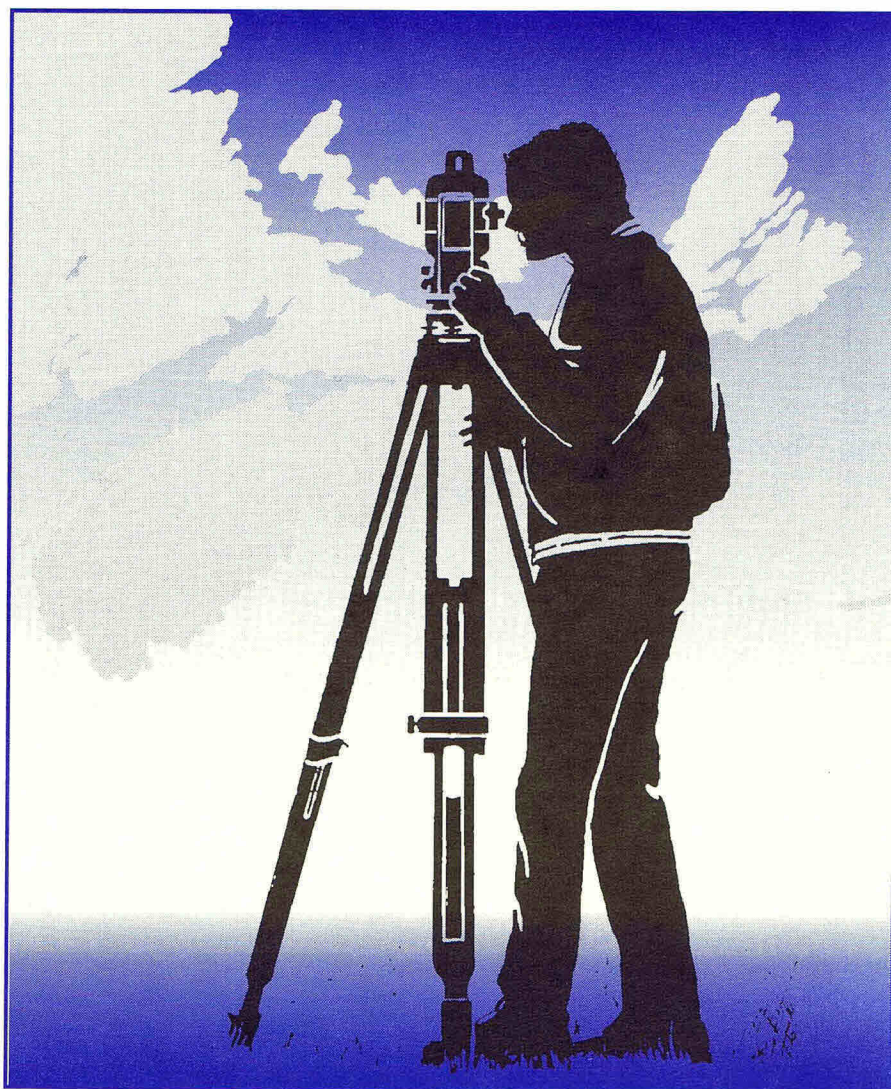


THE NOVA SCOTIAN SURVEYOR

Vol. 53

Fall 1992

No. 142



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THE NOVA SCOTIAN SURVEYOR

Vol. 53

FALL 1992

No. 142

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS

159 Portland Street, Suite 301
Dartmouth, Nova Scotia B2Y 1H9
Telephone: 902-469-7962; Fax: 902-466-2052

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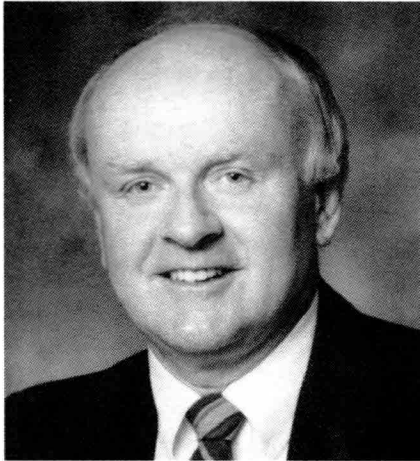
CONVENTION '92

NOTICE OF ANNUAL MEETING

Pursuant to By-law 5.5 you are hereby given notice that the 42nd Annual Meeting of the Association of Nova Scotia Land Surveyors will be held at the Old Orchard Inn, Wolfville, Nova Scotia, beginning Friday, November 13, 1992 at 9:30 a.m. and continuing on Saturday, November 14, 1992.

James D. Gunn
Secretary
Association of Nova Scotia Land Surveyors

PRESIDENT'S REPORT



Are there stages of the land development process that can legitimately be performed by either a professional engineer or a professional land surveyor? If so, what is the extent of this region of overlap? This issue has been central to discussions held over the past four years between APENS and ANSLs, initially by the Surveyors - Engineers Liaison Committee, and more recently by the executives of each association.

As is frequently the case, these deliberations started out with some hope and enthusiasm on both sides, but it soon became apparent that major obstacles existed, and for many months little or no progress was made. The definitions of "surveying" and "professional land surveying" which our membership passed at the 1990 annual meeting were not considered acceptable by APENS. To the engineers, our definition did not seem to limit professional land surveyors to doing only legal surveying under the authority of our Act. It is a credit to both associations that they persevered and continued discussions, with the result that APENS could find our definitions acceptable, subject to the changes indicated below.

The paragraph following consists of the definition passed by our members in 1990, with changes requested by APENS added and underlined:

(a) "practice of surveying" means

- (i) the determination, establishment or recording by any means of the position of points or natural or man-made features on, over or under the surface of the earth,
- (ii) the determination of the form of the earth,
- (iii) the survey of any networks of control survey markers and the survey of photogrammetric control points,
- (iv) the practice of professional land surveying,

and includes the preparation of maps, plans, systems and documents and the giving of advice with respect to any of the matters referred to in subclause (i) to (iv);

(b) "practice of professional land surveying" means the following activities when undertaken to establish, locate, define or describe the extent or limitations of title:

- (i) the survey of land to determine or establish legal boundaries, including subdivision thereof,
- (ii) the survey of land to determine or establish the boundaries of any legal right or interest in land or under the surface of land or in air space,
- (iii) the survey of air space to determine or establish legal boundaries
- (iv) the survey of land to determine the location of anything relative to a legal boundary for the purpose of certifying the location of it,
- (v) the survey of lakes, rivers, watercourses or other boundaries of water to establish or determine the legal boundaries of them,

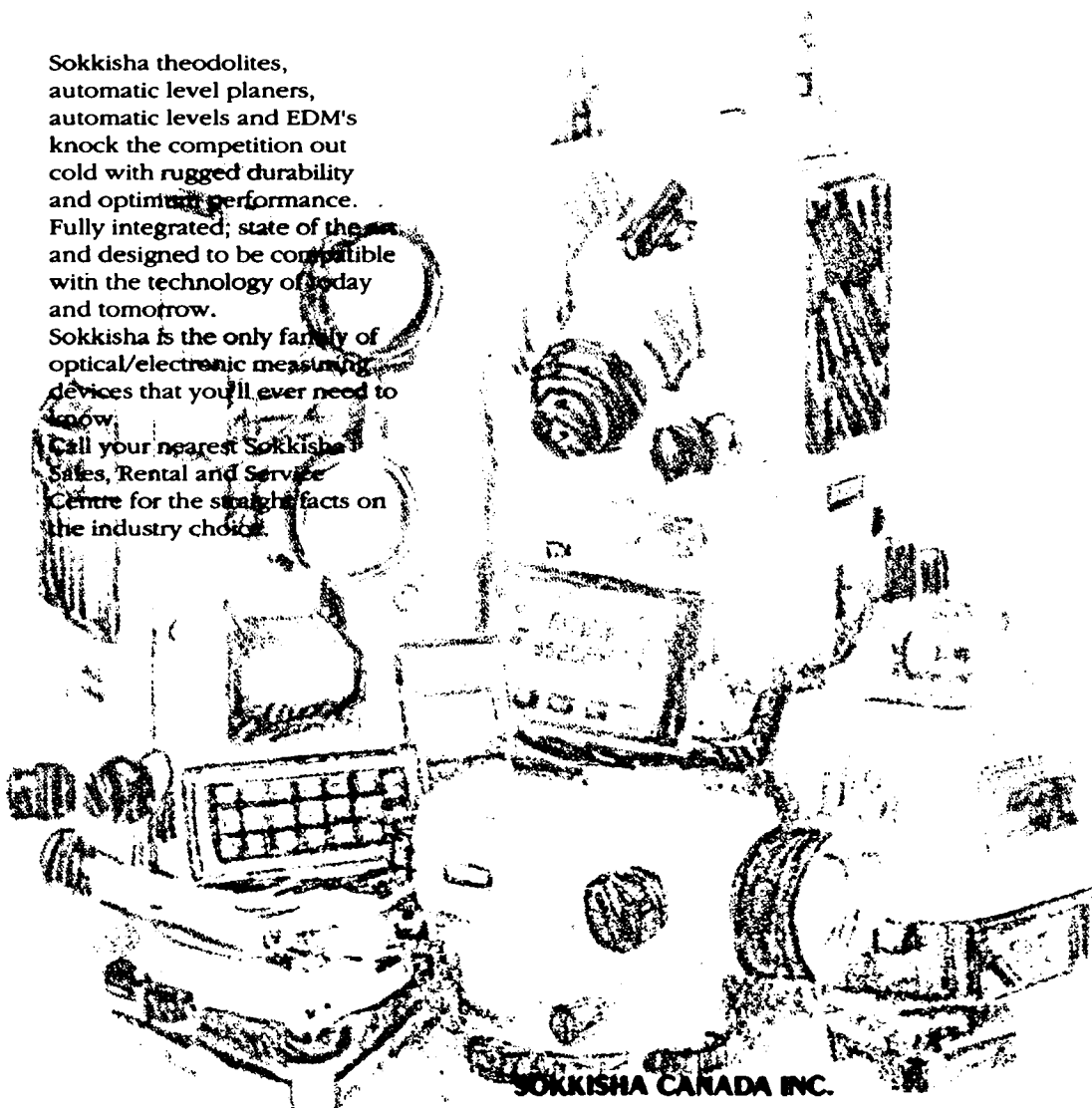
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and includes the preparation of maps, plans and documents and the giving of advice with respect to any of the matters specified in subclause (i) to (v).

