

Licensed Profession or Licensed Trade – The 4-Year Degree's Impact on Surveying

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Background – In recent years, I have been becoming more and more concerned about the future of the surveying "profession". In this article, I attempt to make a case for a national 4-year degree standard -- to keep strong professional recognition and to avoid the technician/trade image that is increasingly growing.

Florida's Bootstrap -- I've been teaching surveying at the college/university level in Florida since 1968. In 1970, when I got my master's degree, I took a job teaching and developing the first degree program in surveying of any type in Florida – a 2-year A.S. degree in Surveying Technology at a Palm Beach Junior College. We were very successful, so successful that Florida's professional leaders were unhappy. They did not want the 2-year degree to become the goal standard for the profession. They believed that a "profession" must have at least a 4-year degree for entry. The A.S. degree is a terminal degree for technicians. They approached the flagship university in the state – the University of Florida – asking for creation of a 4-year degree in surveying. That University said yes, but the new program would be placed in the Engineering Technology Department, since surveying was a "technology", not a professional level subject. By a very narrow vote, the FSPLS Board of Directors accepted the University's offer. Those opposing said that surveying is a profession and should not accept the "technology" title. The slim majority said that the profession could accept the technology title, but only as a starting point.

In 1974, I applied for the position as that program's initial professor and program director. We started with a degree titled B.S. in Engineering Technology. In five years we changed the degree to Bachelor of Land Surveying (BLS) to escape the "technology" identity. The "science" name was not used because the curriculum committees did not feel surveying was a science. Later we changed the degree to B. S. in Surveying and Mapping, achieving the "science" designation, dropping the limiting word "Land", and inserting "Mapping" to recognize a broad diversified profession. Still later we changed the title to B. S. in Geomatics since recruiting new students was very difficult with the word "surveying" due to the "technician" image associated with that word.

Now, 35 years after the program's beginning, we have a mature program. Four-year degree legislation required a degree for all new Florida surveyors in 1999, and this past spring, I taught 36 students in our senior capstone class. Twenty two of those sat for the first day FS (SIT) exam as a group – the largest single group of college-based FS examinees to date in the nation -- and they all passed. With this background, I have many experiences with professional activities, academics, accreditation, licensing boards, and the national exam that leads to the opinions I share here.

1. The Origin and Concept of Surveying -- A 1525 English document gives the word origin of "Survey" – a French word of two parts: SUR – meaning "from above", and VEY – to "see." Therefore the word origin of SURVEY means any method of identifying and measuring ground features and displaying them to scale as if viewed from above – VERY BROAD DISCIPLINE!!! Includes: field surveying, photogrammetry, GIS, satellite imagery.
2. An EDUCATIONAL VISION for the Surveying Profession -- Where are we going? What do we want? Most agree that we want general recognition as a "learned profession" with high public visibility, respect, and compensation – consistent with recognized professions of medicine, law,

engineering, architecture, etc. We also would like a diverse profession with high-tech professional tools applied to significant issues of society.

