

THE OREGON SURVEYOR

Vol. 37, No. 1, 2014



A publication of the Professional Land Surveyors of Oregon

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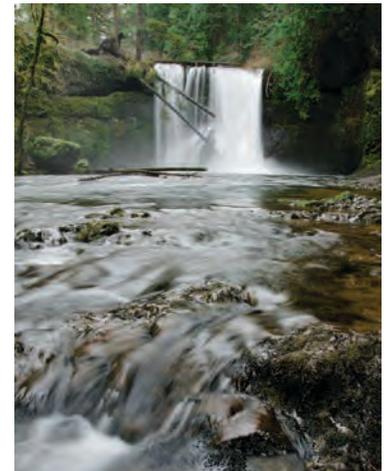
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On the Cover,

by Patrick Gaylord, photographer

Upper North Falls at Silver Falls State Park in winter. Located just south of Silverton, Oregon on Highway 214, Silver Falls State Park offers 9,000 acres of land to explore and one of the highest concentration of waterfalls found anywhere in Oregon. A short one quarter mile hike from the North Falls parking lot leads you to Upper North Falls at the northern end of the park. While visiting the park, check out The Trail of Ten Falls and walk behind numerous waterfalls for an exciting adventure. Day use fees apply year round.



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The Oregon Surveyor welcomes your articles, comments and photos for publication. PLSO assumes no responsibility for statements expressed in this publication. Send materials to Lisa Switalla, lisa@llm.com.

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■ Greg Crites, PLS



(Un)Expected outcomes

I'm going to divulge a little personal information, something I seldom do. Those of you who really know me (which I'm sure are very few) know that I love to read. I didn't start out that way, but back in college, my University Honors professor instilled in me a desire for knowledge that reached beyond the walls I had built around myself and opened some amazing horizons. She gave me a reading list containing 300 books, stating that "if you read every book on this list, I'll consider you an educated man!" Possessing a doctorate in Economics from Harvard, I took her remark as a serious vote of confidence in my abilities. I set about reading all the books on that list. I'm still working on it.

Most of you would recognize some of the authors: Dante, Milton, Schopenhauer, Nietzsche, Hegel, Kant, Twain, Franklin, Cervantes, Poe, Dafoe, London, Jefferson, Dostoevsky, Castaneda, Moon, Hugo and many more. I'll bet you're wondering who some of those authors are? Go to the library, check them out and open your own horizons. Then again, that isn't the subject of this editorial.

When I started reading the authors on this list, of course there were names I recognized, but I resisted temptation and tried to follow this adventure over a logical path. I don't think it was unreasonable to assume that my honors professor had a purpose behind the way she ordered that list, so I set about following her sequence. It didn't take too long to figure out that there were a few things she left out. First was the discovery that I simply couldn't stand reading some of them. Therein was my first lesson in expected outcomes. I felt that by somehow not reading ALL the folks on the list, I was betraying her trust, let alone shorting myself on the knowledge these great works purportedly contained. Second, some of the authors on that list I would have never read had they not been there. Much of that had to do with preconceived notions about their subject matter, or even their writing style. My initial expectations were that this process had to be continuous. I didn't realize that I just wasn't ready to digest the works of some of these folks. A little life had to happen before I gained enough perspective to appreciate their thinking.

A couple of years ago I began reading Victor Hugo's *Les Miserables*. Arguably, it is considered one of the greatest works of fiction ever written. At over 1300 pages in length, reading it requires a commitment of time and an intention to finish it, regardless of the distractions. Honestly, 30 years ago I had no interest in reading this book. Now that I've finished it, I understand the acclaim afforded it and would recommend it to anyone. The chapter on love is one of the most amazing descriptions of that elusive emotion I've ever read. Getting back to expected outcomes, I never would have imagined the impact it had on me.

When I began my surveying career, I had no idea what it had in store for me. Who could have imagined the amazing experiences, the complex problems and the exposure to the many different disciplines encompassed by this field? Fortune telling comes to mind, but then, how often do we find people in this profession who make their "fortune" doing it? There's something else at work here. I think it has to do with loving what you're doing. Attend any conference for any professional surveying society in this

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From your Chair-elect

■ John Thatcher, PLS; 2013 PLSO Interim Chair/Chair-elect

Hello 2014 and greetings from your Interim Chair/Chair-elect. We have a motto where I work: Do good work, make money, have fun. That is my New Year's wish for all of you. If corporate America can be convinced to turn its vast hoard around to create jobs, my wish *could* be granted.

As of this writing, we are still gearing up for the PLSO Conference. Whew! I have nothing but awe and admiration for our Conference Committee. What a job those folks do. Let's all make sure it is not a thankless one. I am also gearing up to lead this organization through this year and the next. But a lot can happen by the time this magazine reaches you. A PLSO member could step up to the open Chair position, and this could be my last column for 2014. Whatever happens, I am here to serve the best interests of PLSO. So here are some thoughts for the coming year.

First, I want to extend to Paul Galli my sincere wishes for a quick and complete return to health. Paul is a member of the Pioneer Chapter and has graced PLSO with his leadership in many ways over the past few years. Paul agreed to be our leader for 2014, but now all we want is for Paul to be healthy.

Second, now that I have been suddenly elevated to Interim Chair, I find myself thinking about a vision for PLSO in 2014. I think I got lucky—there aren't any crises or tough issues for me to inherit (thank you, Lee Spurgeon). Our finances are on the road to health, we surveyors now have some serious national clout with NSPS, and we have a good group of leaders on the Board and in key committees. With all that in place, I offer a few items on my PLSO bucket list:

1. Focus on our Strategic Plan and keep PLSO on track.
2. Continue prodding our finances toward robust health.
3. Populate our committees as needed to advance the Strategic Plan.
Create a Mentorship Program chaired by Past-Chair Lee Spurgeon.
After all, wasn't that one of his campaign promises?
4. Continue and elevate our efforts to recruit young women and men into the profession and assist them with college expenses. This will include funding scholarships, PLSO outreach programs and the PLSO Foundation.

Third, now that you know my somewhat hastily assembled aspirations for PLSO this year, there are a few things I would like to ask of you:

1. **Leadership:** Team up with your fellow members on a committee and make PLSO go. We need your experience, energy and advice to keep PLSO vibrant, current and fun.
2. **Honor your peers:** Take a look at the list of awards and nominate someone for an award at next year's conference. It's easy, and there are several fun awards to consider after you nominate deserving members of your chapter for Surveyor of the Year and Associate of the Year.
3. **Get published:** *The Oregon Surveyor* is now back to six issues per year. Tell us a war story, write a technical article, write a book review, draw a cartoon, tell a joke, submit a photograph, give us a Safety Moment, tell us how things work in your world. You could win the award for Article of the Year at the 2015 Conference.

I have a peripatetic nature, and I have a little plan in the back of my mind to visit all the chapters over the next two years. I should probably do the math first to see if that is possible. Nonetheless, I like to travel and see new places, and I would love to attend one of your chapter meetings. Meanwhile, do good work (it's your legacy), make money (it pays the bills and allows the next item), have fun (precious time is slipping away). ☉



My PLSO bucket list

Focus on our Strategic Plan.

Continue prodding our finances toward robust health.

Populate our committees as needed to advance the Strategic Plan.

Create a Mentorship Program.

Elevate our efforts to recruit young women and men into the profession, and assist them with college expenses.

How you can help PLSO

Leadership: Team up with your fellow members on a committee and make PLSO go.

