

THE EDITOR'S PAGE

THE EDUCATION AND TRAINING OF THE O.L.S.

An Open Letter to the Committee on Education

The confused and somewhat bitter and emotional disputation regarding the educational qualifications required of a surveying student, as evidenced by the discussion of the proposed revisions to the Draft Surveyors Act at the last annual meeting, calls for a review and some rethinking on the subject of education for the O.L.S.

The concern for the education of the survey technician and the alacrity with which the Association has set up the ACSTTO is surprising in view of the fact that the education of our future articulated students, the men who will be the future Ontario Land Surveyors, should be the more pressing concern of the Association. One can reasonably ask why was nothing done about O.L.S. student education? One cannot however, reasonably accept the conscience-soothing likely answer that we have been waiting for the revision of The Surveyors Act, when the proposed revision was a throw back to the existing unsatisfactory situation.

Any surveyor, if he considers himself a professional person, upon reading Ralph Moore Berry's paper on "The Surveyor of the Future" or "what's wrong with surveying?", published elsewhere in this issue, should search his own soul. If he then still considers himself a professional, he should demand action - education for professional status. If his soul-search results in denegation, he should call himself a Land Survey Technologist.

Let us consider for a moment the Survey Technician, the Survey Technologist and the Ontario Land Surveyor, from the standpoint of the connotation which each appellation has for the informed public.

The Technician - is a person trained to carry out work beyond the level of a skilled worker through education in a specified field.

He is primarily concerned with technique, i.e., expert in use of survey instruments, but he is not expected to initiate techniques.

He is concerned with science or technology, i.e., the mathematics of measurement of angles, distances, areas and related calculations.

He is also concerned with responsibilities for, or to, other people, i.e., he works under the direction of a technologist and may himself be responsible for other workers, skilled or unskilled.

A technician is therefore a person expert in applying specific proven techniques associated with science as technology, in particular, one who has undergone a systematic course of instruction related to those techniques. His education must equip him for comprehension, which is the absorption of ideas and recall, the process of remembering, and to think, i.e., the transfer of his learning to the work situation.

The Technologist -

In addition to the training and skills of a Technician, the Technologist will be further trained to be employed under direction as a specialist or a supervisor in charge of a group of technicians engaged in complex legal or technical surveys. He will

require the additional training to that of the Technician to develop the organization and correlation of ideas which involves the recognition of common factors among a variety of ideas. He must be able to think out the process of bringing many sources and types of information to bear on the problems faced in a work situation.

These characteristics are learned by further educational courses and experience related to the surveying specialties.

The Ontario Land Surveyor

The Survey Technologist

The
Survey
Technician
The Know How
for
How-to-do-it

The Know How
for
What-to-do
How-to-do-it
Who-to-do-it

Education and experience in specialties

Concerned with Professional Aspects of Surveying -
Analysis and Synthesis of factual data and evidence in terms of the Acts and Regulations relating to Surveys -
The Know How for judgement and creativity - critical thinking - consequences of actions - communications with public - canons of ethics -

Term of Articles - Professional exams - Registration in order to practice.

None of the capabilities of the Technician or the Technologist approach the professional field of surveying. The Technician and Technologist, however can and do provide the data which the professional Surveyor must use.

The use of the data provided him is the specialty of The Ontario Land Surveyor. It is the O.L.S. who must do the reasoning for his survey by use of analogy and carrying knowledge in one field over into other fields. His thinking must be critical thinking, involving reflections on the consequences to be expected if a proposed action is taken. It includes the evaluation of his data and mathematical derivations in relationship to the Acts and Regulations relating to surveys. In addition to these intellectual qualities, the O.L.S. must know the emotional aspects of human relations including verbal and written communications of difficult ideas to laymen. The O.L.S. must know his own place and importance in the larger connections of the public domain through the application of the canons of ethics of the profession and faithfulness to fulfill the solemn obligations which he assumes on registration as an O.L.S.

How can the O.L.S. obtain this qualification and capability to use the basic thought processes by which he thinks and uses his imagination, intuition, judgement and creativity to define and solve the most likely initially ill-defined and poorly-posed problems with which he is faced. How can he presume to analyze, to carry out the detached study and critical appraisal of data and evidence, if he hasn't the creative facilities derived from higher education. If he has not had the opportunity to develop his creative facilities, he likely only looks at a small part of a problem and begins immediately to solve it, instead of standing back to view the entire problem. He will likely orient himself to complex calculations far too early before, or without considering the broad aspects of his problem. He must take very little for granted and develop his rational thinking whereby factual data, axioms, precepts and principles are logically combined to provide his solution.

If such attitudes to learning are applied in a higher educational setting, the O.L.S. will fit more quickly and usefully into professional life.

What has been said above is related to legal surveying. What about the education of the O.L.S. for the newer, lucrative opportunities for the O.L.S. generalist in the fields of engineering and geodesy? What with the rapid and awe-inspiring advancement in the technology and equipment now available to the surveyor, the science of photogrammetry and third generation computers, what has been said above can be equally, but more forcefully said in relation to engineering and geodetic surveying.

All over the United States and Canada one hears the cry, where are the professional surveyors required for the future going to be educated? Certainly the provincial survey associations have not the means. Neither have the technological institutes. The Institutes can produce well trained technicians and technologists, who will be better surveyors (in the strict technical sense) than many of us who are now O.L.S.'s. But the professional surveyor? No. Only the Universities can produce the type of education and mental training required for professional surveying.

There is no stigma attached to this admission on the part of us O.L.S.'s who are not graduates. It does mean we must individually upgrade ourselves to keep up with the times. It does mean that we must assure that the future of the profession will be ensured. We must therefore demand that future surveyors be sufficiently well educated and trained to carry on the tradition which we proudly proclaim.

The Surveyors Act 1965 will help do this educational job for us if we are sincere in our efforts. Your Committees with the help of the Solicitors of the Department of Lands and Forests and the Department of Education set up the 1965 draft Surveyors Act with an eye to the future. It is the culmination of the historic motion of the Annual Meeting of 1960 authorizing the Association to make a university degree course in surveying or the equivalent the requirement for an Ontario Land Surveyor.

Let us therefore by all means train our technicians and technologists, but by no means think that in doing so we are satisfying our obligations to the profession. We must look higher than ourselves, toward the larger, broader aspirations of increasing our public esteem, our place and importance in the future order of things.

Let us get on with the job.

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SOFT SELL

by Benjamin Franklin

The way to convince another is to state your case moderately and accurately. Then scratch your head, or shake it a little and say that is the way it seems to you, but that, of course, you may be mistaken about it. This causes your listener to receive what you have to say, and, as like as not, turn about and try to convince you of it, since you are in doubt. But if you go at him in a tone of positiveness and arrogance, you only make an opponent of him.