3. Where Are We??? -- In the public's eye, we are confused with survey technicians. We even call our field people surveyors (the only surveyors the general public see). What the public sees? -- a roughly dressed, rough talking, survey technician working in hazardous conditions along the roadside doing hands-on work. Recruiting promising high school students is difficult. A 1992 Fla. Supreme Court case declared that surveying was not a profession – because of the lack of a 4-year degree standard. Kentucky state code declared surveying is not a profession because of the lack of a 4-year degree standard. The US Dept. of Labor recently decided surveying is not a learned profession because of the lack of a 4-year standard for entry.
4. Our Old Educational Home – Civil Engineering – In the 1930's and 40's there were two types of surveyors – (1) dual licensed engineers and surveyors with college education and (2) sole surveyors generally trained on the job by apprenticeship. Dual licensee's (PE & RLS) were in greater number and their education brought large professional visibility in the eyes of the public. CE was the “educational home” of surveying, with each CE program having a tenured full professor in surveying and 3 to 5 surveying courses. Many CE grads identified surveying as their main interest area.
5. Civil Engineering Dropped Surveying as a Professional Specialty 50 years ago -- Returning WWII veterans flooded into engineering schools under the GI Bill to learn the high tech things they saw in the war – radar, sonar, electronics, jets, rockets, etc. However, they encountered the same old style of engineering education – hands-on labs, practical math, practical orientation, etc. There was a “revolt” among engineering students. A high level study on the future of engineering education led to the Grinter Report 1955, which said that engineering education should leave the hands-on practical approach and adopt the highly mathematical and scientific approach. In 1959, CE department chairs met in Ann Arbor, MI and voted that CE should follow other engineering areas to implement the Grinter Report. They identified surveying as one of the topics to be dropped – hands-on and practical. In addition, CE was developing the “design identity”, and surveying did not help this. 1960's and 1970's were the “washout years” of surveying in CE education. When one of the tenured surveying professors retired, they did not hire a surveying replacement, giving the position to another area of civil engineering – structures, hydraulics, etc.
6. Surveying Professorships in Civil Engineering, Dying Legacies -- The Surveying Professorship at the University of California, Berkeley included Prof. Crandall, approx. 1900, Davis, Foote, Kelly, Frank Moffitt, Jim Anderson who retired in 2001. The position was not filled with a surveying person. The Surveying Professorship at U. of Illinois, Champaign/Urbana included Rayner and Schmidt, W. C. Taylor – author of first edition Elementary Surveying, Chuck Danner, Win Eldridge (co-author with Curt Brown of Evidence and Procedures), and Kam Wong who retired from active teaching early 2000's. His position was not filled with a surveying person. In the surveying area at UW Madison, Red Wagner, the last UW surveying professor in CE, brought surveying through the washout years, In the 1970's Paul Wolf joined faculty along with six other prominent faculty members and they developed many active undergrad and grad surveying programs. Many U. Wisconsin PhDs took faculty positions elsewhere. In 1998 the UW CE department dropped the undergrad surveying program. In 2006 the last three surveying faculty members retired, leaving no surveying faculty in Madison. Today, only one tenured CE Surveying Professor is left in the US (at schools w/o a surveying specialty) -- Prof. Bob Schultz, Oregon State University, and he is close to retirement. If a CE school has a surveying course, it is usually taught by a grad student or part time adjunct. In 1980 ASCE studied the surveying course status in Civil Engineering. They found that 1/3 of Civil Programs required at least one surveying course, 1/3 EAC Civil Programs offered a surveying elective, but it was not required, and 1/3 of Civil Programs did not have a surveying

course at all. Today, what is the ratio???? ASCE's 2007 Body of Knowledge BOK does not contain the word surveying.

7. Surveying, A "Bootstrap" Profession -- In the early 1970s, a Florida Board investigator described surveying as a "bootstrap profession," meaning – once we were out of Civil, the profession had to pull itself up "by its own bootstraps." Can't ride the "coat-tails" of CE any longer. In 1960/70s the surveying community realized they needed to create their own educational future.
8. A Separate Educational (and Professional) Identity – The first dedicated 4-year program was created at Oregon Institute of Technology in the mid/late 1960's. The second was established at Second -- Fresno State in California. Then in the 1970s, there was a major 4-year educational movement. Purdue in 1970 gained high visibility with a separate surveying program, then Iowa State, Wisconsin, Florida, Ohio State, Virginia Tech, Maine. Most of these were established at state flagship universities. National Examinations were created in Surveying – by NCEES (Mid 1970's). National Accreditation was established for surveying by ABET (1980s) with ACSM being the lead society. Some states established separate surveying boards (Fla. in 1979) – "We want to be judged by our peers."
9. National Surveying Accreditation was a significant professional advancement -- No national surveying accreditation through the 1960's and 1970's. Then ACSM published Surveying Engineering (EAC/ABET) criteria in 1978. Cal. State Fresno was the first surveying program to be nationally accredited by ABET, 1979. ACSM published Surveying Engineering Technology (TAC/ABET) in early 1980's. EAC (the ABET Engineering Accreditation Commission) was earmarked for the "new" engineer, design oriented, analytical, not hands on. TAC (the ABET Technology Accreditation Commission) was earmarked for for the 4-yr technologists and 2-yr technicians – defined by as ABET as "support personnel for the engineer" being hands on, practical, less math/science. Many engineers felt that surveying was a "technology" ideally suited for the TAC. The third ABET commission ASAC was established at the request of ACSM. In 1984 ABET created the Related Accreditation Commission (RAC/ABET), now called ASAC, the Applied Science Accreditation Commission for free-standing degree programs (Surveying). Surveying programs ended up in three ABET commissions: EAC, TAC, ASAC. In 2008 there were a total of 21 accredited programs.
10. 2008 Surveying Programs in EAC/ABET (Engineering Accreditation Commission) (7) -- Cal. State Fresno, CA (BS Geomatics Engineering (1979)), Cal. State Polytechnic University, Pomona, option in CE (1994), Ferris State University, MI (BS Surveying Eng./AAS (1991), Penn State Wilkes Barre BS Surveying Engineering/AS (1999), New Mexico St. Las Cruces BS Surveying Eng. (2001), Ohio State Univ, OH BS Geomatics Engineering (2002), Univ of Maine, Orono, ME Spatial Information Science and Engineering (1981), *(Purdue, W. Lafayette BS in Land Surveying and Geomatics Engineering (1984) (2007 Purdue CE is dropping the program)
11. 2008 Surveying Programs in ASAC/ABET (Applied Science Accred. Commission) (9) -- Univ. Alaska, Anchorage BS Geomatics (1995), Univ. Florida, Gainesville BS Geomatics (1986), Michigan Tech. U., Houghton BS Surveying (1987), Oregon Inst Tech, Klamath F. BS Geomatics (1985), East Tenn. State U. TN BS in Surveying and Mapping (1994), Texas A&M Corpus C. BS in Geo. Info. Science (2001), Metro State Col, Denver BS Surv. and Mapping (2004), Southern Poly. Technical University, Marietta, GA BS Surv. and Mapping (2006), St. Cloud State University, MN, BS Land Surveying and Mapping Science (2006)
12. 2008 Surveying Programs in TAC/ABET (5) -- SUNY Alfred, NY BS Surv. Eng. Technology (1994), NJ Inst.Tech, Newark BS Eng. Technology, Survey Option (1994), Univ. Akron, Ohio BS Surv.

