



Guest Editorial: The Old Man and the "C"

Professional Surveyor Magazine - January 2007

Summertime was very busy at our company, as I hope it was for many of you too. We worked long hours and managed some creative maneuvering to accomplish all of our work with the personnel on hand. Often office personnel needed to work in the field and field personnel needed to do work with the office personnel. It is one of those instances that I want to relate to you now.

Lou is one of our long-time party chiefs. He is very accomplished, has a great variety of experience, loves the field of surveying, and is extremely satisfied with his role as a party chief, which he has been performing for multiple decades to the great satisfaction of his supervisors. Although he has only a high school education, Lou obtained his professional surveying license from the state by virtue of his experience.

Chris, whom we call "C," is a young man just three years out of college with a BS in surveying. He is intelligent and knowledgeable with a wide grasp of surveying concepts beyond the normal scope of his duties, which often makes him an invaluable member of the team. Chris obtained his professional surveying license from the state by virtue of his educational background and a limited amount of experience.

This story starts when Chris was pressed into field duty, and we decided to send him and Lou out to complete two projects together in the same day. I will endeavor to relate the activities of that day as best as I can, having overheard them during our Friday afternoon "beer: 30" rap session. Before I go any further though, you may be comforted to hear that no blood was spilled, nor did anyone end up in the hospital. I want to relate one of those instances to you.

The first project was a boundary survey that had been nearly completed, but we wanted as much additional boundary information as we could find to clarify some issues and help in our final determinations. We had sent them out with a list of monuments to locate and some coordinates to aid in their search but, as sometimes happens in these hurried situations, the coordinates of the search locations were not on the same basis as the project control. Lou and Chris didn't know this until they were on site, in the mountains, and out of touch with the office. Once they discovered the problem, Chris proceeded to get a bit "out of sorts" (complaining about the other office personnel, for example), before settling down to try to find a solution by crunching numbers frantically. Lou, being Lou, wanted nothing to do with this mad man, so he stayed well clear.

First Chris browsed through the control and search coordinates until he found two points from each set, and then he did a translation and rotation. Next he set up the instrument on the nearest control point. He was pleasantly surprised to see that Lou had set up the back site but was now relaxing under a tree.

With frustration written all over him, Chris dialed in the back site and turned to the search angle he had calculated.

He was further frustrated to find Lou was directly on line, so he called to him on the walkie-talkie to get off line. Lou's calm reply was to ask what the distance was he had calculated and request that Chris take a shot on Lou's prism to see how far he needed to go to reach the desired point. Surprise! Surprise! Surprise! (to borrow a phrase)—Lou was within a foot of both line and distance. After locating the monument that Lou had found they packed up the gear to move to another location. When they got into the truck, Lou asked Chris if he had been sure about noting the data and asked that his sketch be included in the file. The two repeated this, or a similar procedure, at three additional locations.

The second project was a construction site for which some building stakes had to be set. I can tell you now that the engineer had used an aerial survey to determine the location of a new addition to an existing building—not a good idea, as many of you probably already know, but Lou and Chris were unaware of this at the time. They did some checks prior to setting their points only to find that the new structure didn't fit the old structure. They could do a translation and rotation to fit the two buildings together but that wasn't working well. Lou suggested they do as many locations as possible and take the data back to the office for a more thorough analysis before setting the new building at another time. That would have worked if it wasn't for the fact that the contractor needed to start working off their points the next day.

I wish I could tell you what Chris did, but, after a complete description of the process he went through, I'm still unsure of it and I don't want to mislead anyone into doing it improperly. Suffice it to say that after somehow combining his knowledge of aerial photography, building structures, and the locations of the points they needed to tie into with a translation, rotation, and scaling process, he was able to set the new points that afternoon. He then spent his evening at the office checking his work and was back there early so as to get my attention to describe the situation at the site and his solution. I sent the two back to the site for a final check of some ties to the existing building and the dimensions on the new points, but all proved to check correctly.

A couple of days later at "beer:30" we talked about the week's ups and downs and we once again heard all about Chris' exploits. He was deservedly excited to have been able to shine so in front of "the old timer." (I wasn't sure if he meant me or Lou or both.) I asked Chris and Lou what they had learned while working together, and they each spoke of the respect they had gained for the other. That was great, but I wanted to hear more. So I asked them to describe to the other what they had been able to do in their respective situations. I hoped that each would be able to learn from the other and be more able to handle a similar situation in the future.

I don't know what all this talking accomplished though because Lou, I'm sure, still can't do the mathematical manipulations that Chris did on that site. I've heard how to do it twice now and I still wouldn't do it without Chris' coaching and a lot of checking. And Chris still doesn't know the difference between a poplar, oak, or elm tree and surely can't "see" the signs of a monument location or boundary line occupation unless it's as obvious as a fence corner. But I'm endeavoring to allow each to work on projects that will broaden their horizons. And I know that each is more open-minded than before too: It shows in how they deal with each other on a daily basis. I'm also looking for some horizon-broadening for myself. The whole experience has shown me that our debate about education verses experience has gotten way off topic.

I no longer see the debate as a "one way or the other" choice. I fear that if we choose one way over the other we will be excluding people from our profession who have much to offer us. Some states have already chosen to deny anyone without a BS in surveying the opportunity to acquire a license. I feel that we need to offer this opportunity of a profession to all who have the desire to be professional about what they do, regardless of their educational or experiential backgrounds. How far someone excels in this profession should be based on the individual's work ethic and desire. Acquiring a BS is just one way to show that work ethic and desire. To exclude someone based on a lack of education excludes all of the future's "old timers" whom we have all learned so much from and cherished our experiences with. And to exclude someone based on a lack of experience but whose knowledge base is beyond ours is to exclude those eager young professionals who will be building our profession and who "boldly go where no (surveyor) has gone before." But that's just how I feel.

By the way, any similarity between the names used herein and persons living, dead, or otherwise is...coincidental.

About the Author



Earl F. Henderson, PLS

Earl is owner of Zenith Land Surveying, Inc. in Boulder, Colorado. He has been surveying in various states since 1989.