

The Professional Status of Land Surveyors

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AT the present time the professional status of the land surveyor is the subject of national discussion. Within the next few years the surveyor will be in one of two positions. First he can have subprofessional standing with low educational requirements and minor areas of practice, or, second, he can bring himself up to the standards of the better professions and assert himself in a larger area of practice. The surveyor cannot afford to stand still. The engineers, land planners and the like are advancing their stature at a rapid pace and if they pass the surveyor too far they will supplant him.

All of you are no doubt acquainted with the fact that the original unadopted report of the American Society of Civil Engineers task committee excluded surveying as a part of civil engineering. The later report, as adopted, included land surveying as a branch of civil engineering. At the recent American Congress on Surveying and Mapping meeting the ASCE task committee's report, with some modifications to better suit the land surveyor, was adopted by the ACSM status committee.

At the same time the status committee was having its problems resolved, the National Council of State Boards of Engineering Examiner's special committee was meeting to consider a model law (including educational requirements) for surveyors. This meeting was called to coincide with the ACSM meeting so that the two groups could merge ideas. The talks did bring about a unification of many thoughts.

Before pointing out what areas of agreement were achieved at this meeting, a general discussion of the present status of the land surveyor is advisable.

Attaining Professional Stature.

Professional stature cannot be attained by self proclamation. The lazy say, give me the prize without the training, the wages without work, the reward without the quest, heaven without probation, a profession's prestige without a profession's skill. If the land surveyor is to have a professional standing, that standing must be earned – and bestowed upon him by others.

You and I know and believe that land surveying is a profession. But whether it is a profession or not is not our privilege to proclaim; others are the judges. The opinion of learned men and the opinion of the public is the proof.

Fortunately for the world, professional stature is something that must be earned, not merely claimed. If it were otherwise, everyone would soon lay claim to a higher standing, whether qualified or not. Many do attempt to filch good names. The A.F.L. engine operator (dozer operators and the like) inflate their ego by calling themselves "operating engineers". This of course proves to them that they are engineers, hence, it is their right to organize all surveyors as a part of the operating engineers union. The boy who carries the stake bag, coats, lunches and water is certain of his important position in society if he is called an engineering aid rather than a flunky 3rd grade. Mere claiming a good name is not proof that a person has the right to the name. A person's actions, behavior, and conduct are far more potent proof.

The proof of what we are is not what we claim to be. The proof is what others know us to be. We might well ask ourselves, what, on the average, do others think of us?

The profession that you and I and most everyone recognize and acclaim as professions, i.e., the doctors, attorneys, and clergy, need not use the title professional doctor, professional attorney, or professional clergy; everyone considers them professional. The title was bestowed upon them because of their ethics, behavior, and standing in the community. If the land surveyors wish to acquire and maintain a professional reputation, they must earn that right by the average standing of the majority of all land surveyors.

Definition of a Profession.

I have no intention of trying to pinpoint a definition of what constitutes a profession; even the experts have varied opinions. To make matters worse, there are two definitions – one broad and one restricted. Quotations from a few cases at law will help us understand the meaning.

From *State v. Cohn* (184 LA 53) is quoted, “Very generally the term ‘profession’ is employed as referring to a calling in which one professes to have acquired some special knowledge, used by way of instructing, guiding, or advising others or of serving them in some art. Formerly theology, law and medicine were specifically known as ‘the professions,’ but, as the applications of science and learning are extended to other departments of affairs, other vocations also received the name. The word ‘profession’ is a practical dealing with affairs as distinguished from mere study or investigation; and an application of such knowledge for others as a vocation, as distinguished from the pursuits for its own purposes.”

While research in science is certainly a learned occupation requiring special knowledge, it certainly is not a profession. A

profession deals with the affairs of others; it aids others; it does not merely seek knowledge for the sake of gaining knowledge.

From 107 S.W. 555 is quoted, “The word ‘profession’ in its larger meaning, means occupation, that is, if not industrial, mechanical, agricultural, or the like, to whatever one devotes one self; the business which one professes to understand and follow. In a restricted sense it only applies to the learned professions.”