and Mapping Technology (2003), Idaho State Univ. , Pocatello BS Geomatics Technology (2006), Univ. Maine, Orono BS Surv. Eng. Tech (2007)

13. Programs moving Toward Accreditation (6+) -- Troy Univ, AL, Southern Ill U. Carbondale, IL, Glenville State Coll, WV, Great Basin College, NV, U. Arkansas at Monticello, Nichols State University, Thibodaux, LA, and others
14. The Size and Health of Today's Programs, New Approaches -- Some surveying programs have "turned the corner" – stable larger enrollments. Ferris State (MI) – graduating 20+ per yr. (30 yrs after passing the 4-yr legislation), U. Fla – graduating 20+ per year. (20 yrs after passing the 4-yr legislation). Many states are experimenting with new approaches as the surveying educational effort continues to develop. Medium or smaller population states cannot support a surveying degree program in-state. Louisiana, Kentucky, Illinois have moved to the BS/BA + Surveying Core as a way of having a four-year standard without an accredited in-state program. The surveying core requires a bachelor's degree plus a certain number of hours in surveying-only courses. (LA 30 hr core, KY 24 hr core, IL 24 hr core). This is a national solution for all medium/lower population states. States have expanded their urban and regional campuses to every corner. A 4-year degree in some subject is available. In addition, the national Internet campuses (U. of Phoenix, etc) are making the 4-year degree more available. The core is available at local community colleges, or over nationally available distance education surveying offerings (Metro State, U. Wyoming, etc).
15. The NCEES National Surveying Exam, Professional Progress -- No national exam in surveying through the 50's, 60', and early 70's. State Boards and Societies made up locally produced and graded exams. In 1975, NCEES produced the first national SIT exam followed by the PS exam. More and more states adopted the NCEES Fundamentals Surveying (FS) and Professional Surveying (PS) exams. Early exams were "task based" to match the hands-on nature of experience-only candidates. The NCEES committee Examination for Professional Surveyors (EPS) continues to meet twice a year in Clemson to write questions and assemble exams. In 1995 NCEES adopted a new model law for surveying with an expanded definition to include mapping, photogrammetry, etc. In 1999 the October exam moved to a "knowledge based" exam, attempting to test the underlying knowledge (ex: trig), not the button pushing tasks. In 2004 the NCEES Annual Meeting voted to remove the word "Land" from the Model Law – to reflect the growing diversity in the profession. The exams are now called the FS: Fundamentals of Surveying and PS: Professional Surveying exams. (parallel-named with the FE and PE exams)
16. The Legislative Approach to the 4-Year Degree Requirement – In 1970 surveying leaders were concerned with the decline of education among surveyors (fewer dual licenses) and the significant increase of experience-only surveying candidates. In 1972 Michigan was the first state to delete the experience method, requiring a four-year degree. The requirement became absolute in 1978. Academic programs developed in Michigan at Ferris State and Michigan Tech. The states of Minnesota, New Jersey, Ohio followed in the late 70's/early 80's with 4-year degree legislation. In 2009, a total of 26 jurisdictions have deleted the experience-only method of licensure.

