it

(continued on page 11)

Geomatics Community Dialogue (continued)

is they do that is essential for the greater good. It doesn't matter whether it's property boundaries, subdivision development or construction staking, it seems that the world view of many surveyors doesn't include having a solid understanding of the context in which they live and work.

Let me illustrate using a recent example from another group: immigrants. You are no doubt aware of the strikes or work actions that have been recently held in many places across the country to illustrate how dependent our society and economy are on the work output of these people. I'm not suggesting it, but think about what a day in the U.S. would be like if all surveyors didn't work that day? What wouldn't get done? And beyond the pay and billing for surveying work that wouldn't get done, what other impacts would there be on the gross domestic product? I don't know what the dollar figure would be, but I am reasonably sure it would be substantial. If we could all understand the impact, and we could all develop a sense of confidence that what we provide is a valuable contribution, then perhaps we could really start making our place as peers among other professionals.

I think it needs even more than that however. When I ask surveyors what they give clients when they perform a property boundary survey, the most frequent answer is "the map." Surveyors need to learn how to give weight to their own activities. They need to understand what it is they do exactly; and they need to be able to communicate it to society in general, not just clients, in a variety of different and effective ways. Keeping all levels of society (not just students) uninformed is the best way to continue many of the problems we see within the profession today.

Joseph Paiva *is a geomatics consultant, seminar presenter and author. He is currently working on a book that will be a practitioner's guide to the acquisition, care, maintenance and use of modern total stations. He may be reached at jvrpaiva@swbell.net.*

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Cowboy Boots

Anyone who has ever dressed a child will love this one!

Did you hear about the Montana teacher who was helping one of her kindergarten students put on his cowboy boots? He asked for help and she could see why.

Even with her pulling and pushing, the little boots still didn't want to go on. Finally, when the 2nd boot was on, she had worked up a sweat.

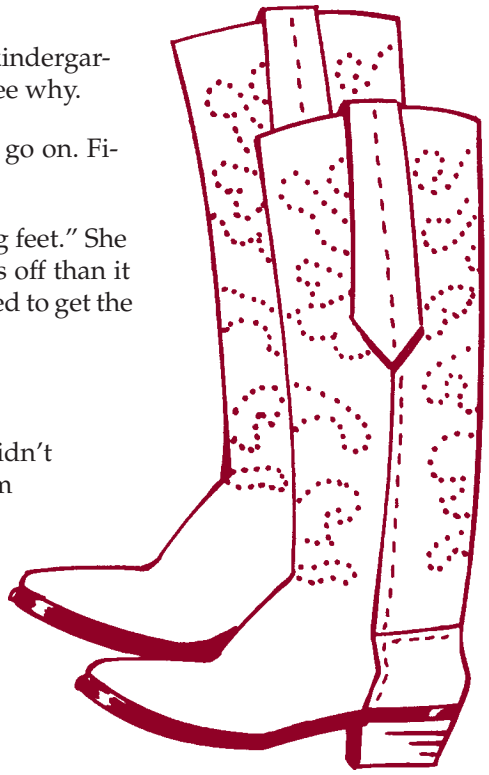
She almost cried when the little boy said, "Teacher, they're on the wrong feet." She looked and sure enough, they were. It wasn't any easier pulling the boots off than it was putting them on. She managed to keep her cool as together they worked to get the boots back on, this time on the right feet.

He then announced, "These aren't my boots."

She bit her tongue rather than get right in his face and scream, "Why didn't you say so?" like she wanted to. And, once again she struggled to help him pull the ill-fitting boots off his little feet. No sooner they got the boots off and he said, "They're my brother's boots. My Mom made me wear 'em."

Now she didn't know whether to laugh or cry. But, she mustered up the grace and courage she had left to wrestle the boots on his feet again. Helping him into his coat, she asked, "Now, where are your mittens?"

He said, "I stuffed 'em in the toes of my boots."



Rules for Investigation

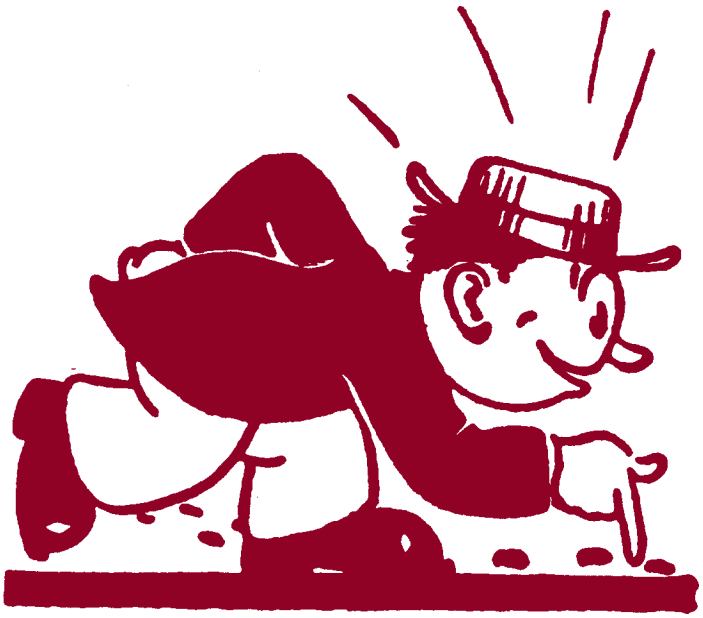
by Donald A. Wilson, LLS, PLS, RPF

As seen in Professional Surveyor Magazine, November 2005. Reprinted with permission from the publisher.

Searching for boundary evidence is an investigation. It is an investigation into a scene, not a crime scene, but a scene nonetheless, where the investigator is searching for evidence, and for clues when evidence is absent, or not readily visible. Crime scene investigators are highly trained for their tasks, and sophisticated scientific techniques are usually employed. Other investigations, if taken to the same level, and applying appropriate techniques, can also be very successful in locating valuable evidence.

Many of the same techniques can be employed to both types of investigation, even if the evidence sought and the tools employed might be quite different. One thing doesn't change - the thought process and the scientific process of reasoning. Sherlock Holmes made a habit of explaining his reasoning throughout his stories. Today's sleuths have attained higher levels, and reference materials demonstrating and analyzing methods of reasoning are readily available. Learning this part of the investigative process is like learning the multiplication tables for the first time. There did not seem to be any immediate practical value to the fact that 2 times 2 is equal to 4, but it did make sense that it might be useful at some time in the future. Such it is with the science of reasoning, especially when translated into practical rules, and more so when illustrated with examples.

Good investigators know that lists of questions from officially issued procedure manuals have limited use. Reading the signs and asking questions at a site does not involve completing a form or responding to circumstances by following pre-established rules. Each site, perfectly preserved or irrevocably compromised, has unique elements that modify the questions and define the playing rules for that particular site. Asking the right questions, of oneself or of others, depends on identifying the rules of each new challenge.



Reasoning backward analytically at a scene involves discovering the rules while playing the game. Sherlock spoke of that in *A Study in Scarlet:* "In solving a problem of this sort, the grand thing is to be able to reason backwards. That is a very useful accomplishment, and a very easy one, but people do not practice it much. In the everyday affairs of life it is more useful to reason forward, and so the other comes to be neglected. There are fifty who can reason synthetically for one who can reason analytically."

There is no place for guesswork in an investigation, it is much too serious for that. Thinking logically does not involve guessing. Guessing is blind and riddled with doubt. Guessing is merely desperate, and is not necessary where there are ordinary facts, as facts raise no doubts. Gil Grissom, the team leader of the popular TV show *CSI*, is quoted as saying, "concentrate on what doesn't lie: the evidence."

Yesterday, Sherlock Holmes, and today, scientific reasoners, employ the art of *Abductive Reasoning.* Abduction is the process of finding a best explanation for a set of observations and it leads to subtle implications for evidence evaluation. It is about certainty and the logico-computational foundations of knowledge. *Abduction* can be described as "inference to the best explanation", which includes the generation, criticism, and possible acceptance of explanatory hypotheses. What makes one explanatory hypothesis better than another are such considerations as explanatory power, plausibility, parsimony, and internal consistency. In general, a hypothesis should be accepted only if it surpasses other explanations for the same data by a distinct margin and only if a thorough search was conducted for other plausible explanations.