One last quotation is from *Stiner v. Yelle* (174 Wash 402) and it apparently refers to the higher type of profession. “A ‘Profession’ is not a money-getting business. It has no element of commercialism in it. True, the professional man seeks to live by what he earns, but his main purpose and desire is to be of service to those who seek his aid and to the community of which he is a necessary part. In some instances, where the recipient is able to respond, seemingly large fees may be paid, but to others unable to pay adequately, or at all, the professional service is usually cheerfully rendered.”

From this, it is obvious that in a broad sense “profession” includes many fields such as college professors, engineers, professional boxers, and surveyors, all with varying degrees of qualifications. In a narrow sense there are only three professions, the learned professions of theology, law, and medicine.

Land surveying to me is a profession; my only question is one of classification of standing. I am not so naïve as to believe that we, at the present time and in the opinion of others, are anywhere near equal in stature with the three learned professions, but I do believe that by sustained effort we can achieve a standing comparable to the learned professions.

Attributes of a Profession.

Most surveyors have sufficient ego to want to measure up to the three learned professions rather than to measure down to those of doubtful standing whose only claim to fame may be by self proclamation. If the surveyor is to compare with the learned professions, he must approach the attributes of those professions and some of those attributes are:

1. Superior education in a field of knowledge.
2. Service to the public.
3. The possibility of gaining highest eminence without necessarily earning much money.
4. Providing services to those unable to pay.
5. Independent judgment and liability as a result of that judgment.
6. Ethics.
7. If fees are charged those able to pay, fees are dependent upon knowledge rather than labor or product.

Without question, superior education in a field of knowledge is an essential feature of a profession, and there is little question but what a *good* professional land surveyor should have superior knowledge in a specialized field. Some individual land surveyors, by self effort or by formal training in colleges, are well educated, but, as compared to the learned professions, are surveyors required to have an equivalent amount of knowledge? How many licensed practicing surveyors have the benefit of a college degree as compared to the doctors, attorneys, and clergy? Proof of the simplicity of our knowledge requirements can be had by looking at the past surveyor examinations administered in many States. In a number of States no registration or examination is needed; in others the examination is so simplified that

even the flunky, 3rd grade, could make a good showing. No wonder many look askance at our profession. The standing of all surveyors as a professional group will suffer unless we as a whole raise our requirements. Experience is never a complete substitution for education. It augments education, but can never supplant education. Education, of course, can be attained either formally at college or self taught at home. Whichever way it may be gained, there is no reason for allowing a professional surveyor to be registered without having superior knowledge. Without superior knowledge, we have an inferior profession.

Man's knowledge in itself does not make a profession; man must use knowledge to aid, assist, teach or benefit others. Application of knowledge to the affairs of others is an essential part of the definition of a profession.

The process of acquiring knowledge and the process of application of knowledge are distinctly different. Parrots can memorize a vocabulary of sorts, but who have ever observed a parrot with the ability to tell another of his needs? The knowledge and experience of a professional man combined with his ability to reason and arrive at a solution to a problem is why others seek his advice. The success or failure of each of us is, in a measure, due to our reasoning ability.

In the learned professions the professional man has a call of duty beyond that of a fee. The doctors are obligated to serve the sick regardless of ability to pay; the clergy do not turn away those in trouble; the attorneys defend the criminal. However, it is noted that the doctors and attorneys do charge a fee and those able to pay, must pay. This is as it ought to be.

The land surveyor does not display this type of obligation. It is doubtful if many surveyors would willingly serve those incapable of paying the required fee. Land surveying is not

an urgent necessity; if it is not done today, it can be done tomorrow. If a person cannot pay today, his survey can wait until tomorrow. Attorneys more or less adopt this attitude for services in connection with business matters.

The surveyor does have moral obligations to the public and among them is the duty to never subtract from the rights of adjoiners. Every boundary survey for a client establishes the boundary of an adjoiner. One of the reasons for giving surveyors the exclusive privilege of marking boundaries is to prevent the unskilled from monumenting lines that encroach on the bona fide rights of others. As an obligation to the public the surveyor should not, in any way, assist a client in acquiring rights to land that are not his to enjoy.

