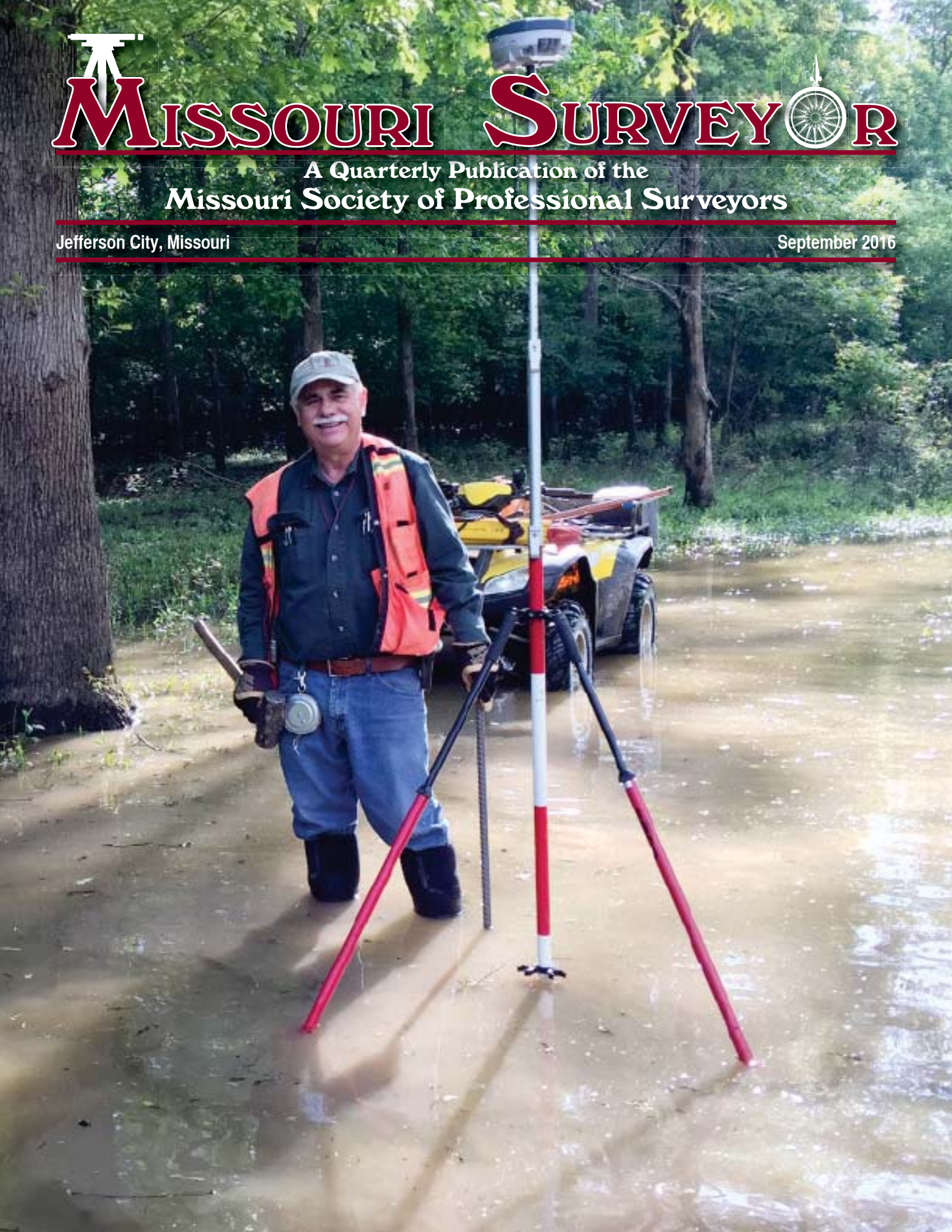
Missouri Surveyor

A Quarterly Publication of the
Missouri Society of Professional Surveyors

Jefferson City, Missouri September 2016



MISSOURI SURVEYOR

CALENDAR OF EVENTS

2016

October 13-15, 2016
59th Annual Meeting and Convention
Sheraton Westport Lakeside Chalet,
St. Louis, MO

December 3, 2016
Board Meeting
Jefferson City, MO

2017

February 22, 2017
Board Meeting and Capitol Visitation
Jefferson City, MO

April 27-29, 2017
Board Meeting, Golf Tournament and
39th Annual Spring Workshop
Lake Ozark, MO

July 15, 2017
Board Meeting
Jefferson City, MO

August 23-25, 2017
Review Course
Jefferson City, MO

Front cover:
Bob Shotts stands at C-E-W-SE 1/256 corner of Section 33, Township 3 North, Range 4 West of the Fifth PM.

Donald R. Martin, Editor

Notes from the Editor's Desk

Donald R. Martin

While we gear up for the *Annual Meeting,* October 13 – 15 in St. Louis (themed *Resolving Boundary Disputes* – and please, no arguing while learning dispute resolution) members have been hosting celebrations of surveys and surveyors from our state's history. Occurring too late for reports in this edition we will bring you the news next time around. To preview that news I will mention our usual leader of such festivities, Stan Emerick, has been joined this year by Joe Clayton and Robert Ubben as the principal coordinators and they have done great jobs. Thank you gents…Missouri Surveyors leading the way…

Now, the August edition: Jim Mathis delivers a gold-medal result with his final *President's Message*. Commending those whom he asked to lead (committee chairs) he urges all to participate in MSPS. Recognizing and encouraging others affirms what an exemplary leader he has been as President - thank you Jim. Then we feature *MSPS Surveyors in the News!* Joe Clayton and Bob Shotts were on TV (not a police BOLO!); these two looked and sounded great – good job friends. From Licking, Missouri comes *Robert Ross Guest Speaker at Texas County Genealogical Meeting*; sharing the lore of surveyors and our contributions. *News from the National Geodetic Survey* follows on pages 8 and 9. Then we present a thoughtful analysis by Tim Burch entitled *BLM's New GNSS Protocols May Set Undesirable Precedent*. Mr. Burch reviews the BLM system of "Direct Point Positioning Surveys" and delivers a compelling cautionary tale. Our next article features Canadian surveyors joining attorneys in *Nova Scotia Offers Help to Descendants of Black Loyalists Denied Land Title*, seeking justice in that maritime province. Member Dick Elgin sent copies of *SNOOPY as surveyor* by cartoonist Charles Shultz in his Peanuts series. I do prefer Snoopy's surveyor alter ego to that of Elmer Fudd; it was embarrassing to see a wand suwveywah helpwess at the cwafty hands of a wascawey wabbit!

Distressing news for survey education in *Surveyors Launch Effort to Save NMSU Program* follows. *2016 Trig-Star Winners* and a couple of reports from *outer space* (read'em, you'll see what I mean, pp 20 – 21) come afterwards. The impending *Annual Meeting* means new *Officers and Directors – nominee bio's* on pages 22 and 23. As members honor Missouri's history of the Osage Treaty Line, our next story recalls history of lines further south, serving similar roles in *Surveyor McCoy Credited with Naming Indian Territory*. Next news from Illinois offers a solution to every party chief's dilemma of someone forgetting gear; *Courthouse Time Capsule Refreshes Memories of Pekin's Founding* shares a remedy for not having a chain. *Surveyors Help Historic Brattonsville Celebrate 250th Anniversary with 'Deed Day'* follows. Then *Career Spotlight* shares responses on a career profiling site – food for thought; how would you answer those questions?

The edition packs it away with *Be a Magazine Cover Model or News Maker*! *Notes from the Editor's Desk* always closes with a reminder welcoming content from readers. This edition includes a special invitation on page 40. We always need help with images for our cover and inside pages. Like they say, a picture is worth a thousand words and before I reach a thousand words, I best close. I'll get back with you come the December issue…

Donald

THE MISSOURI SURVEYOR

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President's Message

Jim Mathis III

As I sat down to compose this, my last "President's Message", my eyes strayed to the chipped and battered old coffee cup sitting on my desk. It proclaimed in proud letters "Missouri Association of Registered Land Surveyors" around a logo composed of a transit over the silhouette of the state of Missouri. MARLS was the host of my first surveyor's meeting 38 years ago, when my brand new surveyor's certificate (bearing the signature of the chairman of the *Engineering* Division – yikes!) was handed out, and back when many of the friends I've made over the years actually had hair – oftentimes dark hair. Although we're still the same great organization, I'm glad that we're now called the *Missouri Society of Professional Land Surveyors* - since "registration" is best reserved for dogs or horses - and besides, "professional" sounds a lot more – well, professional.

But regardless of the name, the function of MSPS is still the same: "…to represent the interests of and be the primary spokesman for the surveying profession in Missouri; … to sponsor legislation and educational programs beneficial to the public and land surveyors; and to improve the professional recognition of the surveying profession…"

In order to achieve these goals, over the years MSPS has established committees, which are the real workhorses of our organization. In addition to helping the Society with day to day functions, these committees also review and perfect our standards of practice, monitor and propose (or oppose) legislation affecting our profession, educate our members in the latest rules and technologies and bring awareness of our contributions to the general public. In short, the committees provide the direction and ideas aimed at meeting the Society's goals, and the committee chairs continue to amaze me with their investment of time and money and their unselfish efforts to benefit all Missouri surveyors.

So without calling out the many individual names, I'd like to take this opportunity to thank each and every committee chair and every committee member for all you do for this organization. And to those who wish to make a greater personal investment for the surveying profession (or to influence the direction of the society), I urge you to become active in our committees. Attend the annual meeting and fill out the committee volunteer sheet. Although the president selects the chairs, the individual chairmen normally appoint the committee members largely from these sheets. Your participation will insure that the surveying profession in Missouri continues to evolve to meet both our current and future challenges.

And although these challenges often seem immediate and pressing, I suspect that the issues we're facing now are simply new wrinkles on the same old problems surveyors have always faced: proper grasp of the possibilities and limitations of the equipment we use; appropriate research and recovery of controlling corners; suitable understanding and application of the laws and rules of boundary resolution; and understanding our roles as problem solvers in a quasi-judicial setting. These are common issues with which all surveyors throughout the years have surely had to grapple. To help us with our grappling, the presentations scheduled for the upcoming 59th annual MSPS meeting in St. Louis are shaping up to be dandies. Come and hear what Justice Thomas Cooley succinctly told us about the function of surveyors over one-hundred years ago. Come and hear experts unravel the complexities of GPS measurements or reiterate the rules governing our practice. And while you're there – don't forget those committee sign-up sheets.

Jim

MSPS Surveyors in the News!

Highlighting a Significant Part of Missouri History and Surveying Practice

On August 12th, television station KSN16 of southwest Missouri broadcast the tale of "200 Year Old Missouri Mystery" by reporter Brad Douglas. The mystery? Described in the report as a search for Missouri's "original western state line from 1816", surveying lore was shared with their viewers.

Serving as a precursor to an event hosted by the Southwest Chapter of the Missouri Society of Professional Surveyors (MSPS) on August 13th in which the southern point in Missouri on the Osage Treaty Line was to be honored, MSPS members Joe Clayton of Joplin and Bob Shotts of Lebanon met with the television news reporter in Stark City. As reported the position was marked by sign and "a rock" (is that anything like a stone?) after use of "old surveying equipment."

The duo was reported as stating the role of a surveyor in such matters is "part detective and part historian." While the news feature reflected on the history of the position, its significance and the skills of Clayton and Shotts, the report bore witness to the bicentennial recognition of Joseph Brown's survey of Missouri's western border. This anniversary is being recognized by MSPS this summer at events in southwest Missouri and the Fort Osage historic site on the southern bluffs of the Missouri River near Sibley and Independence Missouri (metro Kansas City). Clayton, of Anderson Engineering in Joplin has devoted much of 2016 towards research and field investigations of this historic position. Joined by Jim Herre of Indian Creek Surveying, they melded their review and interpretation of 200 year old records of America's *General Land Office* with their own application of 21st century GPS, laser and computer technologies to lead them in their recovery of this site!

The broadcast of the story featured comments from both Clayton and Shotts. It also showcased them using traditional surveying tools of compass, staff and chain while prominently featuring the position's stone and informative marker. Clayton was quoted referring to all surveyors' quest in historic preservation as treasure hunting, and this site specifically as a "true treasure."

Closing the report was an announcement of the position's dedication and welcoming the public to join in the event on August 13th at the site near 26792 Oak Road, Stark City Missouri.

Robert Ross Guest Speaker at Texas County Genealogical Meeting

by Debbie Dakin, The Licking News, July 22, 2016

The Texas County Genealogical and Historical Society welcomed Representative Robert Ross as their guest speaker on July 15. Ross spoke on "The history of land surveying in Missouri (and why it matters today)."

Robert Ross addresses the Texas County Genealogical and Historical Society about Missouri's surveying history.

"I grew up in Eunice and went to school in Summersville," stated Ross. "I was trying to decide what I wanted to do with my future. I considered the fields of commercial aviation, law enforcement, farming, but none of those were what I was looking for. I was on a break from college (SMS) and we were looking over the fields and trying to figure out how much fertilizer we would need when it came to me that land surveying would be good for me."

Ross got his degree in cartography, graduating in 2003. After graduation he wanted to live in his home area again. He got a job in Salem and worked there for six months. He then went to work in Rolla and worked there for eight years. He now owns his own surveying business as well as serving as State Representative for District 142.