Ask any forensic investigator to name the biggest problem that they encounter on the job and you will consistently hear the same response - crime scene contamination by others. Surveyors encounter that on almost every scene, and the older the scene, the more likely the contamination or compromise. Developers won't even hire a surveyor until the soil testing is completed. Backhoes have an uncanny way of seeking out the corner evidence and running over it. Rule Number 1: Protect the scene. Once evidence is lost, opportunities are lost. And the investigator may never know what was lost when a scene is not controlled. State guides for police practice on

(continued on page 14)

Rules for Investigation (continued)

crime scenes state, "once the scene has changed, you cannot change it back."

Most investigators will not visit a scene alone. It is always a good idea to take someone on an investigation with you. Another person, or preferably more than one, will most likely see something that you may not. It is always good to have independent corroboration of a scene.

A good investigator will keep his or her perceptions clear. If on the scene for awhile, bring something to eat and drink. Avoid anything that could impair the senses, like alcohol.

Most investigators will do their research first, trying to find out as much about the site as possible. Without research, you cannot know what you should be looking for, nor can you know what you have when you do find something.

Some investigators make it a practice to arrive at the scene with skepticism. While one should always maintain an open mind, remember that there just may not be anything out there. By doing the homework first, one gets an idea as to what to expect.

Beware of false readings. Measurements, mathematical closures, magnetic attraction, errors in reported information can all lead to false conclusions or provide false leads. Make sure that equipment is working properly, that the operator knows what he or she is doing, and that you are on the right parcel of land, not the neighbor's land or some place totally irrelevant.

The well-advised will make certain that good and careful work, successful or otherwise, is not compromised or discounted by those who have a different expectation.

Most investigators will take lots of photographs, digital or otherwise. Make certain you have plenty of film and you know how to take good pictures, with or without a flash. If you are not a good photographer, bring along someone who is. The next time you visit the site, the conditions may have changed - dramatically, or the evidence may have been totally obliterated.

The above rules, at the very least, should be second nature to any successful investigator. Sometimes it is easy to find and locate the evidence, but explaining procedures or a lack of success to a judge or jury may be entirely another matter. People watch television, and they watch shows like *CSI,* and have come to expect from the practitioner what they see and hear on television. The well-advised will make certain that good and careful work, successful or otherwise, is not compromised or discounted by those who have a different expectation.

Don Wilson *is president of Land & Boundary Consultants, Inc., a New Hampshire-based firm specializing in land records research and evidence investigation. He is the lead instructor in Surveyors Educational Seminars and a member of the Professional Surveyor / Red Vector Dream Team providing online courses for continuing education. He has also been a regular instructor in the University of New Hampshire Continuing Education System for 25 years.*

Church Bulletin Bloopers

- Ladies Bible Study will be held Thursday morning at 10. All ladies are invited to lunch in the Fellowship Hall after the B.S. is done.
- The pastor would appreciate it if the ladies of the congregation would lend him their electric girdles for the pancake breakfast next Sunday morning.
- The pastor will preach his farewell message, after which the choir will sing, "Break Forth Into Joy".
- Remember in prayer the many who are sick of our church and community.
- The eighth graders will be presenting Shakespeare's *Hamlet* in the church basement Friday at 7 p.m. The congregation is invited to attend this tragedy.
- Thursday night Potluck Supper, Prayer and medication to follow.
- Weight Watchers will meet at 7 p.m. at the First Presbyterian Church. Please use large double door a the side entrance.
- The Lutheran Men's group will meet at 6 p.m. Steak, mashed potatoes, green beans, bread and dessert will be served for a nominal feel.
- Don't let worry kill you, let the church help.
- This being Easter Sunday, we will ask Mrs. Lewis to come forward and lay an egg on the alter.
- Irving Benson and Jessie Carter were married on Oct. 24 in the church. So ends a friendship that began in their school days.
- Announcement for a National Prayer and Fasting Conference: "The cost for attending the Fasting and Prayer conference includes meals".
- Miss Charlene Mason sang "I will not pass this way again" giving obvious pleasure to the congregation.

— from www.a-guide-for-seniors.com

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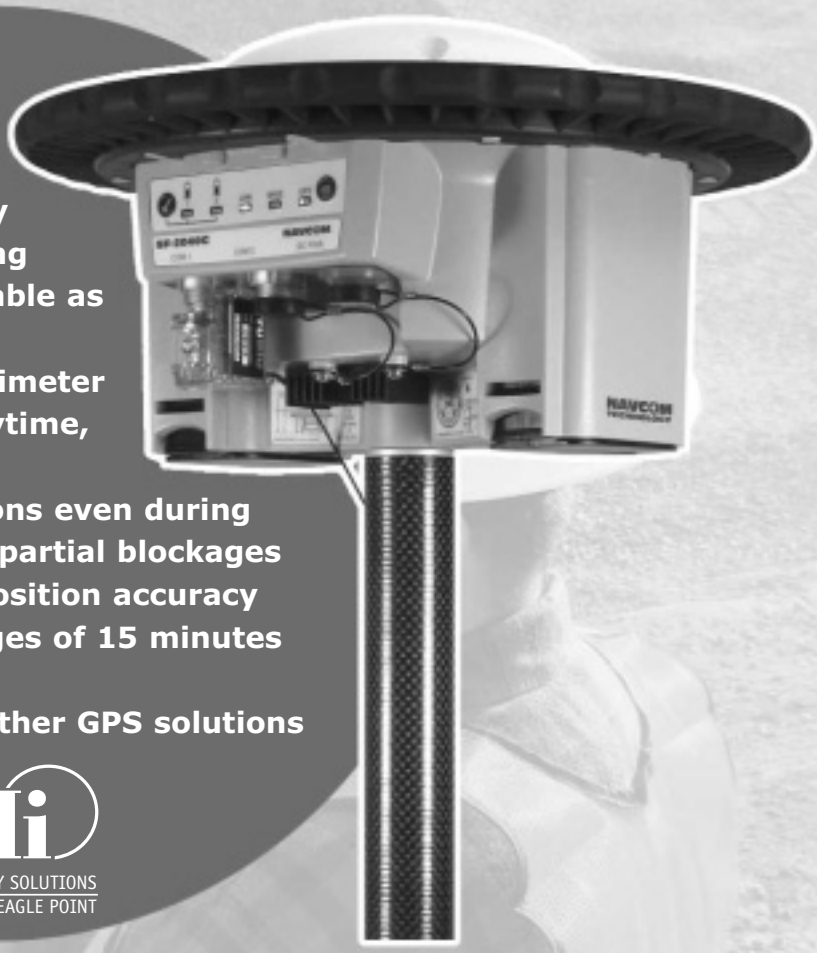

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Summer Went to Sleep Today ...

by Ron Provinsal

Following a long, dry and comfortable summer, autumn has taken place per the calendar, and rain finally closed the door to those comforts of the out of doors and placed a dampening on a dream.

Not that I really had time to enjoy summers entirely. Working busy hours indoors during the best of every day. I painfully missed friends and family and freedom. Nor do I not enjoy the fall, Loon Lake was smooth and colorful today, trees golden, amber and red doubles reflected on the shore line . . . but summer is just my favorite. That is when the air is plentiful and sweet, and freely caresses the exposed body. You breathe deep, you don't have to deal with all the invectiveness of clothing to get to the outdoor air, and to just be alive and peacefully happy.

It seems that the hours I was indoors were those warm wonderful hours when heat would have let me soak up its energy in quiet moments of glory, when another would be complaining, and I would simply let my self be a solar collector, just recognizing the rays, even if they make me sleepy, or break a sweat, or get a little tender from all the attention of Ol' Sol.

It is odd remembering that one moment so many years ago, in the months prior to summer. It was 1973. It was the cold wind, a gale that opened me to the act of sensing, the act of recognizing the elements rather than holding some expectation that they should suit me. It was a bitter cold wind, actually, that awakened me to the outdoors' elements.

That year I was working for the United States Geological Survey. A meager position with a big title, I was a "Topographic Field Assistant". That was a position I sought out after I got overloaded by the inadequacies of contracting to do sheet rock.

It must have been February or March, and the position had me walking like a kite for countless miles in a variety of topographies. Mount Spokane, Medical Lake, Coeur d'Alene, Rosalia, Reardon-Wilbur . . . among the coulees, up the inclines, in the frigid shade of trees seeking the interludes of sun. Generally we worked within 50 miles from a USGS temporary field office in Spokane.

The moments I plainly recall were the winds scraping through barren wheat fields, and other fields where the frozen waves of windrows would later show grain to the sun. We would drive out into the rural expanses, or triangulate with a Tellurometer from gusty peak to distant windy peaks, or place bench marks and aerial targets to no where, and park in uneventful locations, and perform the process of "carrying" an elevation from one location to another, coordinating the earth control to the photos and maps.

