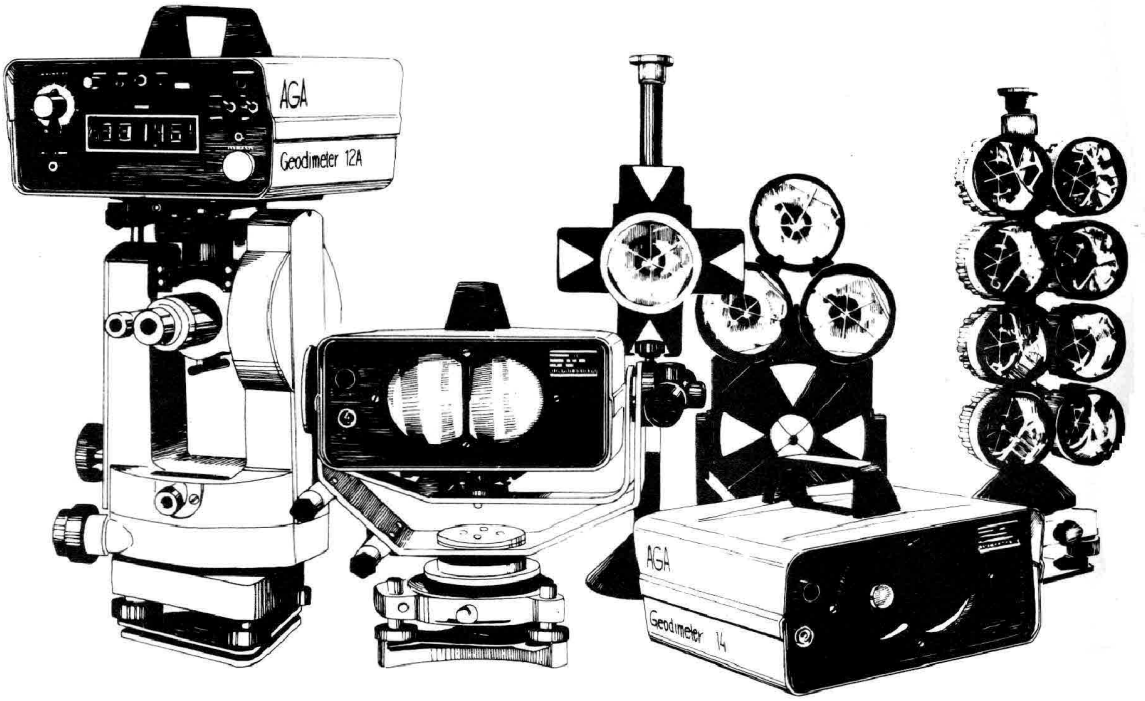
The NOVA SCOTIAN SURVEYOR

APRIL 1978



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The NOVA SCOTIAN SURVEYOR

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** C O N T E N T S **

Views, expressed in articles appearing in this publication, are those of the authors and not necessarily those of the Association.

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** COMMENTS FROM THE PRESIDENT **

A few months have passed now since the Annual Meeting in November. Perhaps it would be appropriate at this time then, for me to outline some of the activities that have been happening in Association affairs since November as well as to outline what hopefully will be happening during the next few months. My writing will also reflect some of my personal views.

The year 1978 finds the Association administration continuing the task of bringing into being, a new set of Regulations and By-laws. The Regulations require both membership and governmental approval before becoming law, whereas the By-laws only require membership approval. Consideration of the proposed Regulations and By-laws require an extra commitment of personal time from the general membership this year. We have already held one Special General Meeting in February at which we had considerable debate that resulted in approval of about two-thirds of the Regulation package pertaining to survey standards. The late hour of the day forced the tabling of the remainder for a future General Meeting to be called later this year. Another meeting should finalize the remainder of these along with consideration of a portion, and possibly all, of the proposed By-laws now in the hands of every member. This would only leave us with the Regulation proposal dealing with disciplinary procedures which may be ready for consideration at the Annual Meeting in November.

The preparation of legislative documents such as our new Act and Regulations, not to forget the By-laws, require considerable effort on the part of the committee members involved. Many evenings are relinguished in order to work for the betterment of the Association as a whole. This Association is very fortunate to have members who are willing to volunteer their personal time so freely for this work. I feel that the Association owes a real debt of gratitude to these members, and so I take this opportunity on behalf of the membership, to express a very sincere thanks to members of the Statutes Committee, Regulations Committee, By-laws Committee and the Atlantic Provinces Certification Standards Committee for their work on these projects.

Council has approved the necessary funds for the publication of a reference text on Court Case Decisions involving boundary disputes. This book is now at the printers being produced in hard cover form and will be available to all members and other interested parties at cost, plus handling. The credit for this publication, along with our thanks and appreciation, goes to Jim Doig who put in a great deal of time and effort on this worth while project.

The Certified Society of Technicians and Technologists of Nova Scotia (C.S.T.T.N.S.) officially came into being under the Societies Act over a year ago. One of the main aims of this organization is to examine the training and work experience of every member by means of a Certification Board, after which a certificate attesting to their level of competence is issued. Council has appointed two of our members to that Board. This system of issuing certificates attesting to the competence level of the technician/technologist should prove beneficial to the employer when hiring, since he should have a better indication of the applicant's qualifications. I believe it to be very important that we continue our support for this organization, helping it to develop into something worth while for both the technician/technologist and the land surveyor. We cannot efficiently serve the public without their services.

The Executive Committee successfully negotiated for a much larger office space in the same building on Cornwallis Street as before, while remaining within the office rental budget. We now have room for all of the Association files including the Board of Examiners' files which had previously been stored at the Department of Lands and Forests Head Office. We have also hired Ms. Lynda DeViller on a full time basis in the capacity of Stenographer/Bookkeeper and General Assistant to our Secretary. Ms. DeViller is proving to be a tremendous asset to the office in helping with the increasing workload being demanded of the Secretary. We still maintain the services of Miss Dot Lowe on a part time basis as we have in the past. She handles in a very efficient manner, the typing and mailing of general membership mailouts such as the Annual Membership Cards, Roll of Members and the Nova Scotian Surveyor.

Most members are no doubt aware by now of the new Land Titles Legislation that was introduced into the legislature this winter by the government. I urge all members to obtain copies of this legislation and to study it very carefully, since it introduces a whole new concept of land registration in this province which will definitely have a direct affect on land surveyors. Surveys inside a designated area will require examination and approval before being accepted for registration. A new Land Surveys Act, to compliment the Land Titles Act will likely be introduced in the next sitting of the legislature that will also have a direct affect on land surveyors.

The Canadian Council of Land Surveyors (C.C.L.S.) is now well into its second year of existance. Having had the opportunity during the last year to be closer to the scene than most, has convinced me that the right decision was made by becoming a part of this national organization. There are, and will continue to be through the years, problems common to land surveyors from coast to coast, that can be handled more effectively on a national scale, rather than on a local scale. The C.C.L.S., for example, is very close now to finalizing negotiations for a proposed national insurance policy for "Errors and Omissions" insurance for land surveyors. The reasoning behind a national insurance policy, of course, is that a better premium rate can be negotiated for twenty-five hundred land surveyors than for three hundred. Aside from the practical aspect of C.C.L.S. in dealing with mutual problems, I believe there are indirect benefits to be derived, just simply from being associated on a continuing basis with other land surveyors in Canada.

It was very gratifying to see such excellent attendance at the series of seminars on the "Use of Redefined Coordinates". The Continuing Education Committee, in cooperation with the Land Registration and Information Service (L.R.I.S.) presented the seminars and are both to be commended for a fine two day presentation.

Once again and in conclusion, I would like to urge all members to participate in the approval process of the proposed By-laws and the remaining Regulations. Your presence and comments at the next Special General Meeting to be held on June 3, 1978, for the purpose of voting on these matters, would help to ensure that standards acceptable to the greatest majority are approved.

** REDEFINITION OF COORDINATES **

Dr. Don Thompson has been involved in a considerable amount of offshore work for petroleum exploration and has carried out extensive research in the field of Geodesy. Currently, he is part of a University of New Brunswick consulting team working in conjunction with L.R.I.S. on the redefinition of the Maritime Geodetic Network and will speak on the concept of and the time frames associated with this redefinition.

Redefinition seminars have been held in most Zones which have been sponsored by the Association's Continuing Education Committee and conducted by member surveyors. Watch for the announcements of successive redefinition seminars.

Why do the networks have to be redefined? - This is something, of course, that everybody asks and there are many answers. What I would like to do is give you a summary of three of these answers.

1. Consider the coordinates that we base everything on right now in North America. These computations were carried out between 1927 and 1932. Since that time small networks have been systematically tacked on and, in fact, the information that we have now is really unreliable and in many cases incorrect. This has been admitted over the years and has been recognized.