"Being a representative is great," explained Ross, "But it doesn't pay the bills. To make my monthly payments I have to supplement my income with surveying."

Ross's services are basically used when two surveyors don't agree. He serves as an "expert witness" to just tell the facts. He sorts out what is right and wrong.

Ross pointed out that surveying and engineering are not the same thing. Surveying is not only a mix of measurements, but also an application of the law.

Missouri's surveying history is full of interesting details. When the United States made the Louisiana Purchase back in 1803, at around 3 cents per acre, it doubled the size of the United States.

In 1812, Congress established the General Land Office (GLO), which became responsible for surveying all U.S. public lands surveys. That same year, Congress and the GLO directed the acting public surveyor in the Missouri Territory, William Rector, to begin the process of surveying and dividing the territory into identifiable tracts of six-mile-square "townships."

In 1815, the GLO directed for all public surveys in the Missouri Territory to be established in eastern Arkansas, marked by the intersection of a newly surveyed "baseline," which commenced at the mouth of the St. Francis River and ran due west, and the Fifth Principal Meridian, which commenced at the mouth of the Arkansas River and was surveyed to run due north. This initial point affects five and a half states, Arkansas, Missouri, Iowa, North Dakota, Minnesota and half of Nebraska.

From this beginning point, public surveyors were instructed to follow a grid-based public land survey system that divided land first into townships, each identified with a township and range designation indicating its position relative to the beginning point. Each township was further surveyed and divided into thirty-six one-mile-square "sections," which, in turn, were subdivided into quarter sections.

The majority of all of Missouri's original land surveys were done between 1815 and 1855. Some small areas, mostly down in the Bootheel area, were not completed until 1929. That was because of the swamps.

Surveying was considered very serious business. Each member of the surveying team took an oath before starting.

(continued on next page)

Robert Ross Guest Speaker *(continued)*

They swore to be fair and honest in establishing these readings. Their basic tools of the trade back then were the Gunter's Chain and the compass. A two pole chain was equal to 33 feet.

A story goes that one member of an early surveying team was playing with his compass, altering its true reading. This was considered such an offense that he received 30 lashes.

Early surveyors had a very difficult job. They had to deal with extremes in weather – heat, cold, rain, snow and ice, not to mention bugs, rivers, swamps, drastic slope differences and through it all they were supposed to keep that chain horizontal. It was not easy work. Most of the early surveyors were well educated and intelligent, and their jobs were some of the best paying for that time period.

Ross explained why these old surveys are so important. "The prime objective of every survey is that every means is undertaken to determine the position of the original corner before deciding that the corner is lost. These corners still determine boundary lines today."

Many different and unusual items were used as monuments (boundary markers). This included gun barrels, pipes, metal wagon wheels, even elk horns. Some of these markers from original surveys can still be found today. But one of the most steadfast markers was the witness tree. They were mostly post oak, post oak being known for its longevity.

"Original evidence is still here," explained Ross. "We are working hard to find it. Excitement still comes over my face when I find that true corner."

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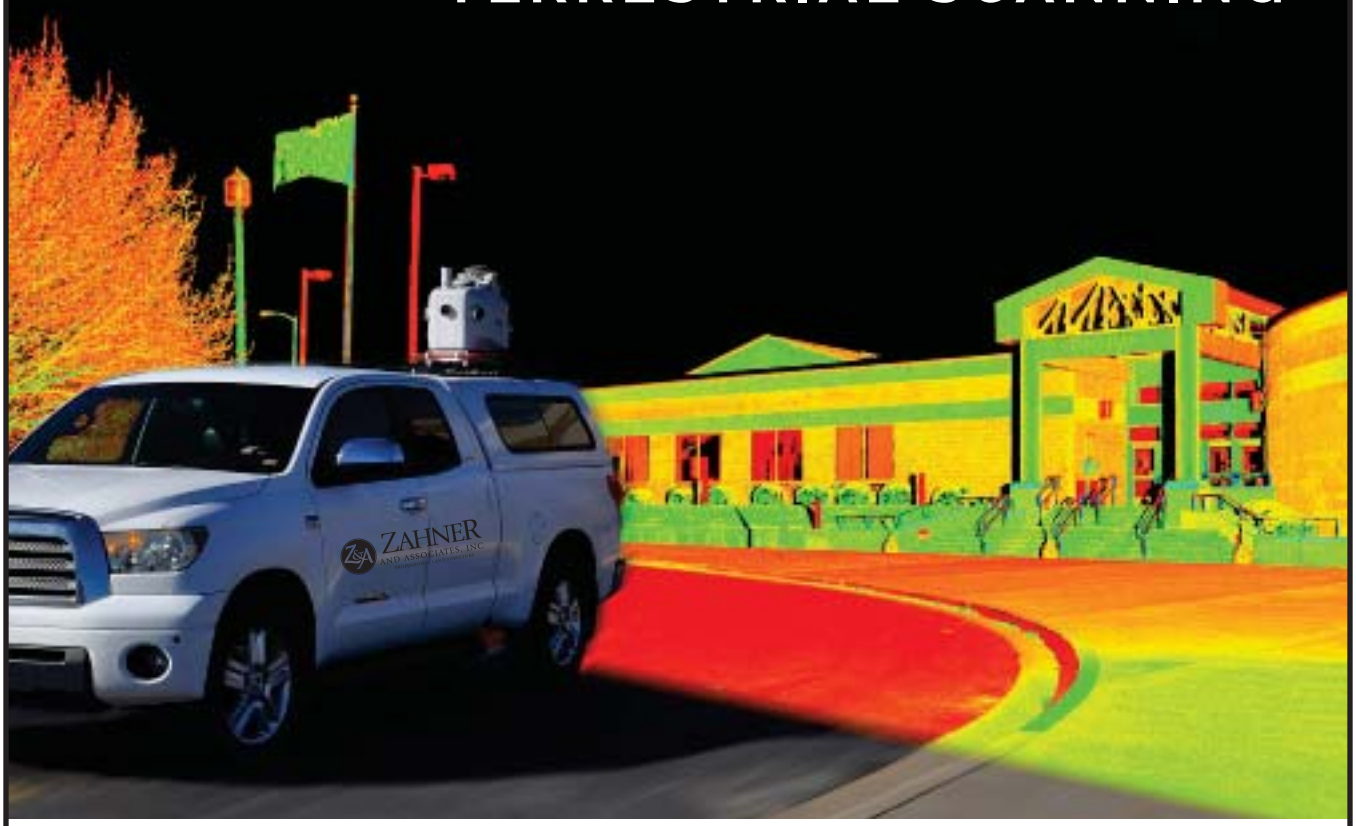

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News from the National Geodetic Survey

Thursday, August 11, 2016

Collecting Lidar Data along Florida's Outer Reef

NGS wrapped up three weeks of topo-bathy (land elevation and water depth) Lidar data collection along the outer reef of Florida. The data were acquired using the Office of Marine and Aviation Operations' Twin Otter aircraft equipped with NGS's new high-resolution, near-shore topo-bathy lidar system. Lidar data will support the Office of Coast Survey's request for chart updates, and will supply much needed data to the Florida Keys National Marine Sanctuary to support bathymetry maps. NGS plans to return to the area next year to survey additional portions of the reef. Near-shore lidar systems have improved over the past few years, and NGS's upgraded system can acquire data in waters up to four meters deep and even deeper where conditions allow.

Thursday, August 4, 2016

Chief Geodesist Serves on U.N. Committee and Working Group

NGS's Chief Geodesist (acting) served as a delegate for the U.S. misison to the Sixth Session of the United Nations (U.N.) Committee of Experts on Global Geospatial Information Management and as a member of the U.N. Global Geodetic Reference Frame working group in New York City August 1 through August 5. The working group is developing a roadmap for sustainable development to be implemented by all U.N. member nations. This will establish a homogenous approach to developing national geodetic infrastructure, data sharing and standards, capacity building, and communications. The working group will report to the broader committee, which will focus on goals and progress toward key areas of action outlined in the U.N. General Assembly Resolution.

Thursday, July 28, 2016

GRAV-D Presentation at NOAA Emerging Technologies Workshop

The NOAA Observing Systems Committee held an emerging technologies workshop designed to highlight new technologies and capabilities and to explore how they might be used to meet NOAA observation requirements and affect NOAA programs in the FY 2019-2023 time frame. NGS's GRAV-D Project made a presentation regarding Small Business Innovation Research grants awarded to Aurora Airborne Sciences. Aurora's proposal

was to miniaturize the GRAV-D sensor and integrate it aboard the company's optionally piloted Centaur aircraft. Phases I and II of the grants are complete and culminated in a successful field test of the concept in April. Phase III is in the award phase to prepare for operating the Centaur in remote reaches of Alaska and the Pacific Islands.

Thursday, July 21, 2016

NOS Co_Hosts Airborne Light Detection and Ranging (LIDAR) Workshop

The National Geodetic Survey (NGS), the Office of Coast Survey (OCS), and the U.S. Army Corps of Engineers (USACE) co-hosted the annual Joint Airborne LIDAR Bathymetry Technical Center of Expertise (JALBTCX) workshop in Silver Spring, Maryland July 19 to 21. JALBTCX is a partnership among NOAA, USCAE, the U.S. Geological Survey, and the Naval Oceanographic Office to share LIDAR technology development, standards, and data acquisition, and to build upon collaborative successes. This year's workshop is the first one to be held in Silver Spring, and was one of the largest JALBTCX workshops to date.

Thursday, July 21, 2016

2016 Experimental Geoid Models xGEOID16A and xGEOID16B Now Available

In 2022, the National Geodetic Survey (NGS) will replace the current North American Vertical Datum of 1988 (NAVD 88) with a new vertical datum based on the geoid: an equipotential surface that best represents mean sea level.

Since 2014, we have been creating and releasing annual models of the geoid in preparation for the new vertical datum. This year's models - xGEOID16A and

xGEOID16B - are now available as experimental products on NGS' beta website. Users can test these models for the improvements gained by the addition of new data from our Gravity for the Redefinition of the American Vertical Datum (GRAV-D) Project. Grav-D has been systematically collecting airborne gravity data across the country since 2008.

The xGEOID models provide our constituents with a regularly updated look at the expected impacts og the 2022 datum update. This 2016 final beta release includes a Web based tool to allow you to identify changes in your specific areas of interest by entering the coordinates for those areas.

June 30, 2016

2017 Geospatial Summit

Save the Date! On April 24-25, 2017 we will host the 2017 Geospatial Summit in Silver Spring, Maryland.

The 2017 Geospatial Summit will provide updated information about the planned modernization of the National Spatial Reference System (NSRS). Specifically, NGS plans to replace the North American Datum of 1983 (NAD 83) and the North American Vertical Datum of 1988 (NAVD 88) in 2022.

The Summit will provide an opportunity for NGS to share updates and discuss the progress of projects related to NSRS Modernization. NGS also looks forward to hearing feedback and collecting requirements from its stakeholders across the federal, public and private sectors.

BLM's New GNSS Protocols May Set Undesirable Precedent

by Tim Burch, July 8, 2016, appeared in GPS World

In the beginning…

The United States agreed to purchase Alaska from Russia in 1867 for $7.2 million dollars, or about two cents an acre. In 1959, Alaska, with a land mass larger than Texas, California and Montana combined, became the 49th state in the union.

For the professional surveyor, more than 20 million acres of federal government land is scheduled to be measured and divided for conveyance to the state for eventual sale to private individuals.

Surveying can be a challenging profession, and creating new townships in Alaska is no exception. In addition to the difficult environmental conditions, new procedural and technological advances are contesting historical means and methods of the creation of newly surveyed township tracts. The two main items are:

- Establishing coordinate values at corners instead of setting monuments.
- GNSS and potential issues with atmospheric interference and lack of satellite coverage.

Alaska. "The Last Frontier" is a fitting slogan for this great land. The rugged terrain and harsh winters make an environment that only the bravest inhabitants can stand. Here, one of the latest surveying battles is being fought; not between land owners, but within the professional surveying community itself and pitting technology against historical tradition.

We will discuss the challenges ahead for the future of surveying in Alaska and how it will affect parcel division. While it is too soon to know whether or not this will bottleneck sales of parcels to new landowners, it does bring many technical and procedural questions for surveyors to the forefront.

Challenging historical methods

From the early days of our new nation, surveyors from the Bureau of Land Management (BLM) followed long standing procedures and placed retraceable monuments at various intervals along township boundaries for tract establishment, with two mile intervals being the predominant length for parcels in Alaska. The position of these monuments are held by subsequent surveyors to retrace these tracts for the state or individual owners.

During the course of the original field surveys, crews tasked with establishment of the new corners will note natural and artificial features for reference to these new parcel lines. These features may be trees or forestry lines, streams and rivers, mountains or glaciers. Because of these environmental challenges, these surveys take a great deal of time and effort to traverse through the difficult Alaskan wilderness.

However, the physical act of performing the survey is the only way to establish accurate ties to features found along the way. Surveyors will establish permanent markers at the chosen intervals along the township lines with measurements to nearby features for future retracement. Once placed, the monument becomes a corner for the township parcel and its position holds over any distance or angular measurement to other monuments or reference ties.

Performing these surveys is very costly and takes a great deal of time, so finding ways to reduce the budgetary expenditure for this task has been a priority for the BLM. Modern equipment and technology has improved efficiency and cut down on some necessary manpower, but it still takes a significant number of people to traverse through the dense areas of Alaska.