Bob Mead was an outstanding mentor and a genuine person of integrity, a gentleman to work with. There were other good surveyors who made the maps as well. I usually paced with a stadia rod. That was where I found the opportunity to discover the character of the out of doors, and the enlightenment that I did not need to suffer the elements, but they each possess their own personality.

It was another blustering cold day in what had seemed eternal and endless days of staking the limitless rural roads, past fences, through road cuts, alongside curious cows, and occasional farmers, and snow, ice, and intermittent mud puddles. The wind was blowing, constantly, and gusting, always. All situations making it difficult to hold the survey rod level and plumb and on the point. With hours every day walking the roads, no shield but the clothes I wore, I would shiver, and clinch my muscles to try to counteract and defy the cold. The cold, like the devil, appreciating the torment.

> ***"The icy fingers of cold would find any opening"***

The icy fingers of cold would find any opening. Closing one would open another. Sleeves might allow a draft of cold, and then the neck, and always the belt would not hold out the frigid air. I would brace, and shiver, and grimace, and pout. My nose would run, and my hands were blocks, only able to move like a mannequin, rigidly. My strides between stations would be brisk and protective. Trying to be a bundle, closed to the world, hoping to rush the moment out of my life, and to move on to another place and time.

Then it happened. The moment of epiphany. That moment that translated in so many future life situations. While standing on a distant and obscure asphalt ribbon, and attempting to hold that rod and to fight the storm, I decided to relax and just feel the cold. Feel the frigidity and allow the icy elements to be themselves, to allow the tentacles through my clothes, and me, to just feel them. Yes, it was like ten little wind streaks ran through, swords, and I just felt them cut me, without trying to stop them. I didn't bleed. I just recognized the wind and chill for what it was. It blew over. It blew by. It blew through and was gone.

That moment has so often reminded me to let others be themselves. The devil should "Go away". I have no need to fear. Jesus is my Lord. A contractor would be yelling at me, bouncing his hard hat on the asphalt, or jumping in a tantrum screaming in my face, and I could see it was his problem, not me, I just watched the wind blow through. They would come to their senses and settle down to do the job. Peers often told me they would have walked away. I stayed and resolved the issues. I told the devil to "Go to Hell!" and I meant

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Summer Went to Sleep today (continued)

it. I knew better than to believe that tempting schlock.

The sun is the same as the wind, just that I like the sensation better. It is glorious to just bask in the heat . . . languor in a sirocco, and recall that the days are soon enough to be, where all the clothes will be bundled around me, and have to be accounted for before and after I leave the door. It is just life in process. Feel it while it is present, and let it go its way.

But summer went well asleep today. As I met with Dave at Loon Lake to hibernate the trailers, it rained, for the season is over. That season where shorts and flip-flops and white clouds drift through a bright blue sky. Those days are finished for now, but then again, they are the future too. Those are the days, like a solar cell's battery, collected to recall when the insurmountable windy blades cut too deep and cause me to lose my timbre and run for the indoors.

Relax. Let it be. This, too, shall pass, as life itself will pass soon enough. Feel it while it is here. It is a temporal sensation at best.

Ron Provinsal (rprovinsal@att.net) is an Associate of the Inland Empire chapter, originally joining LSAW in 1978. His Surveying and Civil Engineering career began with the USGS in Spokane in 1973. He currently works for Womer and Associates, Inc., an Engineering and Architectural firm in Spokane, WA. He worked with the Surveyors Historical Society and the David Thompson Bicentennial at the NW Museum of Arts and Culture (the MAC) in Spokane.

On Words

What does it mean to pre-board? Do you get on before you get on?
— *George Carlin*

A word to the wise ain't necessary — it's the stupid ones that need the advice.
— *Bill Cosby*

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Just Say No

by Knud Hermansen, PLS, PE, PhD, Esq.

Long before Nancy Reagan came on the scene and used this phrase to caution children against drug use. I had a friend who used this phrase. His purpose for the phrase was in the form of a directive to all employees who received survey requests from a certain part of the country that had been thoroughly surveyed by a surveyor who's name will remain anonymous. It seems this surveyor couldn't even retrace his own work let alone an earlier surveyor's work. His inability to survey was compounded by his low prices which naturally led him to perform a high volume of worthless surveys for cost conscious consumers. This surveyor had so thoroughly confused the physical evidence in the area that it was almost impossible to survey in the area without finding problems and losing money - hence the directive "just say no" to calls from people in this area.

The purpose of telling this story is to introduce some thoughts and possibly elicit some discussion concerning business practices. The way I see it, there are basically two ways to break even or make some money in surveying: (1) Get paid for a lot of surveys that have a small profit margin, or (2) get paid for a few surveys that have a large profit margin. I have come to the opinion that most surveyors would like to operate under the second category but for one reason or another are forced to work within the first category.

First, consider the fact that you are in business to provide quality work for a profit — use this goal to govern your services and pricing.

Before I go too far, let me say I have no doubt some surveyors prefer the first category because they enjoy surveying so much that they like to do survey work every waking moment, and therefore requires lots of volume. Then of course there are a few surveyors, bless their souls, that feel the public deserves inexpensive surveys, so they set out to provide inexpensive surveys, even if they have to operate at a loss or must cut a few corners. For surveyors that fall under either of these two groups, I can only envy your energy or admire your social conscience - and say this article is not for you.

For the rest of the surveyors, let me offer some observations and advice based on my limited experience and my work within other professions:

1. **The Law of supply and demand:** My economics course taught me that in times of high demand for surveyors, surveyors should be able to raise their fees until they reach the point where they receive enough work to keep them busy but not overworked. My observations are that surveyors tend to work themselves toward a heart attack rather than raise their rates. My advice is that if surveyors feel compelled to ignore the laws of supply and demand, they should do what other professions do: (a) if there are too many practitioners - raise your rates, (b) if there is not enough practitioners - raise your rates, (c) if the demand falls - raise your rates, (d) if the demand increases - raise your rates, and (e) when in doubt - raise your rates.

2. **Never say no - every request can be met if the price is right:** My observations indicate that surveyors, no matter what their age, seem to have experienced something similar to what my father described as the "great depression." They can't stand to turn down a potential survey job. Past economic hardship has given them an overwhelming compulsion to say "yes" to any request for a survey. They visualize the unseen property as a flat sandy desert with slats protruding to mark the corners. As the survey crew uncovers the last original corner marker (found with the metal detector), the client is so overjoyed she pays the inflated price, quoted over the phone, in cash. Given this vision with the psychological urge to accept any job, my advice is to never say "no" to a potential client that requests a service you are competent and able to provide (contrary to the title of this article). Rather, let the CLIENT SAY NO. What do I mean by this statement? First, consider the fact that you are in business to provide quality work for a profit - use this goal to govern your services and pricing. If a potential client calls and wants a subdivision plat prepared in two days for a closing, then quote a price that would make you happy to drop everything else and meet this goal. If you have to have pressure, confusion, and overtime payments - make yourself wealthy and happy doing so. On the other hand, if the potential client turns down your service because the price is too steep, you have the satisfaction of knowing you've said yes to their request and avoided having to agonize over a hasty acceptance - because you let the client say "no."

3. **I know therefore I am:** I know there's all kinds of talk about how to be professional covering everything from clothes to education. Who am I to say they're wrong? However, my opinion is that a learned profession charges according to the *knowledge* it takes to perform a

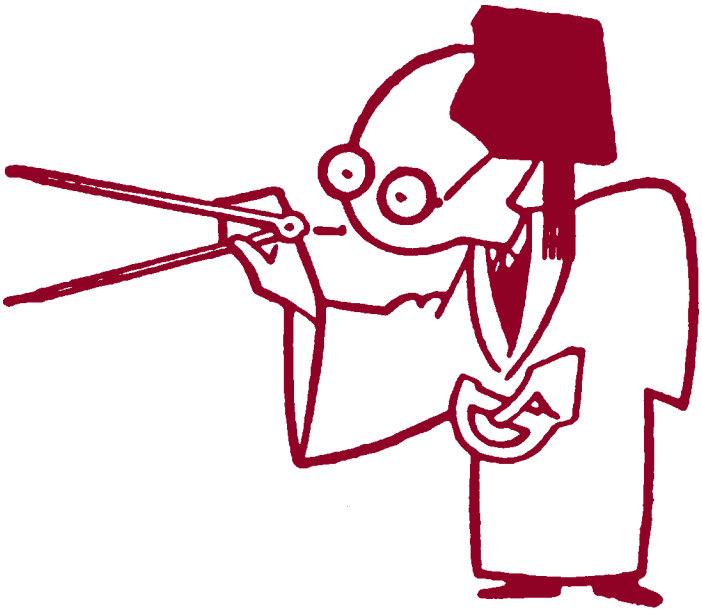
(continued on page 21)

Just Say No (continued)

service rather than the *time or effort* it takes to perform the service (depose a doctor for two hours and pay $1000 for his time and you'll come around to my opinion). My observations indicate that most surveyors do not place much value on their knowledge. My advice is to heed the example given by the often repeated story of the retired engineer, which I'll repeat for the few who are not acquainted with the story: After a factory owner had tried other alternatives to fix a machine and sought several different individuals, a retired engineer who had worked at the factory for thirty years was asked to return to the factory and fix the machine that was malfunctioning. The old engineer entered the factory, went up to the machine, listened and looked for several seconds, then picked up a hammer and struck the machine one time curing its malignancy. Turning around he handed the owner a bill for his services that amounted to $1000. The owner, knowing the engineer had spent only a few minutes fixing the problem, was outraged and demanded an itemized bill. The retired engineer responded by writing the following: "5 minutes of time...$1, knowing where to hit...$999." The owner paid the full amount.

