



Editorial

>> Marc Cheves, LS

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

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Machine Control

Electronic technology such as EDMs, total stations and data collection have radically transformed the way we work by reducing manpower requirements, enabling us to produce higher quality work in less time, and hopefully, increasing the profit margin. Technology has also made our work more fun. But there's one technology that will impact surveyors more than any other technology, and that's machine control.

In my June editorial I wrote that many companies are investing in technology rather than investing in people. We've seen an explosion of robotic total stations that have given birth to quite a few one-man surveying operations. By investing in technology, these companies have eliminated the need for multiple employees, providing benefits, the headaches of absenteeism, etc. An early concern of solo surveying was safety, but with cell phones and commonsense procedures, we've seen that one person and a robot can get a lot of work done.

In this issue we have an article by New York City construction attorney Barry LePatner, who takes a hard look at the real problems plaguing many companies in U.S. construction industry: inefficiency, re-work, not knowing what quantities are to be moved, not knowing what's underground, etc. 3D models will go a long way toward solving some of these problems. Other problems will require a complete rethink.

In last month's editorial, I also mentioned the huge opportunity for surveyors to get involved in the creation of 3D data models (the fuel that drives machine control). Opportunities now exist for surveyors to become data managers. The surveying community has been criticized for turning its back on GIS. It's easy to understand why the precise crowd isn't interested in cartoon mapping or meter-level accuracy, but it bothers me when I see a city employee locating assets in my neighborhood, using a GPS rover paid for with my tax dollars.

In the past, I have touted the positive aspects of machine control by saying that it eliminates the need to pound wood into the ground. I've written that our responsibilities will change to ensuring that the equipment is working *where* it's supposed to. But here's my real concern: many of the surveying companies in this country are small operations having only one or two crews. These crews depend on a mix of work: boundaries, topos and construction layout. But if construction layout is removed from a company that only has one crew, there is a very real possibility that the company will no longer have enough work to justify having that crew.

Like many of you, I have mixed feelings about machine control, but one thing's for sure: it will affect the livelihood of surveyors. We agonize over the future of the profession, but I see machine control as part of the natural progression of a variety of technologies that have already profoundly affected us. But when it comes to machine control, will we turn our backs and not capitalize on our expertise in positioning, measurement and data?

I don't have the magic answer, but we all know that it will be impossible to stop the tidal inevitability of machine control. Will this happen overnight? Of course not. We've been hearing about machine control for more than 10 years. But will it happen? Yes, and with increasing momentum. Randy Noland of Carlson told me that only 7-10 percent of the world's machines are automated, a number that will most certainly increase over time. So the question is, will surveyors navigate wisely through the transition or just wait for the wave to slowly engulf us? 