APENS has further requested that we add the following section:

(4) Scope of Practice

A Nova Scotia Land Surveyor may, notwithstanding this or any other Act, engage in the practice of surveying.

Notwithstanding Section of this Act, neither the practice of surveying or the practice of professional land surveying extends to or includes any activity or matter which involves the application of engineering knowledge or principles or the practice of professional engineering within the meaning of the Engineering Profession Act.

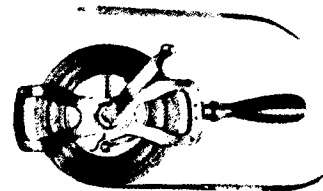
Council, with significant help from our original liaison committee members, Messrs. Doig, Whalen and Feetham, has endorsed the definitions as revised by APENS. Council does not feel that our original intent has been significantly altered. The addition of the "notwithstanding" clause merely confirms what we have been saying to APENS all along - that our members have no intention, nor right, to encroach into the engineering field. It is important to note that when the final wording of the "notwithstanding" clause is drafted, it must refer specifically to the Engineering Profession Act that is now in force, not to future versions.

The action taken by council may be viewed as a compromise. Things tend to get done by compromise. If APENS were to actively oppose proposed changes to our Act, there would be little likelihood of the legislature passing the bill. This potential opposition has, I believe, been avoided.

What we are left with is a definition of "surveying" and "professional land surveying" that is acceptable to APENS, and which well describes those activities in which we engage.

This entire issue may be seen by some as relatively insignificant. I suggest that we do not underestimate the importance of getting some support from the engineering profession. Those persons familiar with the original negotiations four years ago will recognize that a lot of understanding has been gained by both sides.

R. Grant McBurney
President



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The annual general meetings of the Canadian Institute of Surveying and Mapping and the Canadian Hydrographic Association will be held during the conference.

Le thème de la conférence "Fêtons notre héritage, traçons l'avenir" assurera des discussions sur les prédictions de demain, les progressions d'aujourd'hui et les succès d'hier, incluant le résultat de la construction d'un bateau de levé authentique de l'époque 1792, de même qu'une démonstration hydrographique des années passées.

Des auteurs nationaux et internationaux seront demandés de présenter des exposés scientifiques et techniques à des sessions d'affichage, plénières, et concurrentes.

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L'hôtel "Royal York" localisé au centre ville de Toronto est l'hébergement officiel de la conférence. Profitez du confort et des facilités modernes de cet hôtel situé à quelques minutes de marche d'une variété de divertissements, restaurants, théâtres ou partie de balle au SkyDome avec les "Blue Jays".

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La rencontre annuelle de l'Association canadienne des sciences géomatiques et l'Association canadienne d'hydrographie aura lieu lors de cette conférence.

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EXECUTIVE DIRECTOR'S REPORT



To say this has been a hectic summer would be an understatement. Lucky for me, I planned a leisurely week's vacation in conjunction with the CISM meeting in Whitehorse. This was like getting a good night's rest before a big exam. On returning to Dartmouth I assumed my new duties as Executive Director/SRD Manager. My first crisis came on day one when I learned we run out of money and credit about this time each year. My sincere thanks to all those members who responded to my appeal and sent their dues in extra early. This job is a little easier to handle knowing there is a pay check at the end of the week.

I must thank Rosalind for leaving things so well organized for me. She really did. Of course, I have many things to thank Rosalind for. She is a very talented person and I have benefited greatly from her coaching and her encouragement. She is also a joy to work with. I only wish I had her sense of humour, it sure comes in handy when dealing with some of the calls we get here at the office.

We all have Rosalind to thank for vacating her position when she did. It saves us a salary and gives us the opportunity to get our finances in order. Somehow, I think that may have occurred to her as well. I have proposed to council that we leave this position vacant until the end of 1993. This will not only get us out of debt, but give us some reserves to fall back on. I have offered to continue stick handling both jobs until then.

We are introducing a no-nonsense approach to our annual voting and nominating procedures this year. Nominations will not be accepted unless they are received in time to be published in the Fall Issue of the Surveyor. If a vacancy exists beyond this deadline, it will be dealt with on the floor of the annual meeting. If there is only one person running for Vice President, he/she will be elected by acclamation. On the same token, if there is only one person running for each vacancy on council, they also will be elected by acclamation. Ballots will only be sent out to zones where there is a competition. Keep in mind, everyone has the opportunity to express their interest in serving on council or as vice president. Each year we enclose a questionnaire with your notice of dues. This is your opportunity to make your intentions known.

A word to the wise on yellow pages advertising. The executive has had to deal with a couple of members this year for listing the names and/or phone numbers of their employees in the yellow pages. This is fine if the employee is a member, however if the employee is not, then the public may be misled into thinking that he/she is a Land Surveyor. By listing the employee's address, the public may even be led to believe the Land Surveyor has more than one office. Please, lets not have to go through this again.

Please make a special effort to get out to the annual meeting this year. The committee has sharpened their pencils to make it as easy as possible for everyone to attend all events. If you live in metro please do not give in to the temptation of driving back and forth. Get a room and relax. This is your convention, make the best of it.

I received news on September 25 that our proposed regulation changes pertaining to monumentation of P.C.s have been approved by government. Finally! This has been the worst year ever in trying to get things through government. The proposed changes to our Act dealing with the definition and the complaints process are making good progress but they must wait for the next session of the house. The Surveyor's Real Property Report is still under review by cabinet.

Some members have suggested we start working to the standard of the SRPR. They feel this would alleviate any apprehension there is in the market place. I must say this makes sense. With this in mind, I have asked the committee to supply a suggested SRPR format and I offer it here for your consideration.

J. Gunn

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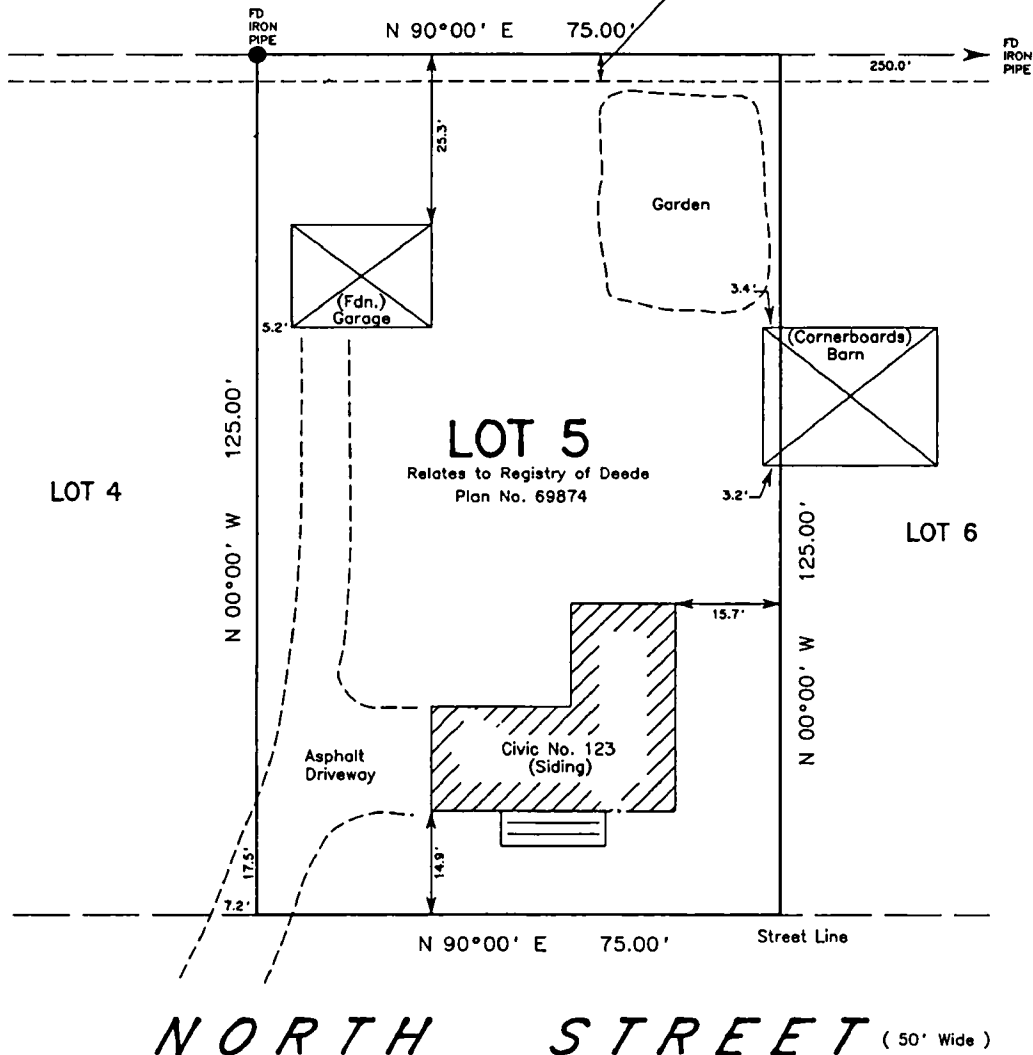
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SURVEYORS REAL PROPERTY REPORT

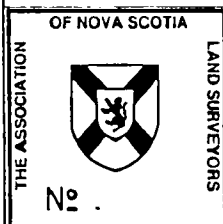
SAMPLE

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EASEMENT (N.S.P.C.)