The BLM has proposed the following changes to establishment of township and section corners during property establishment through a system referred to as a **"Direct Point Positioning Survey"** (DPPS):

Implementation Direction: When preparing official surveys for areas of land selected by the State of Alaska pursuant to the Alaska Statehood Act, exterior boundaries of the selection area will be shown on the official plat by combinations of dependent resurvey, incorporation of record surveys where closure is met, and original survey. For original surveys, all angle points along the exterior boundary of the selection area shall be marked on the ground with a physical monument and shown on the official plat by reported coordinate and reference relationship to the NSRS datum and existing control stations. When deemed appropriate and directed in the Survey Special Instructions, other corner positions along, or internal to, the exterior boundary of the selection area can be reported and fixed by measure using reported coordinate and reference relationship to the NSRS datum and existing control stations and other marked corners of the survey with reported coordinates on the official survey plat. For surveys conducted using DPPS methods, if a corner is not marked with a physical monument, the geographic coordinate reported on the official survey record as fixing the corner location shall be accepted as the only evidence of the original corner position. For corners marked with a physical monument, the geographic coordinates reported on the official survey record shall be accepted as collateral evidence of the original corner position; the actual monumented location will remain the best evidence of the original corner position.

The BLM goes on to state the following conditions for implementation:

- Ease of unofficial location of boundaries on the ground by using satellite positioning in mobile devices for groups like miners, oil and gas lessees, recreational users, prospective land owners, etc.
- More economical future legal surveys when the need arises to mark the corners of property boundaries
- A clear plan for future surveys that will allow efficient procedures for private land surveyors.
- Reduced boundary uncertainty and costs due to monument destruction or disturbance.
- Compatible and accurate boundary framework for GIS and other geospatial databases.
- DPPS methods generate a greater certainty of comer positions and they are correct, consistent and repeatable.
- DPPS methods introduce an economy of resources in the future for leaseholders and landowners when additional parcel boundary demarcation is required because geographic coordinates referenced to a known national datum are directly reported on the survey record and do not need to be calculated from the legacy measurement of bearings and distances.
- Adoption of DPPS methods avoids spending substantial funds on unnecessary procedures like recovery, maintenance and rehabilitation of physical monuments in future survey work.
- Surveys conducted using DPPS methods can be completed much more quickly than surveys completed using historical methods, thereby facilitating quicker patent to the State.

These new policies are reshaping not only how traditional surveyors perform their craft, but also flies in the face of more than 200 years of boundary establishment and case law determination of property rights. Surveyors follow a strict guide when evaluating evidence in legal descriptions and/or property boundaries:

Priority of Evidence Rules:

1. Possessory Evidence
2. Seniority of Title
3. Documentary Evidence
    a. Call for a survey
    b. Call for monuments
        i. Natural
        ii. Artificial
        iii. Record
    c. Distance (or Direction)
    d. Direction (or Distance)
    e. Area
    f. Coordinates

Coordinates have historically always been the last resort for corner positioning and/or retracement use, yet the BLM feels that GNSS measurements have increased in reliability to a place where they can be more heavily

(continued on next page)

BLM's New GNSS Protocols (continued)

relied upon for establishment of section corners and other significant points. This is where the second issue comes to light: positional accuracies using satellite-based measuring devices at high latitudes.

GNSS measurement and environmental challenges

For most of us "regular" surveyors in lower latitudes, our GPS/GLONASS measuring equipment operates with little to no trouble. Newer receivers are taking advantage of not only the U.S. and Russian satellites, but will eventually use the European Union Galileo satellites, China's BeiDou, the Japanese QZSS and India's IRNSS. Once these additional systems are operational, achievable accuracies worldwide will increase dramatically but we are still several years off.

The issues GNSS users in higher latitudes face are not only lack of satellite coverage, but several factors of environmental interference within the atmosphere. The result of these conditions and hazards are scintillation, positioning errors and cycle slips. These are very difficult to predict, thus increasing data-collection time and efforts to catch potential errors.

Scintillation occurs when rapid changes in amplitude and phase are observed and directly impacts the signal from the GNSS. Solar radio storms (caused by coronal mass ejection), large- and small-scale ionospheric structures (causing unpredictable values in environmental electrons) and geomagnetic activity (aurora) are also factors that affect signal, create cycle slips, and thus deteriorate the positional accuracy.

Studies performed by several technical teams (including NOAA/NGS) have shown that variations in position occurs often at CORS stations with little or no warning. Ongoing studies are helping to establish potential patterns in the atmospheric intruders, but will require much more analysis.

Some of these issues will be solved with more satellite coverage from the pending systems, but it will also require additional monitoring equipment to help forecast when potential environmental factors are about to occur. These systems will take time and money to develop, and thus increase the budgetary requirement for a new surveying procedure that was planned to save time and money.

But what does this all mean? From the historical side, placing monuments only at perimeter corners and not at township and section corners will place an extraordinary burden on future surveyors to "follow in the footsteps" of the original surveyor.

This flies directly against the duty of the retracement surveyor, so that alone will be a challenge. Studies have shown the instability of GNSS-derived accuracies as performed by highly trained scientists who are well educated at atmospheric recognition. Pairing a revised retracement procedure with providing GNSS-derived coordinate values with potentially faulty data instead of placing monuments is a recipe for disaster.

The biggest issue for most surveyors with implementation of the DPPS method will be for other jurisdictions to follow suit. The main priority of the surveyor is to protect the public. Making a change to allow coordinates to become acceptable evidence will lead to many more boundary disputes and court cases. Too often I hear that one surveyor thinks his coordinates are better than the next (myself included), yet we are dependent on what the receiver gets and the software calculates.

The surveyor tends to believe that GPS is "our" measuring device, and we have exclusive knowledge of its use and application, but we would be hard pressed to tell the client exactly what the equipment does to determine position and distance. A general understanding of your measuring tools is necessary, but it still comes back to knowledge of boundary law and the principles of how to apply them.

While I applaud the BLM for proposing a new procedure to help reduce costs for new original surveys in Alaska, I'm also afraid of the residual effect everywhere else as it establishes a new precedent.

So in the meantime, let the surveyors keep setting monuments and we will revisit the coordinate standard another day. And to quote the surveyor's favorite geodesist, David Doyle: "Good coordination begins with good coordinates." So let's make sure we have accurate data.

About the Author: Tim Burch
Tim Burch, GPS World's co-contributing editor for survey, is director of Surveying at SPACECO Inc. in Rosemont, Illinois. He has been working as a professional land surveyor since 1985, and is the secretary, Board of Directors, National Society of Professional Surveyors.

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Nova Scotia Offers Help to Descendants of Black Loyalists Denied Land Title:

Residents can get free advice from lawyers and land surveyors under a pilot project.

by Staff of The Canadian Press, published on Toronto Metro, March 2, 2016

HALIFAX — The Nova Scotia government says it will offer free support to descendants of black loyalists still trying to get clear title to their land after more than two centuries.

The province provided land to black loyalists in the communities of 1800s, but the Crown didn't give land titles — though it did for white settlers.

Now under a provincial pilot program, residents of East and North Preston as well as Cherry Brook who have applied to make a claim will get free advice from lawyers and land surveyors.

The Baptist church in North Preston, N.S. is shown in a 1934 file photo. Residents of a black community in Nova Scotia have been pushing for progress in gaining title to their land, 200 years after their ancestors were placed on rocky plots without clear ownership.

A release from the province states the resources are expected to help determine issues such as existence of a will, unclear boundaries and "confusion" about land ownership. It adds that clarity of legal title will help community members enjoy free hold on their land and identify ownership for tax purposes.

The Department of Natural Resources has also posted a summer job for a law student who will perform outreach and work with community residents.

Dwight Adams, a member of a community group advocating for the clearing of the titles, says the announcement is a step forward but further funding is needed to mediate disputes.

The hiring of a law student will help, but it won't suffice, he said.

"We could have 30 applications and we could have 30 conflicts and the application process doesn't mean much if we have two individuals claiming the same piece of property," said Adams, adding that the province needs to hire people from within the community to mediate disputes.

The department is working with the Nova Scotia Barristers' Society and Association of Nova Scotia Land Surveyors to provide the free services.

Darrel Pink, executive director of the Nova Scotia Barristers' Society, calls the program a "significant first step" to solving the property problem in the communities.

He says the focus initially will be on properties where there isn't a dispute over boundaries, or the dispute can be easily resolved.

Pink says over time the hope is also to develop a process to resolve conflicts.

"We're talking about 500 properties and we don't know yet how many of them involve conflicting claims," he said.

Pink says one of the challenges is that the legislation governing efforts to establish land titles for the descendants of the black loyalists was passed in 1964, and there is different land registration system in place now.

"It's about trying to figure out what the best approach and we have a very competent group of lawyers willing to work with government ... on how to reconcile these two regimes to make this system effective," he said.

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SNOOPY as surveyor

Surveyors Launch Effort to Save NMSU Program

by Heath Haussamen, Las Cruces Sun-News, August 4, 2016

LAS CRUCES - Professional surveyors from across the region are making a push to stop New Mexico State University from cutting one of only a handful of four-year surveying degree programs in the United States.

NMSU's administration is moving forward with plans to cut the Surveying Engineering program anyway, though the proposal still requires a recommendation from the Faculty Senate and approval of the Board of Regents.

Officials from the New Mexico Professional Surveyors met last week with NMSU's engineering dean, Lakshmi Reddi, to urge a change of heart and offer possible financial support. David Acosta, president of NMPS and of Construction Survey Technologies in Albuquerque, said the professional association can pledge an annual gift to NMSU of "$0-$30,000 depending on many variables we have to discuss."

NMSU's administration, which is struggling to meet a $12.1 million budget shortfall in the current fiscal year, says the university would save $340,644 each year by eliminating the Surveying Engineering program. So the possible financial support from NMPS is, at best, less than a tenth of the cost of keeping the program going.

NMSU is making other cuts, including eliminating jobs, reducing employee benefits, cutting administrator pay, and defunding its equestrian team because of the budget shortfall, which was caused largely by reductions in state funding and decreased student enrollment. All colleges and administrative divisions are being required to reduce their budgets by between 5 and 6.2 percent.

NMPS has collected dozens of letters for Reddi from New Mexico and beyond that express support for keeping the Surveying Engineering program. They include a letter from the state Department of Transportation signed by Secretary Tom Church and other DOT officials, which states that the agency currently employs seven graduates of NMSU's program.

The letters, which Acosta provided to NMPolitics.net, communicate a consistent message: The skills taught in the NMSU program are essential for surveyors. There's a shortage of qualified surveyors nationwide. NMSU's program puts people to work in important jobs. Eliminating the program could lead to reduced standards for surveyors in New Mexico, which would harm the profession and put the public at risk.

Andreas Linnan, New Mexico Southern Branch president for the American Society of Civil Engineers, wrote to Reddi that it is "difficult to understand" why NMSU would cut the program, "especially in a time when the *Borderlands* is one of the fastest growing infrastructures not only in New Mexico but in the US and Mexico."

"Grooming an educated and qualified workforce is crucial to attract and support investments in rail & road construction to create a sustainable transportation network capable to handle the anticipated cargo without destroying our environment," Linnan wrote.

The letters suggest an impact beyond New Mexico if the Surveying Engineering program is eliminated. John B. Guyton, CEO of Flatirons Inc. Surveying and Engineering, which has three offices around Denver, employs 11 professional surveyors. Colorado universities have no four-year surveying program, and Gutyon wrote to Dean Reddi that discontinuing NMSU's program "will impact my business in a negative way, and reduce our ability to protect property rights and the public welfare."

"I realize that many considerations go into the termination of a degree program," Guyton wrote. "But I want to assure you that the need for such graduates extends beyond the borders of New Mexico."

NMSU Chancellor Garrey Carruthers and his administration don't appear to be reconsidering. Asked for comment about NMPS' efforts to save the Surveying Engineering program, university spokesman Justin

(continued on next page)

Surveyors Launch Effort to Save NMSU Program (continued)

Bannister said, "We don't have anything to add at this time. Our prescribed process is continuing."

Profession 'depends on' NMSU

Becoming a licensed surveyor in New Mexico currently requires a four-year degree in a surveying program like NMSU's. There are only seven of those programs across the nation.

The surveying profession "depends on the NMSU program to … fill important jobs with governmental agencies and private businesses," said Acosta, the NMPS president.

Surveyors do many important jobs related to infrastructure, property disputes and mapping. They're usually the first and last people at a construction site, Acosta said. "Surveyors also assume a lot of responsibility and liability by laying out and staking the locations of buildings, utilities, drainage structures and boundary lines," he said.

On Thursday, two surveyors with Wilson & Company were mapping property lines, elevation and other factors along Miranda Street in Las Cruces as the city prepares to install new lights.

The National Council of Examiners for Engineering and Surveying recommends on its website that surveyors go through rigorous academic programs before doing such work. That's meant "to protect the public from fraudulent and underqualified individuals."

"…the main filter for public protection in a learned profession is college admission and completion of a college program, not an exam," NCEES states. "Lawyers, architects, doctors, dentists, and engineers pass their professional exams at nearly a 100 percent rate because they were highly selected by (1) college admissions and (2) completing the required program."