Honor your peers

Get published in *The Oregon Surveyor*. Your contribution could get the award for Article of the Year at the 2015 Conference!

country and you'll experience that love firsthand. I have never attended meetings anywhere else that are peopled with so many passionate folks. It isn't a big leap from reading Hugo's interpretation of romantic love to recognizing the similarities to the love for this profession. Talk about perspective!

So, John Thatcher's "Letter From the Chair" in this issue was written before our recently completed conference. He was expecting to serve out the year as the PLSO Chair due to the unfortunate resignation of Paul Galli. He was expecting a far different outcome during the upcoming year. That all changed during the three days of our conference. Neither John nor any of the rest of us realized that Lee Spurgeon was willing to continue as Chair for another year! Really, only

Tim Fassbender is crazy enough to want to serve in such a position more than once. I thought Lee was done. I know I was worn out after serving my term as Chair, as it had represented the culmination of nearly 10-years serving on the Board of Directors, but Lee changed all that, and John was relieved to find out that he wouldn't have to step into the frying pan quite yet, his reluctance to serve as Chair so suddenly driven by his self-perceived lack of experience. All of the committee chairs and for all I know, all of the members of the board had anticipated an outcome that became moot when Lee volunteered to continue.

Lee's decision was a game changer. He wanted to continue the programs he'd implemented during his tenure as Chair. He wasn't able to complete

some of those programs and felt the extra time would enable him to lead the PLSO to a better place. It wasn't difficult for the board to get behind such a notion. In a matter of a couple of days, Lee managed to change all our expected outcomes and I'm thankful he did. I know John Thatcher certainly is. He now has a full year serving as Chair-elect to gain the confidence he felt he needed to serve as Chairman. Funny how our expectations can be so quickly realigned when faced with the possibility of changing them. As for Lee, the self-proclaimed Chief Knucklehead, I think I detect just a hint of love for what he's doing! ◊

The views expressed herein are mine and mine alone and in no way should be construed as representing ANY opinions shared by our membership or a stance on political issues by this organization.

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■ Mary Louise VanNatta, CAE



Benefits of membership

Whether you are a new or renewing member, the members and leadership of PLSO—especially those in your local chapter—look forward to your active participation in this professional organization.

You will be able to renew your 12 month membership (July 1–June 30). Renewing members: Keep watch this spring for dues renewal postcards to alert you when online renewals are open. Members are eligible for a number of benefits, including:

- Opportunities to connect with other surveying-oriented individuals.
- Be a part of a learning community in your profession.
- Receive notices about local meetings, workshops and industry news in your area.
- Subscription to *The Oregon Surveyor* magazine.
- Ability to earn mandatory professional development hours at reduced rates.
- Subscription to the PLSO group mailing list that connects professionals via email.
- Promote your business with a free public listing.
- Free listing and online searchable feature of the PLSO Membership Directory.
- Legislative updates on issues that affect surveying.
- Access to “Members Only” features of the website.
- Materials from the PLSO office, including door hangers.

- Discounted registration at the PLSO Annual Conference.
- Give back to your profession by mentoring and encouraging students...and more!
- Join with www.achievelinks.com. Purchase items online and earn points for you and the association.
- Access for you and your family to a *free* prescription drug card program. Download a prescription drug card and receive savings of up to 75% at more than 50,000 national and regional pharmacies.

Why it pays to join

Individual members working in communities provide the energy that keeps the organization moving forward. You can help to support legislative and educational programs that improve the professional status of Oregon land surveyors and help to advance the profession of land surveying by promoting high standards of practice and ethical conduct, while holding paramount the interests of the public. ☉

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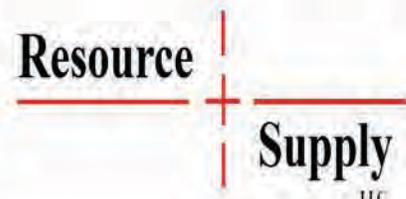
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PLSO Scholarship Recipients—2013–2014 school year

From The Oregon Community Foundation

“Thank you”—two small words that have so much meaning. Each year, scholarship recipients submit letters expressing their appreciation for the support they have received for their education. The messages range from gratefulness for the financial assistance, to the importance of having someone believe in them, or being the first in their family to attend college.

Here are four thank you letters from Oregon Community Foundation (OCF) scholarship recipients. The six of us immensely appreciate and enjoy your involvement in OCF’s scholarship program, but more than any “thank you” from us, these letters affirm the value of the scholarship awards students received.

In 2013, OCF provided 2,400 scholarships totaling \$7 million. Scholarships were awarded to students from every county in Oregon. It is through the generosity of donors and commitment of volunteers like you that we continue to increase scholarship support for students across the state. The Oregon Community Foundation is honored to partner with you to ensure access to higher education.

Sincerely,

The OCF Scholarship Team

Belle Cantor, Program Officer for Scholarships
Randy Choy, Program Officer for Education & Special Funds
Amy Cuddy, Senior Program Officer for Southern Oregon
Jeff Geiger, Program Officer for the Southern Willamette Valley
Maesie Speer, Program Associate for Scholarships & Grants
Maka Chee, Program Assistant for Grants

Dear PLSO,

I am writing to thank you for your generous \$1000 Bill Guiles Scholarship. I was very happy and appreciative to learn that I was selected as the recipient of your scholarship. This scholarship will help me pay for part of my senior year of college.

I am in the engineering program at OSU and major in civil engineering. I also am pursuing a minor in Agricultural Sciences. I always wanted to be an engineer since I was a little kid building Legos. I have always been analytical and wanting to build projects. My skills in technology and creativeness will help me along the way. With this scholarship I will be able to accomplish the goals I have set in my civil engineering career.

By awarding me this scholarship, you have lightened my financial burden, which allows me to focus more on the most important aspect of school: learning. Your generosity has inspired me to help others and give back to the community. I hope one day I will be able to help many people in a community by the skills I have learned in the civil engineering field, and you, Professional Land Surveyors of Oregon, have helped me in my journey.

Sincerely,

Levi Warriner

Dear PLSO,

I want to extend my deepest gratitude for selecting me as a recipient of a PLSO Scholarship. I had the opportunity to attend the 2013 conference and witness the quality of your organization, and your efforts to advance the profession of land surveying. I am honored to receive this scholarship from my soon to be professional peers.

Your generous scholarship will greatly assist me in staying focused on my education and training as a land surveyor at the Oregon Institute of Technology. My aim is to learn as much as possible during my academic years, and become the best land surveyor I can be once I join the industry as a professional.

Once again, thank you for the scholarship award.

Sincerely,

Fernando Chen

Dear PLSO,

I am honored to be the recipient of the PLSO Brian Weigart Scholarship. I greatly appreciate the financial support you have awarded to me. Without the help of generous donors, such as yourself, I would not be able to attend college. I am very excited to attend Oregon Tech this Fall (September 2013) and continue on the path to becoming a land surveyor.

Thank you so much,

Austin Grimes

Dear PLSO,

Thank you so much for your Pete Maring Scholarship. I’m a nursing student in my fourth year of school. My goal is to get through college debt-free. Thank you for your support!

Sincerely,

Kodria Haddock

So, you think you want to start a surveying business?

■ Dick Bryant, PLS

I always thought it would be nice if regular articles were submitted to *The Oregon Surveyor* by fellow professionals—including over-the-hill guys like myself—sharing experiences we've had during our careers. I remember the series of articles that the late-Bert Mason wrote a few years back and how much I enjoyed them. This article describes how I got into the surveying business, and some of the pitfalls that can occur when starting up a private practice.