Any surveyor can attain eminence without necessarily earning much money. In your own area, what do other surveyors and the public think of you? Do they consider you ethical? Do they seek you out for advice? Have you contributed anything to the surveying profession, or do you just sit back and let others advance the profession? Is earning a dollar by any means more important than maintaining a principle? Will you sell your signature? Do you aid others in evading the licensing act? Do you degrade your fellow land surveyors? Have you actively pushed the cause of all surveyors or do you selfishly only look out for yourself? Are you active in your professional society? Have you had articles published in a professional surveyors magazine? Do you serve on committees? Or do you just sit back on your prerogatives? One of the first duties of a professional man is to advance his profession. These questions serve to evaluate yourself. It is only by the concerted effort of all, that we as a group will advance to an unquestioned professional stature. In every community we find those that are substandard

and those that have attained eminence. Which are you?

Attorneys and doctors charge a fee which is not dependent upon the physical labor or force applied. Personal knowledge gained through education and experience creates the demand for the service rather than the size of the muscle on the arm. Contracting is for businessmen actively competing on the basis of the lowest cost or the lowest bid. The moment services are based upon the lowest price, a profession has reduced itself to a business. Service based upon superior knowledge is the foundation of the fee of a professional. Are you a member of a profession, or are you a businessman? Many individuals in the matter of fees have attained professional standing. From the complaints I have heard in various meetings, I can only assume that, as a group, on the average, surveyors have not attained professional stature in their methods of charging fees.

Money, in itself, does not enter into the definition of a profession, but it does have a profound influence on what others think of a profession. Members of a group that show by their outward appearances that they are not successful in handling their own financial affairs, can hardly instill confidence in the public. A person who uses antiquated equipment and the back room of his house as an office is not likely to contribute to professional standing. Success breeds success. Outward appearances do count. They are a part of the overall pictures.

Ethics is that branch of moral science which treats of the duties which a member of a profession owes to the public, to his professional brethren, and to his client. Without ethics land surveying can never be a profession.

Everyone is familiar with the fact that an individual may strictly observe the laws of land and yet be an undesirable citizen and a poor neighbor. Lord Moulton in an article in the *Atlantic Monthly* (134 *Atlantic Monthly* 1, 13, 1924) stated, "The real greatness of a nation, its true civilization, is measured by the extent of Obedience to the Unenforceable". Ethics are often unenforceable. True professional stature arises from obedience to the unenforceable.

Advocating observances of ethics is not sufficient; the surveyor's personal example is far more important. It is not sufficient that the surveyor alone feels that he has honesty and integrity; the public, clients, and fellow practitioners must also believe so. The proof of observance of ethics lies in the opinions of others.

If we as surveyors are to maintain a respected position as professionals in the community, we must look beyond the club of the law to ethical standards which prohibit the doing of that which the law does not forbid.

What Others Think of Us

What is the present professional status of a particular surveyor or all land surveyors can only be answered by examining what others think of us. And what others think of us varies considerably depending upon which group or individual you ask. The opinion of the courts is distinctly at contrast with the educators. The layman's opinion is different from that of a non-surveyor engineer.

Courts, in response to liability litigation, have taken a positive stand on the status of all land surveyors. In the eyes of the law the land surveyor is treated with professional respect; he has all the liability accorded a professional man. While from the viewpoint of the pocketbook, this privilege of liability does have

disadvantages, it is proof, in a backhanded way, that the land surveyor is above the technician level.

The word privilege of liability was used advisedly. Human nature, being what it is, always offers a temptation to met competition by doing a poorer job for less money. But professional liability is independent of the fee. A person agreeing to do a poorer job for less money carries identical liability to that of a person doing a better job for more money. This is as it ought to be.

Since we as surveyors are liable, one of the greatest deterrents to substandard work is the liability. While liability to the individual may be considered a disadvantage, it is an advantage to a profession as a whole. Without liability, I fear that those willing to do poorer work for less money would soon ruin the professional standing of all land surveyors. And so I say, professional liability is a privilege tending to prove the land surveyor's professional standing.

The courts say that we as a group are professional men; but this is not prima facie proof that everyone thinks that each of us is, nor is it proof that we are looked upon with equal standing to the learned professions. If we are to enjoy the standing and dignity afforded professional men, others must know and act as if they believe we are professional men. What do educators think?