Acosta said NMPS fears cutting NMSU's program "would lower the bar to practice surveying — and this, we believe, will negatively effect the public due to less-educated professionals practicing." He and others believe surveying could become an experience-based trade in New Mexico that requires passing a test but not completing the academic degree that is currently required.

'To serve the public good'

Daniel R. Muth, chairman of the Arizona Professional Land Surveyors Association, wrote to Reddi that NMSU has one of two accredited surveying engineering programs in the Southwest. Cutting the program, he wrote, "would be in my opinion a short sighted mistake with lasting unintended consequences."

Muth, a 1995 graduate of NMSU's Surveying Engineering program, wrote that "experience alone will not suffice in today's environment to make a professional surveyor."

"It takes a strong combination of education to reinforce foundational experience," Muth wrote. "NMSU did that for me. I would like to see NMSU continue to provide that superior level of education to future generations of prospective surveyors."

Curtis W. Sumner, executive director of the National Society of Professional Surveyors, which is based in Maryland, also wrote to Reddi.

"The laws of New Mexico related to professional licensing recognize that those individuals seeking to protect the property rights, and preserve the health, safety, and welfare of the citizens of New Mexico as licensed professional surveyors must have obtained a four-year degree," he wrote. "The Surveying Engineering program at NMSU is the only program in New Mexico focused specifically on providing that prerequisite education for such licensure."

2016 National Trig-Star Winners

by Trish Milburn, NSPS, July 20, 2016

TRIG-STAR

National Trig-Star Committee Selects Winners of the Richard E. Lomax National Trig-Star and Teaching Excellence Awards

The National Society of Professional Surveyors (NSPS) is pleased to announce the recipients of the 2016 Richard E. Lomax National Trig-Star Awards. The Trig-Star committee met on July 15, 2016 to determine the three top high school students from the national examinations submitted by state winners. This year there were thirty-eight state winners submitted. A past president of NSPS, Richard Lomax was the driving force behind the elevation of the local Trig-Star program to the national level. In October 1994, Board action named this high school trigonometry skill award in his honor.

The Richard E. Lomax National Trig-Star Awards are as follows:

First Place: Collin Free, Syracuse High School, Syracuse, UT
Second Place: Avi Swartz, Cherry Creek High School, Greenwood Village, CO
Third Place: Aaron Sun, Ed W. Clark High School, Las Vegas, NV

The Richard E. Lomax National Teaching Excellence Awards are as follows:

First Place: Ashley Martin, Syracuse High School, Syracuse, UT
Second Place: Dotty Dady, Cherry Creek High School, Greenwood Village, CO
Third Place: Saundra D. Jordan, Ed W. Clark High School, Las Vegas, NV

The first place student receives $2,000, second place student receives $1,000, and third place student receives $500. The first place teacher receives $1,000, second place teacher receives $500, and third place teacher receives $250. The Trig-Star Policy states that "the National Student and Teacher Awards be given to the winning students at or before the next state professional land surveying organization conference of the student's home state.

The following is a list of the remaining State Winners in the order of finish:

Junhee Lee, Iowa; Veronica Xinyu Gu, Minnesota; Thomas Szczesniak, Michigan; Dagin Lin, Connecticut; John Mastroberti, South Carolina; Yiwei Lyu, Pennsylvania; Tao Lu, Texas; Antonio Faraci, New York; Qingfeng Li, Wyoming; Giovanni Budi, North Carolina; Stephan Terry, Delaware; Alan Zho, South Dakota; Veronica Lahony Suarez Torres, Puerto Rico; Noah Paladino, New Jersey; Elizabeth Asp, North Dakota; William Quinn Marsh, California; Andrew Reimer-Berg, Oregon; Zander Rossman, Wisconsin; Travis Casey, Kansas; William Zhang, Alabama; Jelisa Holmquist, Montana; William Luqiu, Virginia; Nicholas Lillis, Maine; Walter Johnson, Kentucky; Madison Gaines, Maryland; Thomas Pointer, Missouri; Jeffery Mayolo, Washington; Timothy Kammerer, New Hampshire; Christian Lynch, Massachusetts; Wyatt Evan Turner, Georgia; Joel Niemi, Ohio; Haoxiang Li, Illinois; Tingyi Lu, Indiana; Drake Thomas, Alaska; Kael Stelek, Idaho.

Missouri Trig-Star Recipient

Thomas Pointer of Gainesville, Missouri. Graduating in 2017, MSPS is proud to showcase this young ***"Show Me"*** student of trigonometry. Thank you Thomas for accepting our challenge – and congratulations on meeting all we asked!

Air Force Announces a New Competition for GPS III Launch Services

Inside GNSS News, August 6, 2016

The U.S. Air Force has announced a new competition for the next GPS III satellite launch, scheduled for 2019. The request for proposal (RFP) for an Evolved Expendable Launch Vehicle (EELV) Launch Service, due from the industry by September 19, follows a draft RPF that received "extensive industry engagements," the Air Force said.

Departing from a traditional approach that includes a contract for multiple launches, the fixed-price, stand-alone contract will be for one GPS III launch. The Air Force said its acquisition strategy for this solicitation "achieves a balance between mission success/operational needs, and lowering launch costs, through reintroducing competition for National Security Space missions," according to Lt. Gen. Samuel Greaves, Space and Missile Systems Center commander and Air Force program executive officer for Space

Only two companies qualify to send military payloads into space. The United Launch Alliance (ULA), a partnership between Boeing and Lockheed Martin, looks to compete, even though it dropped out of a previous GPS III launch competition last November. That round was won by Elon Musk-backed Space Exploration Technologies (SpaceX), the other qualified launch vehicle company.

Although not coming out and directly saying it will compete, ULA said it "looked forward to reviewing the EELV Phase 1A RFP," said Jessica Rye, ULA spokeswoman, in a prepared statement.

"ULA wants to participate in all National Security Space missions for which we are eligible and competitive from a business standpoint. Each bid decision is made individually based on the opportunity and structure of the RFP," she said.

Lt. Gen. Samual Greaves, Space & Missile Systems Center commander.

As Inside GNSS reported last November, ULA said that it would be "unable to submit a compliant bid for GPS III-X launch services." The company blamed its decision on the lack of Atlas rockets due to restrictions imposed by the 2015 National Defense Authorization Act, which continued a ban on Russian-built RD-180 engines imposed following Russia's annexation of Crimea.

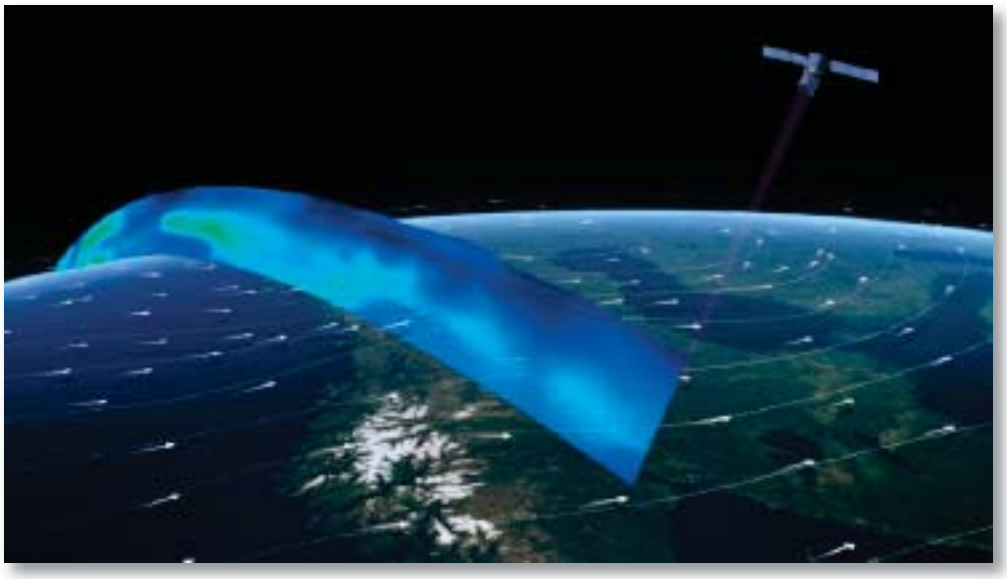
The ULA said that, along with not having accounting systems in place, the GPS III satellite launch request for RFP lowest price technically acceptable (PTA) provision allowed "for no ability to differentiate between competitors on the basis of critical factors such as reliability, schedule certainty, technical capability and past performance."

Until the Air Force certified SpaceX for national security space launches in May 2015, ULA had the field to itself.

First Space-Based LiDAR Ready for Launch

From Sensors & Systems "Making Sense of Global Change", August 9, 2016

The pioneering Aladin sensor, a spaceborne LiDAR instrument with two powerful lasers, a large telescope and very sensitive receivers, is ready to join its Aeolus satellite for launch in 2017.



When launched, the ADM-Aeolus satellite will carry the first wind LiDAR in space, which can probe the lowermost 30 kilometers of the atmosphere to provide profiles of wind, aerosols and clouds along the satellite's orbital path. (Credit: ESA/ATG medialab)

Designed by Airbus Defence and Space, Aladin's laser generates ultraviolet light beamed toward Earth, which bounces off air molecules and small particles such as dust, ice and droplets of water in the atmosphere. The receiver analyses the Doppler shift of the backscattered signal to determine the speed and direction of the wind at various altitudes below the satellite.

These near-real-time observations will improve the accuracy of numerical weather and climate prediction and advance our understanding of atmospheric dynamics and processes relevant to climate variability.

Aeolus Satellite

Nominations for 2016-2017 Officers

President
Joe Clayton

Joe Clayton is an eighth generation Missourian with over 30 years of experience in surveying and mapping. Joe has a diverse background that includes work in high-order geodetic surveys, transportation, land surveying, photogrammetry, technical support, training and project management.

Joe recently retired from the Missouri Department of Conservation; and is enjoying some time off before re-entering the work force.

Joe is a graduate of the U.S. Army Field Artillery Survey School; he has under graduate course studies from three Missouri Universities and is a certificate candidate of the Land Survey Program of the University of Wyoming.

Joe is a founding member of the Southwest Chapter of MSPS. He is the chair of the MSPS GIS/Vision 21 Committee and is an active member of the Legislative, Nominations and Standards committees.

Joe is honored to have this opportunity to serve the Society and the surveying profession.

President-Elect
Gerald Bader, PLS

Gerald is the President of Bader Land Surveying, Inc. which began operations in April of 1996. In the fall of 1996, Gerald was elected as Ste. Genevieve County Surveyor and is presently serving his 5th term. Gerald is an advocate for the protection of the Public Land Survey System and has been participating in MDA's County Surveyor Cooperative Remonumentation Program and the Private Surveyor Remonumentation Program since 1996. In addition, Gerald is active in several local civic and professional organizations. He is presently serving on several MSPS committees. Gerald has served as MACS President from 2004-2005 and 2010 through 2012. Gerald coordinated MACS re-monumentation of the Tri-State corner in 2004 and the PK Robbins Memorial Bench in 2006. Gerald is also serving on the Board of Directors for MACS and the St. Agnes School Board.

Gerald and his wife, Denise have two children, Brett and Alina. They live in Ste. Genevieve. It has been an honor to serve MSPS.

Vice President
Chris Wickern

I manage the survey operations for Engineering Surveys & Services in our Sedalia office.

We all have different things we are called to do throughout our lives. My first calling was to marry the love of my life some 42 years ago. This calling naturally lead to being called to be a father and now a grandfather.

I was introduced to surveying by the US Army Field Artillery as an Artillery Surveyor. I served as chainman, instrument operator, recorder, computor and surveying became another calling. I would go on to serve as a Party Chief, a Regimental Chief Surveyor and a Brigade Chief Surveyor. I also served as an instructor for the Surveyors Basic Course and later taught basic surveying and legal aspects at a community college in Arizona. This year, after several years of discernment and training, I answered a different call and was ordained a deacon of the Catholic Church in the Jefferson City Diocese.

Surveyors presenting the truth of boundaries is best summed up with the very high regard found in the Bible, Ezekiel Chapter 40: The Man with a Measure. 3 "He brought me there, and there standing in the gateway was a man whose appearance was like bronze! He held in his hand a linen cord and a measuring rod."

This angelic vision given to Ezekiel demonstrates both the historic importance of surveying and the very high regard the public has for our noble profession. One our society continues to work to uphold and enrich. I have been involved with MSPS by chairing and serving on various committee's and am just finishing a year of service as secretary/treasurer.

Secretary-Treasurer
Susanne Daniel

Susanne is co-owner of Daniel Surveying in Ava, Missouri. She has over 20 years of experience in surveying and earned her professional surveying license in 2001. Susanne has studied chemistry and mathematics at Missouri State University and holds a B.S. in Geology degree. She is active in state and local political organizations and serves on the MSPS legislative committee. Susanne enjoys tennis, volleyball, playing flute in her church orchestra and volunteering in a lawn care ministry. Susanne and her husband Andy currently reside in Ava, Missouri where he serves as Douglas County Surveyor and she acts as secretary for Ava Chamber of Commerce Economic Development. It is an honor to serve the Society and I remain committed to promoting and advancing our profession.