In the mid-1960s, a college friend, Tom McCullough, started a surveying and forestry consulting business in Corvallis. In 1966, I was living in Coos Bay, 31, single, with a job I was getting tired of, and a social life that was going nowhere. Tom and I got together at a Society of American Foresters meeting in Coos Bay, and after a couple of shots of Irish whiskey he talked me into moving to Corvallis and going to work for him. Thus began my surveying career.

My knowledge of surveying was limited to a couple of classes I'd had in college 10 years before. I quickly got the hang of running a K&E paragon transit, taking notes, pulling chain, closing traverses, using trig tables and doing calculations with an old Monroe mechanical calculator. In 1967, we decided to throw in together and we formed McCullough, Bryant and Associates. I had about \$1600 in savings and Tom had some equipment, so we threw it all in the pot and called it square—starting up as equal partners.

Tom got together with an attorney to draw up the corporate papers. The attorney asked Tom what to use as a name. It came down to; McCullough, Bryant or Bryant, McCullough. Things like this are important. It's kind of like

who gets top billing in a vaudeville show. Tom said, "Let's make it McCullough, Bryant, and we will make Bryant president. That should make him happy." Worked for me!

Initially, we didn't have much work, but Tom thought he could get us a job on the McKenzie Bridge District of the Willamette National Forest doing a series of P-line surveys for new logging roads. Somehow he had found out they were going to be issuing a contract. In those days, firms got on a bidder's list. Rather than competitive bidding, a company was selected and then the fee was negotiated. Of course we were not on any bid list. We did have an "in" because the district ranger on the McKenzie used to work for Tom's dad, who was a retired district ranger up in Washington. Long and short, we got the job for roughly \$25,000.

By that time, our equipment consisted of an old 1911 one minute Gurley mountain transit, a 200-foot steel tape, a rented level, a couple of pickups, a couple of chain saws and an old wall tent.

The first road was way the hell and gone above Cougar Reservoir, so we worked out of a spike camp that summer. We hired three guys and

were off and running. All went well until the first payroll came around and we didn't have enough money to pay the crew. We had two weeks' worth of work for which we had billed the Forest Service, but the lag time in them paying would not allow us to make payroll. Just a small oversight on our part.

Three things we learned early on:

1. Don't miss a payroll.
2. Pay your withholding taxes on time.
3. *The owners get paid last.*

We were lucky to find a benevolent banker in Corvallis that let us borrow 80% against our receivables so the payroll problem was solved, but from that day forward we always seemed to be beholden to the bank to meet our cash flow requirements. It also meant that a substantial amount of our profit was going back to the bank in interest. We also had to indemnify ourselves, which meant that if we defaulted on the loan and there were not enough assets in the company, the bank could come back and collect from us personally. That didn't make our wives very happy!

The work on that job continued through the summer—one that happened to be very dry. At one point the woods were closed for chain saw operation. Another guy and I were working one of the roads on the west side of the McKenzie River Highway just west of the Hoodoo ski area. A thunderstorm rolled through and we beat a hasty retreat to the pickup thinking we would get soaked in a shower to follow. No rain, but a huge column of smoke began rising over Hoodoo. That became the Big Lake

Three things we learned early on:

Don't miss a payroll. • Pay your withholding taxes on time. • The owners get paid last

Fire which covered several thousand acres around Big Lake and Hoodoo.

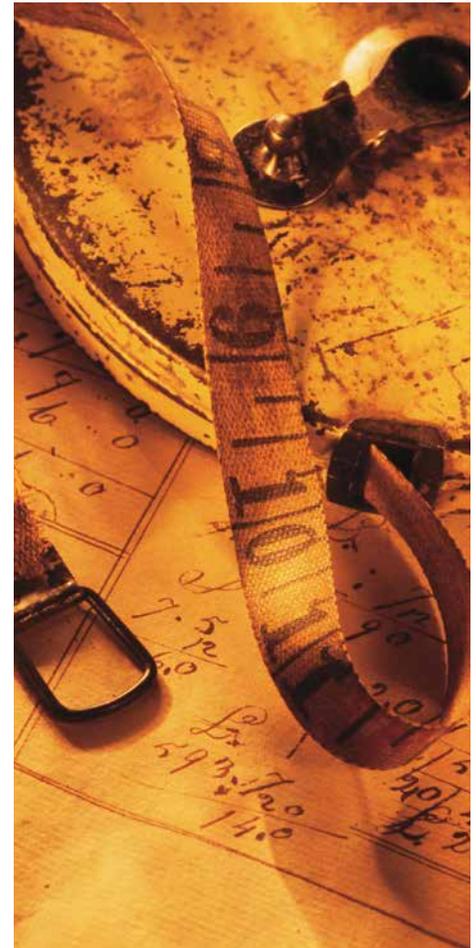
The work on the McKenzie job continued into the winter. We rented an apartment behind the McKenzie Bridge store and gas station and spent most of the winter slogging through snow. That wasn't very efficient and I'm not sure after all was said and done that we made any money. We had an angle bust on one road that required revisiting the field work where we subsequently re-turned nearly all the angles on four miles of road. All angles were either right or left deflection. Our transitman wrote down an angle left instead of a right, or maybe the other way around. Who can remember after 46 years?

The only other thing of note on that job was my car accident on the way back from McKenzie Bridge to Corvallis. It was dark and I believe it was late October. I had just purchased a neat little 1965 VW bug for a company car. After leaving the freeway, I had crossed the Calapooia River and was at the intersection of Highway 34 and Poor Farm Road, as I think it was known as then. A flash of lights from my right and I woke up in the back seat of my VW. I had been "t-boned" by an old Cadillac hearse. The collision spun me around 180 degrees and into the east bound lane. I was then rear-ended by a Dodge sedan on its way to Lebanon. Needless to say my Bug had been squashed, and I did an overnight in the hospital in Albany. There wasn't much damage to me—which I attribute to divine intervention—but I had some lacerations, a broken right hand and a concussion. My wife tells me the concussion may have had some lasting effect, but who can believe anything your wife says?

I was back on the job very quickly. We couldn't afford to have me sitting

around drawing a salary and not producing. Have you ever tried to pull chain with a cast up to your elbow? After a couple of weeks working in the rain, the plaster cast was useless, so I removed it with a pair of tin snips.

Through our time in business we continued to get various contracts with the Forest Service on the Willamette, Siuslaw, Deschutes and the Fremont National Forests. The work consisted of cadastral surveys, PLSS corner search and re-monumentation along with more P line surveys. We also did check cruises and slope staking for private lumber companies. We did a lot of map control surveys for David Smith Mapping who had various contracts with the Bureau of Reclamation, Corps of Engineers, and the Soil Conservation Service. This work carried us throughout Oregon and into Idaho and Montana. ◉



2014 NSPS Map/Plat Design Competition

State surveying association affiliates of the National Society of Professional Surveyors, Inc. (NSPS) are invited to submit maps and plats to the 2014 competition.

Entrants need not be members of NSPS, however a member of NSPS must sponsor the submission. Freehand and machine or computer drafted maps and plats completed after 6/30/2012 are eligible for entry.

Previously entered maps or plats will be disqualified, and no more than two entries per person in each category will be considered. For standards please visit www.nspis.us.com, select RESOURCES then Model Standards.

Maps or plats submitted can be black-and-white (halftone/shaded), blueline or color prints. High resolution jpeg or pdf files on CD-Rom are welcome.

Submit six prints for each entry with a maximum map size of 34" by 44", or 6 CDs with a high-resolution pdf or a jpeg file. (Multiple entries by the same entrant can be on the same CD.)

Submissions must be a single drawing. This may originate as a set but must be entered as a single sheet. All entries must be received by 5 p.m. on April 18, 2014.