17. 26 Jurisdictions w/Academic Requirements (experience-only method deleted)

| State | Law | Effective | 4 yr program/2 yr program/or just courses hrs. |
|------------|------|-----------|--|
| Michigan | 1972 | 1978 | 4 |
| Minnesota | 1979 | 1980 | 4 |
| New Jersey | 1980 | 1988 | 4 |
| Ohio | 1980 | 1990 | 4 |

| | | | |
|------------------|------|-----------|-------------------------|
| ■ Florida | 1988 | 1999 | 4 |
| ■ N. Carolina | 2005 | ?? | 4 |
| ■ Georgia | 1985 | 1985 | 20 hrs |
| ■ Louisiana | 1990 | 1995 | 4 (BS/BA+30 hr core) |
| ■ Utah | 2002 | 2006 | 2 |
| ■ Wyoming | 1988 | 1992 | 2 (moving to BS + Core) |
| ■ Illinois | 1988 | 1998/2001 | 4 (BS + core) |
| ■ N. Mexico | 1987 | 1995 | 4 |
| ■ Texas | 1993 | 2003 | 4 |
| ■ Nevada | 1999 | 2010 | 4 |
| ■ Alabama | 2000 | 2007 | 4 |
| ■ Idaho | 2002 | 2010 | 4 |
| ■ South Carolina | 2000 | 2010 | 4 (BS/BA+12 Hr core) |
| ■ Kentucky | 2005 | 2011 | 4 (BS/BA+24 hr core) |
| ■ Oklahoma | 2005 | 2014 | 2 |
| ■ Kansas | 2002 | 2005 | 4 |
| ■ Alaska | 1996 | 2001 | 2 |
| ■ West Virginia | 2004 | 2005 | 2 |
| ■ Indiana | ? | 2009 | 2 |
| ■ Iowa | 1980 | 1988 | 2 |
| ■ Tennessee | ? | 2003 | 4 |
| ■ Puerto Rico | ? | 1988 | 4 |

18. Expanding the Scope of Surveying, Creating a Diverse Profession -- Before the 1970's, most state statutes defined "Land Surveying" as boundaries only. The word "land" is the "small box" sometimes encouraged by combined boards of engineers and surveyors in the '50s/'60s, where engineers claimed all surveying except boundaries. In 1971 Florida surveyors promoted a significant statute change to greatly enlarged the diversity of surveying past boundaries only. The surveyor was anyone who "determines the facts of size, shape, topography, etc." In the 70's and 80's there was a national movement to drop the word "land." Many societies changed their names from "society of land surveyors" to "society of surveyors," for example: Ohio, LA. ACSM created the NSPS from the previous Land Surveys Division. In 1994, Florida dropped the word "land" from the statute, licensing "Professional Surveyors and Mappers." In 1995 the NCEES model law changed to reflect a broad practice. In 2005 NCEES dropped the word "land" from its Model Law and Code.

19. Technician vs. Professional?? -- Apprenticeship – on-the-job training without education -- is EXTREMELY deep in surveying culture, and is the ROADBLOCK to professional development and public protection. Of each FS (first day) surveying exam today, approximately 1300 take it, but only 100+/- graduated from an accredited surveying program, and only 200+/- have graduated from a four-year program of any type. The apprenticeship system IS STILL IN PLACE!

