



## Editorial

>> Marc Cheves, LS

# THE American Surveyor

A FOOT IN THE PAST... AN EYE TO THE FUTURE

[www.TheAmericanSurveyor.com](http://www.TheAmericanSurveyor.com)

Volume 3, No. 8 November 2006  
© Cheves Media LLC

**PUBLISHER** Allen E. Cheves  
[allen.cheves@chevesmedia.com](mailto:allen.cheves@chevesmedia.com)

**EDITOR** Marc S. Cheves, LS  
[marc.cheves@chevesmedia.com](mailto:marc.cheves@chevesmedia.com)

**ASSOCIATE EDITOR** Joel Leininger, LS  
**ASSISTANT EDITOR** Jacalyn Cheves

### CONTRIBUTING WRITERS

Dan Beardslee, LS	Thomas Liuzzo, LS
Silvio A. Bedini	Jeff Lock
Dale Beeks	Dan Martin
Joseph Bell, LS	John Matonich, LS
Joe Betit, LS	Thomas G. Merrill, LS
J. Anthony Cavell, LS	Jerry Penry, LS
Cathy B. Costarides, LS	Al Pepling, LS
Paul Cuomo, LS	Mark X. Plog, LS
James J. Demma, Esq., LS	Walt Robillard, Esq., LS
Dr. Richard L. Elgin, LS, PE	Fred Roeder, LS
Fred Henstridge, LS	Gavin Schrock, LS
Chuck Karayan, LS	Angus W. Stocking, LS
Gary Kent, LS	Patrick Toscano, LS
Wendy Lathrop, LS	Rj Zimmer, LS

The staff and contributing writers may be reached via the online Message Center at [www.TheAmericanSurveyor.com](http://www.TheAmericanSurveyor.com).

**GRAPHIC DESIGN LTD** Creative, LLC  
**WEBMASTER** Joel Cheves  
**ACCOUNT EXECUTIVE** Richard Bremer  
[rich.bremer@chevesmedia.com](mailto:rich.bremer@chevesmedia.com)

*The American Surveyor* (ISSN 1548-2669) is published January/February, March/April, May, June, July/August, September, October, November and December by Cheves Media LLC. Editorial mailing address: 905 W. 7th St., #331, Frederick, MD 21701. Tel: (301) 620-0784.

*The American Surveyor* is a publication of Cheves Media LLC, 905 W. 7th St., #331, Frederick, MD. No part of this publication may be reproduced in any form without the express written permission of the publisher. Opinions and statements made by the writers and contributors do not necessarily express the views of Cheves Media LLC.

Subscriptions prices in the U.S.: Free for qualified professionals. Canada: 1 year \$56.00 US; international subscriptions \$72.00 per year (Airmail), U.S. funds prepaid. Back issues (subject to sufficient stock) are available for \$4.95 + S/H.

New subscription inquiries and all other address changes should be sent to *The American Surveyor*, P.O. Box 4162, Frederick, MD 21705-4162. Fax: 301-695-1538. Subscribe online @ [www.TheAmericanSurveyor.com](http://www.TheAmericanSurveyor.com)

Made in the United States of America



Proud Member of:



## The Future & The Past

I receive many of the state surveying society newsletters, and always find time to thumb through them. Most contain state-specific information like board meeting minutes, and many make liberal use of articles that have appeared in other newsletters. The ones I find most interesting are those that contain original journalism.

One recent state newsletter, however, nearly caused me to reel backwards. It contained four different articles, the first article of which pertained to a city website FAQ titled “How Do I Locate My Property Lines?” The FAQ discussed the various plans available from the city, and also mentioned that lot pins may be found one foot toward the house from the house side of the sidewalk. But the kicker was the third item, which advised property owners to hire a licensed civil engineer or engineering firm to survey their property. A local surveyor called the City out about the FAQ, and the City changed the website from engineer to surveyor. No biggie, but still an example of the misconceptions held by many people, including local governments, about surveying.

The next article sent a chill up my spine. It pertained to a controversy that has developed in Louisiana over the requirement for a four-year degree. A surveyor is claiming that the degree requirement is the primary reason for a shortage of surveyors. The surveyor also asserted that the profession will disappear within a decade. The Louisiana Society does not support abolishing the degree requirement and disagrees on the reason for the shortage of surveyors, but the scary part to me was the statements by “local developers” who feel that there is a shortage and that it has been going on for 10 years—since the degree requirement began. As we know, the construction/development community has an immense amount of power in the statehouse, far more than we do. What happens if they start loudly complaining? In my opinion, the abolishment of the degree requirement would be a step backwards for our profession.

The third article basically made me angry. Written by an engineer, the article originally appeared in the *Construction Equipment Guide*, a publication for buying and selling new and used construction equipment. In the article, the engineer described the history of construction surveying and lamented our departure from hanging everything on a construction centerline and moving to coordinates and 3D models. He described a day in which a rigid stakeout sequence was followed, and everything was simpler. He believes that the use of coordinates, which allows things to be staked in any order, opens the door for errors. Granted, if the curb and gutter is in, the staking of a guardrail next to it comes with a built-in visual check, but to me, the coordinates provide all the information that is needed. It reminded me of an engineer I once worked for who had a nasty habit of making changes on the plans without informing us surveyors. We were using coordinates for stakeout, but he always loftily informed us that the hardcopy plan was the only correct source of information. It took his boss—an engineer, but also a surveyor who “got it”—to order him to “get with the program” before our stakeout “errors” were eliminated. In the *Construction Equipment Guide* article, the engineer criticized the use of GPS for stakeout

and asked whether “technology has gone beyond the realm of efficiency.” What a hoot. Sure, it would be nice to return to the days when surveyors were actually field engineers who could correct mistakes they found on the plans on-the-ground, on-the-spot. But given the current situation (more work, less people) it seems to me that we will be seeing more technology, not less. To me, the pressure in the future will be on the designers to ensure that the model we surveyors take to the field is correct. And given the coming wireless field capabilities, I don’t think this will be hard to achieve. The author ended his article with a call to the 100,000 engineering firms across the country to begin a debate about new technology supplanting current methodology. But what I read was a call for a return to “the old days” in which a lock-step incremental approach was applied. In my opinion, that’s not gonna happen, nor should it.

