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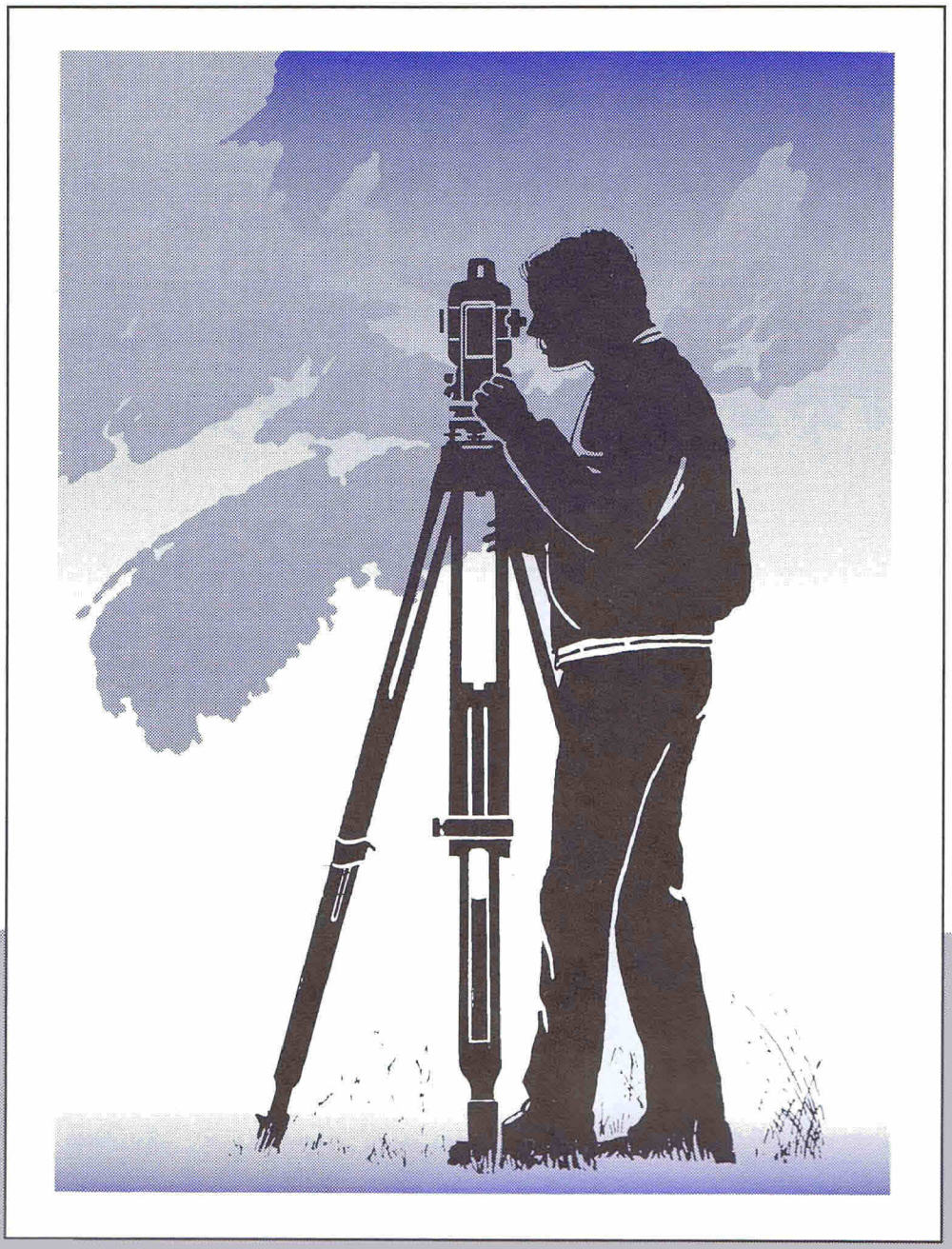