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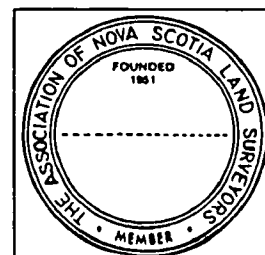
Certified To: Jane Doe
 Re: Lot 5 North Street
Utopia Nova Scotia

Scale: 1" = 20'

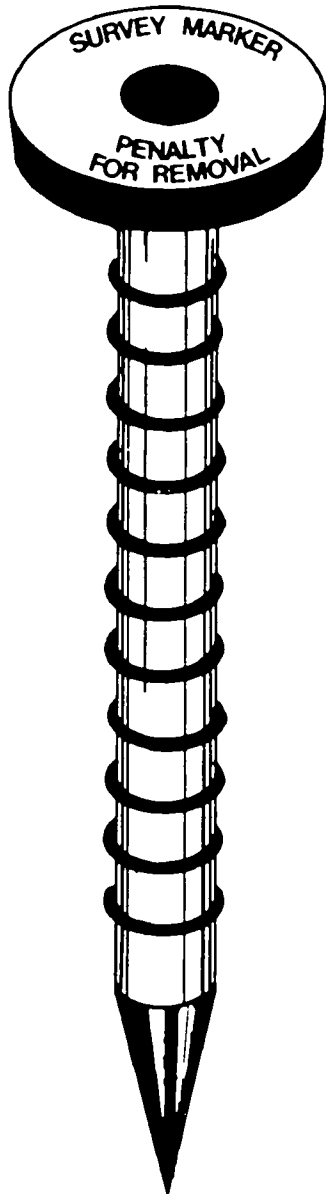


I, _____, Nova Scotia Land Surveyor, hereby certify
 that this Surveyors Real Property Report was prepared under my
 personal supervision and in accordance with the requirements of
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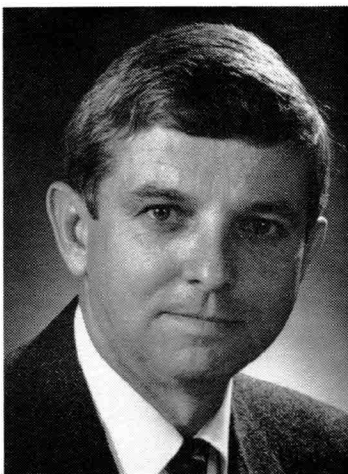
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CANDIDATE FOR PRESIDENT
ROBERT A. DANIELS

Robert A. Daniels, NSLS. CLS, graduated from the Nova Scotia Land Survey Institute in 1971 and received his Nova Scotia Land Surveyors Commission in 1972.

He obtained his commission as a Canada Land Surveyor in 1982.

Since 1971 Bob has served three terms as a member of Council for Zone 6, been Chairman and is currently a member of the Complaints Committee, has been a member of the By-laws Committee, a member of the Nova Scotian Surveyor Committee, the Survey Standards Committee, the Surveyors Engineers Liaison Committee, has been the Association representative on the Advisory Council for the College of Geographic Sciences and a past secretary of the Nova Scotia Branch of the Canadian Institute of Surveying and Mapping. Bob participates regularly in the Associations Speakers Bureau, and is Chairman of the Architects/Surveyors Liaison Committee.

Bob has been with the survey firm of Servant, Dunbrack, McKenzie & MacDonald Limited, since 1971 and is currently a partner and Vice-President of the firm.

Bob, his wife Mary and their two children, Gregory and Gina, reside in the City of Dartmouth.



CANDIDATE FOR VICE - PRESIDENT

GORDON P. ISAACS

Gordon P. Isaacs, CLS, NSLS, NBLs, graduated from the Cabot Institute of Technology in Newfoundland in 1970. From 1970 to 1975 he worked at mining surveys for Alcan Canada, legal surveys with the firm of K.P. McDonald and legal and engineering surveys for the Town of New Glasgow Engineering Dept.

In 1975 he started work with the Dept. of Energy, Mines & Resources in Ottawa where he worked in Survey Regulations for the Surveyor Generals office. In 1979 he was transferred to Amherst, Nova Scotia as the Manager of Survey Regulations for the Atlantic Region. From April 1991 to the present he has been acting Regional Surveyor Atlantic responsible for surveys on Canada Lands in the Atlantic Region.

Gordon is Commissioned as a Canada Lands Surveyor, a Nova Scotia Land Surveyor and as a New Brunswick Land Surveyor.

Gordon has served the Association as Chairman of the Surveys Standards Committee and the Public Relations Committee, as Zone Representative on the Long Range Planning Committee, on the Convention Committee and is currently member of the Manual of Good Practice Committee. He has also served two terms as Councillor for Zone 3.

Gordon currently resides in Amherst with his wife Linda & children Jennifer and Jordan. Over the past number of years he has served on the board of directors for the Basketball Association, the Curling Club & the Amherst Toastmasters Club.



CANDIDATE FOR COUNCIL -

ZONE 1

ALEX M. MCDONALD, N.S.L.S.

RE-OFFERING

Alex was born at La Have, Lunenburg County, Nova Scotia on March 16, 1932.

He moved to Mahone Bay in 1940 and graduated from Mahone Bay High School and attended Acadia University in Pre Engineering for 2 years.

In 1954 Alex attended the Land Survey School which was run by Major Church at that time. The Land Survey School consisted of a room built on the back of the Old Legion Hall at Lawrencetown and had an enrolment at that time of 14 students.

In March 1955 Alex received his commission as a Provincial Land Surveyor and joined the Association of Provincial Land Surveyors of Nova Scotia on May 2, 1955. In this same year he worked for Errol B. Hebb, N.S.L.S.

Alex joined the Department of Highways now Department of Transportation in April 1956 and has carried on a part-time practice since graduation.

Alex took early retirement from the Department of Transportation in 1987 and is carrying on a full time Private Practice.

He is presently living at Mahone Bay with his wife Hugette and stepdaughters Chantal and Susy Laroche.

Alex has represented Zone 1 on Council Since November 1990.



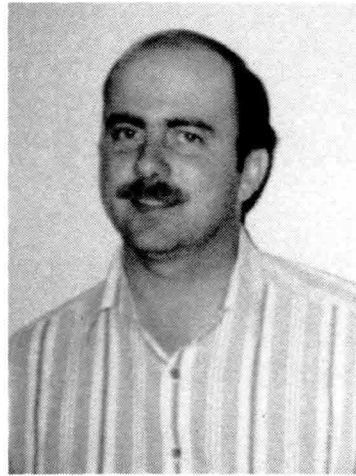
CANDIDATE FOR COUNCILLOR -
ZONE 2
DERIK DEWOLFE, N.S.L.S.

Derik R. DeWolfe, NSLS, was born in Annapolis Royal, Nova Scotia. He graduated from Middleton Regional High School in 1979, and from the NSLSI in 1981 with a diploma in Land Surveying.

Derik articulated under H. Kirk Hicks and was commissioned as a Nova Scotia Land Surveyor in 1984.

Derik is presently self employed as has been since January 1990. His past work experience has been in legal surveying; and employed with D.S. Thorne & Associates, Yarmouth, N.S.; and with H. Kirk Hicks, Berwick, N.S. He is also chairman of this year's convention committee.

Derik presently resides in Middleton, Annapolis Co., Nova Scotia.



CANDIDATE FOR COUNCILLOR -
ZONE 4
JOHN J. DELOREY, N.S.L.S.

John J. DeLorey, NSLS John was born in Linwood, Antigonish County on January 2, 1959. He is a 1977 graduate of Antigonish East High School and a 1979 graduate of the NSLSI with a diploma in land surveying.

John worked for Stewart E. MacPhee, NSLS in 1978 and joined the Surveys Division of the Dept. of Lands & Forests in 1979 under J. Edward Hanifen, NSLS and later Duncan R. MacDonald, NSLS where he articulated and received his commission as a NSLS in 1985.

He was in full time private practice for several years before returning to the Department of Natural Resources as a Crown Land Surveyor for Richmond County and the Port Hawkesbury area.

John, his wife Susan, and their children Stacey, Francine and Gregory live in Linwood.



**CANDIDATE FOR COUNCIL -
ZONE 5**

VALERIE GEORGE, N.S.L.S.

Valerie George, NSLS, was born in Sydney, N.S. in 1961. She presently lives on Berthelot Crescent, Coxheath Mountain with her husband Barry, son Daniel and daughter Alix.

Valerie graduated from NSLSI (COGS) in 1981 and received her commission as a Nova Scotia Land Surveyor in 1985.

She was previously employed with several survey firms in Industrial Cape Breton, LRIS Halifax, LRIS Sydney and J.D. Barnes Ltd., Toronto.

Valerie is currently employed as Regional Surveyor for the Land Information Centre, LRIS Sydney. She is a member of CISM.



CANDIDATE FOR COUNCIL -

ZONE 6

KENNETH W. ROBB, N.S.L.S.

Ken graduated from the Lawrencetown Institute of Surveying in 1956, and with the exception of a 5 month period after graduation, he has been in private practice for the past 35 years. Ken has always been involved in community matters and has served both as a member and chairman of School Trustees, the Dartmouth Cole Harbour Chamber of Commerce, minor hockey, Kinsmen Club, and the Director of several companies in Nova Scotia.

Ken has served on Council in the past and has been active on various committee's of the Association. He has served on the committee that put the present Act into place. He has served on the Errors and Omissions Committee as well as the Land Court Committee and the Political Action Committee.

Ken is interested in working on Council to improve our Act and to promote the following:

1. Statutes of Limitations
2. Revisions to our Code of Ethics
3. Set up a Committee to deal with the Department of Transportation to have boundary lines established by Nova Scotia Land Surveyors only.
4. Changes on competitive bidding
5. Changes in our regulations regarding research and standards
6. Promote better liaison with politicians by members of Council
7. Changes to Real Property reports.



CANDIDATE FOR COUNCIL -

ZONE 6

EDWARD G. JEFFREY, N.S.L.S.

RE-OFFERING

E.G. (Ed) Jeffrey graduated from Dartmouth High School in 1972. He attended Saint Mary's University in 1972-73. He attended the College of Geographic Sciences , graduating in 1980.

Ed articled and worked with Ken Carrick from 1981 to 1985 when he received his NSLS in 1985 he became a partner in R.K. Carrick Surveying Limited. Ed is the Secretary-Treasurer of the Association of Metropolitan Land Surveying Consultants and resides in Dartmouth. His hobbies are computer, basketball, tennis and piano.

Ed is chairman of the Continuing Education Committee and has served on Council since 1990.



**CANDIDATE FOR COUNCIL -
ZONE 6**

JOSEPH R. ALCORN, N.S.L.S.