The final article detailed the state society’s efforts to encourage the state DOT to implement a statewide RTK system. My faith was renewed in that I saw that the surveyors in this state can see down the road and realize that, properly implemented, technology is the future, and our only future.

## Meetings

I recently attended two great meetings. The first was the annual Surveyors Rendezvous held in Winston-Salem, North Carolina. Sponsored by the North Carolina Society, more than 100 people attended. We depend heavily on history for legal reasons, but what I call the romantic side of history is always fascinating. Sequence-wise, this Rendezvous focused on a time before the David Thompson and Lewis & Clark era, which was the subject of the last Rendezvous, and which I wrote about in the July-August issue. As in that era, surveyors as mappers and explorers played a critical role in the development of the southeastern United States. The difference was that these surveyors were carving out tracts of land that, to this day, have large implications for boundary surveying. I will write about the Winston-Salem Rendezvous in a future issue. Meanwhile, I encourage you to make plans to attend the 2007 Rendezvous at George Washington’s birthplace in Virginia. For the first time, it will be

a cooperative effort with the National Park Service, and promises to be another great meeting.

From North Carolina I opted to take in some scenery and drive to the CGSIC meeting in Fort Worth, Texas. This meeting is where the military side of GPS (the Air Force and DOD) meets the civilian government side of GPS (NGS, FAA, DOT, etc.), and I have been attending since 1996. Because the meeting also includes international aspects—GLONASS and Galileo—it is important because it discusses the future of GNSS. Of interest to surveyors, much of the meeting pertained to the burgeoning RTK networks across the country. The Europeans have been way ahead of us on RTK, having taken the free GPS and wrung it out to the last millimeter. But the U.S. is catching up. Here at the magazine we will continue with everything you need to know through Gavin Schrock’s series on RTK. At the meeting I learned that there are approximately 40 RTK networks up and running across our country, with 40 more in various stages of implementation. There’s lots of cool stuff coming from NGS that builds on its successful OPUS. According to NGS, there were more than 160,000 OPUS sessions last year. With its oil money, Russia is now able to properly fund GLONASS and will have a full constellation in the near future. Galileo is slipping a bit in its schedule, but still plans on having 30 satellites in its constellation. As a sign of our feast of satellites, the Coast Guard NAVCEN recently issued a request for input after learning that the GPS constellation will soon have more than 30 satellites on orbit, with the resulting possibility that some receivers will not handle more than 30 satellites. Look for a future article about all this and more. The prospect of having 80-90 satellites to work with is very exciting for our future! More signals and stronger signals will make satellite surveying faster and more accurate.

## Other News

As I mentioned in my May 2005 editorial, in collaboration with *TAS* contributor Angus Stocking, Rhonda Rushing at Berntsen International has a handsome book about monuments that will be available around Thanksgiving. You’ll find an excerpt on page 54 about the special challenges of cave surveying. Monuments are often the only evidence

that surveyors have been in an area. As Rushing points out, “*Surveyors have been making their mark on America for generations, and their monuments are a link to the past, little gems and treasures that tell special stories and create unexpected beauty in out-of-the-way places. Survey monuments are the punctuation marks of our country’s history. It’s time to showcase the art and the stories, and to pay tribute to surveyors who have been marking the past – and the future – of our country for generations.*” Check the Berntsen website for availability.

We recently attended Intergeo, one of the largest surveying trade shows in the world. With an attendance of more than 17,000, this year’s show was held in Munich, Germany in conjunction with the quadrennial FIG Conference. Watch for an article about the show in an upcoming issue. As part of the FIG meeting, a History of Surveying and Measurement pre-conference workshop was held. The workshop focused primarily on European and German survey history (much as it did four years ago in Washington, D.C., when the meeting focused on Western Hemisphere surveying). Part of the workshop included a tour of the Bavarian Office for Surveying and Geographic Information, and in the basement of the building we saw the incredible collection of limestone printing blocks used for printing maps even up until 1960. Many of us are familiar with copper plate printing employed by the Coast & Geodetic Survey, but this was the first time I’d seen limestone used. Intricately carved – in reverse – the collection includes more than 27,000 individual stones, weighing some 1,700 tons. Another fascinating factoid I learned was how, back in the Middle Ages, the length of the foot was determined by selecting 16 of the town’s most important people or selecting 16 people at random from Sunday church and having them stand toe to heel. From these 16 “feet”, the length of the local foot was determined. As we now know, especially after reading Janhein Loedeman’s excellent article on the creation of the standardized meter in the January/February 2005 issue, “local” units of measurement created trade problems, for in many cases they had one local foot for land and another for building. Today’s surveyors sometimes whine about having to deal with a U.S. foot and an International foot. Imagine a world where surveyors had to deal with this on a town-by-town basis! 