

The demise of the American Surveyor in the 21st Century

How many Licensed Surveyors present are under 30 years old? _____
Under 35? _____ Under 40? _____ Over 50? _____

The average age of Surveyors is reported to be 57± years. Does it look to you that there are enough new surveyors coming up to fill the ranks?

Will we exist as a profession for another generation?

I'm afraid that the Land Surveyor as represented by Washington, Jefferson, Lincoln, Banneker, Ellicott, Mason, Dixon and Thoreau is nearly extinct. Replacement Surveyors are not in the pipeline, and the future of our profession is uncertain at best.

How did we get to this sorry state of affairs?

My first experience with surveying consisted of laying out a 160-acre homestead in Alaska, almost 50 years ago. I began surveying fulltime in 1965, and obtained my first registration nine years later.

Beginning with the first Surveyors convention I ever attended, I have heard the same three issues being discussed and lamented:

- 1.) How can we get the public to recognize and view Land Surveyors as professionals?
- 2.) How can we insure that our financial remuneration is consistent with our expertise, education and liability?
- 3.) How can we improve the quality, capability and integrity of Land Surveyors?

Well folks, I can tell you what doesn't work – everything that we've been doing for the past fifty years! When you're in a hole, the first thing you should do is quit digging!

Reflect on the classic land surveyors previously mentioned. I'm certain you could add a few from your personal experience. Did anyone ever doubt or question the professionalism of those surveyors? Unthinkable! They were considered professionals because they were, and conducted themselves as, true professionals, men with standards, character and integrity.

They did it without a Government licensing program! There were no State exams, no degree requirements. They didn't spend a lot of time trying to educate the public – they simply conducted themselves with honor and integrity.

Our strident insistence that we be considered professionals is reminiscent of a line from "My Fair Lady", when a young women in a thick cockney accent proclaimed "Oh, oi'm a laidy oi am, 'n don't you be a'forgettin it G'uvner!"

No matter how loudly we squeal, we do not become professionals by simple self-proclamation. To paraphrase Forrest Gump, Professional is as Professional does.

Some 25 years ago, I decided that I would simply quit quoting work for a fee that didn't really allow me to devote the proper time and effort to each and every project, and be compensated commensurate with a professional product.

After conferring with the survey crews and draftsmen, I raised my rates by 70%, raising their salaries accordingly. We anticipated that we would lose a considerable amount of business, and that some of my staff would have to be laid off from lack of work. The actual results surprise me even today.

We lost approximately 30% of our workload. The most surprising, and unexpected result was that the quality of our surveys improved accordingly! If you're going to charge THAT kind of money, you'd better be the best! We got very particular about quality control, research, monumentation, client communication and the appearance of the final plats. Problem No. 2 solved. (Adequate compensation)

We quickly cemented our reputation for being the firm that could get the job done. Several clients would come to me and say "I take the easy stuff to "Brand X", because he's cheaper, but this project is difficult and timing is critical, so I came to you."

I didn't have to waste near as much time with the tire-kickers, price-shoppers and looky-loos. When the client asked the cost of the project, it was only because he needed a number to write down on the financing package he was taking to the bank. Saturdays could be spent taking my kids fishing with the new poles we could now afford. Problem No. 1 solved. (Professional reputation.)

Problem No. 3 (quality, capability and integrity) is one that we cannot solve individually. It will require a major overhaul of the licensing procedures and requirements for registration/licensing.

Twenty-two years ago, I stood before this body in Anchorage Alaska and presented a proposal for an alternative to government licensing of the Surveying profession. (Appendix 1) The basics of the proposal are as sound and even more applicable today as they were then.

Simply put, we must quit trying to shove the entire spectrum of surveying into an off-the-rack one-size-fits-all surveying suit.

I declare myself to be a competent boundary surveyor and residential designer. I have maintained proficiency with the advances of law and technology that pertain to those disciplines.

I used to be an outstanding construction layout surveyor. Today, I would only be mediocre because I am out of practice, out of touch with the current technology of machine guidance and automated grading. It would take at least a month or two of intense study and practice with current instruments to regain that proficiency.

I am not, have never been, and never will be a competent geodetic surveyor. I simply do not have the combination of education and experience required. At this point in my life, I have the wherewithal, but neither the time nor inclination to obtain that skill and knowledge. There is, however, nothing to stop me from doing geodetic surveying except my professionalism, honor and integrity.

The laser scanner is a wonderful machine, but the post-processing required to transform that raw data into an accurate and adequate design product is beyond my current grasp.