Without doubt the educators are the most severe critics of our reputation, and their criticism has justifiable merit. As a whole, and without question, we are not nearly as well educated as is required of the learned professions. We are usually the low man on the totem pole with respect to engineering. Engineering professors, with minor exceptions, are more than likely to refer to the surveyor as a "technician" or subprofessional requiring a

small amount of specialized education that can be acquired by the apprentice system. As proof of this we need only glance at the college engineering curriculum. Surveying on the average has been reduced to nothing more than a few hours of fragmentary instructions covering limited phases of the work. Every year additional college summer surveying camps are being abandoned. In short, we are being gradually ousted as a part of engineering education.

In the eyes of the average engineer the average land surveyor is not top grade "A" quality, and this is probably the result of educational differences. The Professional Engineers Society, with minor exceptions, do not extend surveyors the privilege of membership. Surveyors are looked upon as second grade citizens and assigned to functional groups. Even the American Society of Civil Engineers displayed considerable doubt, to judge by the first report of its task committee. The second report restored the surveyors to membership possibilities. But in their wording for the requirements to advance to the "fellow" grade, they have excluded the surveyor from the possibility of ever achieving this honor. After questioning many engineers of all classifications on this subject, I would say that on the average, a majority of engineers are more apt to consider land surveyors as technicians rather than as professional men. In a few States, perhaps not exceeding five, surveyors are looked upon with favor.

Within land surveying practice there are many grades of workers. One of our failures, and many engineers' failures, is to properly distinguish between chainmen, draftsmen, technicians, and the professional level. On highway work the engineer in charge has surveyors who make measurements to determine the shape of the ground. They are

merely measuring the grounds it exists and recording the facts as they are. To be sure, the surveyor must have superior ability in knowing how to use instruments and how to make measurements, but this is purely technical. He does not design the road nor does he utilize his measurements. Again the engineer may tell the surveyor to grade-stake a road in accordance with a given plan. Since no design or judgment is involved, it is a purely technical matter. To the average engineer the surveyor is a technician who carries out his orders. And often he is just that. But the engineer frequently overlooks the fact that there is a professional land-surveyor level.

Perhaps one of the greatest attributes of a successful practitioner is measured by how well he gets along with others. Knowledge alone does not make a professional man. He must have knowledge and use that knowledge unguiding, teaching, or instructing others, and his success in this depends upon how well he can influence others. We have all seen those who have superior knowledge, but who are pugnacious, contrary, unyielding, and never wrong. We have all seen those that display the fiery impulse of an infuriated clam and those that have the backbone of a wet noodle. Such types seldom succeed as professional men. Often such individuals fail to understand why they cannot get business and as a final desperate effort they assume that price is the reason and resort to trying to get business by the nonprofessional means of being the lowest bidder.

The problem of varying ability is common to all professions. Some doctors have good public relations, others do not. This does not explain why one profession is superior to another, it merely explains why some individuals attain greater success than others. To a certain extent all professions are judged

by how each individual member gets along with others.

Our Present Shortcomings.

There is no doubt but what land surveying is entitled to professional status of some sort within the broader meaning of the term; the courts indicate such by their decisions. But there is also no doubt that we, on the average, do not measure up to the three learned professions or for that matter, to any of the other better professions.

In the minds of most surveyors there is no question but what they would like to be looked upon with the same respect, dignity, and standing as the doctor, the attorney, or the clergyman. I have repeatedly heard surveyors compare themselves with doctors. No short cut to gaining this prestige exists; it must be earned, and as yet, on the average, we have not earned it.

Land surveying can be a profession approaching the level of the learned professions, and whether we wish it to be so or not is ours to decide by group behavior – that is action, not wishful thinking.

Education and knowledge can never be purchased; each individual must acquire these by his own efforts. All the money in the world will not cram knowledge into the heads of those unwilling to learn. It is recognized that all education is not acquired in colleges; but colleges are the major source of education. They are the repository or storage place for accumulated knowledge.

All learned professions have as one characteristic, specialized and extensive knowledge in a particular field, and that particular field is offered in the curriculum of many institutes of higher learning. How many colleges offer a degree in land surveying?

How many offer a masters degree in geodesy? Colleges simply do not recognize land surveying as a learned profession, and until they do we will not be classified as professionals.