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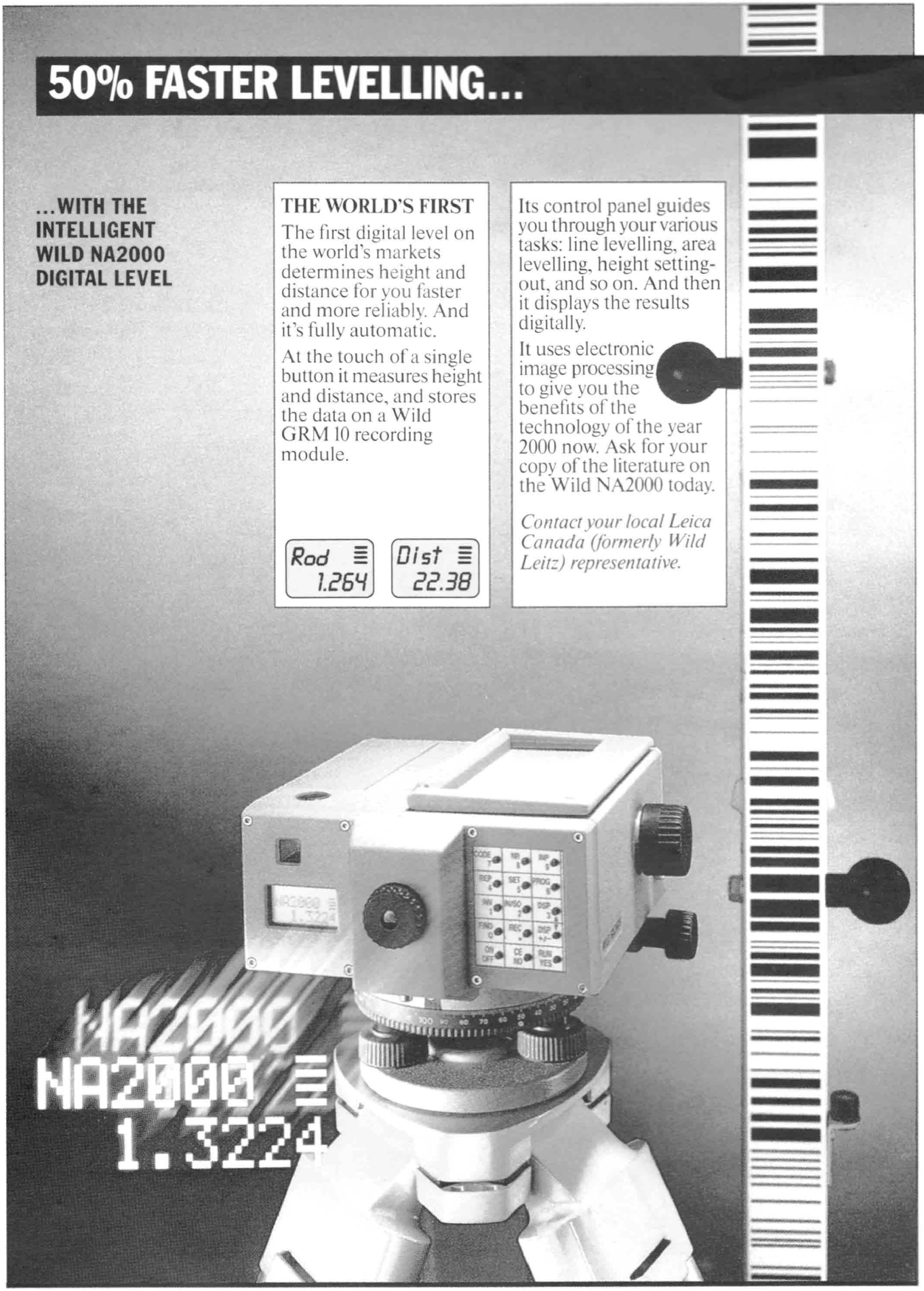

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THE NOVA SCOTIAN SURVEYOR

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Vol. 50 Spring/Summer 1990 No. 137

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
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Contents

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THE NOVA SCOTIAN SURVEYOR

Editor - Michael Crant
Associate Editor - Ed Jeffrey
Association Affairs - Rosalind Penfound
Production - Janet Snow
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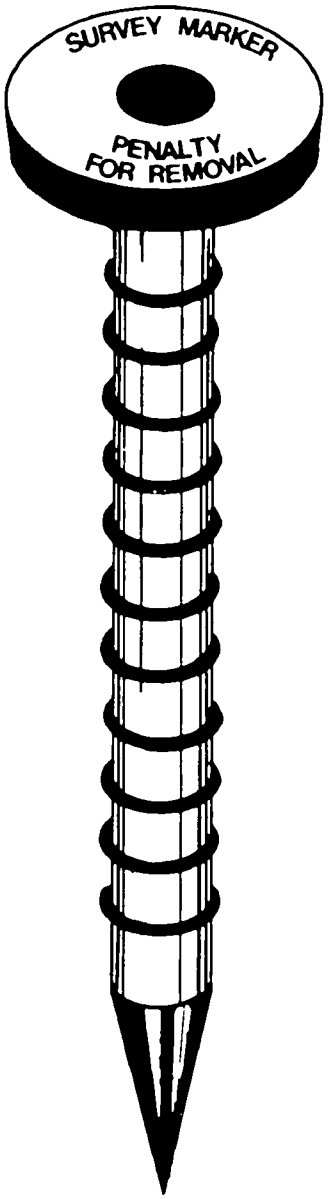
The Nova Scotian Surveyor is usually published four times a year. This edition marks its first publication in this size and format. As a result of this change and the consequent increase in activity surrounding it, the Spring and Summer 1990 Issues have been combined. Address all inquiries to: Association of Nova Scotia Land Surveyors, 159 Portland Street, Suite 301, Dartmouth, Nova Scotia, B2Y 1H9