2. Another problem that concerns us more, particularly in Atlantic Canada, is the fact that the Coordinate System to which our networks relate in Maritime Canada at this time cannot reliably be related to anyone elses Coordinate System. You may say that this is unimportant but, when you consider that Atlantic Canada has international boundaries with three other nations, namely, Denmark, France and the United States, then it becomes extremely important, particularly in this era of the development of off-shore resources, right now it is petroleum, and we know that it will continue into other resource industries. It is extremely important that we be able to relate to what other people are doing to their survey systems so that it is important that we have a reliable definition of our coordinates. We can then reliably and, with some confidence, relate our work with those of other nations.

3. The third reason for redefinition is technological advance. There is no way that we can operate with satelite systems and inertial systems and the newer and more modern terrestrial systems with the present set of coordinates that we have.

The sum total is that coordinates of network points no longer fulfill the daily requirements of users.

When the network started in Canada back in 1905 they had an objective and the objective was to fulfill the needs of mapping, so they looked at one use for coordinates and that was the mapping use. We now have a minimum, at least, of twenty more reasons for using coordinates other than mapping. If we were just looking for use in mapping one could probably state that they are still reliable. If you look at all the other uses the coordinates no longer fulfill the needs.

For example the geodetic network in New Brunswick at the present time has some glaring misclosures. They vary anywhere from zero metres to something in the order of at least three metres. If you went across the blank part of New Brunswick before you even start your traverse you have three or four metres against you.

What are the benefits of redefinition? - If we had a homogeneous system of coordinates, one that we could all relate to, we could eliminate re-surveys, we could

have improved accuracy, improved consistency and obviously if you redefine the networks you have redefined networks. These are four encompassing reasons for this whole project.

On a national basis the redefinition is being spearheaded by the Geodetic Survey of Canada and it includes all terrestrial networks tied together with doppler points. There are roughly 200 doppler points in Canada, being 200 kilometers more or less between each point and they will become the basis, or the defining points, for the new coordinate system. What it amounts to in terms of the number of points in all the networks is somewhere in the vicinity of 6,000 control points across Canada. There will probably be more by the time redefinition is finished.

Now we should come to the Maritime Geodetic Network with this sort of continential background and put the Maritime Geodetic Network, that is L.R.I.S.'s controlled networks in perspective, with what has happened nationally.

Why do we have to redefine the geodetic networks, the Maritime networks and the traverse networks that L.R.I.S. has carried out over the past years? - The first reason comes by default. The traverses are tied to, and rely on the national framework for the definition of its coordinate system, so that if they are redefined the Maritime networks would be inconsistent with other networks within the region, which I do not think would be an acceptable alternative for any surveyor.

The second reason, to have homogeneous and consistent networks in the Maritimes with associated accuracy estimates. These estimates which will come out in redefinition of both the national and regional network will allow for the expansion we predict in professional activities of surveyors. This will be one of the vehicles that they will be able to use to expand their activities in precise engineering surveys, offshore work and the like.

Another reason for redefining the coordinate system is to have something that you can rely on, something that you can have some degree of confidence in and these I classify as self-protection. When you go out and do a survey and you have the quality information attached to the coordinates, you will then be able to compute the reliability with which you have done the survey. When you close a survey in some areas in New Brunswick right now between two geodetic points you do not know whether it is your work, or the national framework, that is wrong. Hopefully, with the new scheme you will be able to analyze what has happened, you will know what is there, and thus increase the confidence in your work.

Last, but not least, for a reason which is under discussion in the Maritimes is the possibility in the future of having to use these coordinates for the definition of land boundaries.

Who is doing the Maritime redefinition? - It is being carried out by the Surveys and Mapping Division of the Land Registration and Information Service in Summerside. A lot of the decisions that are being made are being made by a task force, in terms of planning, scheduling and major technical decisions. The task force consists of three L.R.I.S. people from Surveys and Mapping Division, one from Systems and Planning of L.R.I.S. and two people from the University of New Brunswick.

What is the content of the work? - I told you that there were about 6,000 points that the Federal Government plan to redefine. If you look in terms of magnitude, L.R.I.S. plan to redefine 36,000 points. The number of observations that they have to handle, and these are reduced observations, are something in the vicinity of 100,000. The task that they are taking on is an enormous one to say the least.

I will run through the steps that have been taken to date and some of the reasons for some decisions that have been made. The first thing that had to be decided was: What surface or what mapping plane would be used as a reference to carry out the redefinition of all the networks? An ellipsoidal surface, that is a geodetic system as opposed to a conformal mapping or plane system was chosen. Everybody is well aware that if we are trying to do all three Maritimes at once we have

three different conformal mapping or plane systems. Each of the provinces had different origins and Nova Scotia's situation is complicated by the fact that we have two zones of the three degree traverse mercator. In order to carry out this whole redefinition on a plane, one would have to substitute all kinds of so-called nuisance parameters or unknowns that you would not want to solve for between the different mapping planes. This would complicate things unnecessarily so what will be done is to make the redefinition on a common ellipsoid and the plane coordinates will then be generated simply by coordinate transformations. Similarly the quality facts or the information necessary to express the confidence you will have in the coordinates, will also be transformed.

The second decision that had to be made was: - Should we use a geocentric reference system or a non-geocentric, that is, should we centre this ellipsoid on the centre of gravity of the earth or somewhat removed from it? There are various reasons for accepting one approach or the other. You will see that no matter which you use there will be significant changes. If you look at Cape Breton the change in coordinates will be something in the vicinity of 19 metres to the west to a minimum of about 15 metres somewhere in New Brunswick. So we move westward by 15 to 20 metres so that the change will be significant on a non-geocentric system. If we go to a geocentric system there is a greater change. In Cape Breton now we have something in the vicinity of 57 metres eastward, to New Brunswick about 40 metres eastward. So there are large changes that will occur no matter what we do.

The decision was taken that a geocentric system would be used and the reason for it was that this is the system that will be used in the 1983 redefinition of the North American networks and in order that we in the Maritimes be consistent with the rest of the country and particular on our international borders, it was felt that a geocentric system would obviously be more beneficial to all of us.

In terms of a solution that was chosen, the last solutions that were made, both continentially and regionally, were somewhat approximate. With new technology in terms of computers we can do several man-years' work in a few minutes. The point was taken that the solution will be rigorous because we have the computational power in the Maritimes and there is no reason why a rigorous solution should not be made.

Another question that came up for the task force was: Should a computerized geodetic bank be created while this was underway? The answer was obvious, I think, to everyone, the data bank would enhance the presentation of results. It would allow for future expansion and the future needs of users as the uses of coordinates changed. If this kind of a thing ever came up again we would never be caught in a situation that we are in now of having to dig data out of closets, etc. A computerized data bank will be produced along with this project in the Maritimes.

Finally, if we look at software to be used, there was an extensive investigation by the task force and others looking into available software to do this. In the end, to meet the needs of the Maritimes, we felt that the solution that should be taken was to use L.R.I.S. and U.N.B. software wherever ppssible, to modify if necessary and, to develop jointly, any required software that was unavailable from each of these sources.

Planning stage was basically completed, although not by August 1976 as anticipated but was completed by the end of 1976. The data is an on-going problem and there is a proposal that sufficient field work for missing data or extra data to complete things as analysis is carried out. Software development is proposed for completion by the end of January 1978, and that is more or less on schedule. Getting the geodetic values, that is the national framework values that we will be using are being generated by Geodetic Survey of Canada. They will definitely be ready by the end of 1977. The sub-network analysis will be equivalent to a simultaneous solution of 36,000 sets of coordinates, which multiplied by two gives you a system of equations solving 72,000 simultaneous equations. It will obviously not be done at once.

Once all sub-networks are done you pack it all together and get a redefinition of the network. The data bank is an on-going problem. The same with maintenance, it is something that is being looked into and something that should be of concern to everyone. L.R.I.S. expects to have this whole project completed, that is the redefinition of the horizontal points, by the end of December 1978.

** ACADIA UNIVERSITY CORRESPONDENCE COURSES **

J. F. Doig sent us the following list of university courses offered by correspondence from Acadia University. These were taken from the 1977-78 listing, but most are courses which have been available for some time on a regular basis. Indeed, some of these courses have been offered for many years.