20. A "Learned Profession" must have a college base – The profession deals with something high on the value system of society, for example, a person's health (medicine), a person's legal affairs (law), a person's religion (clergy), a person's financial affairs (accountancy), and the safe use of things designed and built (engineer and architect), etc. Surveying's concentration on identifying land ownership and production of spatial data (GIS) for innocent public use is our claim of being high on the value system. A learned profession requires college education to understand adequately. A true learned professional must understand the mathematical, scientific, legal, environmental, and societal framework within which the work takes place. It also requires attributes of a college general education – the ability to speak confidently, write authoritatively, research published information, analyze issues, apply math and science when needed, and so forth. A learned profession is one where these things cannot be "learned on the job." Courts, legislatures, and federal agencies are now applying the legal test for being named a learned profession – a 4-year degree standard for entry.
21. State Regulation and Licensure DOES NOT Mean Professional Status, Just Public Protection -- Attorneys do not have a state board and state licensure. They are self regulated by the state Bar Associations – professional societies (not state boards). The government merely says, "You must be accepted (college law degree and bar exam) and policed by your peers. We're going to stay out of it. The public will be well served. Keep up the good work." Surveyors in England are self regulated – RICS Royal Institute of Chartered Surveyors (Great Britain) -- government has no surveying board, just says only those in the RICS can practice. In the US, surveying has had a history of causing high profile public damages: California 1890s Mining Claims, Florida's 1920s Swamp Land plats, etc. The profession was not getting the job done on its own. The states had to step in to "CLEAN UP THE BUNCH" for public protection. Each state regulates MANY occupations that are not close to professional recognition. In Colorado recently, a state regulatory person talked to surveyors about legislation for mandatory Continuing Education, he said, "I just had a similar discussion with the plumbers. Yes, we reached an agreement with their union." I was disappointed to hear surveyors and plumbers compared in the same thought.
22. NCEES Exams Set a Minimal Bar for Entry and are a poor filter for non-degree states -- On our national exams, we set a "cut score" so the "minimally competent candidate" will pass. On a range of professional abilities from 1 to 10, those below minimal competency are about the 1s, 2s, and 3s. A true professional is an 8, 9, 10 (as judged by their peers). Therefore, the 4s, 5s, 6s, and 7s who pass the exam may be above the "minimal competency" concept, but do not reach the true professional concept. The main filter for public protection in a learned profession is college admission and completion of a college program, not an exam. Lawyers, architects, doctors, dentists, and engineers pass their professional exams at nearly the 100% rate because they were highly selected by (1) college admissions and (2) completing the required program. The exam is not the effective public protection method.
23. Two Distinct Paths, Separate the Professional Track from the Technician Track -- Learned professions don't elevate the working support staff (technicians) to professional rank. Legal aids don't become lawyers unless they go through law school. Nurses and medical assistants are terminal nurses and medical assistants. Engineering technicians (drafters, etc.) are well paid terminal technicians. There must be two distinct sources of employees and two distinct paths to credentials. The professional tract recruits from college-capable young people, and these then go to college for their professional education. The technician tract recruits off the street or through special technical schools. The Certified Surveying Technician exam process has been a GREAT success; however, in non 4-year degree states, it is being used in the apprentice system toward licensure. One state has even written the passage of the CST exams into state law/code as one credential needed for taking the FS (SIT) exam. Other professions do not organize their technicians within the professional organization; however, our CST program is directly run by the

NSPS of ACSM. Engineering technicians have a separate organization -- the American Society of Certified Engineering Technicians (ASCET). Technician certification exams are offered by this organization, not the professional society. Each medical sub-specialty below the MD has a separate society, separate exam process, and separate licensure statutes – not to be confused with the top professionals. This means that we should not be thinking of our current technicians as our future professionals. The technician “pool” of today has fewer and fewer people capable of becoming a true professional in a learned profession.

24. Geomatics, a New Word for College Recruiting -- The general public’s image of a “surveyor” is of the survey technician. When we convince a university student to major in Surveying, their parents say, “You’re going to major in what??” Surveying educators have had a BIG problem selling the major of “surveying.” The term “geomatics” was developed by academics – professors at Laval University, Quebec, Can. – to present a positive image of the discipline. Laval had an old surveying program in the Forestry department, but professors were having trouble “selling” their old program name to students to embrace an expanded profession of GIS/mapping/GPS. According to a Laval professor, “When I say the word “surveying” to a potential student/parents, I see a veil of preconception lower in about 3 seconds. All communication stops.” “When I say the word “geomatics”, the person responds with “What’s that involve?” I then have about 20 seconds of an open mind to paint a good picture. Geomatics captures the breadth of the measurement/mapping profession.
25. Apprenticeship, Diamonds in the Rough -- When a person walks off the street into an entry-level surveying job, we don’t know the person’s true inner character. Like a lump of coal – dark on the outside (from an educational viewpoint) – the person may have a "diamond" deep in the person's character. Life experiences “chip” off the exterior layers and eventually for some, a true “diamond” appears – a person with high, high professional abilities – a NATURAL leader. Many society and Board leaders are in this category. However, for others, there is no diamond inside, and the person lives out a working life without having professional attributes. What’s the ratio of diamonds to lumps of coal? In the 1950s maybe 1 leader in each 10 apprenticed surveyors? College education was an "economic privilege" and not the standard of society at that time. Many high quality people were seeking a job “off the street.” Today, who knows, but maybe 1 professional diamond in 100 employees off the street?? Those with academic abilities now have MANY opportunities to go to college, and do. Talented future leaders are not walking the streets these days in significant numbers compared to previous decades. Firms have been forced to start “drug testing” policies for their employees hired off the street, etc. Many of our current professional leaders (owners of leadership firms, chapter/society leaders, Board members, national society leaders) are trained by apprenticeship 30/40/50 years ago. They naturally think, “If I did it, someone else can.” We all know and respect extremely high professionals who did not go to college. But the 99 non-diamonds will determine the reputation, image, and future professional standing of surveying, not the 1 diamond.
26. Conflicting Advice Given, The “Don’t Go to College” Scenario -- In today’s society, college is a universal general goal of families for their kids – the way to a career and a profession. Imagine a high school student today approaching his/her parents saying, “I’ve decided to go to college to become a professional.” The parents respond, “NO, don’t do that!! That’s the wrong approach to life. You need to go on the street, get a job, and work your way up through the ranks to become the eventual owner.” Double faced advice – some traditional surveyors are giving this advice (no college) for the profession but the better advice (college) for their own kids.
27. Reduced Disciplinary Action -- Strong evidence is developing that a 4-year degree requirement leads to reduced disciplinary action. This is public protection. A generally educated person maintains more confident communication with clients and associated professionals. I studied the