'LIBERTY' LAND SURVEYORS' MARKERS



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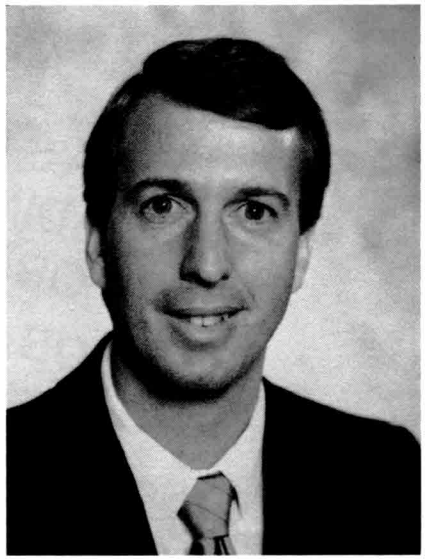
PRESIDENT'S REPORT



As our Association progresses with the times so does our publication, this being the first issue in a more professional format, I trust we will all take the time to read each article.

We have seen several significant changes in the past year which are now being implemented. Jim Gunn our Survey Review Department Manager has been travelling the Zone meeting circuit and has the department well under way. By the time this report has been distributed those of us offering our services to the public will require Liability Insurance. As with any change it is not always as smooth as one would like. Your Council and staff appreciates the inherent difficulties and will assist wherever possible.

On February 20, 1990, I attended a Special General Meeting of the Association of Ontario Land Surveyors in Ottawa, concerning the background and current affairs with the Federal Competition Bureau. The pending charge against several members including some past presidents is "conspiring to limit undue competition by price fixing". This is a criminal charge which carries a maximum jail term of two years and a maximum fine of two million dollars. Their Association feels they have in the past and continue to act in the general interest of the public, as a self governing body. A motion was made and approved by an overwhelming majority (389/1) that their Council take reasonable steps to defend these charges. The following day the AOLS commenced action in the courts for a declaration that the Federal Bureau of Competition Policy has no jurisdiction to intervene in or scrutinize AOLS activities authorized by their provincial legislation. When a decision is handed down I will give a further report.

On another national item the Corporation of Land Surveyors of British Columbia was unsuccessful in the B.C. Court of Appeal regarding non-surveyors preparing location certificates. This could have serious ramifications in B.C. and across the country. However on a more positive note, following this decision executives from Canada Mortgage and Housing Commission contacted the Corporation of B.C.L.S. seeking information on the case and commented that they would only accept survey documents for mortgage purposes prepared by land surveyors licensed within the jurisdiction.

Council has held two meetings since November with the next tentatively set for June. At the last Council meeting the subject of our Association logo was raised, and the possibility of having a new one designed or revising the present one was discussed. Any suggestions or comments would be appreciated and can be passed along to our Association office.

Kenneth M. Whalen, N.S.L.S.
President

FROM THE EDITOR

It has been a long and eventful five months or so for those of us on The Nova Scotian Surveyor Committee, since our last publication (January 1990). That issue marked the last Nova Scotian Surveyor published in the old style format.

Since January the committee has been hard at work (with council's approval) tackling the job of transforming The Nova Scotian Surveyor to the magazine style format you see before you. As a result of the activity surrounding this change it was necessary to combine the Spring and Summer 1990 issues.

The transformation of "The Surveyor" was made possible in part by converting our publication method to an electronic publishing system commonly known as "Desktop Publishing" and by securing the talents of Hamid Ramjohn and Steve Leonard of Norman Wade Company Limited in Halifax. Many thanks to these gentlemen for their hard work and ideas.

Special thanks are also in order for Rosalind Penfound and Janet Snow of our Association office, for their enthusiasm, suggestions and hard work.

We feel the new design and format will provide members with an opportunity to communicate in a more contemporary manner, providing greater flexibility in format and presentation, as well as more interesting use of graphics and photography. We also feel that the new style format will be much more attractive to prospective advertisers as well as serve as a better public relations tool for our Association.

As always the success of The Nova Scotian Surveyor depends upon the contributions of our members. We urge our readers to submit papers, articles, news items and photographs, to ensure the continued good health of "The Surveyor".

The editorial staff looks forward to the challenges that lie ahead and would greatly appreciate hearing from you with your thoughts and suggestions.

Michael J. Crant
Editor

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ASSOCIATION AFFAIRS

Congratulations to Michael Crant and those who have assisted him in this, the first magazine style publication of the Nova Scotian Surveyor. Our Association publication is now in line with virtually all others in North America. Producing the "Surveyor" for the first time in this fashion has necessitated combining the Spring and Summer 1990 issues. The timing and frequency of publication is currently under review.