Surveyors living in the Halifax-Dartmouth metropolitan area are bountifully served by evening courses offered through the city universities. Those outside the city area might be very interested to know what is available at Acadia:

MATHEMATICS 100, DIFFERENTIAL AND INTEGRAL CALCULUS

MATHEMATICS 110, CALCULUS AND LINEAR ALGEBRA

MATHEMATICS 120, ELEMENTARY STATISTICS

MATHEMATICS 130, LINEAR ALGEBRA

MATHEMATICS 200, DIFFERENTIAL AND INTEGRAL CALCULUS AND AN INTRODUCTION TO DIFFERENTIAL EQUATIONS

COMPUTER SCIENCE 320, FORMAL TECHNIQUES OF SYSTEMS DESIGN FOR COMPUTER IMPLEMENTATION

ECONOMICS 100, PRINCIPLES OF ECONOMICS

ECONOMICS 260, EMPIRICAL ANALYSIS IN THE SOCIAL SCIENCES AND BUSINESS

GEOLOGY 295, HISTORY OF GEOLOGY

MATHEMATICS 010, INTRODUCTORY COLLEGE MATHEMATICS

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** COUNCIL MEETING REPORT **

The Council for the Association of Nova Scotia Land Surveyors held a meeting on March 18, 1978, in the Board Room at 5450 Cornwallis Street, Halifax, N. S. with thirteen members present.

The Secretary presented the Association's financial statement as of March 15, 1978, which was accepted by Council.

Council gave approval for Senior Membership to James D. Gunn, Keith Cormier and Ronald G. Wallis, and also approved six new Junior Memberships.

Reports were presented on the activities of: 1) Discipline Committee; 2) Continuing Education Committee; 3) Complaints Committee and 4) Continuing Education Seminars.

The Secretary presented a report concerning the Board of Examiners increase in examination fees and also student membership. It was suggested that the examinations and the solutions be printed in The Nova Scotian Surveyor.

Council confirmed the appointment of Mr. A. F. Chisholm as the Association's Appointee to the Nova Scotia Land Survey Institute Advisory Committee.

Mr. P. Milo requested clarification concerning the cut-off date of July 1, 1979 for registration as a surveyor-in-training for students at the Nova Scotia Land Survey Institute. With the present economic situation Mr. Milo expressed concern that students may not be able to find employment in Nova Scotia to enable them to carry out their apprenticeship time. It was decided that Mr. Milo would make a written request to the Council and to the Board for a ruling on the matter.

The proposed Land Survey Act was discussed and it was decided that any comments on the proposed legislation would be forwarded to Mr. Fred Roberts.

The date for the next Council meeting was set for June 2, 1978 and the next Special General Meeting is to be held on June 3, 1978.

** ZONE 6 MEETING **

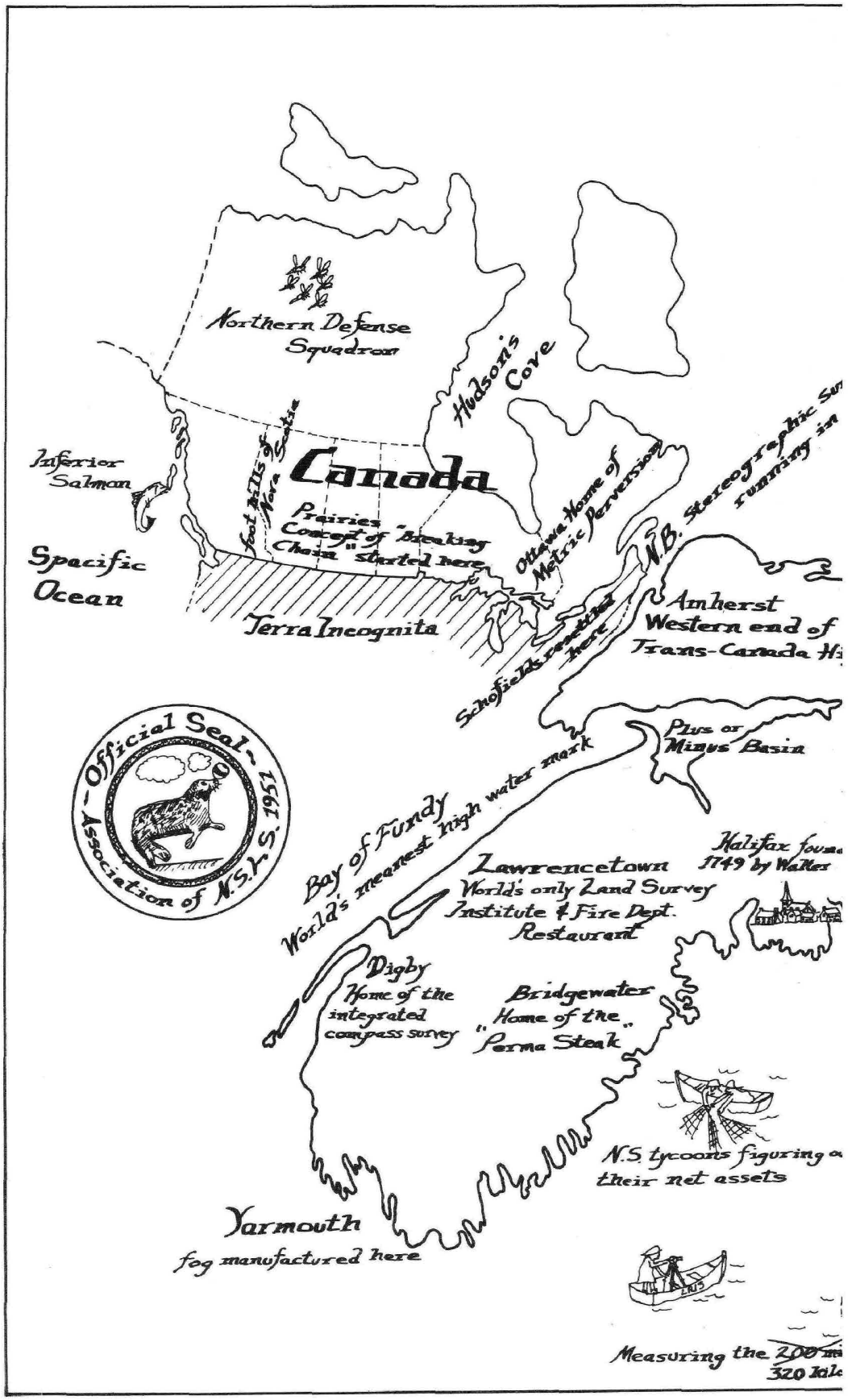
A meeting of Zone 6 was held at the Dartmouth Inn on April 4, 1978 with 24 members present.

Al Wallace presented a Liaison Report and discussed the possibility of Joint Seminars and joint office space with the Engineers. The letter from APENS to the Association of Nova Scotia Land Surveyors was also discussed. Mr. Wallace also reported on the liaison with the lawyers which brought out such points as Continuing Education for both and that more work is needed to be done by the Certified Plot Plan Committee.

Cyril Carlin gave a report on Continuing Education in which he discussed the success of the recent seminars and the future seminars now being planned. Mr. Carlin also pointed out that the Committee is in need of more members to help to carry out the work.

A report on Liability Insurance by Walter Rayworth was given by Gary Glenn and it was pointed out that the C.C.L.S. is investigating the possibility of national Liability Insurance coverage. It was decided that some direction on Liability Insurance from our Association be given to our members attending the upcoming C.C.L.S. Meeting.

A general update on Council activities was given by Gary Glenn in which he pointed out the following: - 1) Resignation of Al Grant as Secretary; 2) New Office Space for the Association; 3) 28 companies now have Certificates of Authorization; 4) Jim Doig's Case Book is now being printed and 5) Next Special General Meeting is to be held June 3, 1978.


Northern Defense Squadron
Hudson's Cove
Canada
Prairies
Concept of "Breaking Chain" started here
Inferior Salmon
Spacific Ocean
Terra Incognita
Ottawa, Home of Metric Perversion
N.B. Stereographic Sur
running in
Amherst
Western end of
Trans-Canada Hi
Schofields meeting here
Plus or Minus Basin
Bay of Fundy
World's meanest high water mark
Lawrencetown
World's only Land Survey Institute & Fire Dept. Restaurant
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1749 by Walter
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Home of the integrated compass survey
Bridgewater
Home of the "Perma Steak"
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World's best ferry Service
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Northern Lights caused by bright lights of Sydney
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Pope's Paradise
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P.E.I.
Sydney
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New Glasgow
World's largest range poles grown here.
Truro
N.S.
Atlantic Ocean
Now or formerly lands of Dept of Swamps & Bogs
Pirates once frequented this coast they now prosper in Upper Canada
Sable Island
Regan's Refinery
Point of Origin
(Grid Coordinates established with Sextant and "Big Ben")
A Good-Natured Plat
Shewing
Nova Scotia
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November 5, 1977 A.D.
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Drawn by - A. "Southern" Comfort

BAR ADMISSION COURSE
REAL ESTATE SECTION

** THE SURVEYOR AND THE LAWYER **

presented by Roy A. Dunbrack, N.S.L.S.
October 25, 1977
Halifax, Nova Scotia

My paper will primarily deal with the various ways in which the legal and surveying professions inter-relate in land transactions. I expect that each of you has had some exposure to surveying from which you have formed opinions and created your own idea of just what surveying is all about.