Use one entry form per document submitted. An entry fee of \$30 must accompany each form. Make checks payable to NSPS. Winners may be asked to send a print for display at the conference.



Surveyors and Title

■ Knud E. Hermansen, PLS, PE, Ph.D., Esq

Surveyors, as a general rule, stay clear of providing title opinions—rightfully so. Nevertheless, reasonably competent surveying services must rely on some fundamental knowledge of title opinions. A surveyor that is ignorant about the basis for a title opinion could fail to provide relevant information necessary for an attorney to provide a competent title opinion.

A deed is merely evidence of title—not proof of title

One of the fundamental concepts forming the need for an informed title opinion from a competent source is the fact that the deed is merely evidence of title, not proof of title. Every surveyor has heard a client or neighbor claiming: “I’ve got title to that property” or “I own that property.” The statement is usually made as they waive their deed about in a manner meant to forestall any further questioning of their right to claim to some boundary. However, unless the surveyor is in one of the few states permitting registered title and the surveyor is actually dealing with a registered title in that state, a deed is merely evidence of title—NOT proof of title. This is true despite the fact the deed is a warranty deed. If a deed were proof of ownership there would be no need for a title search or title insurance.

Since the deed is only evidence of title and not proof, the prudent buyer will obtain a title opinion. A title opinion is founded on two parts: 1) facts and information about the title and 2) an analysis of the facts and information culminating in an informed opinion. The facts are usually portrayed in the form of an abstract of prior records. The abstract is a compilation of information found in deeds, mortgages, releases, and other recorded documents. In the past, an abstract of title was prepared (or an existing abstract added to) for almost every property conveyed. The completed abstract was examined by a knowledgeable attorney who provided an opinion on the title.

A title opinion will opine that the title is one of the following (not always succinctly): clear, marketable, defensible, clouded (unmarketable), or there is merely color of title.

Clear title is title that has no defects. It is title unencumbered by liens, encroachments, or other impediments that would cut short or curtail the complete and reasonable enjoyment of the entire property. In modern practice, title that

is encumbered by zoning restrictions is still considered clear unless the current use of the property is in violation of the zoning.

Marketable title is title that a reasonably prudent and intelligent person, informed of the facts and their legal ramifications, would be willing to accept in the ordinary course of business. Marketable title is generally free from serious encumbrances, material defects, reasonable doubts, and well-founded concerns about its validity. It is title that can be sold or used as security at fair market value and allows the owner quiet and peaceful enjoyment of the property. It is title that does not expose an owner to probable litigation (regardless of the probability that the litigation outcome will be in the owner’s favor). Circumstances that have been found to make title unmarketable include breaks or gaps in the chain of title, encroachments that violate zoning, title founded on adverse possession (but not litigated to quiet title), less than a complete property interest, impairment of legal access, and boundary disputes or potential boundary problems.

Defensible title is title that has potential problems that will *not* likely cause the loss of title but would cause the prudent buyer to pay less than the market value. Defensible title looks to the probability of the *outcome* of litigation involving a title defect. Marketable title looks to the probable and reasonable likelihood of litigation *exposure*.

Clouded or unmarketable title is title that is defective in some aspect sufficient to cause reasonable concern that the buyer will not receive all the benefits they have bargained for. While the buyer may be willing to purchase the property, the price will be less than the fair market value of the property had the title to the property existed without the deficiency.

Color of title is the appearance of title. It is title that is all form without substance. The person has a deed but the deed conveyed no title.

Interjected into the title determination and acceptability of the title opinion is title insurance. Title can be insured against loss, damage, etc., from a multitude of sources, based on the standards of the insurer and the risk of loss. From a practical viewpoint, all title is insurable if the premiums are made large enough or the list of exceptions extensive enough. Consequently, the term “insurable title” has some wide possibilities.

Title insurance can, in some cases, insure the marketability of the title. This has given some people room to argue that title insurance should be able to substitute for marketable title when the title insurance company is ready and willing to provide insurance that will affirmatively cover one or more conditions that may affect the marketability. However, marketable title and insurable title are not the same as they differ by discrimination criterion. Marketable title uses a reasonably intelligent or prudent person criterion based on future prospects for the property. Furthermore, marketable title requires a person accept or reject the title as it stands at the time of conveyance. The buyer or lender cannot qualify or condition their acceptance of the title.

On the other hand, insurable title uses a reasonably prudent investor or insurer criterion. The investor or insurer analyzes the risks, costs, profit margins, and the likelihood of successfully defending the title. The insurer can change the risk and amount of their indemnity by adding exceptions to the policy or using affirmative insurance. Consequently, they have the power to set conditions or stipulations for insuring the title that the buyer or lender does not have when determining if the title is marketable.

Consider the buyer who intends to build a house and a large garage where that person can indulge in his hobby of working on old cars. The buyer chooses a lot that is just sufficient in size to build the house and large garage. The seller is an elderly widow who is motivated to sell and plans to move in with her daughter. As a result, the buyer gets a great deal, purchasing the lot and residence for \$120,000.

In the purchase and sales agreement, the buyer agreed to accept insurable title rather than marketable title. As a consequence, an abbreviated title examination occurs and an owner's title policy is issued. After purchasing the lot, the buyer discovers the width of the lot is five feet less than described in the deed. As a result of the deficiency in the width, the large garage cannot be built. The buyer files a claim with the title insurer. The title insurer contacts the neighbor to determine the cost and availability of purchasing a five-foot strip. The neighbor demands \$3,000. Next the title insurer obtains an appraisal on the lot with five feet less in width. The appraisal values the lot at \$119,000. The title insurer sends the buyer a check for \$1,000. The buyer has been financially compensated for the loss sustained by the reduced width. The title insurer is

Continues on page 12 ►

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Surveyors and Title, continued from page 11

obligated to financially compensate for the loss sustained, not satisfy the needs or aspirations of the buyer.

Title opinions have deficiencies. Both the abstract and opinion are only as good as the knowledge, training, and experience of the person preparing the abstract and tendering the opinion. Even a quality title opinion has dozens of caveats (usually unstated). Matters outside the record, defects arising from government regulations (e.g., zoning), encumbrances appearing in the record beyond the period encompassed in the title search, or conditions at the site, to name a few, are often not factored into a title opinion.

Without words to the contrary in a purchase and sales agreement for property, the buyer or lender has the right to expect marketable title from the seller or borrower where a warranty deed is sought and promised.

Every purchaser of land has a right to demand a title which shall put him in all reasonable security and which shall protect him from anxiety, lest annoying, if not successful suits be brought against him, and probably take from him or his representatives, land upon which money was invested. He should have a title which shall enable him not only to hold his land, but to hold it in peace; and if he wishes to sell it, to be reasonably sure that no flaw or doubt will come up to disturb its marketable value. *Hebb v. Severson*, 32 Wash.2d 159, 167-168, 201 P.2d 156, 159 (1948) quoting *Dobbs v. Norcross*, 24 N.J.Eq. 327

Consequently, surveying services involved in the conveyance of property should focus on those aspects of surveying services that could affect the marketability of the title. Discovery of disputed boundaries and encroachments are important. Even remote chances of boundary litigation will make the title unmarketable. All problems that have a potential detraction on the marketability of the property should be reported. Here is where a surveyor who presumes adverse possession or prescription has occurred and fails to report this deficiency in title does the client a disservice. Without a judgment supporting title gained by adverse possession or prescription, the title is not marketable.¹

Sometimes when a surveyor has discovered a problem and reported the problem, the surveyor has been pressured by a closing agent to obscure or remove the written disclosure from the survey work products in order that the buyer may be led to believe the buyer will be receiving marketable title.