The content of the Nova Scotian Surveyor will henceforth be slightly different than it has been in the past. The Right Angle, the Association's newsletter, which I hope you are enjoying, will report on the activity of members, their businesses and communities as well as activities in the Association office. The intention is that it be a very informal, newsy publication with a heavy emphasis on fun and the provision of information. The Nova Scotian Surveyor will continue to be the official publication of the Association. It will contain such things as minutes of annual and special meetings, discipline orders, official notices of meetings, nominations for Council, book reviews and articles of a professional orientation and interest. Every reader is urged to contribute to both publications and suggestions are solicited and appreciated.

Jim Gunn is now well settled in as Manager of the Survey Review Department. Computer equipment and software are now on site and the Department is hiring a student from COGS for the summer. Jim has attended meetings in each zone and visited both the Ontario and New Brunswick Survey Review Departments.

I am pleased to have been invited to serve on two CCLS committees. One of these is the Professional Liability Insurance Committee. Also on that Committee are Ken Allred of Alberta and Gordon Webster of Saskatchewan. The second committee will help CCLS formulate a position with respect to the Federal Bureau of Competition Policy as it relates to the profession. Involvement with these committees should help to ensure that we are current in these two important areas of concern.

The Complaints Committee continues to meet monthly and has in excess of a dozen active files. Two Discipline hearings will likely be scheduled in June and one in the early fall. The handling of complaints is an ongoing and very important responsibility. The Complaints Committee is working very hard to expedite the process and believes that the public and our members are best served by an efficient prompt handling of complaints within the parameters laid out in our Act, regulations and by-laws.

It is with great regret that the Association will say good-bye to our Office Administrator, Janet Snow, in July. Janet and her family will move to Baden, Germany in August. The efficient and conscientious manner in which she has fulfilled her duties is greatly appreciated and she will be missed.

Reporting forms are arriving daily as members comply with the filing requirements of the Mandatory Liability Insurance regulation. The cooperation shown by members is appreciated. This is our first year and there will necessarily be a learning curve with respect to administering the regulations. Please be assured that we will make every effort to be as flexible and helpful as possible.

If you have any questions or concerns please contact the Association, or better still, drop in to see us.

Rosalind C. Penfound,
Executive Director

MINUTES OF THE COMMITTEE WORKSHOP

held at
TRURO, NOVA SCOTIA
January 27, 1990

President Ken Whalen called the meeting to order at 9:45 a.m. and welcomed members to the 1990 Committee Workshop. Rosalind Penfound and Ken Whalen reviewed the format and arrangements for the days meeting.

Committees were requested to meet in their designated location and report back to the general assembly at 3 O'clock.

At 3 o'clock the general assembly reconvened and each committee reported. These reports are represented in the following minutes prepared by each committee.

STATUTES COMMITTEE

The committee reviewed correspondence to the Association's solicitor and his report concerning a new Act and possible inclusion of "Limitations of Action" in our Act. Newfoundland is using this approach.

We will ask the solicitor to investigate the possibility of exclusion of our profession from Trade Unions Act by virtue of amendment to our own Act.

Joint meeting with Errors & Omissions Committee:

Regulations are necessary to implement changes respecting errors and omissions.

Can our Act allow for these changes or will Registry Act changes be necessary?

The next phase of errors & omissions is to deal with the occasion where boundaries actually move.
The Errors & Omissions Committee will liaise with the Regulations Committee directly in order that revisions to the Act concerning errors & omissions will come forward complete with regulations.

Murray Banks - Put through a small amount of amendments. The new definition of surveying is going to be very closely scrutinized by APENS and there blessing must be received first.

Investigate the desirability of putting through one or two amendments at a time versus a whole package. Very Important.

APENS have been given a copy of all the different definitions across the country to illustrate that we are the only province having this problem.

Murray Banks is unable to participate as a member of the Statutes Committee but will act as a resource person when necessary.

Grant McBurney accepted the position as Chairman of the Statutes Committee effective immediately after this meeting.

Jim McNeil will peruse all the new Acts and liaise with Rosalind when he deems necessary and will contact the chairman when any item appears to affect or be important to the Association.

If our solicitor agrees the committee will proceed with the less controversial amendments to our Act rather than wait for the new definition of land surveying which might take considerably longer due to the problems with APENS.

The committee also thought that the possibility of surveyors being designated as officers of the court should be explored in view of his unique position in that although he works for a particular client he must take an unbiased view in the retracement of an old boundary. This is unlike any other client/professional relationship. The designation of officer of the court might allow us to set minimum fees without incurring the wrath of the Combines Investigation Act as well as enshrine the land surveyor as a unique professional.

David Roberts

****

BYLAWS COMMITTEE

The committee members for 1990 are Gerry Bourbonniere (Chairman), Peter Lohnes, Jeff Fee and Rosalind Penfound. All members were present at the workshop. Unfortunately, Rosalind was unable to take part in our deliberations, however, Joe Alcorn, Councillor for Zone 6, sat in. We also consider Past President Murray Banks as an advisor and information source because of his many years' involvement with the Bylaws and Statute Committees.