The major deterrent to our becoming a learned profession is our low requirements for the right to practice. So long as we have low admission requirements, we will have low standards of practice and low public opinion. A person must know what is right and wrong before he can practice right. If we are satisfied with our present low professional standing, that of a subprofession not measuring up to the standards of the better professions, we should do nothing. But if we want to improve our standing, we must raise our standards.

Without ethics, a group of people can never be a profession. Realizing this, most land surveyor groups have adopted some form of ethics; but these ethics are without effective enforcement. The lawyer, for failure to abide by ethics, can be disbarred. The doctor can be removed from the American Medical Association and thus lose hospital practice rights. The clergy can be defrocked. Who has ever heard of a land surveyor being de-licensed for failure to observe ethics? We must seek and find a way to enforce ethics.

An essential part of the definition of a profession is service to others, i.e., knowledge is used to aid and assist fellow men. I presume this means all men. If we are a profession, should we not have free exchange of information between ourselves? How many secretly hoard survey evidence and refuse to allow fellow practitioners the privilege of knowing that formerly existed? Are we a business in this matter or are we a profession? Fortunately, in our area, but not in all of our State, we do have extensive free exchange of information, but from conversations with

various surveyors in many areas, I can only assume that this practice is not as widespread as it ought to be.

In California's Owens Valley we have two lakes. One if fresh and trout are in it. Trees spread their branches over it and children play along its shores. A river flows into this lake and out into a second lake. Here in the second lake are no fish and no children's laughter. Travelers choose other routes. Neither man, beast, or fowl will drink of its waters. There is a difference between the two lakes. The first lake receives fresh mountain water. For every drop that flows in another drop flows out. The other lake is shrewder. Every drop it gets, it keeps. The first lake receives and gives, the second lake receives, does not give, and is salted to death. Are we going to be like the first lake and receive and give information, or are we going to be like the second lake and jealousy hoard professional information?

Among the many things that would elevate the surveyor to higher stature, perhaps the most important, is the work "agreement". All of us have heard the complaint, "it is a notorious fact that no two surveyors are in agreement on the position of a corner". Differences between surveyors are a cause of degradation. We prove by our own survey monuments that we are incompetent, since we cannot all arrive at the same location using the same written deed.

Difference are caused by numerous circumstances, some of which can never be remedied by the surveyor, but in all too numerous instances differences are caused by surveyors. We, in California, have overcome much of this by certain practices which ought to be part of all registration acts. Specifically these are:

1. Filing public records of survey showing all evidence found and all points set.

2. Placing the surveyor's license number on every monument set.

The surveyor is given exclusive privilege to monument property lines, and in exchange for this exclusive privilege he ought to and does have obligations to the public. Original monument evidence should never be the exclusive property of one; it should be the knowledge of all.

Deeds have a chain of title back to their inception. The validity and correctness of a deed is based upon that chain of title. Similarly monuments should have a continuous chain of history. The original surveyor sets a stone mound for the section corner. Surveyor number two finds a stone mound for the section corner and sets a 2" iron pipe. Surveyor number three finds the 2" pipe and sets reference points 30 feet on each side of a new proposed road. Surveyor number four finds the reference monuments and resets the true section corner in the centerline of the new road. Surveyor number five finds the new monuments in the centerline and wants to prove its identity and the correctness of its position. How can he do this without a continuous record of what surveyors numbers 1, 2, 3, and 4 did? The surveyor who discovers and alters evidence, has a duty to record and maintain a record of what he did, and unless that record is a public record, it will soon be lost with the death of the surveyor. This is the reason that California has a law that makes it mandatory to file a record of survey under certain circumstances, and these circumstances are:

- (a) Material evidence, which in whole or in part does not appear on any map or record previously recorded or filed in the office of the County Recorder, County Clerk, municipal or county surveying department or in the records

of the Bureau of Land Management of the United States.

(b) A material discrepancy with such record.

(c) Evidence that, by reasonable analysis, might result in alternate positions of lines or points.

(d) The established of one or more lines not shown on any such map, the positions of which are not ascertainable from an inspection of such map without trigonometric calculations.

On the record of survey must be shown all evidence found and all new points set.