Surveying covers a very broad spectrum of science involving a number of different disciplines. I think it is worth while right at the outset to define some of the different disciplines and perhaps within the definitions, you will find the basis upon which your thoughts and ideas have been founded.

GEODETIC SURVEYING involves determination of the shape of the earth or a large part of its surface, and the precise definition of any particular point of the earth's surface. Through the application of geodosy, geographic reference systems are established which form a precise base to which other surveys can be related.

ENGINEERING SURVEYING is the specific survey discipline which serves as the basis of planning, design and setting out of geometric control for the horizontal and vertical alignment of man-made structures.

HYDROGRAPHIC SURVEYING involves the gathering of data for the study and mapping of our oceans, lakes and rivers for navigational and commercial purposes.

PHOTOGRAMMETRY is a branch of surveying which involves extraction of data from photographs by precise methods so that accurate mapping of an area can be obtained for use in the planning and design of large scale projects, such as highway systems, pipelines, transmission lines and efficient development of our natural resources.

CARTOGRAPHY - This is another branch of surveying which involves the preparation of maps, charts and plans which portray the data that has been collected by the various methods of surveying.

Now you might ask what has this to do with a lawyer or, in fact, surveying as you might understand the term. Each of these disciplines are involved when we talk of and consider boundaries of land and land covered by water.

Inherent in today's society, at least in our section of the world is the undeniable right of a person to own land and as you are all very well aware it falls to the legal profession to prove or disprove title to that person's land. No doubt in most cases in which you have been involved to date, a clear and unclouded title has been proven back even as far as the original Crown grant but, what good is a piece of paper proving that a person has good, clear, indefeasible title to a parcel of land if he doesn't know, where it is, the size of it, the configuration that it takes and its relationship to neighbouring properties. I expect you would agree that these are very important to anyone that has any dealings with land and that's where we come to the specialized discipline called "Land Surveying".

LAND SURVEYING is concerned with the establishment of boundaries, determination of the size and shape of particular parcels of land and its relationship to the world, otherwise expressed as "extent of title". The Nova Scotia Land Surveyors Act, which is Chapter 13 of the Acts of 1977, assented to by the Lieutenant Governor on May 19, 1977 defines "Professional Land Surveying" as the advising on, the reporting on, supervising of and conducting of surveys to determine the horizontal and vertical

position of any point, and the direction and length of any line required to control, establish, locate define or describe the extent or limitations of title.

Land Surveying is not just a branch of surveying. It encompasses all of the disciplines I have mentioned and as well, requires a knowledge and understanding of the basic principles of: - engineering and architectural design, construction procedures, town planning and municipal controls, real estate evaluations and land development, municipal acts with related regulations and by-laws, provincial statutes and common law respecting land transactions.

Inter-relationship between our professions can be a daily occurrence if you choose to specialize in real estate transactions. Time certainly does not permit an in-depth review of all of the situations that will arise, that require the services of both the lawyer and surveyor; however, for today's purposes we will attempt to touch on a few of the more common occurrences. Procedural requirements respecting mortgage transactions call for certification by a land surveyor in support of your recommendations for a loan approval. Although the particular instructions of the lending institutions may vary from company to company, generally they will require a plot plan, certified by a qualified land surveyor, showing the size and shape of the lands to be mortgaged, the lot number, civic address, the relative position of the building and other structures on the property to the lot boundaries, encroachments on or from adjacent lands and encumbrances, such as rights-of-way and easements that affect and run with the land. Also, the surveyor is to identify discrepancies that exist between the dimensions and directions contained within the legal description to that evidence found as a result of his survey.

In order that the surveyor may begin his investigation you will be required to supply a copy of the description that will be embodied in the mortgage document. If encumbrances exist it is your responsibility to provide the relevant documentation so that the surveyor can properly relate them to the boundaries and improvements and reflect their position on the plan. In the majority of cases and especially in the urban areas, the description will usually refer to a particular lot number as shown on a particular plan of subdivision.

Providing that the subdivision plan referred to is or can be made available to the surveyor there should be little difficulty in re-establishing the boundaries within a reasonable degree of accuracy, unless of course, the ground conditions are not compatible with the dimensions and directions called for in the description and on the subdivision plan. When this occurs you will no doubt have to further your involvement and we will have to further our survey. Together we must be able to identify the source of the problem and then find ways to resolve it. Each individual case encountered will have its own unique situation and there is no text to read, no legislated procedure or rule of thumb to use, that will allow you or I to make definitive decisions in these matters. The best we are able to do is to make an informed decision, and with societies' attitudes today toward consumerism and the professional we had better be correct in making that decision.

The single most important item to the land surveyor is the deed description, it is the basis upon which his decisions will be made. As mentioned earlier the land surveyor is required to determine the size, and shape, of the land parcel, and its relationship to other properties. The answers must, therefore, lie within the description. Unfortunately, a great number of descriptions, enshrined forever in our title documents, lack the required mathematical data or are so loosely worded that the land parcel is rendered incapable of positive definition. When this happens there are many ramifications that can cause upsets in agreements of purchase and sale, objections to title, overlapping boundary lines and thereby disputes, often times leading to litigation.

Rectification of these matters can be very time consuming and costly to the client as delays will certainly occur in, transferring the property, construction start up time and advancing of mortgage funds to support the project. Aside from the nightmare thought that we should not be party to causing him the problem in the first instance, I believe that the best service we can provide our client is early recognition if a problem does, in fact, exist. If we work closely together, surely we can

head off the problems and certainly not cause more grief for those that follow in our professions.

The whole matter clearly begs the question - how has this happened? Simply put, the answer is - someone screwed up. That someone is the person that either created or was party to the preparation of the legal description. Although possibly with the best of intentions, description writers of the past, be it the local justice of the peace, a lawyer, a storekeeper or any other learned person in the community, had a hand in that which is one of the more important functions of land surveying. These people, not being land surveyors, lacked the knowledge and training that goes with being able to translate the written word, into a real, positive and accurate position on the ground. Although I certainly must admit that some surveyors have also contributed to the mass of confusion that exists today in attempting to re-establish boundaries.

The difficulties and complexities of establishing boundaries are bad enough without having the problem compounded by those who, even in the face of being held professionally liable, persist in practising in a discipline in which they are not proficient. The general public is indeed fortunate that legislation is now in effect in this Province that prohibits those other than Nova Scotia Land Surveyors to describe the extent or limitations of title.

Subdivision development is another field of endeavour in which the lawyer and surveyor become deeply involved and must work as a team. Normally you and I will be working together when the developer is first contemplating his proposal and attempting to assemble the lands. He needs our collective abilities to put his land holdings in order so holdups will not occur when he is letting construction contracts, arranging financing and carrying out his ultimate aim, which is the conveying of lots, streets, easements and rights-of-way.

In the initial stage you will be abstracting title documentation on each of the land parcels making up the development area.

Your title information in the hands of the land surveyor will be correlated with other data and a sketch prepared showing the makeup and encumbrances of each of the various land parcels. It is at this very early stage that discrepancies and deficiencies in title, overlaps, shortages and gaps can first be noticed and segregated for resolution. You will continue on, to solve each of the title problems noticed and I will set out to determine the extent of title by carrying out a boundary survey.

In most cases your area of concern will be confined only to the subject lands, my responsibilities make it necessary for me to check out and test the conveyancing documents for each and every land parcel abutting our client's lands. All too often we find ourselves searching back through the chain of title of each adjacent land holding to reconcile and bring resolution to particular problems. From the boundary survey we will be able to report on any and all visible encroachments on or from adjacent lands and mathematically identify the perimeter boundaries of the lands to be developed. To these perimeter boundaries we must relate the mathematical position of easements and rights-of-way affecting the subject lands and also determine the precise relationship of existing streets that touch upon and are to continue into the proposed subdivision. At this point in our efforts you and I should be acutely aware of all of the title and survey problems that might affect the development. Resolution of these matters can be very time consuming and together we must proceed with all haste to prepare the necessary documents that could involve; line agreements, quit claim deeds, deeds of confirmation and quieting the title. Any or all of these procedures may be required in order to clear the title and permanently fix the boundaries to allow for a free flow of the conveyancing and funding that will eventually take place.

All of the information so determined is drawn on a plan which, in effect, is the frame upon which the entire subdivision will be designed and makes it possible to accurately compute the alignment of streets and the configuration and areas of the individual lots.

The subdivision plan is then prepared and submitted to local authorities for approvals and, when approved, becomes the source document for conveyance of streets, easements, rights-of-way and the individual lots. The plan also serves another very important function as it now becomes the basic document of record for representation of all legal boundaries and the source of technical data for subsequent re-surveys and second generation subdivisions.

Condominium development is relatively new to both of our professions and is a prime example of the lawyer and surveyor working together with a common aim, that of putting together a package acceptable for registration.

