

by C.E. Stauffer

The adjacent article is taken from the booklet "Career Outlook" published by the Manpower and Information Branch of the Department of Manpower and Immigration - Ottawa. The booklet covers the courses and estimated graduates from the Technological Institutes in Canada for the year 1967-68.

The expansion of technological education in Canada is phenomenal. Out of a total of 34 Institutes in Canada, 7 are in Ontario and 16 in Quebec. 14 of the 34 Institutes in Canada, including 3 in Ontario and 3 in Quebec offered courses in Civil and Survey Technology and graduated an estimated total of 567 technologists in 1968.

As the number of graduates will increase rapidly in future years, no one should in a year or two lack qualified staff. This is a good augury for the employer, but what does it augur for the future technologist. If the Association and the O.L.S. Survey Managers stand by and watch these graduates go into other types of survey work, in government, construction and engineering, the effort we have put into education (witness the ACSTTO) will be fruitless for us and fruitful for our professional survey competitors.

So what of the future? What can be done? O.L.S. Survey Managers both in private and corporation practice should review and update their position descriptions and personnel practices to provide for the influx of technology graduates. Although it may not always be possible to tie in the duties in job descriptions with the certification levels of the ACSTTO for example, at least the specifications for the job description can specify the educational requirement of graduation from a survey technology course in a recognized Technological Institute. Then instead of hiring a Chainman or an Instrumentman, make the job interesting and give it status. Take on the graduate in the position of, say, Party Chief-Training Stage.

SURVEYING TECHNOLOGY

The tremendous growth within recent years in the development of natural resources in the exploration and mapping of new areas, and in the construction of new highways, combined with the radical changes in surveying techniques and equipment have created a great demand for the qualified surveyor. Indeed, the Northern Alberta Institute of Technology reports that the present demand for surveyors is so great that it is very unlikely that the supply will be sufficient for some years to come. Therefore, notwithstanding the increase in the number of graduates from 53 in 1966 to over 100 in 1967, the demand will still exceed the supply for the survey technologist and starting salaries will remain highly competitive, in the range of \$400 to \$500 per month.

There are presently five institutes offering a two-year diploma course in surveying technology—the College of Trades and Technology at St. John's, the Nova Scotia Land Survey Institute, and the British Columbia, Northern Alberta and Southern Alberta Institutes of Technology. In addition, the Ryerson Polytechnical Institute for the first time will offer a separate three-year diploma course in surveying technology beginning in the fall of 1967. Also, the British Columbia Institute of Technology plans to offer a special photogrammetry option this fall. Basically the admission requirements to all of these institutes is a high school graduation diploma or its equivalent, although with a shortage of physical space in some of the schools, many students who enter this discipline possess an honours graduation diploma from high school. The applicant should have a strong grounding in mathematics and physics.

The curriculum in this field usually includes an extensive course in surveying, using such modern instruments as the geodimeter and the tellurometer, as well as a thorough study of the theory of surveying. The student will also be involved in intensive study in such areas as mathematics (from simple arithmetic through algebra, geometry, plane and spherical trigonometry to calculus), physics, geology, astronomy, photogrammetry, geodesy, cartography, and hydrography. One-year certificate courses are given at the College of Trades and Technology at St. John's in photogrammetry and cartographic drafting.

In addition to equipping the student with the necessary skills and knowledge to carry on as a surveyor, the diploma courses are designed to prepare him for the professional examinations of the provincial or dominion land surveyors associations. Successful completion of these exams together with a three-year period of articles will confer on the student the professional standing of land surveyor. On application to these associations the technology graduate may have his period of articles reduced and possibly be given credit for some of the preliminary examinations.

As land for expanding cities must be subdivided, and topographical and geological features must be explored, surveyed, and located in such industries as oil, mining, highway construction, irrigation, and power, the employment opportunities are not only numerous but extremely varied. Graduates may choose employment in private surveying and consulting engineering firms; in gas, oil, construction, and utility companies; or in federal, provincial, and municipal highway planning and engineering departments. Within these areas the graduate may perform such functions as the exploration of natural resources, road and building construction, large scale map making, or geological, geophysical, geodetic, mine, topographical, or hydrographical surveys.

You will find the graduate S.T. you are interviewing will not be too interested in a chaining or instrument job, but he will be interested in a Party Chief job. He will understand he needs field experience and will likely accept the job of Party Chief-Training Stage, at the starting salary of say Instrumentman. As he progresses through T.S. 3 to T.S. 2 to T.S. 1 you will know what level he can achieve or whether he can operate as a Party Chief, before he is given the position.

Many Survey Technology graduates will want (or demand) O.L.S. Articles. If they exhibit management capabilities, why not? They should make good surveyors and it would be up to the Association and the O.L.S.'s to whom they article to make them good professional practitioners. Some members may say this is heresy on my part. Anyone however, who has read the recently published report of the Education Conference will understand it is a purely pragmatic approach until the Association (Deo Volente) sees fit to encompass within its orbit, all of the survey disciplines. We would prefer of course, that our future articulated students be University graduates. Until the problems of recruitment and the unification of the surveying disciplines are solved, we will look to the bright and interested, trained Survey Technologist for our staff needs in the immediate future.

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P.A. MONAGHAN, P.ENG., OLS, PRESIDENT, APEO

We extend our congratulations to Pat. We are proud to have a member of our Association receive such an honour and convey our best wishes to Pat for a most successful term of office.

It is interesting to note in Pat's statement of policy in the December issue of "The Professional Engineer and Engineering Digest" that item number one is, that he 'will encourage and initiate action towards the approval of the new "Professional Engineers' Act" by the Provincial Parliament'. Pat and the members of his firm have always shown a high degree of interest in the new "Surveyors Act". With J.W.L. (Larry) Monaghan as Chairman of our Committee on Legislation and also as a member of our Special Committee on the New Surveyors Act, the opportunity is provided of coordinating and keeping on top of this matter of legislation in the interests of both Associations.

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TWELVE EASY WAYS TO KILL ASSOCIATIONS

With tongue in cheek, the American Society of Metals publication "Perspectives" has listed twelve ways to kill an organization. These are its "suggestions:"

Don't go to any of the meetings. If you do go, be late. If the weather doesn't suit you, don't think of going. If you do go, find fault with the speaker, arrangements, officers and members. Never accept an office. It's much easier to criticize than to do things.

Stay Mad. Get sore if you are not appointed to a committee. If you are, don't attend committee meetings. If asked to give an opinion on some matter, tell the chairman you have no comment. After the meeting tell everyone how it should be done.

Do nothing required of you. When others pitch in and use their abilities, howl that the group is being run by a clique.

Hold back on your dues as long as possible. If you get a new and good idea, smother it at once. Don't be sociable, either within or outside the organization.

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