Joseph R. Alcorn, NSLS was born in Middleton, Nova Scotia in 1953. After graduating from the Nova Scotia Land Survey Institute in 1976 he travelled to Alberta where he spent a long cold winter in pursuit of his profession.

Joe returned to Nova Scotia in 1977 where he gained employment with Wallace MacDonald & Lively Limited and subsequently completed his articles under Harold Lively, NSLS.

He received his commission as a NSLS in 1981 while in the employ of H. Kirk Hicks, NSLS and continued to work in the Valley for a short period.

In 1986 Joe joined Alderney Surveys Limited in Dartmouth where he is presently employed.

Joe has served on the 1986 convention committee and is presently on the COGS liaison committee.

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COMMITTEE REPORTS

EDITOR'S REPORT

The Nova Scotian Surveyor is the Official Publication of the Association of Nova Scotia Land Surveyors. The past year has been one of financial restraint for the Association and "The Surveyor" has been no exception. As a cost cutting measure, only two issues of the Nova Scotian Surveyor were printed instead of the anticipated three issues.

It was also determined that we could no longer afford to have our printer do all the setup and formatting required in the production of our magazine. Consequently, it was decided that we do most of this work in-house by the Association office staff, and thanks to the hard work of Janice Bell, we were able to produce our last two issues in a high quality magazine style format. This resulted in a substantial saving on printing costs as compared to previous issues.

I would also like to thank our regular contributors, Jim Gunn,

Jim Doig and Rosalind Penfound for their continued support during the past year.

In closing, I urge all members to contribute to the Nova Scotian Surveyor. The future of our publication depends on your support.

Michael Crant
Editor

REPORT OF THE REGULATIONS COMMITTEE

Steven Keddy
Stephen Howard

The Regulations Committee was formed in April and consisted of Steven Keddy and Stephen Howard. We held two meetings before the end of June to discuss the several items presented to us. Some of the items have been going on for some time and others are new this year. Three of the issues that did not require regulation changes were dealt with.

In July, other commitments forced Stephen Howard to end his work on the committee. I will be looking for new committee members at the Annual Meeting so that committee work may proceed.

I do not plan to present any resolutions to this year's Annual Meeting. I hope that several items will be ready for next year on which work has begun. These include errors and omissions, when a survey plan is required, and the beginning of GPS standards for our Regulations.

Respectfully submitted,

Steven Keddy, NSLS
Chairman

DEPARTMENT OF TRANSPORTATION
AND COMMUNICATIONS LIAISON
COMMITTEE REPORT

James McNeil
Everett Hall
Frank Gillis

SURVEY REVIEW ADVISORY
COMMITTEE

E.J. (Ted) Webber, Chairman
Grant McBurney
Dennis Prendergast

The Committee is now under the new chairmanship as of May, 1992. The aims of the committee are as follows:

1. to collect from interested members for the purpose of viewing examples of how existing Department of Transportation and Communications practice and policy conflicts with our Act and Regulations;
2. edit and present to Department of Transportation and Communications a previously prepared brief which outlines present problems and which proposes a solution for the future.

As a willingness on the part of Department of Transportation and Communications in future discussions is necessary in order to accomplish the objectives set out in the previously referred to brief and since at this time it is unknown if this will ever exist, it is difficult to predict a time frame to achieve this goal.

Respectfully submitted,

Jim McNeil, NSLS
Chairman

Most of the activities of this committee were carried out by telephone, letter or fax in response to requests made by the manager of the Survey Review Department. These requests ranged from budgetary concerns to survey practice and technical concerns.

There was one request made by a member of the Association and the concern was reviewed with the SRD Manager. I would like to thank Grant McBurney and Dennis Prendergast for their efforts, comments and interest during the past year.

Respectfully submitted,

E.J. (Ted) Webber, NSLS
Chairman

MUNICIPAL AFFAIRS LIAISON COMMITTEE

Jim Banks (Chairman)
Jim Gunn
Dave Roberts
George Sellers
Bruce Mahar

Committee activity in 1992 mainly dealt with follow-up work on last year's issues.

In April, Dave Roberts, Jim Gunn and Rosalind Penfound attended public hearings in Amherst regarding proposed changes to the Cumberland County Subdivision by-law. Several presentations were made to voice the concerns of ANSLs, especially against the use of Instrument of Subdivision. Written submissions had previously been made.

The provincial subdivision by-law which permits Instrument of Subdivision has since been prescribed for Cumberland County. However, the Minister of the Department of Municipal Affairs has indicated that the issue will be reviewed within the department. Jim Gunn is following up on this with Municipal Affairs as well as the Law Reform Commission.

Respectfully submitted,

Jim Banks, NSLS
Chairman

MANUAL OF GOOD PRACTICE COMMITTEE

Jack Kaulback (Chairman)
Robert Ashley
Marcellin Chiasson
Alan Comfort
James Gunn
Fred Hutchinson
Gordon Isaacs
Jerome MacEachern

A motion passed at the 1991 Annual Meeting advised the committee to develop a draft manual for presentation to the membership at a future Annual Meeting. This was discussed by the committee with the following results.

The committee decided to assemble a draft manual in format only to be presented at zone meetings. Examples of the content of each section would be included where possible. Jim Gunn agreed to "put the pieces together" and to assist in the presentations at zone meetings. It was decided also to prepare a brief questionnaire for members to complete at zone meetings.

All zones will have been visited before the 1992 Annual Meeting. A large majority of those members having completed the questionnaire agreed with one of the main goals of the Manual Committee: ".....to remove much of the technical detail from our present regulations and put it in the manual. As such they would become recommendations rather than laws." The questionnaire results, including many written comments, will be discussed by the Committee prior to the Annual Meeting.

Further development of the Manual will depend upon a budget being approved. A motion by the committee will suggest future action.

Respectfully submitted,

Jack Kaulback, NSLS
Chairman

CONTINUING EDUCATION COMMITTEE

Sandy MacLeod
Jim Banks
Paul Slaunwhite
Dave Wedlock (now out of Prov.)
Joe Alcorn
Ed Jeffrey

Over the last few years, Encon Insurance has been holding a Loss Control Seminar in conjunction with our Annual Meeting on the day before our Business Meeting got under way. This usually took 1/2 day and left the other 1/2 day for us to fill in with other items. Last year, Encon did not have the seminar at our meeting and had decided to have it at another time of the year, which left the whole day open. We had a good response to the seminar last year with speakers from Government Departments discussing the Water Act etc. and Jim Doig speaking on Boundary Uncertainties. As a result of a good turnout the seminar recovered all costs.

Due to extreme financial difficulties being experienced by both the ANSLS and the general membership, coupled with the fact that our committee could not come up with and contentious issues or topics that we felt would get a good enough response to make a seminar this year financially viable.

In order to bring a speaker in that would draw, we would have to put out money and be reasonably sure that it paid for itself, more or less. A quick "phone poll" was done with some of the membership to get a feel for expected turnout for the seminar if it was held, and the feedback was overwhelmingly in favour of not having one at this time, with financial restrictions the prime reason.

Many of the topics that the committee has looked at are either long-term (i.e. U.N.B. "Land Management" courses etc.) or topics best dealt with on a "Workshop Basis" such as that done for the regulation changes and S.R.P.R at the Dartmouth Inn last year. Jim Gunn had his S.R.D. presentation at different zones around the province during the year and may do something similar this year in conjunction with this committee for a workshop later in the year or in the spring. Notice will be given when this is finalized.

Respectfully submitted,

Ed Jeffrey, NSLS
Chairman

BOARD OF EXAMINERS ANNUAL REPORT

John MacInnis(c)
 Jim Chisholm
 Forbes Thompson
 James Doig
 Keith AuCoin (Minis.Appointee)
 David Cushing (APENS Appointee)
 Bruce Gillis (Barris. Appoin.)

The Board of Examiners met once during the past year.

- There are at present seventeen students registered as surveyors in training, but apparently not all are active.
- One student wrote our exams in January and June of 1992.
- One student qualified for membership this year, and there are several working on their survey projects presently.
- The Board, through the Secretary, has assisted the Atlantic Board by supervising examinations at our Portland Street office.
- Two of the Nova Scotia members of the Atlantic Board attended the ANnual Meeting of the Atlantic Board held in Gander, Nfld., on May 7, 1992.

I would like to thank the Board members for their continued dedication and support as well as the Secretaries to the Board, Rosalind Penfound and Jim Gunn.

The present Board consists of James Doig, (Jim is retiring this year) Bruce Gillis, Keith Aucoin, David Cushing, Forbes Thompson, Jim Chisholm, Rosalind Penfound (Secretary - now James Gunn), and John MacInnis.

Respectfully submitted,

John MacInnis, NSLS
 Chairman

COMPLAINTS COMMITTEE ANNUAL REPORT

The Complaints Committee has held regular meetings once a month over the past year.

- Individually, as small groups and as a full committee, we have met at other times with complainants and surveyors.
- Seven new files were opened this year which formed part of about twenty three active files.
- Eight of these files were part of a list of thirteen complaints laid by one of our members.
- None of the complaints were referred to the Discipline Committee.
- All the new complaints were laid by the general public.

- The complaints laid related to boundary problems, incomplete research, plan preparation and communication.

I would like to thank all the Committee Members and our Executive Director (before resigning) who attended all our regular meetings and many of the special meetings with complainants and surveyors for their support, dedication and time.

The Committee for 1991-92 consisted of Bob Daniels (now retired), Bruce MacDonald (now retired), David Hiltz, Ted Webber, Allan Owen, Carl Hartlen and John MacInnis.

Respectfully submitted,

John MacInnis, NSLS
Chairman

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The *Metric Conversion Act of 1975*, as amended by the *Omnibus Trade and Competitiveness Act of 1988*, establishes the modern metric system (System International or SI) as the preferred system of measurement in the United States. It requires that, to the extent feasible, the metric system be used in all federal procurement, grants, and business-related activities by September 30, 1992.