The surveyor should make every effort to provide complete and accurate information for persons to arrive at a competent decision on the status of the title to be conveyed. This caution does always require every problem that exists be discovered or emphasized in a report.

Consider a 500-acre farm that has a one-foot strip of encroachment along an 80-foot section of the farm's boundary. This title is not a "clear title" because of the possibility of adverse possession of the one-foot strip. Nevertheless, the relatively small encroachment along such a small portion of the boundary to a large property will have no effect on the marketability of the title. A reasonable buyer, informed of the encroachment would still be willing to pay the fair market value for the 500-acre farm with or without the one-foot encroachment. Yet, the same one-foot encroachment on a one-quarter acre urban lot would make the title unmarketable. The reasonable buyer would either refuse to purchase the lot or demand a reduction in the purchase price upon discovery of the one-foot encroachment along a boundary of the one-quarter acre lot.

The concepts that have been outlined in this article point to the basis for many of the requirements set forth in the ALTA/ACSM Land Title Survey. As petty as many of the ALTA/ACSM Land Title requirements may appear to the surveyor, an insurer has judged the presence or, in some cases, the absence of certain features or conditions to have an affect on the marketability of the title or pose an unacceptable risk for the title insurer.

In the day-to-day practice of the surveyor, knowledge of the concepts presented in this article can help the surveyor in deciding what needs to be reported or can be safely ignored. A title analysis when contemplating the detail involved in surveying services and reporting problems discovered comes down to the answer to two simple questions: 1) Would the reasonable buyer be concerned with the problem? 2) Will the condition or problem affect the value of the property? (Both questions are interrelated.)

With these two questions in mind, the surveyor would not likely be faulted for failing to report that the neighbor's driveway cuts across the corner of the client's property (by 0.8 feet). On the other hand, the failure of the surveyor to report the neighbor's well head is five feet within the client's property would likely have adverse consequences on the marketability of the client's title and could result in liability to the surveyor. (Although the surface area of both encroachments is approximately the same.)

Hopefully the concepts explained in this article will help surveyors understand title concerns and how surveying services relate to and may impact on the title. ◉

¹ See *Ivalis v. Harding*, 496 N.W.2d 690, 173 Wis.2d 751 (1993) where the court ultimately determined the boundaries located by the surveyor were in fact the actual boundaries of the property based on adverse possession but nevertheless held the surveyor liable for the cost of the litigation in order to perfect the title to the property by adverse possession.

Knud Hermansen is a professor in the college of engineering at the University of Maine. He provides consulting services in the area of alternate dispute resolution, boundary disputes, easements, and land development.

Are you a Watchmaker or a Beekeeper?

■ By James Fischer, Growth Curve Institute

Two friends, both business owners, meet at a coffee shop to talk about their businesses. One is a beekeeper who oversees honey hives placed at the edge of an orchard outside of town. The other is a watchmaker who makes and repairs watches and has a shop near the town square.

Both owners are ready to retire and have put their businesses up for sale. If you had to buy one of the businesses, given that all things regarding customer base, revenue and profit are equal, which one would you choose?

Would you buy a business of enormous precision and control?

The watchmaker works in a world of enormous precision and control. Every piece from one of his handmade watches is delicately machined to within 100ths of an inch. The watchmaker “controls” the assembly of his watches and controls the running of his business in a similar manner.

Both the handmade watch and the business are non-adapting, dependable precision machines able to deliver results based on the predetermined set of conditions reflected in their design. If the watch were dropped on a concrete floor it would likely break into pieces and stop working. That is, until someone or some outside force repaired it. What would happen to the watch business if it were to break?

In short, the watch business, being run like a machine, will never find a solution on its own, it will never adapt to conditions foreign to its design, it will never work independently or in a team and it will never think independently to innovate new ways of meeting the ever changing challenges of its environment.

Or...

Would you buy a business of constant change and chaos? The beekeeper operates in a world of constant change and chaos. He “facilitates” rather than controls the health of 125,000 bees living and working out of 55 white 3-foot-high “wooden hives.” The beekeeper can only foster an environment that supports the bees to produce honey. He cannot in any way guarantee an outcome.

Upon closer inspection, the mass chaos swirling amongst the hives reveals the fact that every bee is an independent agent relentlessly pursuing its own mission, within the natural order of the hive, in support of the business of making honey and protecting the hive. The hive is an intelligent, self-organizing, adaptive organism able to adjust and innovate solutions to the challenges encountered during the natural course of events in nature. If it were to be dropped onto the ground, from a significant enough height to break it into numerous pieces, the hive as a group of bees would relocate its home base and start anew on the business of making honey.

Now ask yourself the following question: If you encountered a company with low morale, low profits, lack of staff engagement, high turnover and rampant gossip, who would likely be running it, a watchmaker or a beekeeper?

If you guessed watchmaker, you would be right. Why?

Watchmakers want predictability and things they can control. They want to run their business like a precision machine and the people in it like replaceable parts in the machine. They believe that to be effective, a

machine must be controlled by its operators. This is the overarching purpose of watchmaker management—to firmly control the enterprise, avoid chaos at all cost and make as much money as possible.

Nothing wrong with making money, but to create an intentional enterprise that provides sustainable profits over a long period of time, research suggests that the better approach lies in becoming more of a beekeeper.

Beekeepers have one foot in the future. They have a natural facility to work with the dangerous sisters of growth: complexity and chaos. Beekeepers facilitate their company’s growth and are more likely to let the intelligence of the team or ‘hive’ find the solutions instead of themselves.

They understand that their business is a living intelligent thing and if allowed, it will come up with far more ideas and solutions than they ever could. The beekeeper’s business will continually self organize around and through its problems and challenges.

So ego wins over intellect.

We suggest that there is a beekeeper buried in every business owner but that in our day-to-day struggles to ‘do the right thing’, be ‘responsible’ and ‘act like a leader’, the watchmaker takes over more often than any of us would like to admit.

You have a choice: Engineer your company’s growth or facilitate it. So what’s it going to be, watchmaker or beekeeper? ◉

This article is reprinted with permission from James Fischer and Growth Curve Institute. If you would like to know more about The Growth Curve Initiative, please visit their website at www.sustainablebusinessgrowth.com or www.growthcurveinstitute.com

Modernization of the National Spatial Reference System

A Workshop for Surveyors and GIS Professionals

Presented by David Doyle, NGS Chief Geodetic Surveyor (Retired), Base 9 Geodetic Consulting Services

Sponsored by Oregon GPS User's Group

This professional presentation details the efforts to enhance the quality of and availability to the high accuracy positioning elements of the National Spatial Reference System.

These include:

- Enhancements to the On Line Positioning User Service (OPUS)
- Gravity for the Redefinition of the American Vertical Datum (GRAV-D)
- Transition to new horizontal (geometric) and vertical (geopotential) datums to replace NAD 83 and NAVD 88 (targeted to be completed by 2022)

Are you prepared for the change? Continued user demands and shrinking budgets at NGS encourage the transition to the National Spatial Reference Framework (NSRS). This transition is to align with the international IGS-ITRF datum and to a gravity based vertical datum. Attend and learn of the upcoming transition and how best to take advantage of the changes and benefits that may be required of your upcoming surveys.

Take advantage of the seminar and have your questions answered during the afternoon session.