Secretary-Treasurer
Michael Gray

From rural Greene County, Missouri, I graduated from Ash Grove High School, attended SMS in Springfield, Mo. My surveying career began in the Army as an Artillery Surveyor with the 5/27 Artillery, Phan Rang, Viet Nam in 1970. I began my land surveying career in April of 1972 with Wright & Associates which later became Anderson Engineering, I was licensed in Missouri in1981 and became the Surveying Manager for Anderson at that time, a position I held until leaving Anderson in 2007. I was also a vice president and board member for Anderson Engineering. I am also licensed in Arkansas, Oklahoma and Kansas. In 2007, with my two sons Michael and Matthew we started Gray & Associates, LLC, providing a range of professional surveying services from Alta surveys, subdivisions, design surveys and construction staking. I have worked on and managed many types of projects Corps lake boundaries, Forrest Service boundaries, Missouri Conservation boundaries, gas and water pipeline projects, electric transmission and distribution lines, airport projects, the Branson Highroad, rural surveys , lot surveys and subdivisions. Through these projects and managing a service contract with City Utilities of Springfield for over 20 years, have worked on and supervised the completion of hundreds of surveys and easements. I was elected to the Ash Grove board of education in 1991 served until 2000 the last three years as board president and a member of the OTC trustee advisory board. I was honored to be appointed to the registration board in 2001 by Governor Holden and re-appointed by Governor Blunt. Served until November 2009 where I was the land survey division chair from 2007-2009. I am currently a member of the Greene County Historical Board. I was honored again to be named Surveyor of the year in 2007 at the 50th anniversary annual meeting of MSPS where I presented my son Michael his surveyor's license. My wife Paula and I have been married for over 42 years and we live near Ash Grove on part of my grandfather's farm where if grew up. Along with our two sons, we have a daughter Misti and three grandsons so if this surveying thing works out who knows.

Nominations for 2016-2017 Board of Directors

Debrah Wolfe

I received my diploma in Civil Drafting and Design in 1985. I started taking surveying classes in New York while working there and moved back to Missouri and finished my surveying classes and got licensed in 2000. I have worked for several engineering and surveying firms in the Springfield area and am currently employed by Toth & Associates working in the electrical transmission division. I help acquire or update easements for new and existing transmission lines.

Ray Riggs

Ray Riggs is a fifth generation resident of Howell County, Missouri and a first generation land surveyor. He attended rural elementary school in Howell County and graduated from the West Plains High School in 1982. Ray has worked within the surveying profession since graduating from high school as a rodman, instrument man and crew chief. He has been a Project Manager and Project Surveyor with Riggs & Associates, Inc. since 1989. Beginning in 1999 and continuing until 2001, Ray completed the required coursework for licensure as a Professional Land Surveyor in Missouri. These courses were completed by distance learning from the University of Wyoming and the University of Maine. He obtained his Missouri Professional Land Surveyor's license in 2003, his Oklahoma license in 2005 and his Mississippi license in 2011. Ray has been a member of the Missouri Society of Professional Surveyors for many years and has served on several committees. In 2007 Ray was appointed to serve on the Land Survey Advisory Committee and continued until the committee was dissolved in 2012. Ray is an active member of the Junction Hill Pentecostal Church, is an ordained minister within the Ozarks Pentecostal Holiness Fellowship and has been the Youth Leader of this fellowship for 24 years. Ray has been happily married to Tami for over 30 years and they have a married daughter, Tabitha. Ray enjoys reading, spending time with family, traveling and writing on his blog, bigsurveyor.blogspot.com. However, since December 2014, Ray has had his hands full being "Pawpaw" to his first grandchild, Lucas.

Ron Heimbaugh

Ron Heimbaugh is the Field Surveys Section Chief in the Missouri Department of Agriculture's Land Survey Program. Heimbaugh earned a Bachelor of Science degree in Industrial Technology from the College of the Ozarks in 1990 and later attended surveying courses at the University of Missouri - Rolla (now known as Missouri University of Science and Technology). He has worked in the civil engineering and land surveying field for more than 25 years, gaining licensure in 2004. Heimbaugh began his surveying career working in the private sector, serving as Project Manager for Rolla area surveying and engineering firms. Heimbaugh began working for the Land Survey Program in 2008 as a cadastral project surveyor and then in 2013 accepted the position of the Field Surveys Section Chief. Currently, Heimbaugh oversees all in-house cadastral and geodetic surveying projects as well as coordinates all County Surveyor and Private Surveyor Co-op projects. Ron and his wife Debbie have three girls, all of which are very active in sports. When Ron is not spending time at a softball field or basketball court, he enjoys hunting, fishing, and archery.

Kevin Flood

Kevin Flood is a 1985 graduate of Northeast Missouri State University (Truman State University) with a B.S. in Industrial Technology. He is Vice President of Surveying for Poepping, Stone, Bach & Associates, Inc. (PSBA) Architects/Engineers/Surveyors/GIS/Planners with offices in Quincy, IL, Keokuk, IA, and Hannibal, MO. Mr. Flood is a Registered Professional Land Surveyor with licenses in Illinois, Missouri, and Iowa and has been employed by PSBA for the past 26 years. He oversees surveying operations in all three office locations and is responsible for employee supervision and project administration. Mr. Flood currently holds the elected position of County Surveyor in Clark County, MO. He is a current member of the Missouri Association of Land Surveyors and the Illinois Professional Land Surveyors Association.

From the MSPS By-Laws

ARTICLE II OFFICERS

Section A. Elected Officers. The elected officers of the Society shall be a President, a President Elect, a Vice President, and a Secre¬tary Treasurer to be elected by the voting membership at the Annual Meeting and to serve until their successors have been duly elected and assume office. The President Elect shall automatically succeed to the Presidency.

Section B. Eligibility. Any voting member in good standing shall be eligible to be nominated and elected to any elective office of the Society.

Section C. Nomination and Election of Officers. The President shall appoint a Nominating Committee of at least three voting members who shall propose and submit to the membership at least thirty (30) days before the Annual Meeting at least one nomination for the offices of President Elect and Vice President and at least two nominations for the office of Secre¬tary Treasurer. Any person so nominated shall have given their prior consent to nomination and election as an officer. Additional nominations may be made from the floor for any office.

1. The nominee for each office receiving a majority vote shall be selected to that office.
2. Should no one receive a majority on the first ballot for each office, then the two nominees receiving the most votes for each office shall then be voted upon by the voting membership until a majority vote is received by one of the two nominees.

Resolving Boundary Disputes

2016 Annual Meeting

October 13-15, 2016

Sheraton Westport Lakeside Chalet ~ St. Louis, MO

Thursday, October 13, 2016

7:00 am — Registration and Continental Breakfast

8:00 - 5:00 pm — Hospitality Room

8:00 - 10:00 am — **CONCURRENT SESSIONS**

The Missouri USPLSS in Four Hours

Missouri's U.S. Public Land Survey System (USPLSS) is different when compared to the System as applied in all other states. (Its closest cousin is Arkansas.) The GLO instructions of the day, use of standard lines, section protraction, Missouri case law and the Missouri statutes relative to resurveys (in flux since 1814) all combine to make Missouri unique. The object of this course is to cover and summarize Missouri's USPLSS in four hours.

Speaker: Dr. Dick Elgin, LS, PE

Minimum Standards

The Missouri Minimum Standards for Property Boundary Surveys are the rules, promulgated jointly by the Missouri Department of Agriculture Office of State Land Surveyor and the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors, and Landscape Architects, that regulate the practice of land surveying. This session is provided to help land surveyors gain that knowledge to produce a higher standard of land surveyor in Missouri.

Speaker: Darrell Pratte, PLS, Dept. of Agriculture-Land Survey Program

10:00 - 12 noon — **CONCURRENT SESSIONS**

Missouri USPLSS in Four Hours continued

(Qualifies for 2 hours of Minimum Standards)

Dick's book "The U.S. Public Land Survey System for Missouri" will be used (Bring yours or purchase one at the Annual Meeting.) This class is suited for students, LSITs, comity applicants for a Missouri PS license, those preparing to become licensed, or PS's or urban surveyors who might be a little vague on the State's System.

Section Breakdowns

(Qualifies for 2 hours of Minimum Standards)

This course will consist of an analysis of the statutes, rules and procedures for the subdivision of the PLSS in Missouri. The role of the field notes and GLO plats will be emphasized in determining the most correct procedures for the subdivision of the sections of the Public Land Survey System in Missouri.

Speaker: Robert 'Bob' Shotts

12:00 - 12:45 pm — Lunch

12:30 pm — Golf Tournament at The Quarry

12:45 - 2:15 pm — **Accuracy Using GPS**

How do you know what you are getting out of your GNSS Receiver and Data Collector? Grid. Ground. Scale factor. Coordinate system? ITRF? ECEF? Local...Global...Site Calibration... Oblique Mercator projection? All of these things effect what spits out of your data collector. In this session we will look at the settings that make a difference, and talk about what to use when. We will also discuss ways to increase your confidence in your results and how to achieve better accuracy.

Speaker: Tom Bryant, PLS and Kelly Harris, PLS, Seiler Instrument

2:15 - 2:30 pm — Break

2:30 - 4:00 pm — **CONCURRENT SESSIONS**

Understanding the Boundaries of the Professional Surveyor

Missouri Revised Statute 327.272 defines who a surveyor is and what they can do. The focus has typically been on understanding items 1-5. This hour and a half will be spent understanding items 6-13. Most of these tasks are not covered by Missouri Minimum Standards; how the surveyor approaches these tasks can be the difference between a successful survey and the one that will never go away.

Speaker: Mark Wiley, PLS, Heideman & Associates

UAV's - Pro's, Con's and Pricing Availability

With UAV's becoming the next tool that any Land Surveyor will need to have in their toolbox, where do you start when considering purchasing one? This session will give you the basics of UAV's: the different types, models, and accessories. We will cover all the terminology and features that you need to know to get started in the UAV business.

Speaker: Jim Martin, Griner and Schmitz

4:00 - 4:15 pm Break

4:15 - 5:15 pm **CONCURRENT SESSIONS**

Safety and the Professional Land Surveyor

Missouri Revised Statute 327.371 states Surveyors and their crews are not liable for trespass. A survey crew encountered a farmer and informed him they were going to cross his field to search for corners and there was nothing he could do about it showing him a copy of the statute. When they had made it to the middle of the field a bull challenged them and their crossing of his territory. They yelled to the farmer for help at which point he hollered back show them your Statute wise guys. How does the surveyor keep themselves and their staff safe in the ever changing work place the Professional Land Surveyor finds themselves in.

Speaker: Mark Wiley, PLS, Heideman & Associates

UAV Regulation and Insurance

After purchasing your first UAV and taking the initial training, what does it take to legally and safely fly your aircraft for commercial use? This session will cover the current federal and state regulations regarding commercial UAV use. Did you know that your current liability insurance probably has a clause exempting the use of aircraft for your business? UAV's are considered aircraft and you will probably need to purchase supplemental insurance. This session will cover the options for UAV liability and commercial insurance.

Speaker: Jim Martin, Griner and Schmitz

5:15 - 7:00 pm Exhibitor Set-Up

Friday, October 14, 2016

7:00 am Registration, Continental Breakfast and View Exhibits

8:00 - 5:00 pm Hospitality Room

8:00 - 10:00 am Business Meeting

10:00 - 10:30 am Break to View Exhibits

10:30 - 11:00 am **Keeping the Professional Land Surveyor Professional**

Missouri Revised Statute 324.00 establishes the Division of Professional Registration. Can a State Law make the Professional Land Surveyor respected and honored for the skill and expertise we provide the people of this state or is that respect something we have to earn? Let's look at what it takes to be considered professional in these ever changing times.

Speaker: Mark Wiley, PLS, Heideman & Associates

11:00 - 11:30 am NSPS

Speaker: Curt Sumner, NSPS, Executive Director

11:30 - 12:30 pm **CONCURRENT SESSIONS**

Insurance Demystified

Understanding your Insurance Needs within your profession and how to take the mystery out of your coverage placed. Insurance is sometimes scary and/or confusing. We will discuss some basic things you may *not* know –or that you *need* to know ---about your business insurance. Whether you're buying a policy for the first time or have had coverage for years, you can keep bottom-line cost under control by being knowledgeable about all the facts when securing insurance and understanding how that applies to the contracts you are entering in to. Join us to discover how to demystify insurance.

Speaker: Lisa Isom, President/Owner, Assurance Risk Managers

Data Collection Field to Finish

True Field to Finish is one of the most powerful tools for a Land Surveyor to use to reduce the office time required to produce a finished product. But it remains one of the most underutilized. This session will cover the complete field to finish process including pre-collection office and field setup, field collection, and office processing. We will use Carlson SurvCE and Carlson Survey to demonstrate the complete solution but will also use data sets from Topcon Magnet and Spectra Precision Survey Pro.

Speaker: Jim Martin, Griner and Schmitz; Ladd Nelson, Carlson Software

12:30 - 1:30 pm Awards Luncheon

1:30 - 3:00 pm **CONCURRENT SESSIONS**

Contracts and Liability

You will learn how to prepare a contract that contains provisions to "save the day"! What happened to the old principle that "a handshake alone is a good contract"? Do I need a simple written contract for each and every client? Should I develop a series of contract forms to be customized for simple through complex job provisions in a contract that a Surveyor needs to have in order to protect the Surveyor from assignments? What are the minimum liability? How should the Contract be amended to cope with unforeseen circumstances? Although Surveyors are not considered "insurers" of the correctness of their findings, the courts recognize that Surveyors have a duty to perform a survey of real property with reasonable care, skill, diligence and ability and that a failure to satisfy this duty of care may constitute a tort or breach of contract, forming the basis for a claim for damages suffered as a result of an inaccurate survey.