Whenever a monument is discovered it has little value without evidence of its origin. By requiring a license number on every point set by a surveyor, the identity of the point can usually be established by calling the surveyor. This is an incentive to exchange information and maintain liaison between surveyors. If a discrepancy is discovered, the first surveyor can be immediately notified and differences worked out prior to a client's display of a desire for revenge on a hostile neighbor.

Conclusions and Recommendations.

Any single land surveyor can attain outstanding eminence as a professional man. Of necessity his knowledge would have to be broad enough to include an intimate acquaintance with such related fields as geodesy, photogrammetry, cartography, and land law. His only limitations would be his own desires and his own ability to push his knowledge, his behavior, his conduct, and his ethics to forefront. A good professional man cannot be a recluse; one of the essential definitions of a professional man is that he serves the public and serves them well.

There are bright spots throughout the United States. Ohio has equal or almost equal knowledge requirements as compared to the civil engineer. California and Massachusetts have good standing, though even here improvements can be made. Minnesota surveyors, by their successful sponsoring of the platting law, have enormously enhanced their professional standing.

Unfortunately those in the same group are often tarred by the same brush. If most land surveyors throughout the United States are of low professional standing, all will tend to be thought of in the same vein. If we as a group are to be thought of with the dignity and respect that we would like to command, we must all be above reproach. Among the many things that we can do to improve our standing are those areas of tentative agreement reached between the various model-law committees at the ACSM annual meeting and these are:

1. The knowledge or educational requirements of the surveyor should be raised to an equivalent level with that of the civil engineer. This does not mean that both would be given the same examination, nor that both will need to know the same subject matter. It merely means that the surveyor will need to know more than is being asked of him in present examinations. Ignorance is a voluntary misfortune and should not be tolerated in our professions.

2. Require a minimum of 16 hours of written examination. This would be divided into two parts, one part on fundamentals and one part on professional practice. Passage of the Engineer-in-Training examination of the civil engineer or the passing of the first 8-hour test would entitle a person to take the second half on professional practice of surveyors. I am sure that if a civil engineer can pass the EIT

examination he would be qualified in the fundamental mathematics of surveying.

3. The surveyor will be allowed to perform every step in the making of subdivisions. Since this would allow him to design water lines, paving, grading, etc., his examination must include these subjects. His scope of examination is increased.

4. Always keep the door open so that it is possible for a man to progress by self-education to the professional level. Formal education in college is merely one of the many ways that a man can acquire an education. A college degree is proof of theoretical training in a given area. The lack of a college degree is certainly not an indication of a man's knowledge. Many have acquired excellent educations by their own efforts. After examining present-day college civil-engineering curricula, I will not hesitate to say that possessing a civil engineering degree, is not proof of adequate training in surveying.

5. Require eight years of experience in responsible charge, four years of which may be acquired by an accredited college degree. And that college accreditation implies accreditation in surveying subjects – not thermodynamics, electricity, and the like.

These areas of agreement were attained without a contrary opinion. If these objectives can be put into practice, I am sure the professional tone of all surveying will be on an equivalent standing with that of other learned professions.

The ACSM task committee envisioned that at a future date both the surveyor and engineer would, on the average, have equivalent planes of practice and equivalent professional standing and ideals. At such time, if each professional so desired, it would be possible for reduction to one license. Whether that is advisable or not, we need not concern

ourselves; that decision will be made by the next generation.

Most registration acts are only definitions of who may practice surveying; they do not obligate the surveyor to file records of his work nor do they require him to use license numbers on monuments. By adding to most registration laws and requiring surveyors to abide by certain practices, the professional standing can be upgraded.

I have chosen the land surveyors profession because I like it and am proud of it. Although our office does do numerous engineering jobs, I never infer or imply in any way that I am an engineer. I know that we as land surveyors should have professional standing, but I also believe that we have not acquired the standing we ought to have. These remarks were designed to point out some of our weaknesses and suggest some remedies.

I started out with a thought and wish to close with the same thought. Professional stature is not gained by self proclamation. Professional stature must be earned and can only be measured by what others think of us. If you want to find out whether you are a professional man, ask what others think, don't ask yourself. If you want to be a professional man, earn that right.