For the past number of years one of my partners, Douglas K. MacDonald, has been responsible for preparation of plans related to condominium development. I asked him if he would prepare a short write-up on the lawyer-surveyor relationship in putting together the registration documents. He informed me that he has put together a paper on condominiums and that it was directed toward the survey community. I reviewed his notes for the paper and felt that some of his explanations and comments would be of interest to the lawyer. Bear in mind that these comments were destined for land surveyors and only intended to give an overview of matters considered important in surveying. If you don't agree with his understandings I am sure he would welcome your comments. Doug's introduction notes start off.....

"The surveying community in Nova Scotia is being asked, with increasing frequency, to participate with the developers' team in bringing new or existing complexes under the Nova Scotia Condominium Act. With land values, construction costs, and mortgage rates inevitably increasing, it appears obvious that demand for this type of housing will continue to increase in the years to come. As a result of several years involvement in this field we will attempt to briefly comment on some of the questions which come to mind when first confronted with the request to carry out the condominium survey.

Black's Law Dictionary defines the term "condominium" as "co-ownership or joint-ownership". Concise, but not overly definitive. A more expressive definition to our mind is found in the Colorado Condominium Act, which states that condominium ownership "shall be deemed to consist of a separate estate in an individual air space unit of a multi-unit property, together with an undivided interest in common elements".

Thus a purchaser acquires the fee simple ownership of an air space bounded by the walls, floor and ceiling of a unit. He will also acquire, in addition to the fee simple ownership of the above air space an undivided interest in the general common elements of the entire condominium. The general common elements are those items which must be shared by all owners and are essential for the continued existence of the complex, such as the underlying land, structural components of buildings, roadways, walkways, elevators, heating, ventilating, water and sewer systems, etc.

In most cases the purchaser will also acquire an exclusive interest in certain items referred to as limited common elements. These are items appurtenant to, or useful to the normal use of his unit - and include balconies, patio areas, parking spaces, storage lockers, etc.

To summarize, a condominium comprises three grades of "ownership":

1. Fee simple, being the unit air space.

2. Co-ownership, being exclusive use of portions of the limited common elements.

3. Co-ownership being an undivided interest in all of the general common elements.

There are occasionally items such as swimming pools, tennis courts, etc., which usage is restricted to a specified group of owners such as the unit owners of a specific building in a multi-building complex. This, however, is really just a

mutation of a limited common element with the exclusive usage conferred on a group rather than an individual.

Therefore, we see that a condominium is most clearly defined by the type or types of ownership it confers on the purchasers rather than on its physical manifestation."

Doug goes into quite some detail as he explains the numerous survey requirements and procedures, the results of which can be seen on the condominium plans. He then explains the liaison with the owner and I think it is worth reading as it will give you an insight into some aspects of the surveyor's involvement:

"Discuss all aspects of the project with him to ensure there is no misunderstanding as to requirements:-

You will need the following information from him:

(a) Size and configuration of exterior patios, if any.

(b) Size and configuration of exterior recreational amenities, if any.

(c) Number of parking spaces to be assigned to each unit - which spaces to which units.

(d) Is there to be defined guest parking spaces.

(e) Are balconies to be part of unit or exclusive use.

(f) Is he satisfied with your choice of structural components used for physical (as opposed to mathematical) definition of unit boundaries.

(g) Are parking areas and exterior patios to be defined "as built" or predesigned and "laid-out". If the latter, be sure he understands that you must do the layout as you will be required to certify their position.

(h) Does he have a "trade" name for the condominium development that is to be reflected in the title block of the plans.

(i) The names of his lawyer, architect, consulting engineer(s), contractor and personal agent from whom you can obtain definitive information on matters outside the owner's personal competence or on any matter arising when he is unavailable for extended periods.

(j) His time deadline for registration. These deadlines are often tightly tied to very heavy financial commitments, particularly if he is "cascading" funds from one project to the next. Failure, on your part to meet his registration deadline could severely strain future relations.

He then breaks into the subject of liaison with the lawyer:

Review your understanding of the owner's requirements with the lawyer to identify and resolve any conflicting of ambiguous instructions.

Establish a clear understanding of the division of labour:

(a) Who will draft unit boundary descriptions.

(b) Who will establish the official numbering system for units and appropriate identifiers for patios, parking area, lockers and other exclusive use areas.

(c) Who will draft descriptions of limited common elements.

(d) Who will deal with the Deputy Registrar of Condominiums in order to reserve condominium number and obtain decisions on specific matters, etc.

(e) Who will deal with the Nova Scotia Power Corporation and Provincial, County and/or Municipal Authorities regarding their requirements for easements, etc.

The first two items (a and b) are best handled by the surveyor. The last three items (c, d & e) may be handled by either party unless the specifics of the requirement is clearly that of a legal or survey nature.

Request the solicitor to provide you with complete copies of all relevant legal documents including the abstract of title for the property.

Agree to exchange draft copies of material being generated as soon as possible. This enables the other party to correct or comment as appropriate and protects against misadventure by either party. The material exchanged, of course, would be limited to that material having a direct bearing on the work of the other.

Agree to inform each other promptly of any previously unanticipated problems which may arise which could affect the approach being taken or the scheduling of the product.

Ensure that each party is aware of the other party's schedule and estimated completion date.

Copies of all letters flowing between the solicitor and surveyor should be forwarded to the owner for his information."

Some of Doug's general comments are:

"(1) It generally will take two to three months to put the complete registration package together.

(2) If units are already occupied the owner must notify the tenants in writing, giving 24-hours advance notice, of the time the surveyor is scheduled to enter the unit to perform his survey. The owner or his responsible agent must be present at all times to prptect the surveyor from unwarranted claims by tenants with respect to theft or damage.

(3) Expect delays in obtaining information on rights-of-way and easements and in particular those easements containing buried utilities.

(4) Allow at least two weeks for the Department of Lands and Forests to examine the survey plans.

(5) Check owner's and lawyer's vacation schedule as they will inevitably be away when you need them."

I am confident that if the lawyer and surveyor make a concentrated and coordinated effort and both fully appreciate each others responsibilities and the requirements as set out in the Act and regulations, little difficulty will be encountered in putting together a package acceptable for registration.

There are a number of other times when the lawyer and surveyor work together as a team for a common client but, unfortunately, time does not permit us to delve into the intricate details of each; however, I will briefly mention a few more and just skim across the top.

If your client is an expropriating authority or you are employed by such authority, you will be, or at least should be, working with a land surveyor when the limits of the area intended for expropriation are being decided upon. Identification of ownership, the extent of their respective land holdings and the acreage involved are integral parts of the procedure.

Incorrect information, insufficient mathematical data and indefinite description writing, unfortunately, is common practice with some of the authorities. These are the contributing factors in rendering the expropriated limits extremely difficult and costly to re-establish and more often than not, incapable of positive definition on the ground. In my opinion, it is unfair and unjust for any expropriating authority to place the heavy burdens of cost of reconciliation of discrepancies, deficiencies and ambiguities on the shoulders of the person who has had a portion of his lands expropriated.

It may be that your client is the person who has had his lands expropriated and you are looking to the courts to settle the compensation award. Depending upon the nature of your client's lands, information gathered by your surveyor could lend heavy support to your case. The contentious matter may be the acreage involved, a proper survey would soon settle the matter. Many settlements of compensation are based upon the proximity of the land to available services and utilities. The land surveyor can provide this information to assist in evaluation of the lands.

When your client is involved in litigation relating to traffic accidents you may deem it necessary and efficacious to have a survey plan prepared to show in detail the accident scene. On occasion the plan may point up certain conditions in your favour which you would certainly pursue and thereby gain the brownie points you need to win the case. On the other hand the contents of the plan may enable you to recognize a losing cause and reach settlement before resorting to the courts and attracting heavy costs for your client. In the court room the surveyor can be called upon as an expert witness and his opinions and observations relating to the accident scene would be respected as unbiased.

You may have a client who is involved in a boundary dispute with a neighbour and you will be relying on the evidence of the land surveyor to assist you in giving direction to your client. I have been witness to boundary disputes where merely inches were involved. Usually by the time the dispute reaches your desk and mine, such intense hostility has developed that the only apparent resolve is a walk through our courts for a decision.

When the case has developed because of overlapping boundaries and whether the problem stems from ambiguities in title, indefinite description writing or lack of survey control, you and I must take the battling participants firmly by the shoulders, sit them down together and explain the facts of life.

By adopting the bedside manner of a country doctor and yet apply the firmness of a baseball umpire, we should be able to convince them to enter into a line agreement. You and I would then prepare the necessary documents for that line agreement. If we encourage such a situation toward the courts we deserve thereafter to be referred to as ambulance chasers.