The Executive Order on Metric Usage

Executive Order 12770 (July 25, 1991), *Metric Usage in Federal Government Programs*, mandates that each federal agency:

- Make a transition to the use of metric units in government publications as they are revised on normal schedules or as new publications are developed.
- Work with other governmental, trade, professional, and private sector metric organizations on metric implementation.
- Formulate, approve, and implement a **Metric Transition Plan** by November 30, 1991, and provide it to the Secretary of Commerce.

The Metric Transition Plan is required to include:

The scope of the metric transition task and firm dates for all metric accomplishment milestones for 1991 and 1992,

Initiatives to enhance cooperation with industry as it voluntarily converts to the metric system, and

A schedule to increase the understanding of the metric system through educational information and in publications.

- Designate a **Metric Executive** who is responsible for carrying out the Metric Transition Plan and preparing annual agency progress reports.

A Copy of the "Metric Guide for Federal Construction, First Edition" prepared by the Construction Subcommittee of the Metrication Operating Committee of the Interagency Council on Metric Policy can be obtained from the National Institute of Building Sciences, 1201 "L" Street, N. W., Washington, D. C. 20005, (202) 289-7800.



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EXECUTIVE COUNCIL

Lieutenant Governor of Nova Scotia in Council made the



NOVA SCOTIA

22nd day of September A. D. 1992

92-937

The Governor in Council on the report and recommendation of the Minister of Natural Resources dated the 27th day of August, A.D., 1992, pursuant to Section 8 of Chapter 249 of the Revised Statutes of Nova Scotia, 1989, the Land Surveyors Act, is pleased to approve, effective on, from and after the 1st day of October, A.D., 1992, of amendments to regulations made by the Council of the Association of Nova Scotia Land Surveyors and approved by a majority of the members of the Association of Nova Scotia Land Surveyors at its annual meeting on the 16th and 17th days of November, A.D., 1991, respecting the manner of making surveys and the monumentation of boundaries in the form set forth as Schedule "A" attached to and forming part of the report and recommendation.

A handwritten signature in cursive script, reading "A. W. Scott", followed by a horizontal line.

A. W. SCOTT
CLERK OF THE EXECUTIVE COUNCIL

SCHEDULE “A”

AMENDMENTS TO REGULATIONS MADE PURSUANT TO SECTION 8 OF CHAPTER 249 OF THE REVISED STATUTES OF NOVA SCOTIA 1989, THE LAND SURVEYORS ACT

1 Section 24 of the regulations made pursuant to Section 8 of Chapter 249 of the Revised Statutes of Nova Scotia 1989, the Land Surveyors Act, is repealed and the following section substituted therefor:

24 (1) (a) Notwithstanding section 15, all boundary lines through wooded areas shall be well brushed out, unless in the opinion of the surveyor such action would have an adverse effect on the value or esthetics of the property.

(b) All boundary lines not brushed out shall be clearly indicated as such on the plan of survey.

(2) In any instance where the distance between two monuments on a particular line exceeds 100 metres the line shall be blazed as follows:

(i) suitable trees standing within one metre of the line shall be blazed fore and aft and on the side toward the line or the trees shall be blazed at forty-five degree angles to the line;

(ii) suitable trees standing between one and two metres from the line shall be marked with a single blaze facing the line;

(iii) trees left standing on a boundary line shall be marked with a single blaze fore and aft;

(iv) all blazes shall be made with an axe.

(3) When sufficient evidence exists along a boundary line so as to render its location distinguishable, the boundary line need not be brushed or blazed as the case may be.

(4) Road, street or highway boundaries need not be brushed or blazed as the case may be.

2 Subsection (3) of Section 27 of the regulations is repealed and the following subsection substituted therefor:

(3) Damaged, deteriorated or disturbed evidence shall be replaced with monuments that meet current regulations, where applicable.

3 Section 36 of the regulations is amended by striking out the word “Monuments” in the first line thereof and substituting therefor the words “Placed monuments”.

4 Section 37 of the regulations is repealed and the following substituted therefor:

37 (a) When a survey is made, all angles and points of curvature of the boundary or boundaries under survey, being either retraced or created, shall be defined by one of the monument classifications prescribed in the regulations or by found evidence which, in the opinion of the surveyor, adequately marks the boundary;

(b) When a survey includes curved boundaries along an existing road, it is sufficient to monument the intersections of the road boundary and the property boundary and to show calculated points of curvature along the road boundary;

(c) Where the boundaries of an air space or of land covered with water are to be defined, their location shall be referenced to at least two related monuments or to the Nova Scotia Co-ordinate Survey System.

5 Section 39 of the regulations is amended by:

(a) striking out the word “monument” in the first line thereof and substituting therefor the words “boundary evidence”, and

(b) striking out the word “evidence” where it appears for the second time in the first line thereof and substituting therefor the word “information”.

6 Section 40 of the regulations is amended by striking out the word “monument” in the first and second lines thereof and substituting therefor the word “evidence”.

7 Clause (a) of subsection (1) of Section 44 is repealed and the following clause substituted therefor:

(a) Where it is impossible or inadvisable to monument a true angle or point of intersection, or where it is determined that the location of a monument will place it in immediate danger of destruction, as in the case of lots fronting on an undeveloped street, one witness monument stamped “WIT” shall be placed at a suitable point as near as practicable to its intended location and on one of the boundaries under survey.

8 These regulations shall come into force on, from and after the 1st day of October, A.D., 1992.

ETHICAL ESSAYS

James F. Doig NSLS, CLS

How Do Surveyors Learn About Ethics?

It is quite apparent when reading business and professional publications that ethical questions, often of considerable magnitude, are now being raised very frequently.

Do surveyors learn all they need to know about ethics from mother's knee and from our professional code? If so, we're in good shape; there is no need to read further.

But if we suspect that rather more than this may be required, what do we do?

The question is prompted by the following set of situations adapted from Business Ethics, 2nd Edition by Richard DeGeorge, Macmillan Co., 1986:

Case A: Joan works for a large surveying partnership. She specializes in drafting standards and contracts. During several weekends and evenings, working at home, she writes a program that will make her work easier and more efficient. She transfers the program to her computer at the office, and uses it regularly. After some months she gets an offer of employment elsewhere. When she leaves the surveying firm she takes her program with her, and erases it from the company machine.

Case B: This is the same as Case A, except that Joan develops the program, on her own time, using the firm's computer during weekends and evenings. Her firm allows her access to the computer during these times.

Case C: This is the same as Case B, except Joan leaves the program in the firm's computer and only takes a copy of the program with her when she leaves.

Case D: This is the same as Case B, except that Joan takes neither the program nor a copy when she leaves. She rewrites the program when she gets to her new job.

Case E: This is the same as Case D, except that Joan develops the program during business hours, on the firm's time.

Case F: Same as Case B, except Joan does not write her own program. Instead she modifies a copyrighted program that the firm had purchased from a commercial supplier of software. When she leaves, she takes her modified program with her, leaving behind the original.

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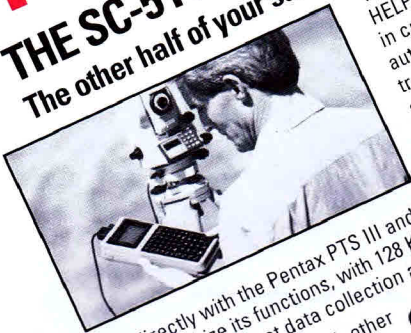
Distance Measuring Range	3,000 m (3 prisms)*
Accuracy	± (5 mm + 3 ppm) m.s.e
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Note: *Under good conditions.

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Each of us would probably have no great difficulty in sorting out the rights and wrongs of Cases A and F. Test yourself, and get a perfect score; the answers follow right along here.

In Case A Joan was perfectly correct in doing as she did; in Case F, given that the program is of some complexity, she does not have the right to take either the program or a copy with her.

But what about the cases in between? How well would we do on these? Do we need only an understanding of ethics to resolve them properly, or do we also need some understanding of law or computer programming or both? Is it possible to resolve these cases by the application of plain common sense, with no special knowledge being needed at all? Has law got anything to do with ethics? Whatever these circumstances, could there be more than one correct answer to each case? If so, from a logical standpoint, how could this be? Or does logic have anything to do with ethics?

The case might be made that surveyors ought to be exposed to some consideration of ethics, if not before becoming certified to practise then during the time they are practising. This might be done through seminars on ethics, or by ensuring that one or two ethical questions are raised and answered during business or professional practice seminars. Several approaches are open.

Every surveyor and every survey company has a library to which reference is made to resolve a variety of technical questions (unless, of course, a perfect understanding of surveying was obtained during the periods of schooling and apprenticeship).

Would you be surprised to see a book on business or professional ethics in a surveyor's reference library?

Should you be?

OBITUARY

James F. Aucoin

February 19, 1937 - October 9, 1992

James joined our Association in 1977. He was commissioned as a Canada Lands Surveyor in 1982. James received his engineering degree from UNB in 1959 and his MBA from Dalhousie University in 1970. James operated the firm of Comtec Services in Cheticamp, Cape Breton. James will be long remembered for the generous hospitality extended to all who visited him in his beloved Cheticamp. Our sincere sympathy is extended to his wife Yvette.



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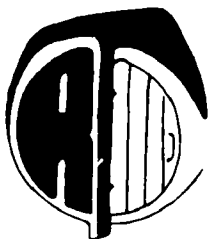
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CANADIAN COUNCIL OF LAND SURVEYORS

COMMITTEE REPORT presented to:

The Association of Nova Scotia Land Surveyors

The Board of Directors met twice during the year, once after the NSLS meeting last November, 1991 and once in Whitehorse, Yukon after the CISM annual meeting in June, 1992.

There are approximately 2900 land surveyors in Canada. The number has decreased by 10% over the past year and it is expected that this number will continue to decline. The annual membership fees range from \$290 to \$1380.

The following are issues that CCLS is presently pursuing.

Strategic Plan

A major issue this past year has been the development of a strategic plan for CCLS. A committee was struck, a consultant hired, information will be collected from the grassroots members individually and the Associations in general and the plan will be finalized in December, 1992. The plan will be used to guide CCLS actions in the coming years to ensure it is meeting the needs of its members.

Ultimate Limitations

The Association of Manitoba Land Surveyors is in the final stages of preparing a submission to the Government of Manitoba on the Limitations of Actions for Professional Acts of Manitoba Land Surveyors. This would establish an ultimate limitation period of 10 years for actions resulting from the professional acts of its members. The time for this period would begin to run from the date the professional services in the matter complained were terminated.