I can't think of another profession that does not specialize. I certainly wouldn't want a contract-law attorney to defend me against an alleged breach of the Homeland Security provisions, and I certainly wouldn't engage a proctologist to do my dental work!

Not only is it impractical for Surveyors to be competent in all venues that might require measuring, mapping, design, legal or historical proficiency, it is a fraud upon the profession, its practitioners, and our potential clients to represent that we are.

We continually hear that we must "educate the public". Here's a news flash! The public doesn't care! No one ever gets a survey because they want one – Only because they need one! Surveyors are often seen as merely another impediment to closing the deal. We can never educate the public; we can only educate a potential client when our services are needed.

In our attempt to be all things to all people and to pare down the competition, we have done some very strange things – to quote Pogo, "we have met the enemy, and he is us!"

How else do you explain the actions of the Missouri regulators who recently changed their rules to require an additional four years of practical experience after becoming an LSIT? What of the person who has 8-10 years of good professional experience before s/he really "catches fire" with the desire to become a professional surveyor?

As far as the elitist regulators are concerned, that experience doesn't count. During the discussion on this proposal, one of the proponents self-righteously proclaimed that "they should have figured it out early on" if they are serious about being a surveyor.

Well, excuse me, but I have trained dozens of budding young surveyors who started working with me at the ripe old age of 12 or 13. What does a young teen know about life or their future path? Not a very much – they rely on good parents, teachers and mentors to help guide them. My son didn't care much for surveying – until he realized that a chainman's pay was better than flipping burgers. At age 17, he was running a crew, under my very close supervision.

He didn't choose surveying as a profession, but if he were to decide at age 30 to obtain licensure, the past 25 years experience (yes, I started him on the crew at age 5 – carrying the lunch & watching) is, according to Benny-better-than-you, of no value or consequence unless he has already passed the LSIT.

For the last ten years, I have not, in good conscience, been able to recommend Land Surveying as a career to those who have approached me on the subject.

The requirements to achieve licensure as a Land Surveyor are identical with those needed to become a Civil, Structural, Electrical or Petroleum Engineer. (Did you notice that I listed four separate specialties within the engineering profession?) Check the starting salary of a Land Surveyor vs. the starting salaries of the various Engineering Disciplines!

If money is your goal, become an attorney, a commercial real estate agent or a used car salesman. If money is really important to you, sell cocaine or heroin!

Why are we still, after 50 years of complaining, still not making the kind of money one would expect for a professional? It's simple, we're still growling over the scraps, like dogs under the table. Too many of us are taking every job that comes thru the door, at a price that prevents doing a good, thorough and professional job at anything more than minimum wage.

To many surveyors have no idea what it really costs to put a crew in the field. Instead of paying themselves a reasonable salary, they have relegated them selves to living on whatever is left over.

If you want to be thought of as a professional and compensated as a professional, be professional!!

I recently had some routine electrical work done on my car. The shop rate for the mechanic was \$90.00. What is your rate for a cad operator with five years experience? How much do you charge for a visit to the field to search for 150-year-old survey evidence?

Well, money isn't and shouldn't be our primary goal – but “the workman is worthy of his hire”, and our compensation should be commensurate with the skills brought to the market place. When the Xerox repairman with a \$3.95 tool box from Wal-Mart is billed out at a greater rate than a 2-man survey crew, it doesn't take a college degree to realize that something is seriously wrong – and still, we keep on digging that hole!

Now I have always insisted that my employees and family members never bring me a problem without also bringing a proposed solution.

I've already touched on specialization and division of the profession into various disciplines. That is critical. Of course the requirements for licensure or certification in the various areas must be relevant to the tasks to be performed.

For example, why should a geodetic surveyor be versed in the Public Lands Rectangular system? Why should a topographic mapper have to know about Riparian boundaries? Why should a boundary surveyor have a thorough knowledge of geoids and ellipsoids?

A boundary surveyor would have to have an appropriate apprentice opportunity. The same path could be used by the construction surveyor—but under construction surveying, not boundary surveying.

The geodetic surveyor would most likely require much more extensive education than either the construction or boundary surveyor.

We should be able to gain certification or licensure in a single area of endeavor without pretending to be all things to all people.

If you want to do GIS mapping, then become proficient with the tools and enter the market with confidence. Be professional—don't just complain and ask the government protect an area that we think should be reserved for your use.