When	Thursday, April 3, 2014 7:30 AM – 4:30 PM
Where	NW Eola Viticulture Center, Chemeketa Community College 215 Doaks Ferry Rd., Salem, OR 97304
Cost	\$70, includes buffet style lunch
Check-in	7:30–8:30 AM (Preregistration only—No registration at the door)
PDH credits	7

First come, first served, for up to 150 registrants. Attendees will be emailed handout materials prior to the workshop. Handouts should be printed out prior to attendance; no materials will be provided at the workshop.

Questions: johnminor@stuntzner.com or neathamer@gmail.com

Send one registration per person to: Cael Neathamer, PO Box 1674, Medford, OR 97501

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Lost Surveyor

Answer, from the inside back cover

■ Pat Gaylord, PLS

Have you been lost at the office before? Can you name this historic Oregon covered bridge located at North 43°45'30" West 122°29'44"?



The Office Bridge (also called Westfir Covered Bridge) is found in the town of Westfir, Lane County, crossing the North Fork Middle Fork Willamette River. It is Oregon's longest covered bridge at 180 ft. and it is the only covered bridge west of the Mississippi River which has a separate pedestrian walkway. Originally owned and constructed in 1944 by the Westfir Lumber Company, the bridge is now owned and maintained by Lane County. The Lost Surveyor found this bridge while driving home from Eastern Oregon. I noticed a tiny road sign signaling the way, so I made a quick detour to go explore. A few miles off the highway takes you to this beautiful bridge. This photo was taken as the last rays of sunlight disappeared from the canyon. ◉

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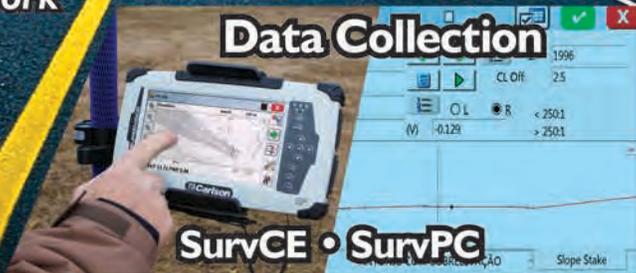


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The Sidehill Chronicles – Part 1

Centigrade–Fahrenheit Adventure

■ John Thatcher, PLS

Every era has its cutting edge technology. For surveyors in the 1970s, two technologies emerged that significantly altered the way we worked: electronic distance meters and the ever-evolving models of Hewlett Packard handheld calculators. This is a story about Larry McDowell and one of those technologies.

The Hewlett Packard HP-41 series handheld calculator was introduced in 1979 and was a huge leap forward in handheld computing technology in at least three ways: it was alphanumeric, its liquid crystal display (LCD) replaced the former technology of light emitting diode (LED), and it had continuous memory. All three features combined to make our work in the bush easier, literally overnight. Imagine for a moment setting slope stakes for road construction in the deep woods, far from civilization (read: electricity), using an algorithm that computes the catch point, given the cross-section template, the cut or fill at centerline, and the cut/fill ratio of the side slope. Now imagine that your calculator, mounted on the staff of your E-Z Arc, has been programmed to compute the catch point described above as a function of slope distance.

Stay with me now, because this is prior to 1979, and your calculator is an HP-67 with LED (read: it sucks batteries), without continuous memory but with a built-in magnetic card reader (also sucks batteries). You work until the batteries run down, open up the environmental case, replace the spent batteries (you *did* charge batteries last night, right?), take out your carefully protected packet of 10 magnetic cards containing the slope staking program and run the cards through the card reader one at a time, praying they aren't scratched or demagnetized.



Hewlett
Packard
HP-67

You then put the calculator back in its case, switch it on hoping the “fresh” batteries are still good, re-enter your road template, and finally get back to work. During pauses of almost any length, you key the decimal point to save juice.

Later that night in camp, you fire up the generator as soon as you can, plug in all the chargers and charge the day's spent batteries for tomorrow. You refill the gas tank just before hitting the sack, and sometime around one o'clock the next morning your generator runs out of gas and the camp is finally quiet. That is, after the other campers stop applauding.

Then one magical day the HP-41 makes its appearance. You load up four N-size batteries and go out and slope stake for the next six months, turning it off and back on a thousand times with impunity, never losing so much as a byte of your program. Batteries getting low? The HP-41 prompts you. You switch it off, slip in four fresh batteries, turn it back on and compute to your heart's content for the next six months. Of course, we take all this for granted now, being on this particular era's techno cutting edge. If it is our parents who were there, we may wonder how they got anything done with such primitive technology. But there was a day, not that long ago, when this stuff was revolutionary technology. We were right there on the cutting edge, and not a cell phone in sight! Here is a quote from the Hewlett Packard Virtual Museum:

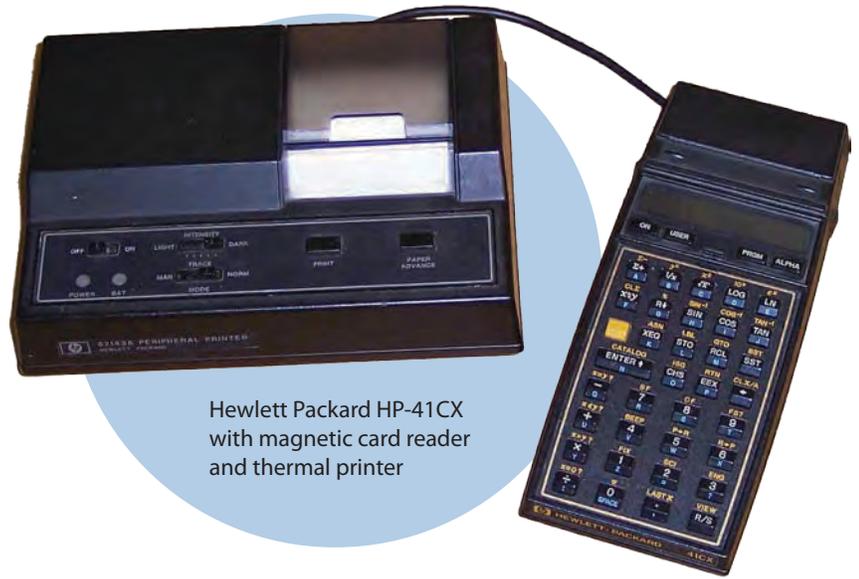
“When the HP-41C handheld calculator was introduced in 1979, it was the first calculator that could display alphabetic characters as well as numbers. But more importantly, it was fully programmable and expandable. For many people, the HP-41C was their introduction to computer programming. At \$295, it was less expensive than a personal computer, and— through the HP Interface Loop (HP-IL0)— it could be hooked up to a printer, plotter and mass-storage device.”

By the time the HP-41CX was introduced, it was called a computer rather than a calculator. It had more than twice as many built-in functions and three times as much memory capacity as the HP-41C.

The HP-41 is beautifully designed. It is programmable, with looping and testing functions. Most of the keys are capable of executing up to five different functions: primary, shifted, alpha letter or punctuation, and an optional user assignable function on both the primary and shifted positions. You can also assign program shortcuts that are accessible in user mode. So many functions, so few keys. So, instead of fishing around in the function and program catalogs, you simply assign functions or program shortcuts to keys you don't normally use much. I compute manually with angles on a regular basis (imagine that). So I assigned the functions that add and subtract degrees, minutes and seconds (HMS+ and HMS-) to the shifted + and - keys respectively. Very handy.