CCLS is supporting and assisting in this submission and, if successful, can be used by other associations as a model.

Guide de la géomatique

This is a document produced by L'Order des Arpenteurs-geometres du Quebec which is directed to the general public and describes the kinds of geomatics services provided by L'Order. CCLS has requested that it be translated and this is presently being done by the Dept. of Energy, Mines and Resources. It will eventually be distributed via the provincial associations.

National Standards

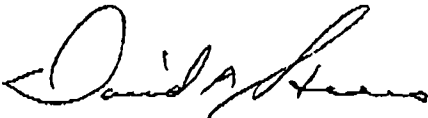
All provinces have now passed regulations for the utilization of Real Property Report except Prince Edward Island and British Columbia with Nova Scotia in the middle of the process. Discussions and assistance is on-going with PEI and BC concerning implementation in these two remaining provinces. CCLS is also discussing promotion of the SRPR with Central Mortgage and Housing Corporation.

Title Insurance

Title Insurance is being marketed in Canada, especially in B.C., Ontario and Alberta, to real estate owners and mortgagees to protect against certain title defects which could have an adverse effect on property value. It purports to offer protection against these defects which fall beyond the scope of assurance funds under a Torrens System of land titles. Defects include unregistered easements on rights-of-way, certain leases, spousal rights of possession, construction liens, survey errors, contravention of municipal bylaw rules and priority of title. CCLS will continue to monitor this issue and obtain as much information as possible for further distribution and analysis.

For further information on these and other topics, please refer to the CCLS Newsletter distributed in September, 1992.

Respectfully submitted,



David A. Steeves
CCLS Director

/jw

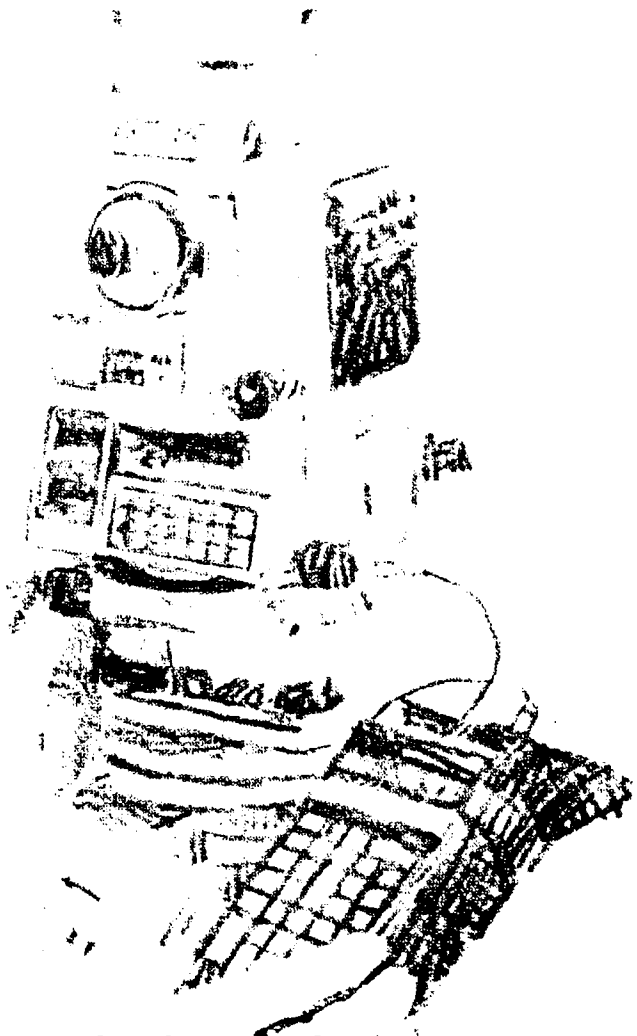
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SURVEYING THE BOUNDARY WITH ENGINEERING

James F. Doig

Come, here's the map — shall we divide our right

King Henry IV (1) Act 3 Sc. 1

The Association of Professional Engineers of Nova Scotia initiated prosecutions of Nova Scotia Land Surveyors alleging that, in certain of their work in subdivisions, there had been contraventions of the Engineering Profession Act, R.S.N.S. 1989, c. 148. An appeal to the Supreme Court was allowed and an earlier conviction was set aside. This judgment, and a related one in a lower court, are examined for principles applicable to the determination of the dividing line between the professions of land surveying and engineering.

This article is reprinted by permission from the Summer 1992 edition of the Canadian Institute of Surveying and Mapping Journal.

During the past three or four years the Association of Professional Engineers of Nova Scotia (APENS) and the Association of Nova Scotia Land Surveyors (ANSLS) have been, to put it plainly, at loggerheads over the line of demarcation between their respective professions.

Two judgments on the question have recently been handed down in our courts. One judgment was from the Appeal Division of the Supreme Court of Nova Scotia, the other from the Provincial Court.

It is the aim of this paper to examine these, and some other relevant decisions, for the guidance they offer on:

- a. How the line between surveying and engineering (or between any pair of overlapping professions) ought to be determined;
- b. The interpretation of definitions; and
- c. Some consequences attendant upon monopolistic practices.

There are few judgments from Canadian courts on how the line between two professions is to be defined. Moreover, recent months have seen

surveyors contest in court a situation in which others have been doing work traditionally regarded as belonging to the land surveyor. *A.G. for B.C. v. Infomap Services Inc.* is the latter case in point.

It may be helpful, before getting into the Nova Scotia judgments, to say something of the relevant circumstances.

Some time ago APENS undertook a searching examination of activities which might constitute the practice of engineering by individuals who were not engineers or who were not working under the direction or control of engineers. After scrutiny by APENS' Act Enforcement Officer, some survey activities (mainly those within the subdivision process), were deemed in contravention of the *Engineering Profession Act*. A good deal of discussion between the two associations followed, but an agreement satisfactory to both parties could not be reached.

In 1988 APENS charged two Nova Scotia land surveyors with offences under their Act. The substance of these charges was that each surveyor had designed a part of a transportation system when he prepared road profiles and cross-sections to support a request for tentative approval of a sub-

The definition of engineering, it will be noted, is a very broad one; and this fact was the subject of specific comment in the court decisions.

division. Both surveyors were found guilty at the Provincial Court level. It was the appeal by one of these surveyors, Kenneth W. Robb N.S.L.S. of Dartmouth, from this (and a subsequent) conviction, that resulted in the decisions which are now before us.

In 1989, shortly after the first charges were laid, APENS and ANSLs each formed a special committee to attempt to find common ground by way of a division line between the practices of surveying and of engineering. It was agreed by the Executive Councils of both associations that the committees would be made up of individuals who were not members of both professional groups. That is to say, the ANSLs members were land surveyors who were not engineers, and the APENS members were engineers who were not land surveyors. This was intended to avoid divided loyalties, and to encourage plain and open discussion of a difficult topic, obviously of great concern to both.

Given that the two committees could reach a mutual understanding, the Executive Councils reserved the right of final approval. (Here it might be best to say that the writer of this article was a member of the ANSLs committee; hence the reader should be on the watch for bias and make any necessary allowance for it.)

At the committees' first meeting ANSLs members asked that, pending completion of their joint task, APENS suspend further prosecution of land surveyors for alleged infractions of engineering practices. The APENS members, having apparently had previous instruction on this point from their Council, were not able to agree. Suffice it to say that ensuing discussions, though direct and vigorous and always gentlemanly, did not produce a workable solution. It is probably fair to say that the two committees came very close to what they themselves perceived as a possible agreement. But their respective Executive Councils were not of the same mind.

The likelihood of an agreement disappeared entirely when it became clear to ANSLs that APENS sought to bring the sizing and configuration of lots of a subdivision into the exclusive sphere of engineering. That is, land surveyors, henceforth (in APENS' view), would not be able to participate in subdivision work other than under the direction of a professional engineer from practically the very beginning.

Central to the questions at issue, of course, were the statutory definitions which govern the surveying and the engineering professions in the Province of Nova Scotia.

The *Engineering Profession Act* provides:

2(h) "Engineering" means the science and art of designing; investigating; supervising the construction; maintenance or operation of, making specifications, inventories or appraisals of, and consultations or reports on: machinery, structures, works, plants, mines, mineral deposits, processes, transportation systems, transmission systems and communications systems or any other part thereof;

The *Land Surveyors Act* provides:

2(1) (j) "Professional land surveying" means the advising on, the reporting on, the supervising of and the 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;

The definition of engineering, it will be noted, is a very broad one; and this fact was the subject of specific comment in the court decisions. In contrast (though this did not evoke particular mention) that of land surveying is more circumscribed. The relative narrowness of the definition of surveying gave the ANSLs committee considerable concern, in light of the breadth accorded the definition of engineering. These same considerations, though the positions were reversed, doubtless heartened the APENS committee during its deliberations.

While Mr. Robb's appeal from an initial conviction was being heard, he had been charged by APENS with two further offences. This case was tried in Provincial Court by His Honour Judge R.A. Stroud. Mindful of the appeal under way, the Court said on January 30, 1991:

This is a matter originally scheduled for decision today. I can advise counsel that I am prepared to give a decision, if counsel so wishes but it may be that, with the other appeal not having been decided, that it may muddy the waters more or confuse matters or give rise to more paperwork than it would if I didn't give a decision so I leave that to counsel. If you want my decision, I'll give it. If you want an adjournment until we hear from the Appeal Division, I'll do that as well.

Both parties agreed that his decision was wanted — then and there.

The Court then dismissed both counts of the information: the land surveyor, in delineating road and ditch profiles within a subdivision, had not contravened the *Engineering Profession Act*.

Judge Stroud said that the facts in the present case could be distinguished from those of the leading Nova Scotia case, *O'Malley* (where APENS had brought charges against an electrical contractor for performing engineering functions). Nevertheless, he added, there were some principles in that case which were applicable to the matter before him:

- a. First: "It is the duty of the Court to construe a statute according to the ordinary meaning of the words used";
- b. Second: "Monopolistic provisions in statutes such as the *Engineering Profession Act* are to be strictly construed";
- c. Third: "The provisions of the *Act* must be interpreted in accordance with their primary purpose which is the protection of the public, particularly public safety"; and
- d. Fourth: "Section 20(a) of the ... *Act* is a strict liability section which leaves the defense of due diligence available to anyone charged under that section."