For Boundary Surveying, we should learn from our friends to the north. The Province of Alberta has adopted a system whereby a prospective land Surveyor binds and indentures himself to a practicing Land Surveyor for a period not to exceed five years, during which time the Surveyor is obligated to insure that the pupil receives a minimum of six months of office and eighteen months of field experience.

This is a true apprenticeship agreement, with contractual obligations and responsibilities on both sides. The Surveyor may not have more than one pupil at a time. The program has been established by agreement of the Associations of the Land Surveyors of four western Provinces in conjunction with the University of Calgary.

I submit that most U.S. surveyors did not learn at the hands of a master. They received only enough supervision to (we hope) avert a catastrophic blunder, and we are all to a great extent, self-taught.

I was fortunate to have learned under the watchful eye of old mossback Alaskan Surveyors like Al Harris, Lefty Howard and Doc Griner. None were licensed, but they steeped me in the concept that we always did things properly, made the proper checks on our work, left tracks and notes that our successors could easily follow – we did these things not because a government agency was required it, but because the alternative was simply unacceptable.

They were, and following their example I became, truly Professional!

I took selected night classes at the community college, and a course from International Correspondence Schools, while working full time to support a wife and two children.

A licensed Surveyor with the same commitment to excellence as the aforementioned mossbacks proceeded to put the finishing polish on my practical education. George Schwaderer convinced me that taking time to do it right was far preferable to finding time to do it over, and that nothing was a greater indication of substandard work than having a colleague find a monument on the ground or an error on a map that we had overlooked.

John Fenske, who taught me how to fly, followed the pattern. I had amassed over five times the hours required to take the FAA check-ride and obtain my license. I pestered John to sign me off for check ride. His response was that he had no doubt that I could pass the check-ride – but he didn't give a damn about the check-ride. His job was to make a pilot out of me, and I wasn't quite there yet!

It is the rankest type of elitism to pretend that college credits can substitute for field experience at the hands of a master, or that one must have a degree to be a professional.

Shortly after I began my private practice, I was setting at an old homesteaders kitchen table, proudly showing the advanced capabilities of my programmable HP-65. I ran an area program to show how easily the new tools could compute an area. He was unimpressed – “well, that's pretty fancy, but the answer is wrong.”

I was at the same time offended and amused. Old Jack was arguing with my programmable HP-65! “Pull your head out of the box and look at that answer”, he said – “it's not reasonable.” Oops! I had slipped a decimal point or reversed a course – That small corner of his homestead was closer to 3-4 acres than the 15 showing on the screen.

Our current requirements for becoming a land surveyor have produced a generation of button pushers. Their fingers fly nimbly over the keys of the data collector and the RTK controller, producing a map that reports distances to the thousandth, directions to the tenth of a second and the area of a quarter-section to the fourth decimal place.

Affordable and easy to use GPS systems have exponentially increased our ability to arrive at an erroneous answer. For many of us, coordinates have become the Holy Grail, relegating the compass, shovel and extended site investigation to the trash heap of history.

The problems arise when they abandon all other methods of replacing an obliterated corner and expediently set a two-bit rebar by double proportion – three feet from a 2' square, 4' high concrete fence post covered in moss & rusty barbed wire.

Mandatory continuing education, with button pushers teaching other button pushers, or courses on stamping our feet and throwing temper tantrums to “make” the public understand that we ARE TOO professionals are of little value, and often exacerbate rather than solve our problems.

We MUST return to the time when the Land Surveyor was a person of stature and honor as were Washington, Jefferson, Lincoln, Banneker, Ellicott, Mason, Dixon and Thoreau.

Not a single one was licensed or met any requirements for continuing education by someone who knew less about the subject than they did.

Not one of them would have taken on a project that they were not competent to complete—They were professional and honorable.

Did you know that Washington completed his first survey at age 16? Now which of you is willing to stand and proclaim that George couldn't possibly have been proficient, educated and professional enough to complete that first survey? I didn't think so.

Now how in the world was he able complete two years of college, pass the LSIT exam, obtain four more years of experience and pass the LS exam by age 16?

The answer of course, is that he didn't. After an expedition where he surveyed 10,000 acres for Lord Fairfax, Washington took and passed an exam before the faculty of the College of William and Mary for a surveyor's commission. At age 17, Washington secured the appointment of surveyor for the frontier county of Culpeper. He established a reputation for fairness, honesty and dependability, while earning a decent living.

Why did you become, or want to become a land surveyor? I started because I needed a job – and I continued because I loved the work. I loved the independence, I loved the outdoors, and I loved the challenge of following in the footsteps of pioneers. I loved being that pioneer, surveying lands that never before been measured or marked, showing the way to explorers, miners and settlers who came behind me.