The procedures (or flow pattern) for communication between Council and the Committee were discussed. It was decided that the Committee should attempt to identify any changes, additions or deletions which may be necessary to the existing Bylaws and present these observations to Council for further instructions. It does not make any sense to the Committee members to take the time and effort to prepare a proposed Bylaw which Council does not see as being required in the first place. The other procedure is to prepare a proposed Bylaw on the direct request from Council as determined by their deliberations.

The following topics were discussed during the Workshop:

1) Review all the present bylaws for any changes which may be necessary due to the change in our office organization. Namely, the hiring of the Executive-Director and the Manager of the Survey Review Department.

2) Consider a bylaw creating a new membership category to provide members with some financial relief if they wished to take a "sabbatical" from the Association for reasons such as full time attendance at an educational institution. We propose to check with other Professional Associations such as the Bar Society, APENS, Architects, Accountants, etc. for their policies on this subject.

Possibly this new category, if approved, and the present retired and "non-practising" categories could be brought together under one heading.

3) A bylaw for controlling write-in nominations for the election of officers of the Association.

At present, all members of a Zone may not be aware that persons, other than those on the list of nominees distributed by the Association, have agreed to run for office. Also, many times those additional nominees have not been consulted for their consent and they could win an election without knowing they were offering for a position.

4) A bylaw with respect to advertising by the membership.

This is covered by the "Code of Ethics" but the question of "interpretation" possibly may require more specific wording which could be set forth in bylaw form. If this is deemed necessary we will obtain any bylaws on this topic from our sister Associations who have them. At present, we have the Advertising Bylaws from British Columbia and New Brunswick.

The following have been identified as possible "housekeeping" problems with the present Bylaws.

5) Bylaw #8 - Respecting payment of dues.

Article 8.5(a) - the wording "shall not later than the first day of October in each year..." be changed to "shall, not less than fourteen days prior to the first day of October in each year...".The wording in 8.5(a) and 8.7 should be consistent and this will create that consistency.

6) Bylaw 13 - Retired members.

Perhaps there should be a clause similar to 9.5 which would provide a mechanism for a retired member to return to full member status.

Section 13.1(b) permits Council to grant this membership to a member due to long-term disability. Depending on the definition of long-term disability, a member could overcome the disability and wish to continue his/her career as a Land Surveyor.

7) Schedule "B" G. T. Bates Scholarship

The A.N.S.L.S./COGS Liaison Committee has recognized a possible problem with the dollar value ($200) attached to this scholarship. If this is changed, a change in the schedule will also be required. Perhaps the revision can be made in a manner which will permit future changes without necessitating further revision of this schedule.

As outlined above, the Committee will present this report to Council for further direction on proceeding with the preparation of any proposed changes. Any changes which are prepared will be done in time for presentation to the membership at the Zone level prior to the Annual Meeting.

The next meeting was tentatively set for 4 weeks hence at which time we expect to have heard from Council with their instructions.

Gerry Bourbonniere

****

SURVEY PROFESSION COMMITTEE

The first meeting of 1990, of the Survey Profession Committee, was held at the Best Western Glengarry in Truro, during the January 27 Annual Committee

Workshop. Murray Banks took over as Chairman for the year. Members in attendance at various times during the day were Bob Feetham, Al Wallace, Marcellin Chiasson, Dave Steeves (CCLS Director), Dave Clark and Murray Banks (Chairman). Visitors sitting in on the meeting for part of the day were Executive Director Rosalind Penfound and Chairman Allan Owen and Nick Dearman of the ANSLS/Barristers Liaison Committee.

Murray opened the meeting with a review of last year's activities. Bob provided a progress report on the discussions with APENS and the present considerations of land surveying and engineering definitions. Murray explained how the present definitions have evolved. It was agreed that the committee would bow out of involvement in the APENS conflict discussions while it is being considered by the special committee for that purpose.

The meeting from then on consisted primarily of discussions concerning what matters should be the focus of the committee's attention during the year. A half dozen specific projects pertaining to the enhancement of the land surveying profession were listed and considered. It was felt that some items should be given greater priority than others and that the committee would act as an advisory body to Council on these and other matters.

1) **Boundary problems created by unqualified persons surveying.** - It is felt that there are some very serious problems being created under FRDA programs, with certain unqualified persons going beyond the scope of boundary maintenance and actually establishing forest boundary lines. It was noted that although there are many allegations of this happening and of boundaries being located incorrectly, there is virtually no hard evidence available. It was agreed by the committee to try to find money in the budget to contract a land surveyor for a short period of time to carry out an inspection on one or two of the more blatant complaints, so that the facts can be presented to those in control of the programs.

It was noted that because these programs are government sponsored, prosecution of offenders is a delicate matter, but because of the problems that may be created by shoddy work, the Association must ensure that it does not continue.