4. **It costs more in court:** Rumor has it that someone has stumbled onto an alternative funding source to clean up I chemical waste sites? The answer is: Pay a surveyor $50 and have the surveyor do a mortgage survey for the site. After the surveyor signs the appropriate form (i.e. survey report) saying there are no visible encroachments or clouds on the title, then sue the surveyor for damages sufficient to clean the site. My observations are that many surveyors, for a paltry sum, will thoughtlessly put an all encompassing certificate on their plat or certify a "mortgage" survey without any investigation into physical encroachments that may effect the title. My advice is to carefully review what you are certifying and charge according to the liability involved - you don't make money going to court.

5. **Competing by price is cheating:** My observation is that surveyors can generally be counted on to help each other out - going out of their way to extend professional courtesy - but will practically starve their family trying to under bid each other for work. So what does that tell me? Surveyors are friendly guys and gals who enjoy competition. My advice to surveyors is that if you need some friendly competition among the local surveyors, then compete for the most innovative way to bill a client, best prepared plats, most durable or visible corner markers, most complete survey report, happiest survey crew, most qualified principal



of a firm, best educated survey party, best looking office, most continuing education credits per field crew member, fastest service, most profits without sacrificing quality, firm that has the newest equipment, and so on. Surveyors should leave pricing out of the competition so you can take the family out to dinner when you win - or lose.

6. **The tower of babble:** Go into your office and ask your employees to get a piece of paper and pencil. Ask them to: "draw five circles connected" - then compare. Chances are you'll get a slightly different drawing from each employee even if the instruction is stated in these simple terms. This minor exercise should give you the reason for using contracts. Contract documents have little to do with trust, they're used to foster understanding and prevent misunderstanding.

7. **The litmus test:** Surveyors are such trusting souls. They frequently do all the work for the client then wait and wait for payment and in some cases never receive it. My advice is to ask for a retainer to test the client's sincerity. If they balk at paying a retainer or don't have the money at the time, there is probably a very good chance the same excuses or comments will occur when the final bill is tendered.

8. **Invest in your spouse:** Surveyors lament about how difficult it is to get good help at a reasonable price. After you invest all the time in training good help, they get their license and leave. As a result, many

(continued on page 23)

Just Say No (continued)

surveyors are forced to use their spouse in the office or field. My advice, as I indicated in another article on the subject, is to send the spouse to college. Even if he or she doesn't particularly like surveying, imagine the help a two- or four-year degree in business management, accounting, civil engineering, or computer science would provide. If they do eventually become licensed as surveyors, imagine the relief you'll have if you get sick or want to go back to school yourself.

> ***My experience has been that the best employees are the ones that are always willing to learn . . .***

9. **You done good:** I apologize for the improper English but I ask you to remember the point. Pay is not the only thing that matters to an employee. We're all human and need some encouragement. My advice is to make a point of offering compliments for good work. For a good job, get a gift certificate and send the employee and their spouse to supper after work sometime.

10. **Those that seek knowledge are knowledgeable:** My experience has been that the best employees are the ones that are always willing to learn, to spend extra time at the office writing a computer program or learn a new technique on the equipment. Consider encouraging these and all employees to attend seminars and schools. If you don't have enough money to support seminar attendance, then consider paying them an extra hour every week to sit down and study surveying at the office or give in-house training in sessions on a regular basis and time.

These observations and advice are what I refer to as my ten commandments of business practice. (It has such an authoritative ring when I use ten of them.) While there is some jest in these comments, they have provided some good guidance for me over the years. Perhaps some of them may help you.

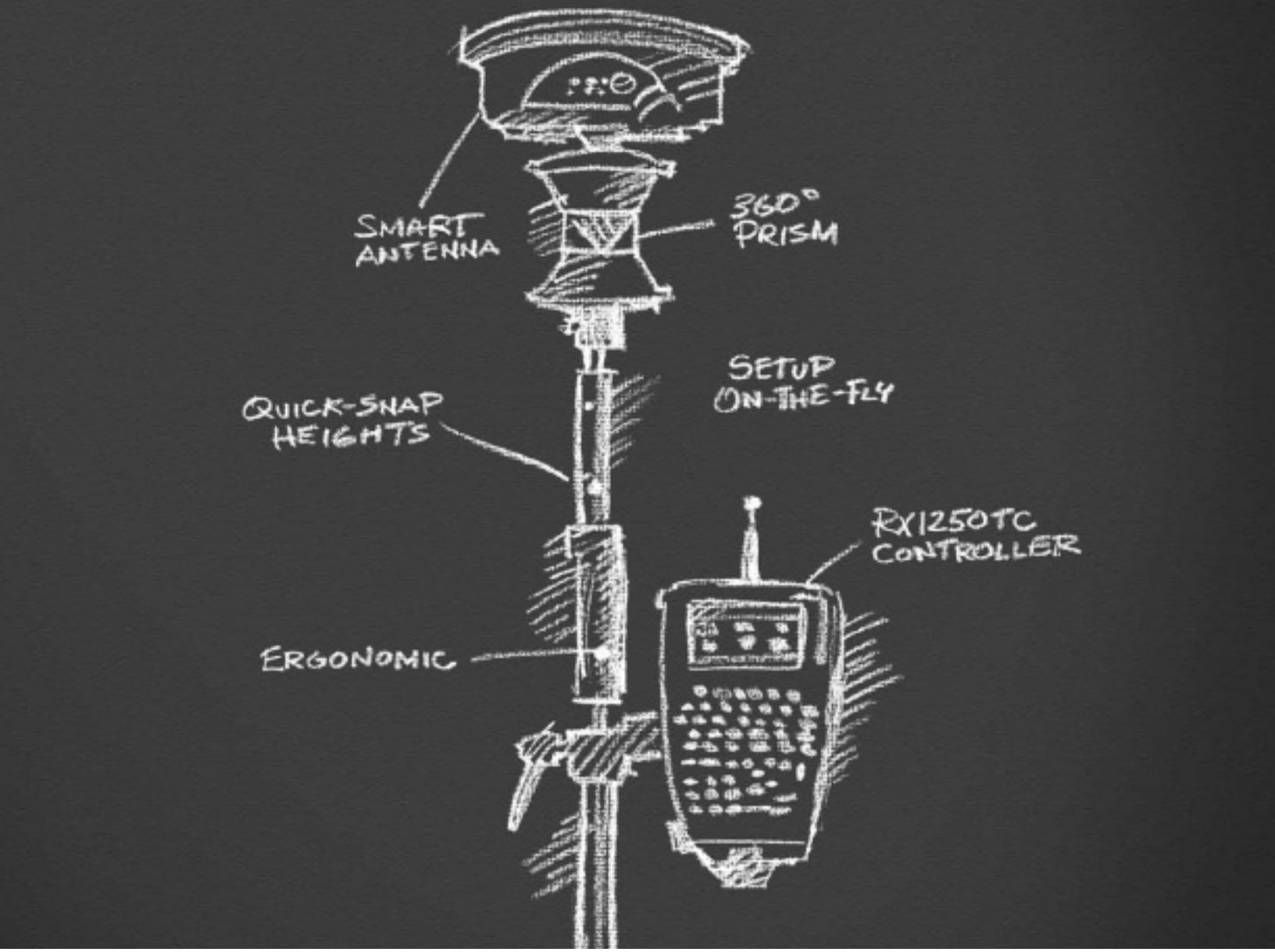
Knud Hermansen is professional land surveyor, engineer, and attorney at law. In addition to consulting work, Knud teaches at the University of Maine in the Surveying Engineering Technology program.