Do you use a TI? A Casio? A generic? You are cheating yourself out of one of the best features of an HP handheld: Reverse Polar (not Polish) Notation, or RPN. Once you get the hang of RPN, you'll never want to go back. $2 + 3 = __?$ Nope. 2 Enter 3 +. Yes, the same number of keystrokes so far – but wait until things get more complex. The beauty of RPN is that your intermediate results are preserved on the automatic memory stack. This means that once intermediate results are computed, you never have to store them or use parentheses. Need to add up a few angles and then subtract the result from 180°? Piece of cake:

DATA	FUNCTION	STACK
180	ENTER	t: 0.0000 z: 0.0000 y: 180.0000 x: 180.0000
13.2614	ENTER	t: 0.0000 z: 180.0000 y: 13.2614 x: 13.2614
76.5439	SHIFT +	t: 0.0000 z: 0.0000 y: 180.0000 x: 90.2053
	SHIFT -	t: 0.0000 z: 0.0000 y: 0.0000 x: 89.3907



Hewlett Packard HP-41CX with magnetic card reader and thermal printer

Look again and follow that 180.0000. It is hanging around and right there when you need it. This is a simple example. You will really see the advantage of RPN on a complex formula. Or not. With the introduction of the HP-48 in the late 1980s, the stack went from five registers (the HP-41 has a Last x stack register also) to however-many-you-need.

Enough said on the technical side. We used to have some fun with the HP-41 while we were in transit. We played a game called “Moon Rocket Landing.” You are given only so much fuel while landing on the moon. If you used it up too soon, you crashed in free-fall. If you waited too long to fire the thrusters, you were moving too fast to stop, and you crashed (again). We worked primarily in the forests of Northern California. If it was late and dark enough, we could pick up the Portland Trailblazer game on the AM radio. When a program is executed on the HP-41, an icon we called the goose would fly across the screen, jumping from position to position at every decision point in the program. But a program executing on the HP-41 also caused static on the AM radio. I never did look up Subpart J of Part 15 of FCC Rules.

The rule I was concerned with is the 10-4 rule. Those surveyors who have worked in Alaska or other remote areas will understand the logic of the 10-4. When you are out in the wilderness, it doesn't compute to travel back and forth every weekend. It's inefficient. So we worked ten days straight, rolling back into town every second Wednesday. When we started a 10-4, Monday was “the first day of Monday,” Tuesday was “the second day of Monday”—you get the idea. Four days off every two weeks? Ha, that was a joke!

After being out in the bush for ten days and getting back to town late Wednesday night/early Thursday morning, we spent most of Thursday at the office organizing field notes and cleaning out the rig. Then of course, there was

Continues on page 18 ▶

ten days worth of laundry to do. Most of Sunday was taken up with preparing for the next 10–4—oiling boots, packing, getting the truck ready, and shopping for a ten-day supply of food and beer. That left, in reality, two days of real leisure.

On a dark and stormy night at the tail end of one of those legendary 10–4s, Larry McDowell and I were driving home, towards town, towards beer, towards the opposite sex (we hoped), towards at least a couple of days of hard-earned R&R. Larry drove and I rode shotgun. Driving long distance at night can be boring, but Larry McDowell was not one to succumb to boredom. During a period of poignant silence, out of the blue Larry asked me, “Johnny boy, what temperature is the same in both Fahrenheit and Centigrade?”

Until that moment I had been half-dozing, and I was caught off my guard. “Uh...well...gee Larry, I never really thought about it,” I spat out. In those days I was concerned about the Viet Nam War, the gas crunch, Ronald Reagan being elected president, the Cold War, and meeting girls, so the Fahrenheit–Centigrade issue had slipped under my radar. But nonetheless I was mathematically literate enough to know that the equation relating the two is linear, with a slope not equal to one. Thus I reasoned that the graph of the Fahrenheit–Centigrade equation must intersect the graph of the equation $x = y$ *somewhere*. With all the other issues of the time occupying my mind, I hadn’t bothered to investigate just exactly where that intersection is.

“Get out the 41”, said Larry, “and let’s write a routine to calculate where Fahrenheit and Centigrade are the same. I’ll dictate the program steps, and you punch them in.” What to say when confronted with a superior intellect? “Duh, okay,” I stammered.

So there we were, driving down the dark, lonely, deserted road late at night, Larry driving and dictating program steps (the conversion formula somehow lingering in his memory, just waiting for this moment in time), and I punching keys as directed, the dark world outside doing its own timeless calculations.

Those first Hewlett Packard handhelds were very powerful and sported an elegant programming language. Within that language were several functions to make decisions after comparing two numbers. With the F–C conversion formula at his mental disposal, Larry dictated to me a series of commands in the HP-41 programming language (extemporaneously, while driving) that would take any whole number assumed to be in Fahrenheit, compute its Centigrade equivalent, compare the two numbers, increment or decrement the Fahrenheit number by one depending upon the results of the test, then loop



HP-41C advertisement. The headline states, “NASA bought it at Hartwell’s Office World for \$250, and it can help land the Shuttle. Without the help of Mission Control.”

around and start the process all over again with the new number (being theoretically one number closer to the goal). When the two numbers finally came up being equal, the program was designed to halt and display the answer. Ta-da!

When Larry finished dictating program steps, he suggested I key in any number and launch the program. I did so. We turned on the truck’s AM radio to bide time while the HP-41 crunched numbers. We already knew that we would hear static while our HP-41 executed subroutines, so the static was no surprise to us. On the contrary, it was comforting. After about five minutes (these devices were elegant and powerful but S-L-O-W)...ta-da! We had our answer. But what impressed me more was that Larry’s program worked the first time, having required no debugging. What a brain.

Larry McDowell died at the young age of 56 in January of 2000, and it broke my heart. He was a special person in many ways, and anybody who knew him will confirm that. I almost killed both of us one dark, foggy night in the mountains around the lower Klamath River. But that is a story I’ll save for Part 2. Recently, in his memory and honor, I took out my HP-41CX and wrote my own Fahrenheit–Centigrade routine. It is probably less elegant than Larry’s original program, conceived spontaneously that dark and stormy night so many years ago, but it works, and I will be happy to share it with you. But if you love that device as much as I do, I know you will prefer to write it yourself.

How else are you going to get the answer? Google? But, where’s the fun in that? ◉