2) **Promotion of opportunities for practicing land surveyors to upgrade their qualifications.** - Bob felt that we are falling behind in our objective of obtaining extension courses from UNB. Since land surveying education has gone through such transition in recent years, some surveyors may need to be given the chance to upgrade their competency. Drainage for instances, is an area that some surveyors may wish to increase their knowledge. Apparently UNB has a framework of extension courses already available and COGS is also more than willing to provide continuing education to Association members. It was agreed that the committee should advocate the objectives of the Atlantic Cadastral Studies Committee in this regard.

3) **A "last resort" rectification of boundary problems.** - It was felt that the need exists for some means to rectify a survey problem created by a member, when the Association is incapable of forcing that member to resolve the situation.This could possibly happen as a consequence of a discipline case, or due to the death of the member. The result of such a situation is that the Association bears the brunt of any bad publicity.

It was further suggested that there are sometimes cases where an indigent person desperately requires the service of a professional land surveyor and perhaps the Association should provide as a public service a means to carry out the necessary survey.

It was agreed that the committee should investigate the establishment of some sort of trust fund which might be utilized in either of these instances.

4) **The continued promotion of the establishment of a Land Titles System in Nova Scotia.** - There are encouraging signs that discussions are taking place within government regarding major changes to the Land Registry System, following the presentation of the Association brief last year to the Attorney-General. Rosalind is already a member of one sub-committee working on these changes. With considerable discussion by the committee, it was felt that the Association should strive to provide input in any new system being developed. It was felt that we should demonstrate the need for a boundary survey in the transition of real property from one system to another. It is unfortunate that the pilot land titles project in Albert County, N.B., does not have this requirement.

It was agreed that the President and Vice President and Chairman Allan Owen should seek an appointment with the Deputy Attorney General to request a representation from ANSLS to provide input in the implementation of a new Land Titles System.

5) **The establishment of an Association Building Committee** - While reviewing the Long Term Plan, it was discovered that the formation of a Building Committee as was approved at the Annual Meeting a year ago, has not yet been done. Even though we are happy with our present location, it was felt that a committee should be formed to analyze the concept and advise on the acquisition of a building for our future requirements.

In other matters mentioned during the meeting, Dave Steeves reported that a proposal would be forthcoming in the near future from CCLS in regards to an expanded survey profession and Marcellin circulated a copy of the press release on the new Maritime Land Information Centre which elicited a very positive response. Rosalind inquired if we should consider the appointment of a lay member to Council, feeling that this would help enhance our image to the public.

The meeting adjourned at 3:00 p.m. with plans for another meeting in the near future.

David Clark

****

DISCIPLINE COMMITTEE

Members in attendance: Errol Hebb, John Covert, Al Hunter

Non-members in attendance: Rosalind Penfound, Robert Daniels, John MacInnis, Sandy Cameron

1) Discussed past cases concerning the costs to the Association.

2) Suggested by Rosalind Penfound that a list of past cases and their decisions be complied for future use.

3) Discussed the possibility of having a member of the Bar sit as a member of the Discipline Committee.

4) It was noted that the complainant may not have his survey corrected even after going through the discipline hearing.

5) It is suggested that this workshop be scheduled for the same weekend each year so that members can better plan for it.

6) The manner in which complaints are now handled by the Complaints Committee was explained.

7) It was suggested that one member of the Discipline Committee be assigned to each case to be sure the decision of the Committee was complied with.

****

BOARD OF EXAMINERS

Members in Attendance: Jim Chisholm, Jim Doig, John MacInnis

1. Student Handbook

Reviewed preliminary outline prepared by Jim Doig. After comments are received by other board members a draft of the handbook will be prepared. Council, through the President, will be kept informed of the progress in the preparation of the handbook with a draft to be presented to Council for comments.

2. C.L.S. Syllabus

Discussion re request to respond.

2. APBELS syllabus

Discussion re changes approved at the January 18, 1990 meeting held at Edmundston, N.B. A copy of the present APBELS syllabus follows, together with a copy of the Revised Syllabus which comes into effect on July 1, 1990.

John MacInnis

SYLLABUS OF EXAMINATIONS FOR CERTIFICATE FROM THE ATLANTIC PROVINCES BOARD OF EXAMINERS FOR SURVEYORS

PART I

1. Basic Mathematics
2. Statistics
3. Physics
4. Computer Programming
5. Introduction to Earth Sciences
6. Plane Surveying
7. Basic Photogrammetry
8. Written and Graphic Communications

PART II

1. Advanced Mathematics
2. Data Analysis
3. Numerical Methods
4. Geodetic and Astronomic Positioning
5. Advanced Photogrammetry
6. Advanced Surveying
7. Survey Law
8. Cadastral Studies
9. Land Economy
10. Physical Planning and Municipal Engineering

PART III

(Candidate has to take three of the following examinations)