When your client is about to purchase a piece of land and a survey plan is not available, you might better serve his needs by recommending a boundary survey. The survey could point out and identify encroachments and possible claims relating to adverse possession. Also it will provide the accurate area of the parcel upon which the sale price may be based. Another very important reason for the survey lies in the fact that municipal zoning regulations and by-laws call for certain minimums respecting lot frontage and lot area. The survey might identify deficiencies in the frontage and/or area that would in effect nullify the intended use of the land. If your client is paying for land on a per acre or per square foot basis the survey becomes an absolute necessity.

When a person is entering into or closing a land transaction, the last thing he needs is to be surprised. In recent years I have been involved in real estate transactions where the word "surprise" has to be considered an understatement.

One such case involved the ourchase of a parcel of land that had always been expressed as containing 100 acres. Acceptance was made by both parties of an appraisal in the amount of $1,000 per acre. The agreement of purchase and sale was drawn up

that embraced the reduced sale price of $100,000. The conveyance was executed whereupon the new owner promptly had a boundary survey carried out. As it ended up the survey proved a total of 180 acres. An $80,000 overnight profit on a land transaction isn't too hard to take.

I was recently involved in a land transaction where the same procedure was used in establishing the sale price. The vendor made the conveyance on the basis of 45 acres. The survey carried out after the transaction, proved 86 acres.

Perhaps in these two cases, with you acting for the purchaser, you wouldn't get any thanks if the acreage was determined before the closing date. On the other hand, if our land tenure system is so loose, is it not conceivable that your client could just as easily end up on the short end of the stick.

Not so very long ago one of our clients in the land development business dropped into our office to pick up a plan we had prepared for him sometime earlier. In general conversation with him he told me he was heading down town to sign an agreement for the purchase of a parcel of land purported to contain 40 acres. I showed him a property index plan that we had prepared that would include the land parcel he was about to purchase. The price in the agreement had been set at $60,000 with no qualifiers. With the cost working out at $1,500 per acre for the 40 acres the developer thought it a worth while purchase. From the plan we discovered that the parcel could not contain any more than 21 acres. Naturally he didn't enter into the agreement and he appeared quite genuine when he thanked us for pointing out the shortage and saving him $28,500 in land acquisition costs.

Other times that we will be working together include applications made to municipal authorities for, re-subdivision, zoning, re-zoning and lot consolidation: Petitions made to the province under the Quieting of Titles Act and applications to the Federal Government under the Navigable Waters Protection Act. In all cases a proper survey must be carried out and a survey plan prepared to accompany the submissions.

In closing, I wish to express my thanks to you for hearing me ou
out to show how and when our two professions inter-relate, and I sincerel
this report has been of assistance to you. I am confident that if we have a
tion and understanding of each other's responsibilities and problems, the r
clients will be better served.

* * *

** HISTORICAL REVIEWS **

presented by D. L. Parker

ADDITIONAL REMARKS ON THE RUNNING OF LINES

The great secret, the grand security of success in surveying, is to run the course, to run the lines exactly straight from bound to bound, and to measure with accuracy the distance between them. To obtain these results, everything depends upon the quality of the surveyor's instruments, and on his skill and dexterity in using them.

As lands are frequently bounded by curved, as well as by straight lines, it is the duty of every surveyor to make himself thoroughly acquainted with the properties of curves.

It is customary to bound lands on rivers, roads, &c. When lands are to be bounded by rivers, great care should be taken to place the bounds at a proper distance from the edge of the stream or shore. Banks are liable to the undermined, and if the bound be too near the brink it may fall in, and leave its exact position in uncertainty. From this source disputes frequently arise, leasing to lawsuits, and resulting in the loss of the property, peace, and character of the parties, and the reputation of the surveyor.

Difficulties likewise frequently arise from bounding lands upon roads. The road is liable to be changed for the purpose either of straightening or levelling it, and their boundaries are in danger of being removed. Surveyors, therefore, should, as far as possible, measure from known and well established boundaries, and run in straight lines. It is particularly desirable that the place of beginning be distinctly marked, and not liable to be removed. Lines then would be easily retraced either by the surveyor by whom they were run, or by his successors.

In the tracing and retracing of lines, great care should also be taken to follow closely the original line, especially if it be straight. No trees should be blazed except those which were blazed before. When individuals unacquainted with the properties of lines, mark trees which stand perhaps two rods to the right or left of the original line, interested parties may be deceived, or an opportunity afforded to the litigious to embroil his peaceful neighbour in the anxieties and losses of a lawsuit. The surveyor too comes in for a full share of the blame. No unqualified or unauthorized person has any right to take such liberties. By such improper conduct peaceful settlements are frequently thrown into confusion, and evils of incalculable magnitude have been produced.

From "A Treatise on Theoretical and Practical Land Surveying" by Alexander Monro, Land Surveyor, Pictou, Nova Scotia, dated 1844 and on microfilm in the Legislative Library, Province House, Halifax.

* * *

ARGUMENT IN FAVOR OF COMPASS SURVEYS

"With respect to the comparative merits of these different methods of making a survey, that by the Theodilite or plane table, and that by the common compass, there are different opinions. Many of the surveyors from Europe, at their first arrival, condemn the needle as being in its nature too uncertain to be depended upon for an accurate survey, while the natives of America, as uniformly prefer the compass. This difference arises from difference of circumstances in their several countries.

In England the ground is clear, and valuable, and observations can be taken by instruments to considerable distances. Though a plan is made, it is never depended

upon for distances, or areas of ground. These are all found by arithematical calculation. This is the universal mode of surveying estates, and for this purpose a Theodolite is undoubtedly the most proper instrument. When a survey is to be made in the woods of America, the case is widely different. Distant points cannot be seen from each other, and the surveyor is necessarily thrown upon the needle for guidance. It is not, however, so bad a guide as many suppose it to be. It is true it may not settle within a quarter of a degree of the meridian, but in running a mile through woods, the instrument has to be set thirty or forty times; and though at each setting, the course given may be a little out of the true line, the mean of a great number will be likely to leave quite an imperceptible error.

A similar result takes place in the survey of a road, that is each course may not be quite accurate and the mean will come near the truth. In one particular it has an advantage over the Theodolite; if a mistake is committed in noting the course, it goes no further, but if made with the Theodolite, it is propagated through the whole of the remainder of the survey."

From A Treatise on Roads in two parts. Part First on Surveying and Engineering by George Wightman, Halifax 1845 on microfilm in the Legislative Library, Province House, Halifax.

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** OUR COURTS, THE CONDUCT OF A TRIAL ** AND THE SURVEYOR'S ROLE IN IT

*by Robert K. Carleton**

Sooner or later in one's life, he or she is usually called upon to testify in Court. It may be as a Plaintiff suing as a pedestrian negligently run down by a Defendant's motor vehicle; or as a Defendant who as a vendor has refused to go through with a property transaction with the purchaser because of second thoughts, as an accused who has driven his car after having consumed one too many at the Christmas office party; or as a witness who just happened to be in the bank when it was held up, or finally as a debtor who just got in over his head financially with the recent illness in his family and in the management of his earnings.

The court itself may be a humble small claims court or a more austere supreme or superior court found in most all of the Provinces of Canada.

For the person who has never been in any court before or even for the person who has been in court but never has been in the witness box, the mere thought of being in that witness box to give evidence conjures up all types of fears, anxieties and apprehensions. Visions of being made a fool of, of being crossed up, of being tongue tied or being tongue twisted pass through the mind. Indeed most opinions of courts, witnesses and evidence held by many Canadians result from having seen court room dramas on television or the local theatre, of Raymond Burr brow-beating a villain into a confession on cross examination or E. G. Marshall getting an admission from a tearful young girl that she only heard the shot and did not see who pulled the trigger.

In fact, our Canadian courts are quite different both in layout and in procedure from many of the courts that are setting for film and television dramas. In each province there are higher and lower courts; the former usually known as supreme or superior courts are reserved for the trials of those accused of the most serious crimes and for the adjudications of civil disputes of greater financial consequence. The lower courts usually known as county or district courts deal with crimes carrying less severe penalties and civil cases having a less pecuniary involvement. In addition, there are provincial courts or magistrate's courts which deal mainly with lesser criminal offences and with breaches of provincial statutes such as those regulating the use of highways and the consumption of spirits or breaches of municipal by-laws such as anti-noise by-laws or construction safety regulations.

Each province has an appeal court in which a party aggrieved by the decision of a judge of one of the above-mentioned courts can have such decision reviewed by three or five judges sitting together on the appeal who might either uphold the former judge's decision, vary it or reverse it. Finally there is the Supreme Court of Canada. This Court too is an appeal court only, and a party who is not satisfied with the decision of the appeal court of a province may under certain circumstances appeal such decision to the Supreme Court of Canada who again may uphold, vary or reverse the decision of the provincial appeal court.