A Little Zen . . . Thoughts for People Who Take Life Too Seriously

- He who laughs last thinks slowest.
- Remember, half the people you know are below average.
- Save the whales. Collect the whole set.
- A day without sunshine is like, night.
- On the other hand, you have different fingers.
- 42.7 percent of all statistics are made up on the spot.
- Ninety-nine percent of lawyers give the rest a bad name.
- Clones are people two.
- I feel like I'm diagonally parked in a parallel universe.
- Honk if you love peace and quiet.
- Depression is merely anger without enthusiasm.
- The early bird may get the worm, but the second mouse gets the cheese.
- I drive way too fast to worry about cholesterol.
- Support bacteria. They're the only culture some people have.
- Monday is an awful way to spend 1/7 of your week.
- A clear conscience is usually the sign of a bad memory.
- Change is inevitable, except from vending machines.
- Get a new car for your spouse. It'll be a great trade!
- Plan to be spontaneous tomorrow.
- Always try to be modest, and be proud of it!
- If you think nobody cares, try missing a couple of payments.
- How many of you believe in telekinesis? Raise my hand . . .
- OK, so what's the speed of dark?
- How do you tell when you're out of invisible ink?
- If everything seems to be going well, you have obviously overlooked something.
- When everything is coming your way, you're in the wrong lane.
- Hard work pays off in the future. Laziness pays off now.

— from www.a-guide-for-seniors.com

What makes one pole smarter than another?



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If You Ever Wondered Why . . . Ask Mike!

by Michael Whitling, PSM

Why do refer to where we live as our "neck of the woods?"

"Neck of the woods," is a phrase heard so often we don't think about its weirdness. If we live in the neck, where are the head, and the rest of the body? "Neck" had been used in English since around 1555 to describe a narrow strip of land, usually surrounded by water, based on its resemblance to the neck of an animal. The early American colonists made a conscious effort to depart from the style of place names used in England for thousands of years in favor of new "American" names. So instead of the English terms "moor," "heath," "dell," and "fen," the colonists came up with "branch," "fork," "hollow," "gap," "f1at" and other descriptive terms, but included one of old, "neck." The Americans were the first to apply "neck" to a narrow stand of woods or, more importantly, to a settlement located in a particular part of the woods. In a country then largely covered by forests, your "neck of the woods" was your home, the first American neighborhood.

Why when we reverse a situation with someone do we "turn the tables" on them?

In 1632, Dr. Robert Sanderson, an English deacon (the future bishop of Lincoln), published a sermon in which he

(continued on page 27)

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2006 Year End Report
Missouri Board for Architects, Professional Engineers, Professional Land Surveyors and Landscape Architects

Principles and Practice of ..... 59 Candidates
Land Surveying Examinations ..... 33 Passed
(April, 2006 and October, 2006) ..... 26 Failed

Missouri Specific of Land Surveying ..... 88 Candidates
(April, 2006 and October, 2006) ..... 46 Passed
..... 42 Failed

Fundamentals of Land Surveying ..... 40 Candidates
Examinations ..... 19 Passed
(April, 2006 and October, 2006) ..... 21 Failed

TOTAL OF MISSOURI LICENSEES:
Architects 4,428
Professional Engineers 13,200
Land Surveyors 931
Landscape Architects 282
Total Individual Licenses 18,841

REVOCATIONS

Ray E. Oberkramer, LS-1206 — Eureka, Missouri
Summary: As previously reported, Mr. Oberkramer agreed to his professional land surveying license being placed on probation for a period of two years commencing on April 1, 2006 and ending March 31, 2008 for failing to file documentation with DNR required for the reestablishment and restoration of a corner which constitutes: 1) incompetency, misconduct gross negligence, fraud, misrepresentation and dishonesty in the performance of the functions and duties of any professional licensed or regulated pursuant to Section 327.441.2(5), RSMo 2000; 2) by violating any provision of Chapter 327 or of any lawful rule or regulation adopted pursuant to Chapter 327.441.2(6); and 3) violating the professional trust and confidence Mr. Oberkramer owed to the board and the public pursuant to Section 327.441.2(13), RSMo 2000. As a condition of Mr. Oberkramer's probation, he was required to provide to the Board within 30 days from the effective date of the Settlement Agreement written proof that he had filed with the Department of Natural Resources all appropriate documentation required for the reestablishment and restoration of a corner.
Cause for Discipline: Mr. Oberkramer failed to file with the Department of Natural Resources all appropriate documentation required for the reestablishment and restoration of a corner.

Dallas B. Russell, LS-2660 — Williamsville, Missouri
Summary: On March 21, 2006, Mr. Russell agreed to his professional land surveyor's license to being placed on probation for a period of three (3) years commencing on April 4, 2005 and ending April 3, 2008. As conditions of Mr. Russell's probation, he agreed to: 1) submit to the Board no later than January 1, April 1, July 1 and October 1 a list of all professional land surveying projects that he has worked on during the preceding three month tern, and 2) submit copies of any sealed documents and any other relevant information to the Board upon request.
Cause for Discipline: Mr. Russell failed to provide the Board with quarterly reports in a timely manner as follows: 1) report due July 1, 2005 which was received by the Board on July 25, 2005; 2) report due on April 1, 2006 which was received by the Board on May 1, 2006 and, 3) report due on July 1, 2006, which was received by the Board on July 18, 2006. Mr. Russell failed to provide the Board, copies of all research notes, field notes, computations and a plat survey for an amended survey for the Gayle Mangum project.
Board Action: Because of Mr. Russell's violations of the terms of the Consent Agreement and Order, the Board held a violation hearing and found that Mr. Russell did violate the terms and conditions of his probation. On November 6, 2006, the Board voted to revoke Mr. Russell's Professional Land Surveyor's license. The revocation became effective November 20, 2006.

SUSPENSIONS

Lawrence E. Jansen, LS-2385 — Billings, Missouri
Summary: A complaint was filed alleging that Mr. Jansen instructed his employees to apply his seal and signature to surveys that he did not prepare or directly supervise.
Cause for Discipline: Mr. Jansen violated Sections 327.411 and 327.442.2(5), (6), (10) and (13), RSMo by knowing that an employee of Ozark Mountain Land Surveying, Inc. signed Mr. Jansen's name and applied Mr. Jansen's professional land surveyor's seal to documents and then not preventing such documents from going to clients and reviewing agencies. Mr. Jansen violated 20 CSR 2030-3.040(4) (formerly known as 4 CSR 30-3.040(4) by failing to mark preliminary documents as preliminary.
Board Action: Mr. Jansen entered into a Settlement Agreement with the Board whereby agreeing to his professional land surveyor's license being suspended for a period of six months commencing on December 20, 2006 and ending on June 19, 2007 followed by probation for a period of three (3) years commencing on June 20, 2007 and ending on June 19, 2010.

(continued on page 36)

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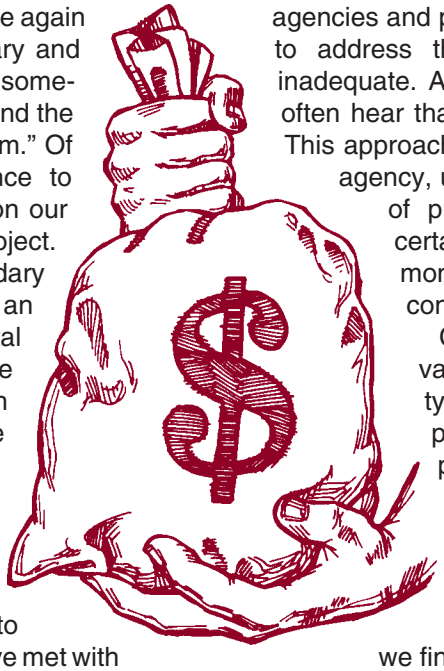
Hidden Multimillion Dollar Infrastructure

by Richard E. Waltrip, PLS



Our profession and organization has once again raised the issue of destruction of boundary and positional control monuments. These are sometimes referred to as "survey monuments" and the problem is often seen as a "survey problem." Of course, this issue is of great importance to surveyors because it has a direct effect on our ability to effectively implement a survey project. This is true whether that project be a boundary surveyor one requiring the establishment of an elevation or a reference to a horizontal system such as a state plane coordinate system. The effect of monument destruction generally translates to more project time and a higher cost for the survey project. My experience in other states has shown me that the problem is not limited to the state of Washington, but exists in other states as well. And though efforts have been made over the years to develop strategies to protect these monuments, these efforts have met with limited success.