Not all may be aware of the implications involved in strict liability. A strict liability statute is one which imposes a penalty regardless that one may not have intended to do anything wrong. Because of possible harshness in holding people rigorously accountable in this way, courts require strong evidence of a legislative intent to create, by statute, strict liability.

Having earlier referred to the statutory definition of engineering, the Court then quoted the statutory definition of surveying (see above), and added, "I emphasize the words 'and the conducting of surveys.'"

Judge Stroud went on to say that in the case before him, public safety was not so relevant as it had been in the *O'Malley* case which had been referred to by both counsel. He pointed out, "The Department of Transportation was involved in the [subdivision] process and employs engineers to serve that purpose."

The Court's finding with respect to design, however, carried the principal weight of its judgment:

I don't think I need go beyond the ordinary meaning of the words in the *Engineering Profession Act* for the purpose of this decision. There is no question in my mind that what the defendant did was design. The difficult issue is whether what the defendant designed was part of a transportation system. I agree with

defense counsel that there could be a point where the extension of a part of a transportation system to some very small and incidental part could become absurd However I can see small components that could be considered part of an overall transportation system that would not [require] engineering principles or involve the use of engineers. However, I don't think the roads and ditch profiles in question here reach that absurdity.

But the issue is, when do they become part of the transportation system? In my view, when the defendant prepared his subdivision plans in this case and set out the roads therein, it was acting within Section 2(1) (j) of the *Land Surveyors Act* in that it was conducting a survey to control, establish, locate, define or describe the extent or limitation of title within the subdivision. The fact that it used engineering standards and specifications determined by the Department of Transportation did not change the nature of the survey. The Department of Transportation employs engineers to protect the public by seeing that roads in subdivisions must contain engineering standards, established by them, from time to time. In my opinion, subdivision roads do not become part of a transportation system until the tentative plans are approved by the Department of Transportation.

Therefore the prosecution must fail on this point. To find otherwise and prohibit surveyors from performing such functions and insert another profession in the subdivision process would clearly be against the public interest because of the obvious increase in cost of lots to the public.

The Court had commented earlier about monopolistic provisions: "Anything which is not clearly prohibited may be done with impunity by anyone not a member of such a closed association." The Court continued in this vein: "If the legislature intends such to be the result of the *Engineering Profession Act*, it must do so in clear and unambiguous language which it has not done when one looks at the two Acts and also [bears] in mind the strict interpretation to be applied to such legislation."

And finally the court remarked:

It is trite to say that it is incumbent upon the prosecution to prove all the elements of the alleged offence beyond a reasonable doubt. Assuming the Crown did raise a *prima facie* case, because this is a strict liability offence, it is open to the defendant to raise a

Not all may be aware of the implications involved in strict liability.

defense on the basis that it was exercising due diligence in the performance of the survey. I agree with defense counsel that there is some overlap in the activities which surveyors and engineers are authorized to do under their respective enactments. I am satisfied on the evidence that one of the services authorized under Section 2(1) (j) of the *Land Surveyors Act* is the designing of subdivision plans which incidentally includes the location of roads in those subdivisions.

As welcome as this decision in his favor must have been, Mr. Robb still had to await a decision under appeal. He had earlier been found to have acted in contravention of the *Engineering Profession Act*, and had appealed the decision to the County Court where he had not been successful. Accordingly, he appealed to the Supreme Court. He had less than two weeks to wait, however, for on February 12, 1991 the decision of the Appeal Division (Freeman, J.A.; Hallett and Matthews J.J.A. concurring) was handed down.

Mr. Robb's appeal was allowed; the earlier conviction and fine were set aside.

The charges had been essentially the same; the preparation of road profiles and cross-sections as part of an application for tentative approval under the County of Halifax subdivision bylaws.

The Court in its judgment referred, of course, to the respective definitions of engineering and surveying. Of the former the Court said:

The dictionary meaning of "designing" is extremely broad, and with respect to a part of a transportation system could include the crudest sketch of the sidelines of any proposed road. Obviously, everything that may constitute a road design is not within the exclusive domain of professional engineers. In the full context of the *Act*, the meaning must be limited to the application of the special skills of the engineer to the designing of transportation systems by applying engineering principles for engineering purposes, that is, with a view to eventual construction.

Addressing the position of the surveyor, the Court observed:

The Crown has urged that the practice of land surveying should be confined to the measurement of existing features of the landscape, including boundaries. In laying out subdivisions, a land surveyor would start by having a professional engineer establish centre-line profiles for proposed roads. *With respect, this approach is too narrow and leaves out of account the traditional role of the land surveyor in proposing new boundaries and laying out road allowances*, a role which can only

be diminished by the clear language of a statute. (Emphasis added.)

The appellant argues that he had to prepare the profiles and cross-sections in order to show that a road could be built within his proposed road allowance limits to specifications published by the Nova Scotia Department of Transportation. This argument would suggest that there is an engineering aspect of road design for purposes of construction, and a land surveying aspect of road design for purposes of location. There may be a semantic alternative, if it could be said that whatever a surveyor does to position a proposed road is not really road design. But that places an artificial strain on the ordinary meaning of "design." The two *Acts* will support an interpretation that both land surveyors and engineers are involved in road design, surveyors in a rudimentary, preliminary way for the surveying purpose of locating road allowances, engineers in a much more complex and specific way for the engineering purpose of road construction. Obviously there is a gray, overlapping area of some magnitude between the two professions.

Having touched on the business of overlap, the Court continued:

The demarcation line should long since have been determined between the two professions by negotiation, fixed by regulation or statutory amendment, and settled by practice. In the absence of such a boundary line the Crown is faced with a task of no small difficulty in establishing beyond a reasonable doubt that it has been overstepped.

Only one similar situation has come to the writer's attention: *Corporation des Arpentiers-Géomètres v. Beauchemin*, wherein civil engineers were charged by the land surveyors' association of Quebec with the unlawful practice of surveying. The headnote of the decision (writer's translation) reads in part:

A civil engineer is within the bounds of his professional responsibilities and does not intrude on those of the land surveyor when in order to help an architect better select the site of a school for which he must draw up the plans and bill of materials, he makes use of public documents such as the cadastral plan and record book prepared by the Department of Lands and Forests, indicates, on his own plans and drawings, distances, and places engineering works on a plan drawn up by land surveyors, above all when the staking has been carried out by land surveyors.

"The Crown has urged that the practice of land surveying should be confined to the measurement of existing features of the landscape, including boundaries."

The Superior Court of Quebec did not, however, attempt to define a boundary between the two professions. The final paragraph of its decision (writer's translation) reads:

Considering that in the light of the statutes, land surveyors and civil engineers pursue related professions which complement each other, and that if these professions operate in their respective areas, in similar fashion that is to say, using measurements, plans and estimates, then the one must not exclude the other in carrying out their work, which otherwise would be impossible and unreal.

In the Nova Scotia decision, the Appeal Court referred to the *O'Malley* case in its consideration of monopolistic practices and public safety. The decision in this case cited *Brough Marine Consultants*, which in turn referred to the *Laporte*, *Pauzé* and *Advance Geophysics* decisions. References there to monopolistic practice were essentially the same observations made by Judge Stroud, and noted above. On the question of safety the *Advance Geophysics* decision had said: "With respect I think it is important to emphasize the public interest factor particularly in relation to the engineering profession." The Appeal Court also noted the observation of Jones, J.A. in the *O'Malley* case, wherein he said that the Nova Scotia Act "must be read having regard to the objects of the Act and in particular that engineering means the science and art of designing and supervising construction by persons who through education and training are skilled in the principles of engineering."

The main thrust of the Appeal Court decision deals with the plans Mr. Robb prepared in the initial development of a subdivision.

In the present case the plans related to tentative subdivision approval only. There are three stages: (1) preliminary approval, which can be based on a rough sketch requiring no professional preparation, (2) tentative approval, and (3) final approval, which requires detailed engineering drawings signed and sealed by a professional engineer. Requirements for the tentative stage include a boundary survey, a survey plan showing the proposed lots, and a centre-line profile of proposed roads. In addition, the Department of Transportation requires road cross-sections at this stage. The bylaws do not specify whether tentative road profiles and cross-sections must be prepared by a professional engineer rather than a land surveyor.

The Court noted that a drainage plan had been submitted to the Municipality as part of the subdivi-

sion application. In the matter of drainage, Mr. Robb had told the developer that he was not an engineer and hence could not prepare such a plan. Mr. Robb referred the developer to a professional engineer whom the developer engaged to prepare it. The Court then continued:

[T]he location of roads on a tentative plan, measured on a horizontal plane, might fit a definition of road design, but that appears to have excited little concern. What apparently led to the charge was the inclusion of the centre-line profile and cross-section of the road. These are measured on the vertical plane; both go beyond existing conditions and show the ground altered by cutting, filling and ditching for the proposed road.

It was these that the trial judge had found to be the part of a transportation system consisting of more components than simply a road. She had found these met Department of Transportation and Communications specifications, which required the application of engineering principles. But the Appeal Court ruled:

With respect, merely determining whether there has been an "application of engineering principles" is not the test. The burden on the Crown is to prove, not that the appellant performed certain acts which might be classified as road design or the application of engineering principles, but that he did so in a manner that constituted the practice of engineering. In order to do so it must show that the acts the appellant performed went beyond what was reasonably necessary under the *Land Surveyors Act* for locating a road allowance and thus fixing lot boundaries on a plan intended for tentative subdivision approval, and amounted to the design of a road for construction purposes.

That seems far removed from the purpose of plans for tentative approval, with their emphasis on locations and dimensions of various features of the subdivision or its environment....

Plans submitted for final approval must ... be accompanied by engineering drawings showing existing and proposed public streets or highways and private roads within the proposed subdivision, and including plans, design calculations, profiles, cross-sections, details and specifications.... [T]he engineering drawings include information relating to roads, drainage and services vastly more complex and specific than the road profile required with the tentative plan. The engineering drawings and design must be stamped by a professional engineer.