The latter two courts referred to, the Supreme Court of Canada and provincial appeal courts do not hear evidence of witnesses. They refer to laws found in the statutes and in former court decisions; they review the transcripts of evidence taken at trial and they decide on the success or failure of an appeal after such references. A party, therefore, would never be called upon to give evidence in such a court. The only one exception to this that can be recalled is the Steven Truscott case where in 1968, the Supreme Court of Canada as a result of Miss LeBourdais's book reviewed this case and reheard the evidence.

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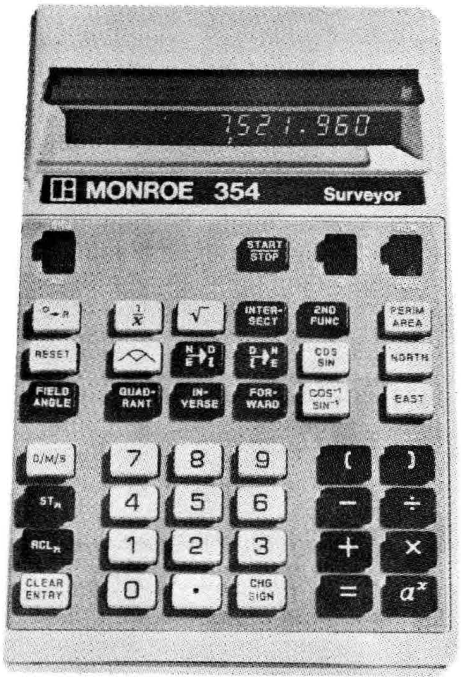
354 Micro Surveyor



You're looking at the Monroe Micro Surveyor—the very first hand-held, battery-powered programmable micro computer specifically designed for the surveying professional.

The Micro Surveyor does any kind of calculation you could ask for. Right there in the field. When and where you need it. Including all kinds of intersections, vertical angles, circular arcs, you name it. The Micro Surveyor knows what to do when you feed it bearings, azimuths, and field angles. It does direction/length to latitude and departure conversions. And vice versa. And, as you work your way around a traverse, the machine is accumulating the total area, including curved sections, and perimeter.

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And on those rainy days? The Micro Surveyor is a draftsman's dream. Helping with subdivision layouts, cut and fill, and every other type of calculation you could get into. And, because it's so compact, the Micro Surveyor is right at your fingertips on the drafting table.

Although he may be in any one of the types of courts above-mentioned, either in his personal capacity as Plaintiff or Defendant, accused or witness, etc., a surveyor because of his profession is often times called upon to be a professional or expert witness. In such case, he may be called upon to give evidence on behalf of one of the parties to a law suit relating to the work he has done on behalf of that party, or he may be called upon to give opinion evidence based on the testimony of other witnesses as to what procedure should have been followed in relation to a certain survey or as to what result should have been obtained upon certain given facts in evidence. Before going into the dimensions of an expert witness such as a surveyor on the witness stand, it might be useful to take a glance at the cast of characters who participate in these real court room dramas.

Firstly, there is the judge. He is by far the most important person in the court room. He has the leading role so to speak for without him there can be no trial. He is probably gowned usually in a black robe with a red, blue or purple trimming. He may or may not wear a hat but he will definitely not wear a wig as the latter have not been worn in Canadian trial courts for many years. Some judges are stone-faced, some have a sense of humour, some grasp the issues quickly, some are slow to catch on, some are polite to counsel and witnesses and some are constantly berating them; however, they do have one item in common and that is to hear the facts from the witnesses and to accept certain evidence and reject other evidence in case of conflicting evidence; to apply the law relevant thereto and to attempt to render a just decision thereafter, while all the while maintaining proper procedure and decorum in the court room. The judge is located at the front of the court room on a raised dias called the Bench.

Secondly, there are the parties, the plaintiff and the defendant, or in the case of a criminal proceeding, the Crown and the accused. The plaintiff and the defendant have waited either anxiously or with some misgivings for their day in court. They usually sit beside their lawyers or counsels, as they are commonly referred to, at the tables in front of the Bench.

Thirdly, there is the lawyer or counsel for each of the parties. They have been on the case for months; through preliminary attempts to negotiate settlement; through all the pre-trial procedures and manoeuvres. They are familiar with each other's client's case and know only too well the strengths and weaknesses of their own. They are usually dressed in black robes not unlike the gowns formerly worn by school masters.

Then there is the suppporting cast, the clerk of the court who announces the arrival of the judge and takes care of certain procedural problems such as the taking of exhibits from counsel for the parties, the court reporter who takes everything said down in shorthand, the witnesses subpoened by the lawyers for the parties to give evidence on their respective behalves, the court attendants who perform perfunctory tasks such as holding the doors open, assisting the judge to sit down, opening windows and beckoning spectators to stop whispering. Finally, in some cases, there is the jury, men and women who are to adjudicate upon the facts.

In criminal trials the jury consists of 12 jurors and they must return a unanimous verdict as to the guilt or innocence of the accused. In a civil trial, the jury consists of six jurors and a decision by any five is sufficient.

As this article is being written there has been a suggestion made by The Honourable Arthur Wishart, Attorney General of Ontario, that the civil jury system in his province be discarded as it is costly and slows down the administration of justice. It remains to be seen what will eventually happen.

Non-jury trials open with one of the lawyers, usually the plaintiff's lawyer, introducing himself and his adversary to the judge and thereafter giving a short unbiased resume of the important facts and issues of the case. At this point, the judge takes a couple of minutes to review the record and to make himself familiar with the agreed upon and disputed points in the respective presentations of the plaintiff and the defendant.

Thereupon the judge will advise the counsel for the plaintiff to call his first witness. The first witness for the plaintiff is usually the plaintiff himself but need not be. After the counsel for the plaintiff has put all questions he considers relevant and necessary to the plaintiff or the witness in what is called direct examination, counsel for the defendant will cross examine the plaintiff and is permitted under the rules of the court to ask leading questions which imply an answer of yes or no, i.e., "You didn't see the defendant's vehicle till you were five feet from it, did you?" The counsel who has summoned a witness to give evidence on behalf of his client is not permitted this privilege of cross examination as it would amount to putting the answers that he wants in the mouths of his witnesses. Finally, in the evidence if there are matters upon which the judge is not entirely clear, he may put questions directly to the plaintiff or any other witness. The plaintiff is then followed by the remaining witnesses that he has summoned to support his case. The witnesses usually proceed to the witness box in chronological order or such other order as counsel considers to be best for the presentation of his client's case.

In most trials the judge orders the exclusion of all witnesses from the court room at the commencement of the trial inasmuch as should they be permitted to sit in the court room while other witnesses give evidence, their testimony is apt to be influenced by the testimony which has preceded it. The only exception to this rule is the expert witness who must hear all the facts in order to give his opinion thereon.

When the counsel for the plaintiff has called all his witnesses and these witnesses have been cross examined, and the plaintiff's case has been concluded, he will advise the judge that he has concluded his case. At this point it is the defendant's turn. His counsel usually opens his case with the defendant in the witness box and follows the defendant with the remaining witnesses. While the defendant's case is being presented the roles of counsel are reversed and the Counsel for the plaintiff has the right to cross examine or lead the witnesses.

Throughout the course of the trial there may be many times when one or the other of the counsel will interrupt or object on a well-founded or ill-founded objection raised on the grounds of relevancy or admissibility of the evidence being adduced by his adversary.

Finally after the defendant's evidence is in and his case concluded the plaintiff is given an opportunity to reply or to rebut the defendant, the plaintiff's counsel may or may not take this opportunity to reply, but should he, then he is restricted to actually rebutting what was stated by witnesses for the defendant and he is not permitted to introduce new evidence.

After all the witnesses have been heard and all the exhibits introduced, counsel for the plaintiff and for the defendant make their submissions to the judge in which they respectively point out the important facts and relevant law of their own case and the weak points of their opponent's case. The judge will thereupon give either a decision orally from the Bench or if the issues are complicated and he wishes to read certain case law referred to him by counsel, he reserves his decision and in such instance, the parties must wait a month or more until the judge hands down a written decision.

What role does a surveyor play in this drama? How should he prepare himself and how should he conduct himself when he is called to the witness stand?

Usually the surveyor is called upon to provide evidence involving disputes with regard to fences or boundaries and although a surveyor may be very competent in his own profession, when he becomes a witness, he is playing hockey in the opposition's rink so to speak and the few following words of advice should assist him when called upon to testify in a court of law.

The surveyor, as any other witness, should understand every question put to him before answering. It is not uncommon for a witness to ask the counsel who has put a question to him to have the counsel rephrase or repeat the question so that he can fully appreciate it. This applies to both direct examination and cross examination. A witness should never guess at an answer nor should he give a definite answer

when he is unsure. If a witness doesn't know the answer, he should frankly say: "I do not know". If he is unsure he should qualify his answer by saying "I think so" or "I believe it to be so".

