



Editorial

>> Marc Cheves, LS

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

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The Demise of Surveying Mathematics

We have received an enormous amount of feedback on our website concerning Dr. Richard Elgin's article on surveying mathematics. We asked him for his comments. He replied: *In the May 2007 issue of "The American Surveyor" I wrote an article titled "The Demise of Surveying Mathematics." (Go to www.amerisurv.com to read the article.) The reaction I received concerning it was all positive. Congratulatory emails and phone calls came in saying I'd "hit the nail on the head." I've written, perhaps, forty national articles on a myriad of surveying subjects, both technical and professional. I don't remember one which generated more comment. It seemed to strike a familiar chord with surveyors.*

Responses asked my opinion as to trigonometry topics that should be taught and for an outline of a course in elementary surveying mathematics. Pointing out the problem was the easy part. Bringing about change in our high schools to better prepare those who enter our profession will be the hard part. Affecting change and a solution will be a long and difficult row to hoe.

Exactly what series of courses should be taught? What math topics should be taught? Teaching math isn't like teaching Latin. One cannot merely memorize math, one must apply it. Surveyors need to help those who teach math with the applications of algebra, trigonometry and geometry. How can we help? I'm not a math educator, so I can't design courses of study and lesson plans; however, we surveyors can assist our math educator friends with the applications.

This is not a new problem, and has, in fact, been building for decades. Technology is both a blessing and a curse. It has created a generation of button-pushers. The cold, hard truth is that the Trig*Star program, while promoting math and creating enthusiasm among scholarship applicants, in reality does little to encourage young people to go into surveying. I ran the contest at my high school back in the 1980s, but I can assure you that the young Vietnamese student who won did not go into surveying. I suspect that MathCounts, the equivalent program for budding engineers, attracts far more young people into engineering than Trig*Star does into surveying.

For years I have advocated a high school *and* middle school outreach program, not for the top-level math students—who will most likely opt for rocket science—but for the next tier down. This could be a grassroots program, managed by the state societies and the chapters. Guidance counselors could help to arrange visits from surveyors who explain to students what surveying is and what an opportunity it affords for kids who like technology and working outdoors. NSPS could create a DVD about surveying and distribute it to guidance counselors across the country.

Elgin raised questions about a surveying math curriculum. We need inroads into boards of education and math departments that will lead to the establishment of curriculums that will meet the needs of students pursuing surveying careers. Who better than to raise this awareness than current educators and employers who are witnessing the progressive slide in math abilities of incoming freshmen and employees? 