Speaker: Eric Harris

Point Cloud Processing

UAVs (drones) have become the next hottest tool in land surveying greatly reducing the field time needed. Most UAVs are designed to capture imagery and software is then used to create point clouds which are then processed to generate a plat. This session will focus on the processing of those point clouds using Carlson Survey 2016 and Carlson Point Cloud 2016 starting with data sets collected from UAVs. We will cover cleaning up the data, stripping it down to "bare earth", extracting features, and generating contours.

Speaker: Jim Martin, Griner and Schmitz; Ladd Nelson, Carlson Software

3:00 - 3:30 pm Break to View Exhibits

3:30 - 5:30 pm **CONCURRENT SESSIONS**

Contracts: Others and Your Own

A Surveyor's liability for a mistake or misrepresentation in a land survey depends on the particular circumstances involved, including the relationship between the Surveyor and the party that has relied upon the survey, the nature of the claim for relief asserted, the application of a statute of limitations, the extent of the survey error and other relevant factors.

Speaker: Eric Harris

Point Cloud Processing continued

Speaker: Jim Martin, Griner and Schmitz; Ladd Nelson, Carlson Software

5:30 pm Reception with Exhibitors

Saturday, October 15, 2016

7:00 am Registration and Continental Breakfast with Exhibitors

8:00 - 10:00 am

Revisiting Justice Cooley and Resolving Boundary Disputes – The Judicial Functions of the Land Surveyor

Justice Thomas McIntyre Cooley (1824-1898) has had some of the greatest impacts upon the land surveying profession than any one individual. His thoughtful tome captioned "The Judicial Functions of the Land Surveyor" has laid the foundation for the application of the rules for land surveying across the country. From 1864 to 1885, Cooley was in a unique situation to comment on the formative years of American boundary surveying while serving as the Chief Justice of the Supreme Court of Michigan, a role that permitted him to lay the legal framework for some of the country's most important rules of land surveying. Regrettably, over the passage of time, many of the important rules and principles espoused by Cooley have been neglected by people who push buttons and measure things with satellites. In commenting on the original "record" monuments placed in connection with these early maps, Cooley succinctly described them as "nothing but green sticks driven into the ground." Across the country, courts continue to invoke Cooley's valuable words when ruling on boundary line disputes in spite of fancy surveying equipment and satellite sprayed coordinates. If one wants to understand that laws of surveying, turn the satellites off. Mr. Pallamary will discuss the importance of Justice Cooley as well as the application of proper law in defining and establishing boundary lines.

Speaker: Michael J. Pallamary, PLS, Pallamary & Associates

10:00 - 10:30 am	Break and View Exhibits
10:30 - 12:00 noon	**Revisiting Justice Cooley continued**
12:00 - 12:45 pm	Lunch
12:45 - 2:45 pm	**Quality Control for Land Surveyors** Quality control (**QC**) is a procedure or set of procedures intended to ensure that a manufactured product or performed service adheres to a defined set of quality criteria or meets or exceeds the requirements of the client or customer. Quality Assurance (**QA**) is sometimes expressed together with QC as a single expression, quality assurance and control (**QA/QC**). In order to implement an effective QC program, a company must first decide which specific standards the product or service must meet. Then the extent of QC actions must be determined. QA is the planned and systematic activities implemented in a quality system so that quality requirements for a product or service will be fulfilled. QA is the activity of providing evidence needed to establish quality in work, and that activities that require good quality are being performed effectively. All those planned or systematic actions necessary to provide enough confidence that a product or service will satisfy the given requirements for quality. Mr. Pallamary will discuss the application of QA/QC in the practice of land surveying and he will provide some ideas how to enhance the quality of your work product in a manner which will limit liability and increase productivity. *Speaker: Michael J. Pallamary, PLS, Pallamary & Associates*
2:45 - 3:00 pm	Break
3:00 - 5:30 pm	**Quality Control continued**
5:30 pm	Adjourn

Speaker Information

Tom Bryant, PLS, is a professional land surveyor with more than 30 years of experience working in surveying. He graduated from Southeast Missouri State University in 1978 with a Bachelor of General Studies degree, studied at the University of Missouri-Rolla under Dr. Richard Elgin, and graduated from the University of Arkansas-Fayetteville, where he studied under Dr. David Knowles, with an Associates degree in Surveying in 1984. Tom is a past President and newsletter editor for the Saint Louis Chapter of MSPS, and has been a presenter at several MSPS, MoDOT and IPLSA workshops. Tom is an Adjunct Instructor of surveying classes at Washington University and Saint Louis University, both in Saint Louis, Missouri.

Eric C. "Ric" Harris of Harris & Harris, P.C. practices with his daughter, Ashlee F. Harris, in Park Hills, Missouri. He received his business degree from Washington University, St. Louis in 1973 and his law degree from the University of Missouri at Columbia in 1976. He has 40 years of litigation experience involving boundary line disputes, easements, quiet title, ejectment, partition of real estate and foreclosure actions. Mr. Harris has been a licensed Missouri Real Estate Broker since 1973 and is a frequent lecturer for the Missouri Bar and has conducted many workshops for MSPS. Mr. Harris has taught a course at Mineral Area College known as the legal aspects of survey and real estate law. Mr. Harris is a member of the American Bar Association, Missouri Bar Association, Missouri Association of Trial Lawyers, Association of Trial Lawyers of America, Associate Member of MSPS and the National Association of Realtors. He has earned an AV Preeminent Peer Review Rating by Martindale-Hubbell, the highest recognition possible in the legal industry.

Kelly Harris, PLS, is a Professional Land Surveyor in three states, Illinois, Missouri and North Dakota. Kelly previously worked at Woolpert Inc., a national design, geospatial and infrastructure management firm, with offices mainly in the Midwest and eastern part of the United States. Kelly has fifteen years of survey and technical support experience working as a crew chief, survey coordinator, and survey / cad technical support advisor. He graduated from SIU Carbondale in 2002, with Advanced Technical Studies & Land Surveying Degree.

Lisa Isom is President and Owner of Assurance Risk Managers based out Aurora Colorado. She formed the Agency in 1998 to further focus on placement and coverage specifically for the Land Surveyor. Since 1991 with the Development of the Insurance Program for Land Surveyors, she has continued the focus nationwide. The only endorsed Agency for NSPS and their members, Lisa and her Agency is dedicated to our profession, the sales team is experienced in the insurance industry and knowledgeable in our needs, as well as, dedicated to the Land Surveyors Program. They travel yearly across country supporting each state and their conventions. This year alone, Lisa or one her staff were in 28 states attending conventions and supporting the profession as a whole.

Dr. Dick Elgin, PS, PE, is a practitioner (sealed about 15,000 surveys), researcher (co-developed the "ASTRO" software products), educator (Adjunct Professor at Missouri S&T), and author (several books including the "Sokkia Ephemeris" and his Vietnam memoir "Shoulda Played the Flute, An Army Helicopter Pilot's Year in Vietnam"). Dick is a past-president of MSPS and a former member of the Missouri Licensing Board. Now semi-retired, he works on some special projects for Archer-Elgin Surveying and Engineering, Inc., Rolla, MO. At the

Speaker Information

Annual Meeting Dick will teach his class from the book he wrote "The U.S. Public Land Survey System for Missouri." His current project is a monogram on riparian boundaries.

Jim Martin has been employed at Griner and Schmitz, Inc. since 1996. He has been factory trained on software and hardware from TDS, Ashtech, Javad, Topcon, Sokkia, Carlson, and Geopack with extensive experience in Carlson SurvCe and Topcon Magnet. In his 20 years at Griner and Schmitz, he has received field training from many of the best Land Surveyors in Missouri and Kansas.

Ladd Nelson Nelson is currently the Director of Midwest Sales for Carlson Software—a leading provider of land surveying, engineering and construction-related hardware and software technology products. His past work experience has included land surveying responsibilities and this knowledge, coupled with his interest in computers and Civil Engineering Degree from the University of Wisconsin-Platteville gave him the opportunity to pursue a career in software development for land surveyors and civil engineers. For over 25 years, Mr. Nelson has been providing his clients with technical support and on-site training and in 2007, added sales service to his repertoire when he joined Carlson Software. Beginning in 2011, he was also elected to serve on the Board of Directors of the IntelliCAD Technology Consortium, a non-profit organization that develops software technology code products for the CAD markets and continues to serve an Officer role in the ITC to this day.

Michael J. Pallamary, PLS, is licensed in the State of California and he has been surveying since 1971. He testified in his first court case as a surveyor when he was 19 years old. Since then, he has testified in more than 100 cases across the State of California including federal litigation involving the location of the International Border with Mexico and state/federal water boundaries along the State of California. He regularly manages 4 to 5 trials. Mr. Pallamary is a staff writer for The American Surveyor Magazine. He is a frequent lecturer at conferences and universities. He was a close friend to the late Curtis M. Brown and together they lectured and wrote about local land surveying topics and problems. Mr. Pallamary is the author of "The Curt Brown Chronicles." Mr. Pallamary is a faculty member of Lorman Education Services and the National Business Institute where he is certified by the California Bar to teach continuing education to members of the legal community. He is the author of the recent article in The American Surveyor Magazine entitled "Revisiting Cooley."

Darrell Pratte is the Missouri State Land Surveyor, and Director of the State Land Survey Program (LSP) with the Department of Agriculture. Pratte began his surveying career in 1974 as a chainman at Smith and Company, a multi-discipline engineering and land surveying firm in Poplar Bluff, gaining licensure in 1984. In 1986 Pratte accepted the position of State Park Surveyor with the Department of Natural Resources, transferring to the Land Survey Program in 1990. Over the ensuing 25 years, Pratte has worked in every survey unit within the Land Survey Program and led the cadastral and geodetic survey sections. Pratte accepted the position of Missouri State Land Surveyor in 2008.

Robert "Bob" Shotts grew up in eastern Kansas and has for as long as he can remember loved the outdoors. After graduation from high school at Shawnee Mission North, he attended Kansas State University in Manhattan, Kansas. After two years he transferred to the University of Missouri in Columbia, Missouri, graduating with a BS in Forestry in 1971. Upon graduation he was commissioned as an officer in the US Navy and saw the world, including a tour in Vietnam in 1972. Upon completing his active duty commitment, he returned to the Midwest and once again attended Kansas State University doing graduate work in Landscape Architecture. He worked as a Landscape Architect and Planner for the City of Lee's Summit, Missouri for three years and then moved to Lebanon, Missouri. After working for Barton Engineering in Lebanon, Missouri for 13 years, he started his own company in 1994. In 2000 he, Ralph Riggs and Craig Ruble founded Ruble, Riggs & Shotts. Both companies continue today. Bob is licensed as a Professional Surveyor in Missouri, Kansas, Illinois, Arkansas and Colorado. He is also licensed as a Professional Landscape Architect in Missouri, Kansas and Arkansas. In addition he became a Certified Federal Surveyor in 2007 and a Certified Floodplain Manager in 2005. He has been a County Surveyor since 1989. Bob has been married to his wife, Delilah for 45 years. They are blessed with two daughters and sons-in-law and three grandchildren. He has served as president of MSPS and is the recipient of the Robert E. Myers Service Award (2005) and MSPS Surveyor of the Year (2001). He currently serves as the chairman of the Landscape Architectural Division of the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors and Professional Landscape Architects.

Mark Wiley is a Second generation Surveyor who currently manages the Surveying Department for Heideman + Associates Inc. Licensed in Missouri and Illinois he has done course work at St. Louis Community College, Mineral Area Community College, and the University of Missouri Rolla in Surveying related courses. He began his carrier prior to 1978 working for his father during the summers and on weekends and has continued in the surveying profession ever since. He opened and operated Advanced Land Surveyors Inc. in Ste. Genevieve from 1994 to 1999 setting legal precedent in prescriptive Road Cases. He has worked in Metro St. Louis and Springfield, as well as Jefferson, Ste Genevieve, St Francois, Franklin, and Washington counties during his 35+ year career. Mark serves as the Pastor of the Son Light Parish in the Mineral area serving three Presbyterian congregations in the towns of Ironton, Fredericktown and Park Hills. He is active in his community serving as the President of the Belews Creek Watershed Partnership. A group of local folks who are working to make a difference in the Watershed by both cleaning and stabilizing the creek.