A witness should never allow himself to become angry or sarcastic. Usually when a witness, especially a surveyor, is subpoened to give evidence on behalf of one of the parties he is paid well to appear in court on that party's behalf. Not only is a witness more likely to give an incorrect or misleading answer should he become angry or sarcastic, but is also quite apt to fall into disfavour with the judge. This will certainly not help his party's case.

A witness should never answer more than he is asked. There is no need for a witness to "put his foot in it" and ruin the case for the party who called him by answering more than he is asked to answer. Moreover, when he answers more than is required he is apt to introduce irrelevant side issues which will only confuse the judge unnecessarily.

A witness, if cross examined about conversations with his party's counsel prior to trial, should admit frankly if in fact he has had discussions concerning the case with his party's counsel prior to trial. In fact, any witness, and especially an expert witness such as a surveyor, should sit down with the counsel for the party who is calling him as a witness some days prior to trial to go over in detail the evidence which it is proposed he give at the time of the trial and to discuss plans, surveys, field notes, etc. so that there are no unpleasant surprises at the time of the trial.

Should a witness have made a mistake in his evidence, it is imperative for him to point out the mistake should it become apparent further on during his testimony. The judge appreciates that everybody is human and fallible at times and he will not consider such error as an attempt to mislead.

A witness should be familiar with the exhibits which will be introduced through him, that is to say, in the case of a surveyor he should be familiar with the plans, surveys and field notes in particular. Furthermore should there have been mistakes and resulting changes in his field notes or other original documents, the changes should be made by striking out what is incorrect and by substituting inter lineations and additions. Erasure marks are always subject to the hypothesis that they were made in order to suit a party's case at the trial.

Witnesses should always be dressed with a shirt, tie and suit coat except where it is impossible for them to do so, firstly because it is the polite and proper way to appear in court and secondly, because court officials, including the judge, are more impressed with witnesses properly attired. It has only been in the last three years that Ontario courts have permitted women to appear in courts without hats on. Even today most female witnesses still wear hats.

A witness, even an expert witness, should try to use layman's language as much as possible. Doctors are usually greater offenders than surveyors in this respect but if it is necessary for a witness to use technical terms common to his profession, he should also describe them in layman's terms so that the judge and the parties' counsel will know exactly to what he is referring.

In jury trials, a witness must never discuss his party's case with one or more jurors during any recess nor should a witness who is in the middle of his evidence when the trial has been adjourned temporarily discuss his evidence at that point with the counsel for his party.

Most important of all, a witness must be completely familiar with the evidence he is to give prior to going to the court room. This can be accomplished by sufficient attendances with the party who is calling him as a witness and with that party's counsel. A witness should never go on the stand "blind".

Finally, before concluding this article, a word should be mentioned regarding fees for the expert witness. In Ontario, at time of writing, expert witnesses are entitled by law to $25.00 per day plus travelling expenses of $ .10 a mile. In practice, a greater compensation is usually provided by the party calling the expert witness than the sum of $25.00. This should be negotiated with the party calling him prior to trial if possible. Nonetheless, when a witness is served with a subpoena which is an order of the court, he must obey it and attend in Court at the place and time indicated even though he may find that the amount he receives as a witness is considerably less than what he would make in an ordinary day practising his profession.

* * * * *

A SURVEYOR'S GET TOGETHER WOULD NOT BE COMPLETE WITHOUT TED AND ALBERTA

MURRAY AND KEITH WITH REPRESENTATIVES OF THE CANADIAN COUNCIL OF LAND SURVEYORS

STRETCHING THE TAPE - - -

How to Kill our Organization in 13 Easy Steps -

1. *Stay away from all meetings.*
2. *If you do come, find fault.*
3. *Decline office or appointment to a committee.*
4. *Get sore if you aren't nominated or appointed.*
5. *After you are named, don't attend board or committee meetings.*
6. *If you get to one, despite your better judgment, clam up until it's over.*
7. *Do no work if you can help it. When the old reliables pitch in, accuse them of being a clique.*
8. *If everything is strictly business, complain that the officers are ineffective and the meetings are a waste of valuable time.*
9. *Oppose all banquets, parties, and shindigs, as being a waste of the members' time and money.*
10. *If everything is strictly business, complain that the meetings are dull and the officers are a bunch of old sticks.*
11. *Never accept a place at the head table.*
12. *If you aren't asked to sit there, threaten to resign because you aren't appreciated.*
13. *Don't rush to pay your dues, let the Treasurer and Directors sweat; after all, they wrote the budget.*

The above has probably applied to some of us at one time or another . . . . think about it.

* * *

After Joey Smallwood got back from Flower's Cove without the votes he expected, he was singing: "Where have all the flowers gone."

* * *

BONES - The Body of an Organization has Four Kinds of Bones:

1. *The Wishbones: Who spend all their time wishing someone else would do the work.*
2. *The Jawbones: Who do all the talking but very little else.*
3. *Knucklebones: Who knock everything that everyone else tries to do.*
4. *The Backbones: Who get under the load and do all the work. To which of this framework can you honestly say you belong?*

* * *

COMPLETE LISTING

The little woman had spent the whole afternoon, and made a real effort to balance up her cheque book. When her husband came home, she handed him four neatly typed sheets, with items and costs in their respective columns.

He read them over carefully: "Milkman, $11.25, cleaners, $4.67, etc." Everything was clear except one item reading "ESP, $24.89."

Warily he asked, "What does ESP mean?"

She smiled, "Error some place."

* * *

An old fellow, at 80, went to his doctor for a check-up. He told the doctor that three months ago he got married to an eighteen year old. The doc told him he couldn't take all that strain at his age and that he should get a boarder to live with him.

Old fellow: "I did get a boarder, just three weeks after the wedding but a lot of good that did. Now, the two of them are pregnant."

* * *

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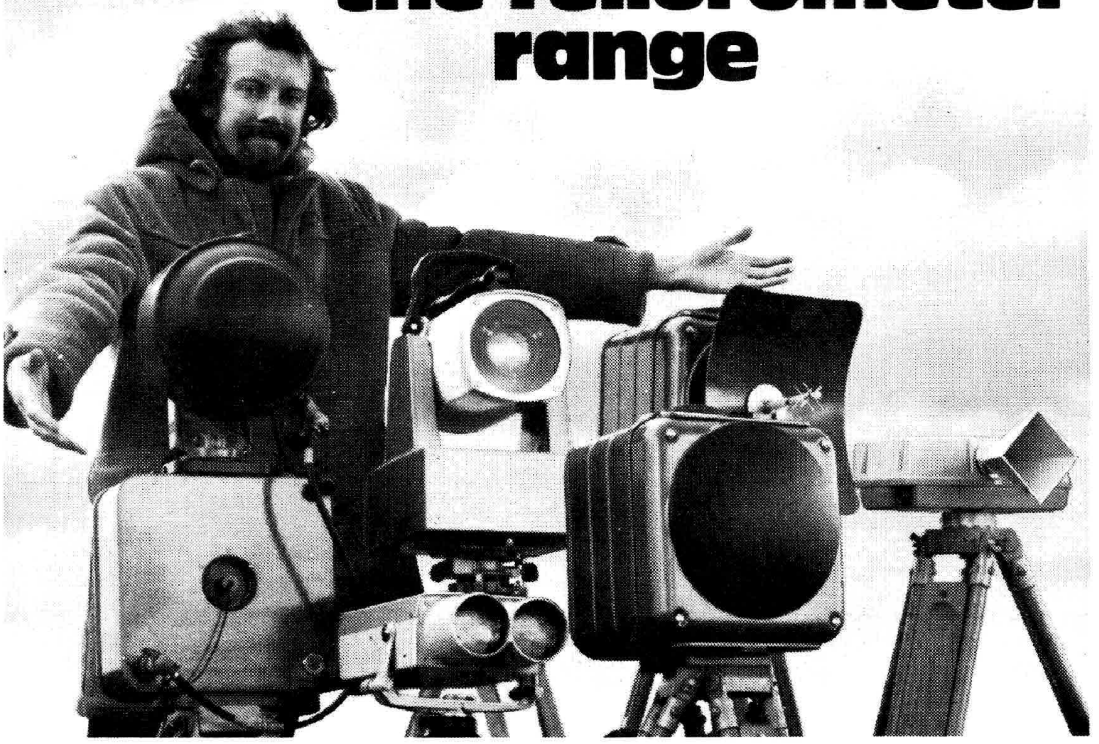

Such are the hazards of being a pioneer that the name Tellurometer should be taken by some people as the generic term for all Electronic Distance Measuring equipment. But there is, of course, only one Tellurometer Company and range of equipment, albeit a large one with an increasing number of different models suitable for practically every application.

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