We continue to struggle to develop effective strategies that will help to protect more monuments from destruction. I have joined in the struggle, both with LSAW and as an individual. Because a substantial part of the monument destruction occurs on street and utility projects, I've met with local agency groups and professional engineering organizations. I've spoken with my contacts with local utility companies and local contractors. From my conversations with these groups, as well as with members of our profession, my outlook has changed and I am approaching the situation a little differently. I have begun to frame the conversation by speaking of our system of monuments, property lines and right of way lines as an infrastructure, much like a street infrastructure system or a utility infrastructure system.

What's struck me most about these conversations is the difficulty in having to build my case about the importance of our efforts and the benefits to all. I mention that monuments are protected by law and have the appropriate statutes available for handout. I get questions about what is stated in the law, when the laws apply, and what constitutes a survey monument. I get the distinct impression that my audience sees this as a problem only for surveyors. They seem to feel that these monuments belong to surveyors and though they are sympathetic, there is only so much they can do.

One could build a list of standard procedures that occur in the implementation of a street or utility project. Protection of utility features, fences, landscaping and other features would be on the list. With the possible exception of street monuments, a standard plan for the protection of monuments is typically not on that list. Though some public agencies and private engineering firms have taken steps to address the problem, in many cases they are inadequate. And of course, most have done nothing. I often hear that the contractor is ultimately responsible. This approach and attitude only serves to separate the agency, utility or private firm from the responsibility of protection of survey monuments. And it certainly doesn't convey the importance of monument protection to those involved in the construction of the project.

Can you imagine this attitude about a water valve or gas valve? How much effort is typically expended to make sure they get protected? Is there a standard procedure in place to ensure that proper protection occurs? The answer, of course, is yes. If we are doing a design topographic map, we will map each utility feature as part of our standard process. We'll research utility records and verify utility maps against what we find in the field. If something doesn't add up, we'll dig deeper, sometimes literally. The client, whether it be a public agency or private engineer, expects these utility features to be mapped. The field and record utility information is placed in the engineering design drawings. Each feature receives appropriate treatment to make sure it is "preserved and protected." If we ask the client whether or not to map utility features, we know they won't decide to pull that from the scope. Ask the same question about monuments and you may get a different answer.

Why don't survey monuments get the same treatment? Part of the reason is a general misunderstanding of surveying in general and how property or right of way corners are established. Can't you just calculate coordinates for these? Most non-survey types don't understand the nuances and application of boundary survey principles established from real estate law and case law. Monuments and property lines are not viewed as part of an interrelated system or network with interdependencies and relative relationships. "Can't we just use GPS and put them back?" Many assume that GPS has some sort of inherent knowledge about where things are. But surveyors know well that GPS is only a measurement tool and cannot make professional decisions to determine boundaries. Ultimately, the importance of these monuments is simply not recognized.

There are other reasons that utility features are protected so assertively. One is the immediate nature of the problem. Public health and safety concerns may be created and these need to be addressed right away. Another important reason is that the owner has clout. If a manhole or valve box is

(continued on page 29)

Hidden Multimillion Dollar Infrastructure (continued)

buried, the owner will not hesitate to require that you take appropriate measures. From what I've seen, most don't see a survey monument as having an owner. The property owners themselves may not even know that a monument was destroyed or even existed in the first place. Most of the time, they don't know their rights. Only in a few cases, does a property owner ask to have a monument replaced.

Our profession is very aware that monuments and property lines are a network with interdependencies and rules of construction, much like gas or water systems. This network exists like utility subnets, within regions or local networks. If you destroy or disturb a critical survey monument, a serious problem becomes present in the system. Often, the problem is not known for some time. No one on the block will be calling the agency right away to let them know about the problem. Surveyors will hear about it from the land owner who wants to know why the cost of the survey is so high. We'll explain that the controlling street monuments were destroyed in the street improvement project three years ago. Can't you get the city to put the monuments back in? But of course "it's not the city's responsibility because the contractor destroyed the monuments."

We need to start thinking and talking about this system of property lines, right-of-way lines and monuments as an infrastructure. As a gas valve is an essential component in a network or interrelated system, a survey monument is an essential component in a network or interrelated system. Both need to be perpetuated in a usable condition to prevent damage to the system.

Monument destruction often occurs during a public project or during a private development or utility project approved by a public agency. I would suggest that all professionals associated with the project have some responsibility in preserving these monuments. The private design professionals and the participating agency or utility should put the same level of effort into the protection of the monument infrastructure as it would to the protection of any other infrastructure. Protection of monuments needs to become so routine that the equipment operators know to be as careful with the survey monument as they are with the lilac bush next to it, without being told.

For many projects, this will mean conducting a thorough research of survey records, subdivision plats and other record sources. In accordance with good professional practice, it may mean employing a surveyor to participate in the process. Monuments need to be searched for, shown on the design drawings, and labeled "preserve and protect." Their existence needs to be monitored throughout the project. If damage occurs, it needs to be corrected. Whatever actions are required to protect the monuments (and the public), they need to be done.

After all, public agencies, as well as all licensed professionals, are charged with the responsibility of protecting the public interest. Private utilities operate with a quasi-public status and also have a responsibility to protect the public interest. These agencies, utilities and individuals need to accept this responsibility and take pro-active action. Survey monuments mark Public Land Survey System (PLSS) lines and private property corners. These monuments are essentially owned by our citizens. They need to be shown on design plans, along with provisions for their perpetuation. If a public agency, utility or private individual hires a contractor to do a project and property is damaged, is the responsibility solely with the contractor? Doesn't the entity initiating the project share some of the responsibility?

Our profession needs to stay involved with this issue. We need to help generate solutions. Do we need to keep placing controlling monuments in street intersections? Would a monument database be viable? Is there a way to get One-Call involved? Have we taken the time to explain the importance of monument preservation to the engineer or client we're working for?

We need to keep spreading the message. The problem is not a "survey problem." Attitudes about who is responsible need to change. Many share in the responsibility. The public interest regarding this issue needs to be understood.

The courts view monuments as paramount evidence of boundary lines and statutes have been enacted to protect them. Those involved with construction projects need to participate in their protection. It is just as important to protect a property corner as it is to protect a water valve or a landscape feature. I propose that we incorporate some new language about the property boundary infrastructure in our discussions with designers, contractors, public agencies and utility purveyors. And I propose we incorporate new language in construction standards and specifications to provide for the protection of this infrastructure.

Our profession is very aware that monuments and property lines are a network with interdependencies and rule of construction, much like gas or water systems.

If You Ever Wondered Why . . . Ask Mike! (continued)

exhorted, "Whosoever thou art that dost another wrong, do but turn the tables: Imagine thy neighbor were now playing thy game, and thou his." The "tables" he was referring to was the game of backgammon which has been known as "the tables" since medieval times. During the playing of backgammon the rules of backgammon allow sudden reversals of fortune which can rescue a player on the brink of losing and thus "turn the tables" to his or her advantage.

Why is "Peggy" a nickname for Margaret?"

Margaret, which is a variant of the obsolete word "margarite," meaning a "precious stone," was a very popular given name in medieval England and Scotland, where it was conventionally taken to mean "pearl." But that doesn't help with the "Peggy" connection. Actually Margaret has spawned an amazing variety of names, some of which you wouldn't connect with the original in a million years. For example: Margot, Marguerita, Rita, Greta, Gretel, Gretchen, Marjorie (originally Margery), Margie, Maggie, Madge, May, Maisie, Daisy, Maidie, Meggie, Meg, and Mog. The "Peggy" connection is more closely related to the nicknames of Maggie, Meggie and Meg. "Peggy" easily enough came from a schoolyard rhyme of "Meggy-Peggy." More interesting is the "Daisy" connection. "Daisy" was a pun dating to a time when "Margaret" was also an English slang term for the ox-eye daisy. It became an independent first name during the 1900's fad for flowerbased names.

Why is "bodacious" used as slang for something beautiful?"

"Bodacious," created by simply combining "bold" with "audacious," which, of course, means pretty much the same thing as "bold," but this is slang, after all. There is something surprising about "bodacious," however, and perhaps you can tweak your 80's minded friends with it. Ask them how long "bodacious" has been around. They may guess that it was maybe the 1960's or 70's, but in fact people have been describing things as "bodacious" since around 1843.

Why do bananas get bruised as they age?"