In our desperation to regulate our profession into respectability, we have accomplished exactly the opposite. We have, instead, deprived a whole generation of the prestige, honor and challenge of being the type of surveyors that we are, and our fathers were. We have stolen their birthright and sacrificed it upon the alter of pride, selfishness and greed.

Shame on us if we don't "quit digging" and climb out of the hole we have created.

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He established the Anchorage firm of Ability Surveys in 1974, and moved the business to Homer in the following spring. The firm was sold in 1992, and is still in operation in Homer Alaska.

Jerry served as the Chief Location Surveyor for the New Mexico Highway and Transportation Department from 1992 to 1997.

In 1997 he organized the firm of Anderson Development Consultants, headquartered in rural Missouri, and offers professional land survey services in several states including New Mexico, Wyoming and Alaska.

Attachment: 1986 ACSM Presentation

PROPOSAL FOR AN ALTERNATE TO STATE LICENSING
FOR THE SURVEYING PROFESSION

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THE PROBLEM:

Some serious problems are perceived with the current process of having the Government license and regulate the profession of Land Surveying.

The general argument for licensing by the State is that the "Public" must be protected. This rationale assumes that the "public" is too ignorant to select a surveyor on the basis of reputation, character, education or endorsement. The solution is said to be a Government panel that will administer an examination to assure the minimum competency of the potential surveyors.

This sounds like a fine solution, but in practice the theory and process break down. The government granted license many times confers upon a surveyor a mantle of respectability, confidence and authority to which the individual may not be entitled. When the client consults two surveyors to secure proposals and cost estimates, he may find that the scope of work proposed and the anticipated fee vary across the entire spectrum of possibility.

All too often, the surveyor who quoted the highest fee is seen as being a shyster and a rip-off, when in fact, he was the one who had an accurate grasp of the actual needs of the client, and the cheap fellow will do more harm than good.

(It is interesting to note that article 7 of the Code of ethics of the Alberta Canada Land Surveyors act states "An Alberta Land Surveyor should assess and receive fair and just compensation from his client, commensurate with the professional and technical complexity, level of responsibility and liability potential of the services performed) (Emphasis added.)

The problems created by an incompetent or fraudulent survey seldom come to light until the property is developed, sold or re-surveyed. By then, the damage may be serious indeed.

All the client knows is that both surveyors are registered by the Government. He generally doesn't realize the complexity of the profession, nor does he comprehend that two people with the exact same registration may be proficient in totally different areas and disciplines.

Of course, the true professional will never undertake work that he is not qualified to do. If we were all true professionals in every instance, this paper and the registration board

would be superfluous to begin with, but perfection is not of this world. We will always have shoddy products, quacks and con artists to contend with.

I'm sure we all know at least one individual who passed the test because he was good at exams and (we suspect he lucked out on the multiple-choice portion of the test. This individual may be a real menace to the security of the property boundaries and the economic well being of his clients.

We hear reports of the cut-off score for the exam being taken below fifty percent, so that a "suitable" number of applicants will pass.

I know of at least one case where an individual was allowed to take the exam despite the recommendation of two of his most recent supervisors that he was not at all qualified to be a Registered Land Surveyor. He passed the written test and now "he are one".

Other individuals are eminently qualified in their respective areas, yet they "freeze" on a structured exam, and so are prohibited from offering their considerable talents to the public.

In most cases complaints of sub-standard work, unethical conduct and gross incompetence are ignored by the board of registration. When they are roused by a particularly heinous act, all they can do is refer the case to the Attorney General. In eleven years of practice, I am not aware of a SINGLE instance of the State taking any disciplinary action against a surveyor.

So much for protecting the Public!

I personally find it repugnant that the Government should be injected into the market place and the profession to such an extent that purchasers of surveying services are restricted to those who have been granted an advantage by the Sovereign. An advantage that he or she may or may not be deserving of by virtue of skills, education or judgment.

THE. SOLUTION

Land Surveyors should be removed from the jurisdiction of the State Board of Registration.

All License fees should be paid directly to the Alaska Society of Professional land Surveyors to administer a program of testing and certification, as opposed to registration and licensing. Future revenues would be derived from increased dues to the Society. (The dues in Alberta Canada are \$500.00 per year.)

People within all phases of surveying would then be certified by the Society in various areas as having reached the minimum competency for that certification.