Resolving Boundary Disputes 2016 Annual Meeting REGISTRATION FORM

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Firm _____

Address _____

City/State/Zip _____

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MSPS Member Convention Registration Fees

Member Registration - 3 Days	$330.00	$ _____
Thursday Only	$110.00	$ _____
Thursday AM/PM Only (circle one)	*$55.00*	$ _____
Friday Only	$110.00	$ _____
Saturday Only	$110.00	$ _____

Non-Member Registration Fees

Non Member Registration - 3 Days	$550.00	$ _____
Thursday Only	$200.00	$ _____
Thursday AM/PM Only (circle one)	*$100.00*	$ _____
Friday Only	$150.00	$ _____
Saturday Only	$200.00	$ _____

Optional Activities

Golf (Includes Cart & Two Mulligans)	$85.00	$ _____
Golf Sponsor	*$100.00*	$ _____
	Sub-Total	$ _____
10% Surcharge for Late Registration (After 10/1)		$ _____

Grand Total $ _____

Concurrent Sessions

(Check one per time slot)

Thursday

8:00-10:00 am
- ❒ Missouri USPLSS
- ❒ Minimum Standards

10:00-12:00 Noon
- ❒ Missouri USPLSS
- ❒ Sectional Breakdown

2:30-4:00 pm
- ❒ Understanding Boundaries
- ❒ UAV's-Pro's and Con's

4:15-5:15 pm
- ❒ Safety
- ❒ UAV Regulations

Friday

11:00-12:00 Noon
- ❒ Surveying Liabilities
- ❒ Data Collections

1:30-3:00 pm
- ❒ Contracts and Liability
- ❒ Point Cloud Processing

3:30-5:30 pm
- ❒ Contracts
- ❒ Point Cloud Processing

Payment Information

❒ Charge my Credit Card ❒ Check Enclosed ❒ Invoice my Organization

Credit Card #: _____ Expiration Date: _____

Mail Registration Form with payment to MSPS, PO Box 1342, Jefferson City, MO 65102.
Fax Registration Form with credit card information to 573-635-7823.
For questions or to register by phone call 573-635-9446.

Registration Deadline is October 7, 2016

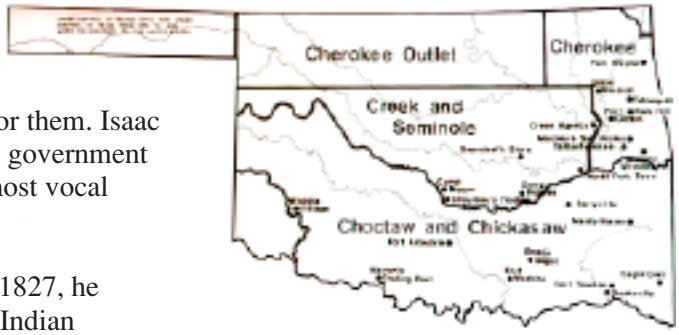
Surveyor McCoy Credited with Naming Indian Territory

by Jonita Mills, The Muskogee Phoenix, August 13, 2016

As early as the administration of President George Washington, the idea of settling all American Indians west of the Mississippi River was being considered. With the purchase of the Louisiana Territory by President Thomas Jefferson in 1803, this policy became possible. The first treaties for removal were being signed in the late 1810s.

The territory of Louisiana was a vast stretch of land that had rarely been mapped and had never been surveyed. Officials in Washington only had a vague notion of what the area entailed. Politicians and the public at large had differing opinions on Indian removal, so the policy was slow to find acceptance.

One man, however, firmly believed that moving the various Indian tribes west would be the best thing for them. Isaac McCoy, a Baptist minister and government surveyor, became one of the most vocal advocates of removal policy.



In a pamphlet he published in 1827, he pushed for the creation of an "Indian Territory" that would be a "promised land" for the native people. Here they could progress at their own pace toward full assimilation into democratic society and would be protected from the abuses they experienced back east.

McCoy visited Washington on more than one occasion, hoping to be appointed an Indian Commissioner. That didn't happen, but he was given the government contract to survey the lands within the "Indian Territory." At the time, about 1830, this territory included the future states of Oklahoma, Kansas and Nebraska.

It was McCoy who surveyed the boundary line for the lands given to the Cherokees in the treaty of 1828. As such, it was he who established the state line between Arkansas and Cherokee Nation running north from Fort Smith, Arkansas, to the southwest corner of Missouri.

He would also survey boundaries for the Seneca, Ottawa and Shawnee tribes and the Cherokee Outlet. Working with McCoy on these surveying assignments was John Donelson who was the nephew of Andrew Jackson's wife, Rachel.

Soon, McCoy was considered the expert on the land that made up the Indian Territory. On two occasions, he led delegates of various tribes on visits to Indian Territory where they could investigate the land being offered to them by government treaties.

In 1832, McCoy helped to establish Ebenezer Mission in the Creek Nation. This mission opened the first Baptist church in Oklahoma called Muscogee Baptist Church. It continues to function today as Fountain Baptist Church north of Muskogee.

Courthouse Time Capsule Refreshes Memories of Pekin's Founding

by Jared Olar, Library Assistant, appeared on Morton Times-News

Quite a lot has happened in Pekin, Illinois in the 192 years since Jonathan Tharp built his log cabin at a spot that is today the foot of Broadway. Many of those events have been documented in books, newspapers, and photographs, but most have been forgotten – and even what has been recorded often suffers from gaps of detail that might be of interest to us today but didn't seem important enough to our ancestors to record.

Last month's opening of the Tazewell County Courthouse 1916 time capsule, however, is enabling local historians to refresh many of our memories of the county's and Pekin's history. Among those refreshed memories are forgotten details of the story of Pekin's founding which never made it into the history books.

One of those details is the fact that if a crucial vote of stockholders had turned out differently, we might today be living in the city of "Port Folio."

That and other fascinating facts are found in a four-page document that was one of several items included in the 1916 time capsule but not listed among the contents of the courthouse cornerstone printed in the "Historical Souvenir" published for June 21, 1916 dedication ceremonies. Apparently it was decided to include this document and several other items only after the "Souvenir" was already printed.

The document in question dates from 1830 and contains handwritten minutes from the stockholder meetings of the company that founded Pekin. The minutes were taken at meetings held from Dec. 28, 1829, to Jan. 19, 1830, and then formally attested and signed in March 1830. The information in the minutes substantially corroborates the accounts of our city's founding that may be read in the standard published works on Pekin's history. Some of the specific traditions about Pekin's founding are not substantiated by the minutes, while other quite interesting details mentioned in the minutes go unmentioned in the standard Pekin histories.

Minutes of the settlers' company that founded Pekin telling how the town got its name (instead of being called Stringtown?)

To illustrate that point, let's first review what Pekin's pioneer historian William H. Bates (who seems to have selected most of the contents of the 1916 cornerstone time capsule) had to say about Pekin's founding in his account which was printed in the 1870-71 Sellers & Bates Pekin City Directory, pages 9-10.

"At the land sales at Springfield in the fall of 1828, the 'Town Site' was purchased by Maj. Cromwell for a company composed of himself, William Haines, William Brown, Thomas Snell, Peter Menard, Dr. Warner, A. Herndon and ---- Carpenter, of Sangamon county, and the purchase was divided into twelve parts. The question as to who should possess so important a piece of ground as the present location of Pekin created considerable excitement and the feeling rose to such a pitch at the land sale that pistols were drawn and bloodshed seem (sic) inevitable. The parties above mentioned, were successful, however, and the matter was amicably adjusted. . . .

"In 1829 a survey of 'Town Site' was made by William Hodge of Blooming Grove, then County Surveyor. The compass run without variation and, in the absence of a surveyor's chain, the town lots were measured with a string.

"The survey made, and the town laid out, Mrs. Cromwell being called upon, exercised her share of woman's rights in that early day by christening the embryo city of the new Celestials, PEKIN. Why she thus named it the legendary history of the days gone by fail to record, and we can only surmise that in the plenitude of her imagination she looked forward to the time when it would equal in size that other Pekin – the Chinese City of the Sun."

Many of the details in Bates' account are supported by the testimony of the minutes, but many other things of which Bates tells aren't mentioned in the minutes at all.

For example, the names of company members Cromwell, Haines, Brown, Menard, and Carpenter appear in the minutes (which give Carpenter's first name as William), but Bates' account doesn't mention other settlers who have long been known to have been important members of the company, such as Major Isaac Perkins and Gideon Hawley (called "Isaac Pirkins" and "Gidian Holley" in the minutes).

As for the skirmish at the land sale, related

As for the skirmish at the land sale, related in Jacob Tharp's 1860 diary as well as the 1949 Pekin Centenary and 1974 Pekin Sesquicentennial volumes, perhaps understandably no reference to it appears in the company minutes, nor is there any mention of the purchase being divided into 12 parts. The minutes merely state that **the land be surveyed and laid out into lots, and that Major Nathan Cromwell was appointed "to survey said parcels of land, and lay it off into Town plat and forme (sic) as the Commisioners (sic) present did devise and agree upon." The minutes record the surveying of "Town Site," calling for the hiring of "Chain carriers and Stakers" to "afsist and Compleet said Survey," but the name of the actual surveyor, William Hodge, isn't mentioned, nor is anything said in the minutes of the unavailability of a surveyor's chain making necessary the use of string.**

The minutes are especially valuable for providing specific dates for key events in the process of Pekin's founding. Later sources generally give only the year or the season of the year in which these events took place, and sometimes these sources even give the wrong year. The minutes make clear, however, that it was on Dec. 28, 1829, that **Cromwell was appointed to survey and stake out the proposed town, and Cromwell reported on Jan. 18, 1830, that "the survey of Said Town, is Compleeted (sic) and the Stakeing (sic) nearly done."** On Jan. 19, 1830, the company's commissioners met again to decide on the name of the new town and to arrange the sale of lots to be announced in several newspapers throughout the Midwest. That same day, the commissioners directed Cromwell to have the town plat "recorded according to law," and then chose two of its members as officers of the corporation. Brown was named treasurer as well as the land agent for the stockholders, and Haines was named secretary

Perhaps the most remarkable fact mentioned in these minutes, however, is the account of the naming of Pekin on Jan. 19. This passage of the minutes is worth quoting in full (spelling, capitalization, and punctuation as in the original):

"on motion of Isaac Pirkins, to Chainge the name of Town Site to Some other name. the votes where Called to decide, whether – Pekin – Port-Folio – or PortuGall – Should be the name of the contemplated Town. and after the votes being legally takeing and Counted, it appeared that a large majority announced the name of said Town to be forever hereafter Known by the name of Pekin."

The minutes say nothing about Ann Eliza Cromwell choosing the name "Pekin," but given the unanimity of the early sources that "Pekin" was her idea, there is no reason to doubt that tradition. The early sources and standard histories say nothing, however, about "Pekin" being just one of three possible choices – and consequently we don't know who wished the new town to be named "Port-Folio" or "PortuGall" (Portugal).

How very different Pekin's history would have been had "Port Folio" or "Portugal" beat out "Pekin." There would never have been a Pekin professional baseball team named "the Celestials," no Chinese-themed downtown theater, and instead of the "Pekin Chinks" and "Pekin Dragons," we might instead be rooting for the Port Folio Financials or the Portugal Galos (Roosters).

Full images of the 1830 minutes document, along with a complete transcription of the document's cursive script, may be viewed online at the library's "From the History Room" blog. The Tazewell County Genealogical & Historical Society will also feature the document and a transcription in its monthly newsletter.

Surveyors Help Historic Brattonsville Celebrate 250th Anniversary with 'Deed Day'

by Tracy Kimball, The Herald of Rock Hill, SC, August 11, 2016

Land Surveyors period attire and tools of the trade joined in Deed Day

Historic Brattonsville celebrated "Deed Day" on Thursday, which marked the 250th anniversary of the historic site purchased by Col. William Bratton on Aug. 11, 1766. Historians and visitors toured the structures built by three generations of Brattons in the 18th and 19th centuries. Tracy Kimball

When 12-year-old Emma Anne Mobley walked around Historic Brattonsville wearing a 1700s full-length dress at high noon and high humidity, the pre-teen was more than imagining what life was like in 1766.

"It's hot, very hot," said the sixth-grade home-school student, who was wearing a linen dress made by her great grandmother. "I've had on a lot cooler things before."

Mobley was among the living historians and visitors Thursday for "Deed Day," marking the 250th anniversary of the day Col. William Bratton signed the deed and obtained 200 acres in what was then part of Mecklenburg County, N.C.

Bratton and his pregnant wife were likely living at the site, which has 30 historic structures, when they signed the deed on August 11, 1766, historian Mike Scoggins said.

"We believe that he probably had access to that property prior to, built the house and then was to make it official and claiming this is now home," said Historic Brattonsville school programs manager Karen Cox. Col. Bratton likely would not recognize his house if he returned because of the changes his descendents made, Cox said.

For the past 45 years, the Col. William Bratton House and the Homestead House have been listed on the National Register of Historic Places.

In addition to touring the historic structures and viewing Bratton family documents, visitors learned about **surveying** and archeology. They were treated to music in the evening.

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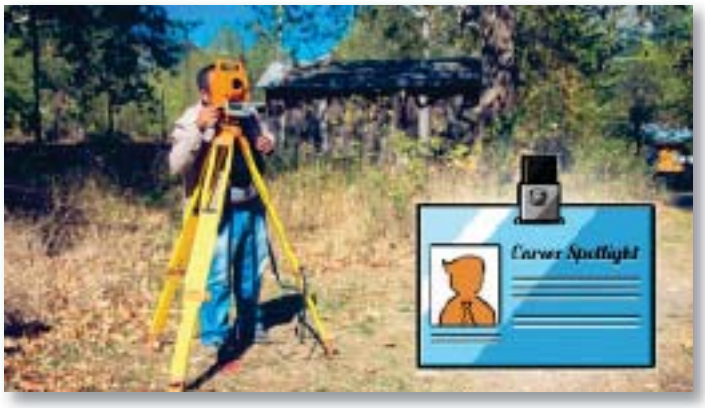
Editor's Note: The following does not have specific ties to our members but does provide interesting insights into our profession as expressed by this Canadian surveyor. Suggest readers consider Mr. Mason's answers and ponder their own responses!