comparison of engineering vs. surveying disciplinary action in Kentucky, 2002. Engineers had 1 case for each 500 licenses per year. Surveyors had one case for each 100 licenses per year – a five time increased rate.

28. Supply and Demand Gaps Build College Enrolments -- After the grandfathering phase in of a four year degree requirement, the number of new licenses will drop drastically. Fewer new licenses plus retirement causes a reduction in supply. No problem, since today's survey systems allow one practitioner to do the work of five surveyors 20 years ago. Increased productivity will solve much of the supply issue. No need to replace surveyors one for one. As demand increases and supply falls, fees, profits, salaries, and starting graduate salaries climb. For the first time, we are seeing significant numbers of sons/daughters of surveyors coming to Gainesville for our Geomatics program. During the 70s/80s, many surveyors told their kids, "If you go to UF in Gainesville, study civil engineering not surveying." Recruitment was very hard, since even surveyors did not think the profession to be a good future for their own children. As supply went down in the 2000s, and demand went up, the supply/demand gap caused great increases in surveyor profits, salaries, and particularly salary offers to college surveying grads. As the profits/salaries of surveying improve, the general attitudes of surveyors improve – no more "second class citizen." Surveyors, family, friends, neighbors begin to see surveying as a good field for their kids. The supply/demand "curve" causes university surveying enrollments to climb – the program "turns the corner."
29. The Second Approach to a Four Year Degree Standard, The Exam -- The experience route is still open for engineering in 1/3 of the states. But 99.95% can't pass the FE (first day) exam without a college education. Legislative action is not needed – the exam does the job. The FS (first day) surveying exam could be shifted from a "knowledge based" exam to a "curriculum based" exam. A non-graduate should not be able to pass the first day surveying exam. This approach is currently being considered.
30. FS (SIT) Exam Pass Rates for First Time Takers -- GENERAL STATEMENTS ONLY (not official) for 16 exams from Oct 2001 through Apr 2009. 4-year ABET Surveying students pass at an approximate 75% rate (approx 120 per exam). 4-year Engineering grads pass at about a 70% rate. (approx 100 per exam out of about 30,000 annual engineering grads in U.S.). 2-year degrees (all types) pass at about a 50% rate. No Degree applicants (about 550 per exam) pass at about a 35% rate. (many of these have some college, but no degree) Of note: The pass rate for No Degree applicants started at 27% in 2001 and is now at 38% in 2009 – a significant increase in only 8 years. Surprisingly, many state societies now offer "exam review seminars" – an attempt to get marginal "minimally competent" examinees over the bar. Other state societies have voted NEVER to offer such a review seminar – not professional. Private seminar providers are also helping many marginal applicants to become licensed. The exam should NOT be the only filter for licensing. Second, third, and fourth time repeat takers pass at a lower rate (but many EVENTUALLY pass the exam)
31. The "Model Law" Surveyor -- The current "model law" of NCEES for surveying contains an educational requirement of a 4-year degree to take the FS (first day). Many feel that the current exam process is not in agreement with the NCEES Model Law – since many (largest percent) of takers have no four-year degree. Either the exam should change or the model law should change. NCEES needs to follow its own model law.
32. Conclusion -- The surveying profession must do it. No one else will do it for us – pull ourselves up by our bootstraps. An educational future? A recognized profession?? Or a licensed trade??