I've mentioned that more bananas are eaten every day in North America than any other fruit. And to think that North America didn't get its first taste of the tropical fruit until 1876 at the Philadelphia Centennial Exhibition. Each banana was wrapped in foil and sold for 10 cents. So guess what, bananas do not bruise as they age, unless they are mishandled. Liken the black spots on bananas to the liver spots on mature adults, they appear with age, even if they go untouched. The hormone ethylene, a ripening agent found in the skin of the banana, transforms a green banana into the appealing yellow fruit we purchase at the market. Ethylene, however, continues the ripening process, which gives the banana a "bruised" appearance, and eventually turns the banana black in color. There is no switch to turn off this process, but by placing the banana in a cool place, one can slow the process. The refrigerator is no place for a banana, because this is certain to blacken it prematurely. The cold air, to which the banana is exposed, causes the heightened production of blackening compounds.

Quick Facts:

If you fall/jump from 160 feet, your body experiences 285 G's, or 285 times the normal force of gravity, when you hit the water. To put this in context, the force your body experiences in a normal car crash is 70 G's.

Each unit on the Richter scale for earthquakes is equivalent to a power factor of about 32. So a 6 is 32 times more powelful than a 5.

Taco Bell sold 3.2 billion corn and flour tortillas and 104 million pounds of cheese last year.

The ashes of the average cremated person weigh nine pounds.

Natural gas has no smell. The odor is artificially added so that people will be able to identify leaks and take measures to stop them.

There are 5 million more women than men in America! The US population is 49.1 % male and 50.9% female.

In the comedy classic "Caddyshack," the noise the Gopher makes is actually a dolphin - the same sound effects were used for "Flipper" in 1964.

In L. Frank Baum's classic fairy tale, "The Wizard of Oz," Dorothy wears silver shoes, not ruby slippers. Noel Langley, one of MGM's screenwriters, is credited with updating Dorothy's footwear in this unforgettable 1939 film.

William Taft was the largest president at 6 feet 2 inches tall and 326 pounds.

As if the Platypus isn't odd enough. Adult male platypuses have a poison gland in their hind legs. They can eject poison out of a hollow, horny spur on their ankle.

Splenda is 600 times sweeter than sugar.

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Hawaiians consume nearly 7 million cans of Spam each year, about 6 cans for every man, woman and child.

Crocodiles swallow stones to help them dive deeper.

According to a recent survey, the most popular name for a dog is Max. Other popular names include Molly, Sam, Zach, and Maggie.

Caligula of Rome had his father, mother and two brothers killed to become emperor. Nero had his mother and first wife killed. These two emperors were hated so much by the people that all references to them were deleted from official Roman documentation.

The tin can was invented by Peter Durand in 1810. The modern can opener was not invented until 1856. Before the can opener, people used a chisel and hammer to open cans.

Send your thoughts to mjw@miarnidade.gov.

Reprinted from The Florida Surveyor, June 2006

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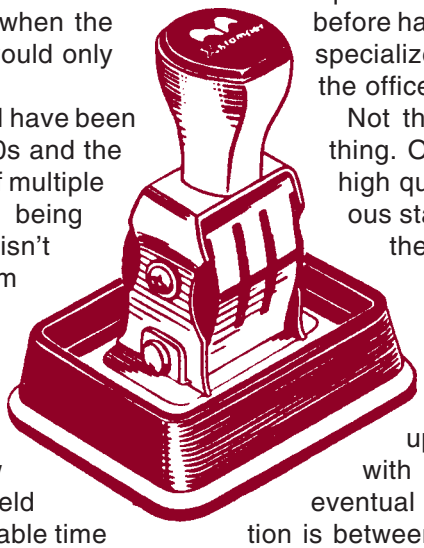
The Need for Dual-Stamped Maps

by R. Lee Hixson, PLS (CA, NV, OR, UT, ID, WY)

Have you ever worked on a project where the field work was handled by one surveyor, and all the office work was handled by another surveyor? Of course you have. It happens all the time. From small firms to large firms this is a typical scenario, and yet the maps that get recorded in California allow for only one surveyor to stamp and sign them, despite the fact that multiple surveyors have exercised responsible control over the work.

Why do we do this?

I suppose that this practice has historical roots, dating back to past centuries where most licensed surveyors worked either for themselves, or with small firms, and literally performed all the work for the project from start to finish. They got the contract, did the research, ran the field crew, did the calculations, analyzed all the data and either did the drafting themselves, or closely supervised it. Thus, it only made sense that they would take full responsibility for the entire product and, when the map arrived at the Recorder's Office, it would only bear one stamp and signature.



But this is clearly not the case anymore. I have been surveying in California since the late 1970s and the trend has obviously been in the direction of multiple responsibilities for the mapping that is being done. There are variations, of course, but isn't it very common that you work for a firm where the field work is separated from the office work? Of course it is. As project surveyors or project managers we try our best to visit the site to be familiar with the field conditions, inspect some of the land net monuments in the area, watch the crew for a while, and carefully examine their field notes, but the reality is that 99% of our billable time is spent in the office.

The result is that we are forced into a position of trusting that the field work is being done to our satisfaction. If we have worked with the same firm for many years, and if the field survey staff hasn't had too much turnover, then we have a greater chance for developing a higher level of confidence in the field work being done ... that the crew members are being diligent and professional, and closely following our guidance in each phase of the project.

But no matter what the circumstances of the firm-the longevity of the working relationships between the field and office personnel-the truth is that, to a great degree, we do not follow the legislated maxim of being "in full responsible charge" of the field work being done. While we may be taking full responsibility for the field work, if we are not actually out their doing the work ourselves we are merely trusting that it is being done the way we would do it ourselves.

I have worked for small firms where the office LS was heavily involved in the field work. He or she would be the only one to study the previously recorded maps in the area and do the pre-calculations for use by the crew in locating the land net monuments. They would also prepare the crew package and give a detailed briefing on what was to be done that day, perhaps being in phone contact with the party chief during the day and getting personally debriefed when the work was completed ... even downloading and checking over the field data.

But I have also worked for larger firms where there was a greater disconnect between the office and the field. It is not uncommon for one cadd tech to do the precalculations and another tech take care of the transfer of data from office to field, and field back to office. It is also possible for yet a different staff member, who is skilled in least squares adjustment, to adjust and balance the data before handing it over to the project surveyor. Many specialized staff members might play key roles in the office.

Not that such a division of authority is a bad thing. Of course not. Many firms are performing high quality, professional surveying with numerous staff being involved at the various stages of the mapping process.

The point is, to one degree or another, most firms have a division of labor where there are multiple people involved in a particular project. Any of the common types of survey projects can be divided up into phases, allowing for different people with different specialties to participate in the eventual final product. And the biggest differentiation is between the field and the office. There is some degree of divided authority between the different office tasks, but it is between the office and field work where we see the largest "gap" in the chain of responsibility.

But that gap need not be a problem if everyone involved is doing their work professionally and the good communication and proper quality control is being implemented. There are firms where some of the party chiefs are licensed surveyors. Here we have, not just a physical separation between the office and field, but a situation where there is a licensed person on each end of the work.

Let's take it one step further. How many of you have been involved in (or heard about) cases where one firm subcontracted the field work to a second firm? A licensed person in Firm A does the research and the pre-cales,

(continued on page 34)

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The Need for Dual-Stamped Maps (continued)

then has a licensed person in Firm B oversee their own crew in performing all the field work. Firm A takes the field data, processes it and eventually completes a boundary resolution. Firm B is then given the coordinates for the monuments that need to be set, and they proceed to set them.

Is there anything inherently wrong with such a division of the labor? As long as the two firms have licensed surveyors taking responsibility for their separate phases of the work, of course not. So then why not allow them to both stamp and sign the map?

In the first case, where one firm has an office LS as well as a party chief who is an LS, it may be more discretionary as to whether one or both of them stamp the map. But in the second case doesn't it seem practical and even desirable that both of the surveyors should have their stamps appear on the final mapping product?

Let's face the reality of modern surveying. With the tremendous changes that have taken place in the past 15 years in the technology of field data collection, there has been an ever-increasing tendency for the surveying profession to further specialize. For a long time we (and our state laws) have sidestepped the issue of multiple sublicenses within the profession. For unexplained reasons we have not gone the way of engineering and subdivided the licensing process to recognize specialties (civil, structural, geologic, etc.) despite the realization that, as our profession evolves there is a compelling need to do just that. Some day we may wake up and change our laws to provide for a "General Licensed Surveyor" designation, along with sub-licenses for boundary analysis, water boundaries, photogrammetry, construction staking and public land survey work.

With the tremendous changes that have taken place in the past 15 years in the technology of field data collection, there has been an ever-increasing tendency for the surveying profession to further specialize.