1. Applied Photogrammetry and Remote Sensing
2. Geodetic Networks and Gravity Field
3. Engineering and Mining Surveying
4. Hydrographic Surveying
5. Cartography: Conventional and Automated
6. Computer Science
7. Business Administration and Economics

PART IV

1. Survey Systems
2. The Surveying Profession

Examinations administered by the respective Provincial Boards

---

Regulatory Processes (or equivalent)
Project
Oral

REVISED
SYLLABUS OF EXAMINATIONS
FOR
CERTIFICATE FROM THE ATLANTIC PROVINCES BOARD OF EXAMINERS FOR SURVEYORS
(effective 1 July 1990)

PART I

1. Basic Mathematics
2. Statistics
3. Physics
4. Computer Programming
5. Introduction to Earth Sciences
6. Plane Surveying
7. Basic Photogrammetry
8. Written and Graphic Communications

PART II

1. Advanced Mathematics
2. Least Squares Estimation and Data Analysis
3. Data Base Management Systems
4. Geodetic Positioning
5. Applied Photogrammetry and Remote Sensing
6. Advanced Surveying and Survey Astronomy
7. Survey Law
8. Cadastral Studies
9. Land Economy
10. Land Use Planning, Environmental Management and Municipal Engineering
11. Geographic Information Systems
12. Business: Law, Administration and Economics

PART III

(Candidate has to take two of the following examinations)

1. Geodetic Networks and Gravity Field
2. Engineering and Mining Surveying
3. Oceanography and Hydrographic Surveying
4. Cartography

(Note: CLS candidates need to take III/3 and III/4)

PART IV

1. Survey Systems
2. The Surveying Profession

Examinations administered by the respective Provincial Boards

---

Regulatory Processes (or Equivalent)
Project
Oral

ERRORS & OMISSIONS COMMITTEE

Members in attendance, John MacInnis, Lee Johnston, Ken Robb(c)

The Errors & Omissions Committee met with the Statutes Committee to determine the status of proposed new regulations adopted by this committee, dealing with the corrections of plans, containing

errors and omissions that did not move boundary lines. Our committee was informed that the Statutes Committee, over the past year, was involved with a change of solicitors, that caused considerable delays in the work of their committee. The Statutes Committee advised the Errors & Omissions Committee that the processing of our proposals would not constitute a first priority. Due to the heavy work load now on the Statutes Committee agenda, we were informed that a priority status would be given to new legislation or statutes involving Real Property Reports, Limitations and a re-definition of the meaning of Land Surveying. Our proposal would be handled as a last priority on their list.

Discussion followed regarding the approach by our committee, to the Regulations Committee, to draft regulations that could be used with a future statute change in the Surveyor's Act for errors & omissions. My committee, then met with the President of the Association, Ken Whalen, to request his permission to deal with the Regulations Committee. Upon notification by Mr. Whalen, and/or the chairman of the Regulations Committee, Mr. Lee Johnston, a member of my committee will arrange a meeting with the Regulations Committee, to discuss the drafting of new regulations.

My committee, at the present time, is uncertain as to whether it should continue its meeting regarding the second phase of errors and Omissions, which would involve plans that require the movement of boundary lines. As soon as a meeting date is arranged, I will place this item on the Errors & Omissions Committees' agenda for further discussion

Ken Robb

****

MUNICIPAL AFFAIRS COMMITTEE

Members in attendance - Erwin Turner, George Sellers, Kirk Hicks

Several of the topics discussed had arisen the previous year. It is hoped that in the coming year a meeting can be arranged with Municipal Affairs to discuss the following topics: 1. Repeal of subdivision plans; 2. Subdivision by Instrument; 3. 5 Acre Subdivisions; 4. Definitions re roads, railways, streams, lakes, rivers as boundaries relating to areas of land. I feel that discussion on these and other topics will open up an effective line of communications with Municipal Affairs.

Erwin Turner

SURVEYOR/BARRISTER LIAISON COMMITTEE

Members in attendance - Allan Owen(c), Marcellin Chiasson

1) This committee did not meet as a separate body today, but coordinated discussion on the implementation of a land titles system with the Survey Profession Committee.

2) If any members have subjects of issue which they feel we should be taking up with the Barristers, please pass your thoughts along through Nick Dearman or Rosalind Penfound.
3) I will contact Cathy Walker to determine if the Barristers have any survey related concerns to put on the table.

Allan Owen

****

SURVEYORS/ARCHITECTS COMMITTEE

The Surveyors/Architects Committee have been invited to attend the Association of Nova Scotia Architects Annual Meeting and Review 1990 on March 2nd/3rd, 1990 at the World Trade and Convention Centre, Halifax.

The committee will have the opportunity to address the Architects in a 1/2 hour time slot during their meetings at which time topics such as services available from surveyors, products and types of plans available from surveyors, latest technology used by surveyors in data gathering and plan preparation and manipulation of data with respect to site information (contour lines, volumes).