Career Spotlight

from: http://lifehacker.com, Andy Orin, 12/10/15

When it comes to land ownership, someone has to draw the line. You can't just decide to put your picket fence wherever you'd like. It's the job of land surveyors to define legal property boundaries on large and small scales, both in urban environments and remote wilderness.

To learn a little about the day to day work of a land surveyor, we spoke with Mark Mason in British Columbia, Canada. It's a mix of field work, historical research, and navigating bureaucracies to precisely define boundaries for contemporary projects as well as laying out references for any questions that may arise in the future. As Mark put it, "land surveyors are required to stand behind their work for the rest of their lives."



Tell us a bit about your current work and how long you've been at it.

I'm a British Columbia Land Surveyor (BCLS) working for Browne Johnson Land Surveyors in Salmon Arm, BC, Canada. I've been in the industry since 2003, but I've only been a commissioned land surveyor for a couple of years. I spent a lot of the time before that in school, writing professional exams, and articling/training in the workplace to become a professional surveyor. As a legal land surveyor, I often work with property rights: researching and re-establishing old boundaries, helping people understand the rights they hold, and guiding people through the process of creating new parcels or changing parcel boundaries.

It's a career with a unique mix of physical and intellectual challenges. We need to know how interpret dense legislation or calculate a complex spiral curve—but also how to sharpen a machete or dig through frozen ground with a frost bar!

What drove you to choose your career path?

I liked the idea of working outside, using my body and my mind together. I haven't been disappointed! Land surveying can be very physical work, but there are strong intellectual and technological components as well. I was also attracted to the direct connection with history that land surveyors experience in the form of plans, field notes, and from surveying monuments from decades or even centuries in the past.

How did you go about getting your job? What kind of education and experience did you need?

I have a diploma of technology as well as a Bachelor's degree, both in geomatics engineering. In BC, a BCLS candidate must either have a university degree from an approved program or a diploma of technology plus completion of a series of 13 board exams. A period of articles and project submissions is followed by another set of professional exams and a final face-to-face interview with the board of management. It's a challenging process that typically takes 10 years or more! However, being a professional surveyor is jurisdictional, and different regions will have different requirements for their members.

What kinds of things do you do beyond what most people see? Do you spend most of your time in the field or in an office?

A lot of people don't think much about what land surveyors do. In a nutshell, we are the interpreters and providers of landmarks and records that directly impact real property. If you consider that many people would call their land their primary asset, this is a very serious responsibility indeed! We do lots of other types of surveys as well, like building layouts and topographical surveys, but only a legal land surveyor can survey property boundaries.

There's a popular misconception that property boundaries are based on coordinates that surveyors can simply "walk

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to" with our instruments. The reality is that, while physical coordination of monuments is easier than it's ever been, property boundaries often need to be determined based on evidence and plans that are old, decrepit, and done with different technology and expectations than we have today. Learning how to weigh evidence and fairly re-establish a boundary can be as much an art as a science.

Land surveyors can spend as much time reading legislation, bylaws, and engineering documents as we spend in front of an instrument in the field or calculating coordinates for a subdivision. We are mathematicians, historians, project managers, advocates, engineers, and even chainsaw operators!

I'm lucky enough to split my time between the field and the office. Some land surveyors in larger outfits can work mostly from behind a desk, managing many field crews at once. I work primarily in BC, but I've traveled as far as Baffin Island for my work, and I know other surveyors who have worked on literally every continent!

What misconceptions do people often have about your job?

That all we do is stand by the road! That's where people often see us working, but it's the same as a surveyor saying that all the public does is drive in cars!

More seriously, I think that people can get caught up in the "gee-whiz" technology of surveying, which is constantly changing, and forget about the legal aspects and the professional responsibility that surveyors bear—something that hasn't changed much at all in hundreds of years.

It's also important to know that, unlike lawyers, land surveyors put the public interest first. That means we're not biased by our client—this means that the property line will be drawn in the most equitable position, regardless of which neighbor is paying the bill. We often advocate for our client's interests in the case of subdivision applications or zoning bylaw changes, but we'll stay completely impartial when it comes to boundary resolution.

What are your average work hours? Is it a typical 9-5 thing or not?

It depends on the company and the season. In our case, we put in more hours when we're busy, and take more time off when things are quiet. Some surveyors live for the work, putting in weeks or months at a time in remote locations. With a young family and hobbies that I'm passionate about, that isn't the path I've chosen. Like in many careers, you need to make your own decisions and follow your own path.

What personal tips and shortcuts made your job easier?

I automate some tasks and delegate many others. Doing research, job organization, data processing, field surveys, and plan preparation can be tedious, detailed work. Building smart processes to streamline the workflow can make the work easier and the results more reliable, which keeps my head above water and my clients happy.

When I got my commission, other land surveyors told me to ask for advice from my peers when I was struggling with something. I've found that other professionals are more than willing to lend advice about a tough problem. The conversation can be a learning experience for everyone. I never hesitate to reach out when I'm in over my head, and I'll never hesitate to return the favor.

What do you do differently from your coworkers or peers in the same profession? What do they do instead?

There are lots of ways to design a workflow—for instance, some land surveyors book their notes by hand, and some use electronic data collectors. Every firm has its own unique way of arriving at the end product. However, from a licensed land surveyor, the product should always be of the same high quality.

Some land surveyors delve into land development advocacy, working with local government on behalf of clients in order to facilitate progress on a project. Others stick to strictly surveying. The approach depends on the individual firm and the needs of the local area.

What's the worst part of the job and how do you deal with it?

Some field days can be tough. I've worked inside fuel tanks with 3 foot ceilings, in -42 to +42 Celsius temperatures, in snow and smoke and hail, and I've dug through snow and ice and pavement to find legal evidence. I've worked clear through the night by headlamp, and I've flown in a rickety long-islander with propane tanks strapped into the other seats. I've jury-rigged missing equipment, broken into my own truck, and cut out an emergency helicopter pad with a machete. I've been hungry, cold, tired, lost, injured, and downright hopeless!

However, the most difficult days have been the ones I've had to spend correcting a mistake. We're all human, and

we make errors in spite of the pains we take not to. It's important to take ownership of the situation and to work to make it right. It's easy to be hard on ourselves, but the important thing is to turn a mistake into a learning experience.

What's the most enjoyable part of the job?

Some of the places we find ourselves working are unique and beautiful, and are often closed for public access. It can be thrilling to travel to areas I wouldn't normally go, nearby or further afield. We sometimes spend our field days "walking in the footsteps" of the original surveyor, inspecting untouched remote monuments from 100 years ago or more. We leave new monuments as well, and sometimes I imagine a surveyor 100 years from now reading my plan, retracing my boundaries, and finding the monuments that I set. It's an honor to make a mark in history like that.

Completing a large or difficult survey can be a very satisfying thing, especially if there have been hurdles or setbacks along the way. In our work, we get to "tick" off jobs quite often, so the sense of completion can also be rewarding.

What kind of money can one expect to make at your job?

Just like in other professions, salary range varies with negotiation skill, responsibility level, and location. Professional land surveyors take on a lot of responsibility, and should be compensated appropriately. In general, salary for land surveyors is often similar to that of a professional engineer or lawyer—surveyors are often "comfortable" but not "wealthy."

Is there a way to "move up" in your field?

Definitely. Legal land surveyors are few and far between and can find themselves in demand. Land surveyors start as employees, and move up to partnership in a firm or to ownership of their own enterprise if they wish. Some wind up working for government, private corporations, or public enterprise.

What do people under/over value about what you do?

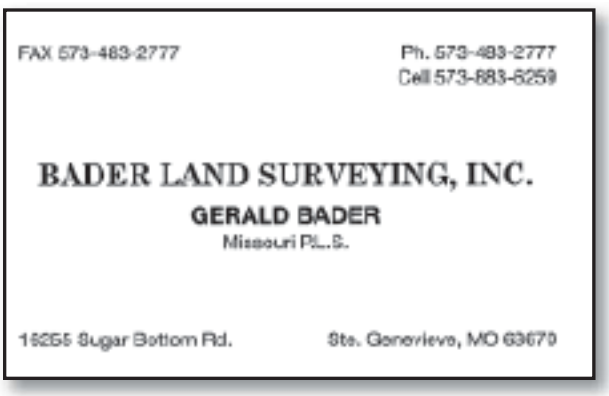
People sometimes are under the impression that finding their property corners should cost as much as changing their oil or blowing out their sprinklers. What they don't realize is that land surveyors are required to stand behind their work for the rest of their lives. I'm required to do every job well enough that I'd use it as evidence in court—that doesn't come cheaply! Property is a critical asset for individuals and for our larger economy. Maintaining the cadastre (legal survey fabric) is an important job and a valuable service.

What advice would you give to those aspiring to join your profession?

If you're looking for an adventure, an intellectual challenge, and a close-knit community of professionals, consider land surveying! It's not for everyone, and I'd recommend working as a surveyor's assistant or office staff before committing to the necessary schooling. However, you might find that land surveying can give you the career satisfaction that lots of people only dream about!

I've met very few professional land surveyors who regret their career path, and even fewer (in BC, at least) who are out of work, even during economic slowdowns. Land surveying has been a positive influence on my life, and I'd encourage anyone who hasn't considered it to give it a chance!

Career Spotlight is an interview series on Lifehacker that focuses on regular people and the jobs you might not hear much about—from doctors to plumbers to aerospace engineers and everything in between.



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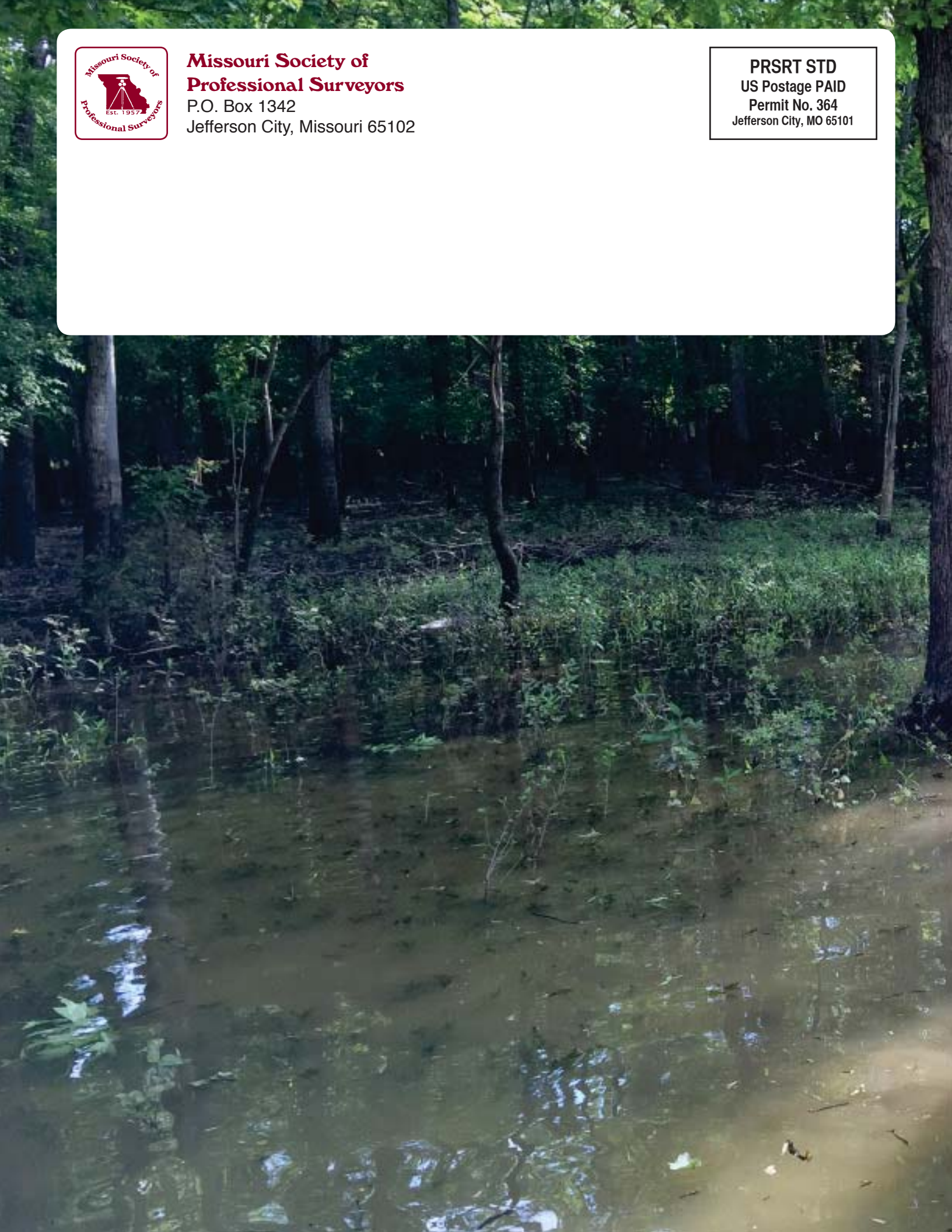

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