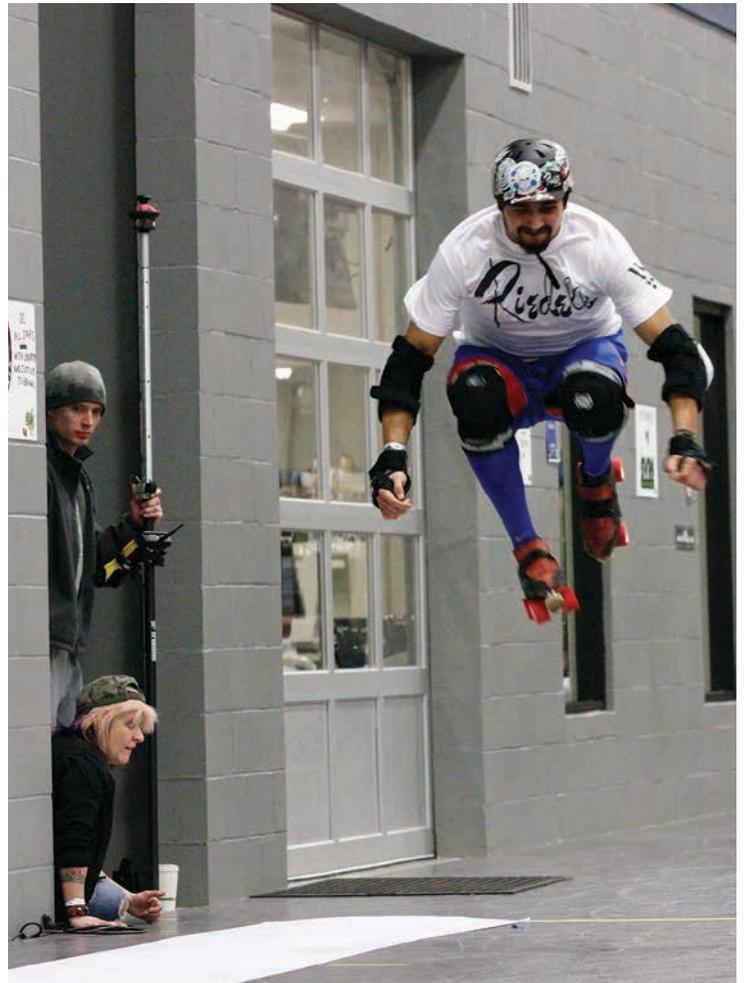
Surveying a World Record

■ Renee Clough, PLS

When we received an e-mail asking for a surveyor willing to measure distances for a World Record, Dan Nelson and I said ‘Yes’ without hesitation. At the end of a three day roller derby tournament, interested skaters would have the opportunity to attempt to break the existing World Record Roller Skating Long Jump. As surveyors we had the responsibility of certifying that the jump surface was flat, and to verify the length of each jump.

The first task was clear and easy, but the second was a bit concerning. The paperwork I was given specified that the end of the jump was the back of the back wheel when the skater landed on the ground. It was nice to be given such a specific definition, but how were we supposed to identify that point! I was quite relieved when I found out that a photographer would be taking photos of the jumps which could be used to identify the point of landing.

The start of the jump was marked with tape. Butcher paper was laid down beside the jump with the existing World Records marked. A roller derby referee was responsible for determining if a jump qualified (toes could not cross the start line, only the skates could touch on landing, the skater had to stop under their own power without falling, etc.). If a jump was deemed qualifying, the photographer and I would scroll through the digital photos to find the frame taken at the point of landing. The location in the photo was transferred to a mark on the butcher paper based on a relationship with marks on



the floor and paper that were visible in the photo. Dan then used our Trimble S6 to take a shot at the new mark and report the distance from the tape. There was an element of judgment to this approach, but overall it worked well.

We haven't received official word yet regarding acceptance of the records, but as far as I'm concerned two new records were set. The previous record for the men's jump was 16 feet, 5 inches; the longest men's jump we measured was 20 feet, 3 inches. The previous record for the women's jump was 9 feet, 11 inches; the longest women's jump we measured was 12 feet, 8 inches.

For years I have listened to stories told by surveyors with more experience than me (Orv Caswell, Steve Haddock, my dad, Richard Skinner, etc.) and wished that I had stories as exciting and/or novel as theirs to tell. Now I finally have one! Although I still have a long way to go before I have as many stories as those I look up to. ◦

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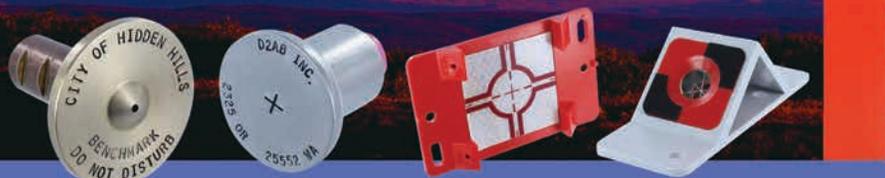
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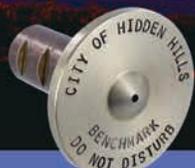
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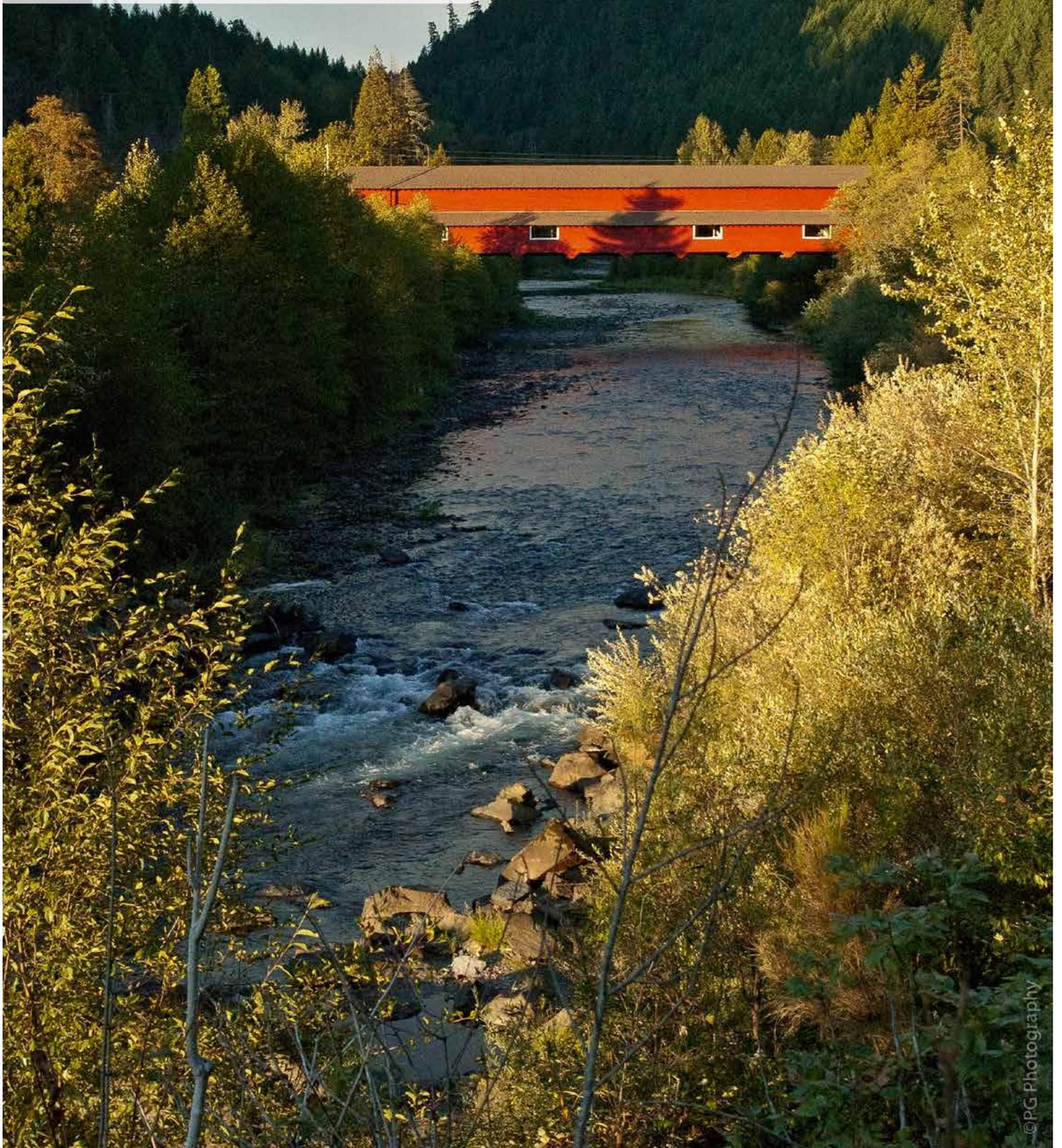
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Lost Surveyor

■ *Pat Gaylord, PLS*

Have you gotten lost on the way to the office?
Can you name this historic Oregon covered bridge
located at North 43°45'30" and West 122°29'44"?

Answer on page 15



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