But while we wait for this eventual subspecialzation to be recognized, can't we at least acknowledge the reality that, very often, the office and field work is supervised by two different people? Why can't we change the Subdivision Map Act and Land Surveyor's Act to allow for two people to stamp a topography map or any of our maps that get recorded? The Surveyor's Statement could be altered slightly to reflect the different responsibilities. For a Record of Survey these could be the two versions of the Surveyor's Statement:

> This map correctly represents a field survey made by me or under my direction in conformance with the requirements of the Professional Land Surveyors' Act at the request of _____ in _____, 20___.
>
> This map correctly represents the boundary resolution portion of a survey made by me or under my direction in conformance with the requirements of the Professional Land Surveyors' Act at the request of _____ in _____, 20___.

Each licensed surveyor would stamp the appropriate statement. Similar alterations could be made to the statements shown on Parcel Maps, Tract Maps and topographic survey maps. The Land Surveyor's Act could contain a new paragraph that would explain the allowed division of authority; the Subdivision Map Act could also be revised toward the same end.

There are two main benefits to such a change: 1) that State Law would finally reflect the way that work is actually being performed every day around the state, and that, 2) each surveyor involved with a project would be able to take credit-and responsibility-for that portion of the work that they were in charge of. There is nothing intrinsically wrong with moving in this direction and it only seems right that our laws bear a closer resemblance to how the profession actually operates.

I have been told that, in Germany, the party chief, the drafter and the office surveyor in charge all stamp and sign the map. Doesn't it make sense? Shouldn't we allow for, if nothing else, the possibility that more than one person was in responsible charge of a survey? Why should we continue to pretend that only one licensed person was involved with a project, if in fact there were two?

2006 Year End Report (continued)

INJUNCTIONS

Richard L. Ferguson, LS-2125 (expired December 31, 2002)
Lee's Summit, Missouri
Summary: A complaint was filed against Mr. Ferguson alleging that he performed a survey in Blue Springs, Missouri while his Professional Land Surveying license was expired.
Cause for Discipline: Mr. Ferguson's conduct amounted to the unlicensed practice of professional land surveying pursuant to Section 327.272 and violation of Section 407.010, RSMo, the State's Merchandizing Practices Act.
Board Action: The Board authorized the Attorney General's Office to file a petition for injunction in the Circuit Court of Jackson County, Missouri. Thereafter, on December 14, 2006, Judge John R. O'Malley issued an Order of Default, Default Judgment as to Liability, Permanent Injunction, Restitution, Civil Penalties, and Other Relief, in that Richard L. Ferguson is permanently enjoined from violating Section 207.020, RSMo 2000 and Section 327.272, RSMo by practicing land surveying in Missouri without a currently valid certificate of registration or license to practice land surveying in Missouri. Defendant Ferguson is liable and shall make payment in the amount of $12,700 to the State of Missouri, payable to the credit of the Merchandising Practices Restitution Fund as restitution for consumers listed in Order. Also, Defendant Ferguson is liable and shall make payment in the amount of $1,500 to the State of Missouri payable to the credit of the Merchandising Practices Revolving Fund and Defendant ferguson is liable for and shall make payment of $6,000 to the State of Missouri as civil penalties.

How Far Back is My Property Line?

"But of course my property goes right down to the curb," said the landowner to the Alberta Land Surveyors' Association.

"It's a common misunderstanding," reported Brian Munday, Executive Director of the Alberta Land Surveyors' Association. "After all, you're responsible for mowing the grass and shoveling the driveway right to the curb. However, the reality is your property line is often a good distance in from the curb."

There is no set distance between the curb and your property line. Sometimes, landowners might think that their property line is automatically one metre back from the curb but your property line is really defined by survey pins or markers put in the ground by Alberta Land Surveyors.

Because of their significance, the Surveys Act of Alberta carefully regulates boundary markers. The law not only provides for the establishment of survey markers but also for the consequences of removal or tampering with them. It is illegal to remove or tamper with an official boundary marker. Tampering with boundary markers can result in fines up to $10,000.

The area between the curb and your property line may form part of a utility right-of-way that allows underground gas, electrical and telephone lines to connect to your house. In some cases, the area may be reserved for a future road widening.

Your Alberta Land Surveyor's Real Property Report will show you exactly how far back your property line is from the curb. It will also show you whether there are any improvements, such as a basketball hoop, that are within the right-of-way.

The Alberta Land Surveyors' Association has produced a number of free brochures of interest to the general public related to this topic. They include "The Real Property Report," "Understanding Easements and Rights of Way," and "I destroyed survey evidence- a practical guide to survey markers for the homeowner, handyman and contractor." Contact the ALSA for your free brochures.

The Alberta Land Surveyors' Association, formed in 1910, is a self-governing professional association legislated under the Land Surveyors Act. The Association regulates the practice of land surveying for the protection of the public's interest.

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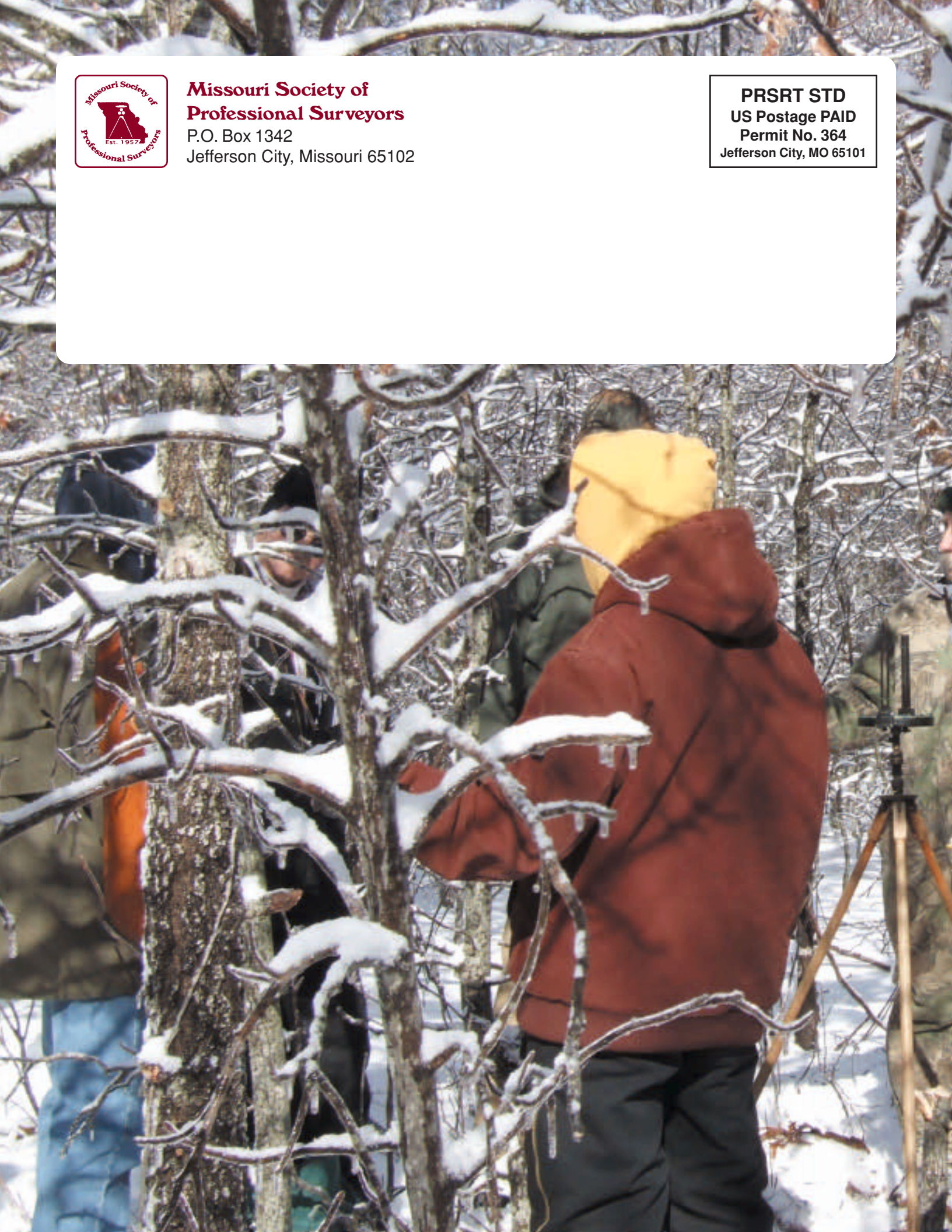

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