Criteria for certification could include any combination of experience, testing, reputation, education or endorsement.

(The American Congress on Surveying and Mapping is currently beginning a similar program on a national level.)

Possible areas and/or levels of certification could include:

SURVEYORS AIDE (i e. Rodman or chain man)
INSTRUMENT MAN
TOPOGRAPHIC SURVEYOR
HYDROGRAPHIC SURVEYOR
CONSTRUCTION LAYOUT SURVEYOR
ROUTE LOCATION SURVEYOR
BOUNDARY AND RETRACEMENT SURVEYOR
RESIDENTIAL SUBDIVISION DESIGNER
GEODETIC SURVEYOR
INERTIAL GUIDANCE SURVEYOR
ETC.... ETC.... ETC....

I'm sure there are other appropriate classifications or headings, and some of the ones I've listed may not be desirable.

Once the certification mechanism is in place, I would urge that all laws restricting the practice of surveying be abolished.

If, for instance, one wishes to be an appraiser, no state license is needed. You simply open an office and offer to appraise property for a fee. The trick is to get the various financial institutions to accept your appraisals. The solution is to become certified by the National Appraisers organization. They have several designations, including Master Appraiser.

The Same concept is relevant to the Surveying, or any other Profession. The issue of whether or not to require a four-year degree for land surveyors could be neatly meshed into this program by requiring the degree prior to obtaining certification beyond a certain level. A two-year associate degree could be required for other classes of certification.

In the Province of Alberta, our Canadian neighbors have adopted a system whereby a prospective land Surveyor binds and indentures himself to a Land Surveyor for a period not to exceed five years, during which time the Surveyor is obligated to insure that the pupil receives a minimum of six months of office and eighteen months of field experience.

This is a true apprenticeship agreement, with contractual obligations and responsibilities on both sides. The Surveyor may not have more than one pupil at a time. A pupil may contract with a Surveyor only after having been granted a Certificate of Completion from the Board of Examiners, which has been established by agreement of the Associations of the Land Surveyors of four western Provinces in conjunction with the University of Calgary.

Contrast this with our current practice of hiring survey help who pull themselves up through the ranks by their own boot-straps. I submit that most American surveyors did not learn at the hands of a master. They received only enough supervision to (we hope) avert a catastrophic blunder, and we are all to a great extent, self-taught.

I foresee a situation where no man would be prohibited from offering his services, knowledge or labor in the market-place. -The true professional would still not undertake any project that he was not qualified to complete.

The financial institutions would require that the As-built-surveys be completed by a Certified Property Surveyor. The State Would require that Government funded construction projects would be manned by Certified Construction Surveyors.

Municipalities could require that subdivisions of their property would be designed by a Certified Designer and staked by a Certified Boundary Surveyor.

The consumer and the client could decide what level of certification they were willing to pay for. There would be far less chance that they would be paying for expertise that they THOUGHT they were buying, but in fact, were not.

I do not anticipate that any person would be automatically granted certification in any area. Just be cause I have been actively engaged in practice as a Land Surveyor for over twelve years, one should not presuppose that remain or was ever qualified to receive certification as a Boundary Surveyor or a residential Designer.

THE REALITIES

During our last Alaska Convention, we heard Mr. Kevin Davies, Surveyor General of Queensland, Australia, state that a few years ago, the situation of Surveyors and their profession in Queensland was in "a shambles". Then, in describing their sorry state of affairs, he proceeded to paint a very accurate and concise picture of the United States Surveying Profession today.

In a subsequent personal conversation with Mr. Davies, he related that the Government did still control and regulate the profession and practice of Land Surveying, but that they exercised that authority in precisely the manner deemed appropriate by the Professional Association.

In our less than perfect society, we may not be able to eliminate the Government from our Profession. Indeed many will not share my view that government; should be eliminated from the equation.

We must, however discern the difference between registration and regulation. Even if the State continues to register Surveyors, we must accept the responsibility to regulate our own ranks.

An honest and critic al evaluation and cataloging of the various levels and areas of skill for each Professional Surveyor by the Society must be the first step. It is critical that the evaluation of our peers become the standard by which we are to be judged.

If that standard is high and exacting, our credibility in the community will be secure. If the standard is lax, ill-defined and nebulous, our state of shambles will continue.

The writer would welcome further discussion and examination of the above concepts and proposals.

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Jerry organized the Kenai Peninsula Chapter of the Alaska Society of Professional Land surveyors, and is a past member of the Kenai Peninsula Borough Assembly. (September 1986)