The main thrust of the Appeal Court decision deals with the plans Mr. Robb prepared in the initial development of a subdivision.

While the engineer would presumably make use of the surveyor's measurements, he would not be bound by anything the surveyor proposed for tentative approval, including the road profiles and cross-sections. It is difficult to see how the public interest would be protected by a requirement that the profiles and cross-sections submitted with the tentative plans be prepared by an engineer as well.

The Court went on to say that the surveyor has a duty to the client to establish the location of roads as accurately as possible. The surveyor must be aware that the approval the client seeks depends on the approval of these locations by the Department of Transportation and Communications and that he must take the Department's specifications (the so-called "blue book") into account to the best of his ability. Of these specifications, the Court observed: "Any member of the public, to say nothing of a surveyor, is entitled to consult them and treat them as guidelines in the early planning stages of various enterprises. Indeed, Crown evidence established that developers are required to be familiar with the contents of the book and to adhere to its requirements."

Finally, the Appeal court addressed the responsibilities of the Crown in prosecuting the case:

The Crown must show that the surveyor went beyond what was necessary to establish the location of subdivision roads with the greatest degree of accuracy within his ability for the purpose of defining the limitations of title of the proposed lots. That is, it must prove that he went beyond the authorization in s. 2(1) (j) of the *Land Surveyors Act* in preparing the profiles and cross-sections and practised professional engineering as defined in s. 2(g) of the *Engineering Profession Act*.

It must do so in the absence of evidence that the road locations in the plans prepared for tentative subdivision approval were intended to be acted upon for engineering purposes, or construction, as opposed to surveying purposes to locate road allowances, and thereby, lot boundaries or limitations of title. It is relevant that roads cannot be lawfully built within the road allowances on the subdivision plans, no matter how feasible the profile and cross-sections show them to be, without final subdivision approval. Final subdivision approval is not possible without engineering drawings signed and sealed by an engineer.

The burden is on the Crown to prove beyond a reasonable doubt that the appellant was practising professional engineering in the manner alleged. On the evidence before the court it

must be doubted that a properly instructed jury, acting judicially, could have reached that conclusion, beyond a reasonable doubt.

The Court allowed the appeal and set aside the conviction and fine.

Both the Nova Scotia judgments considered here have addressed the statutory definitions of the two professions; indeed, they were obliged to. Though not directly germane to the points at issue, this might be a good place to look briefly at the *form* of a definition rather than at its *content*, while recognizing that these two qualities are not always completely separable.

Many hold the view that one should take special care to avoid circularity when defining a concept. That is, one should not define something in terms of itself. A good example of a circular definition is the parcel description of a mining property, encountered in the Registry of Deeds for Annapolis County, some years ago: "Being all the lands on which buildings are now being erected."

The definition of engineering (s. 20(g), *Engineering Profession Act*) shuns circularity completely; neither "engineering" or "engineer" appear anywhere. The definition of "land surveying" (s. 2(1) (j), *Land Surveyors Act*) does not have this characteristic. Therein land surveying is said to consist, among other things "of the conducting of surveys to determine ... the extent of title." Thus, were the definition to come under extremely close scrutiny, one might wish to examine the ordinary meaning of the word "survey" for guidance. Depending on the point of view, the result might be neither helpful nor comfortable.

When the *Infomap* case was considered on appeal, the Court observed that the British Columbia *Land Surveyors Act* contained no statutory definition of land surveyor. The word "land" gave no difficulty, but the Court found that the word "surveyor" required interpretation and looked beyond the Act for it. There are obvious dangers when this is done; there may be meanings out there which are not appropriate or suitable, whatever the reason. But this is a matter for another day, and will not be pursued further at this juncture.

To return to Mr. Robb's situation, the writer has observed elsewhere [*CISM* 1989]: "It is a matter of some regret that our system of law on occasion requires the expenditure of so much of a private citizen's time, money and persistence to resolve an important point ultimately for the benefit of many others." This comment is as appropriate in this instance as was its reference to another case.

In the matter of costs, it might be noted that the Appeal Court did not award any: a signal, per-

Many hold the view that one should take special care to avoid circularity when defining a concept.

haps, that the issue should never have come before it in the first place.

It is unfortunate that surveyors and engineers were not able to reach a mutually satisfactory agreement with respect to a practical division of responsibilities between their two callings. That a matter of this kind could come before our courts, for whatever reason, is not very helpful to the reputation of either professional organization.

The good part of the whole business is that both surveyors and engineers now have some extremely useful and authoritative direction as to how the boundary line between their two professions might better be defined.

References

- Attorney General for British Columbia v. Infomap Services Inc.* (1990), 68 D.L.R. (4th) 1. Judgment appealed from was published in full in *Northpoint*, Summer, 1989, pp. 13-17.
- Advance Geophysics Ltd. v. Acheron Mines Ltd.* (N.P.L.) [1973] 1 W.W.R. 358; 32 D.L.R. (3d) 518 (B.C.S.C.).
- Brough Marine Consultants Ltd. v. Aqua Terra Flotations Ltd.* (1982), 18 B.C.L.R. 217 (B.C.S.C.).
- Canadian Institute of Surveying and Mapping, 1989. *Survey Law in Canada*, Carswell Company, Chapter

- 8, "Settlement of Boundary Uncertainties", §8.29 makes this comment à propos *Merriman v. New Brunswick* (1974), 7 N.B.R. (2d) 612 (C.A.)
- Engineering Profession Act*, R.S.N.S. 1989, c. 148.
- La Corporation des Arpenteurs-Géomètres de la Province de Québec v. Beauchemin et Autres* [1964] 455.
- Land Surveyors Act*, R.S.N.S. 1989, c. 249.
- Laporte v. Que. College of Pharmacists*, [1976] 1 S.C.R. 101; 23 C.C.C. (2d) 45; 58 D.L.R. (3d) 555; 10 N.R. 602.
- Pauzé v. Gauvin*, [1954] S.C.R. 15.
- R. v. O'Malley Electric Ltd.* (1987), 77 N.S.R. (2d) 344.
- Yogis, J.A. 1983. *Canadian Law Dictionary*, Barron's New York.

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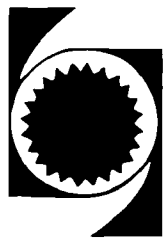
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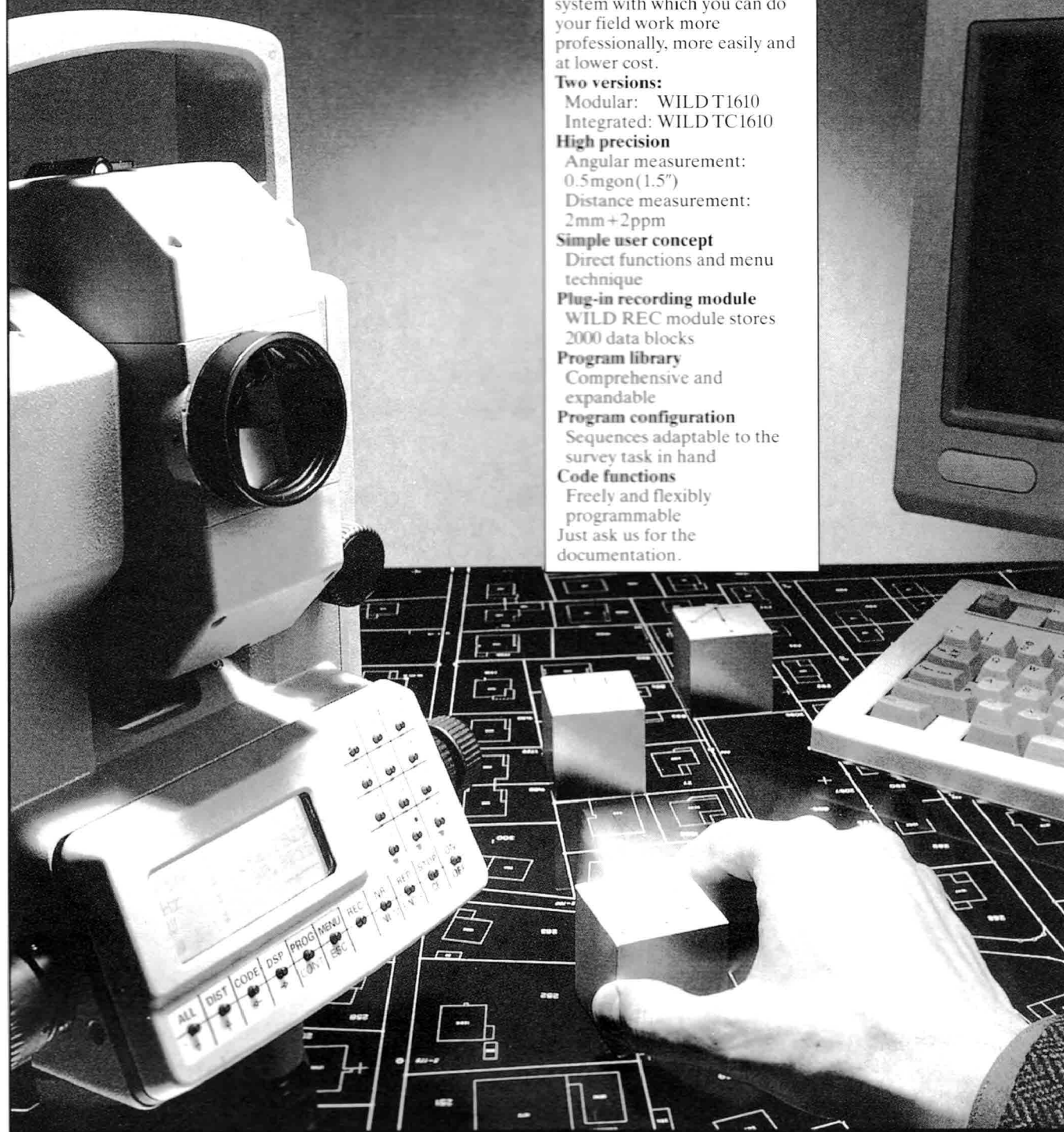
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