As well as attending the business meeting, the committee will participate and have a display which will show the new technical instruments, i.e. total station, computers and plotters. There will also be examples of various types of computer generated map sheets and topographic plans as well as samples of data in the computer to demonstrate the surveyors capabilities.

Brian MacIntyre and the Public Relations Committee will be assisting with the display at the Architects Convention.

Bob Daniels

ANSLS/COGS LIAISON COMMITTEE

Present - Dave Steeves, Grant McBurney, Joe Alcorn, Dave Wedlock, Ken Whalen

The Surveyors Forum will be held for the second time in the Winter of 1991 at COGS. The format and content of papers will be similar to the one held previously. This involved six speakers.

Dates for spring and fall meetings of the committee were tentatively arranged - spring meeting being the 1st Friday in April at COGS.
The Trig Star program is being pursued this year with ten high schools in the rural areas of the province, mainly in Cape Breton.
Last year's speakers at the Surveyor's Forum at COGS were: John Conn, Doug MacDonald, Steve Wallace, Bruce MacLaughlin, Athol Grant, Bob Daniels

****

POLITICAL ACTION COMMITTEE

Present - Dave Steeves, Ken Robb, Stewart MacPhee

Look into setting up meeting with Russell MacKinnon to discuss issues confronting land surveying today and hopefully set up meeting with caucus.

Same concerning P.C. government

Association utilize press releases for positive action taken by the government on related issues. The first example is the formation and implementation of the MLIC.

Need small budget for dinner meeting, etc.

****

D.O.T. LIAISON COMMITTEE

Members in attendance - G. Crews(c), D. Wedlock

Guests: Geoff Verner, Stewart MacPhee

We reviewed our past progress and decided to set a meeting with the Minister of Transportation to persuade him to make necessary changes in his Department. We'll show the Minister the problem created with assessment and L.R.I.S. revisions to map sheets and title difficulties when engineers sign survey plans. Also show him how a legal survey department could solve these problems.

Ken Whalen and Rosalind Penfound attended the last 1/2 of the meeting.

Glenn Crews

****

LAND COURT COMMITTEE

Ken Robb reviewed activity of the committee to date and reported to the general assembly. Members of the committee have met with representatives of the Department of the Attorney General to discuss the possibility of land surveyors assisting the courts in cases involving boundary questions. Although the Department of the Attorney General does not feel that it would be possible to establish a separate land court it has proposed to the Nova Scotia Supreme Court, Trial Division, that it consider the use of land surveyors as referees in such cases. The Association will become involved in developing selection criteria.

Ken Robb

****

Ken Whalen thanked all in attendance. The meeting was adjourned at 4:00 p.m.

Rosalind C. Penfound,
Executive Director

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THE PROFESSIONAL LIABILITY INSURANCE CORNER

by GORDON A. WEBSTER, S.L.S., C.L.S.

Chairman Professional Liability Insurance Committee, Canadian Council of Land Surveyors

The following column is a regular feature and will attempt to give examples of claims made against the CCLS insurance program. The examples will relate to problems incurred against the program anywhere in Canada and may or may not have resulted in a settlement. Claims may be closed or open and the opinions given are that of the author. It is the intention of the author to maintain confidentially in all examples.

In early 1987 our Insured was engaged to complete the necessary survey, of a particular piece of property, in order that a portion of the property could be sold. The required survey was completed and the sale of the property was completed.

In June of 1987 the purchaser of the property engaged our Insured to complete additional survey work on the property. This additional work was topographic in nature and the plan prepared was submitted by the owner to the architect and engineer in order that plans for the design of a building, to be constructed on the site, could be completed.

In May of 1988 the Insured was engaged by a contractor to survey and locate the building as per the drawings which had been prepared by the architect. On May 11th, 1988 our Insured was contacted by the contractor who indicated that the location of the building appeared to be wrong by ± 10.0 feet, and that the building would have to be relocated. The Insured conducted his own investigation and it was determined that the building was in fact in the wrong location by the suggested ± 10.0 feet. The insurance company was contacted and an adjuster was appointed to assess the claim.

The adjuster in his investigation determined that our Insured used the plan prepared by the architect to locate the building on the property. The architectural plans showed two lines, being the boundaries of a right of way which was 10.0 feet in width. The Insured assumed the wrong right of way boundary to be the property boundary and used the dimension from the right of way boundary as the dimension of the property line. The resulting problem was that the building was located 10.0 feet closer to the property line than was originally intended. The matter was discussed with the building owners and it was determined that this building location was completely unacceptable and a means of correcting the problem must be found. Fortunately, the error had been discovered, by the contractor, just after the footing and grade beam had been completed and no major construction of the building had yet commenced.

The contractor's proposal to correct the problem was to add a 10.0 foot section at one end of the building, while adding a wall 10.0 feet inside the existing foundation at the other end of the building and to cut the concrete and remove the 10.0 feet of wall which was too close to the property line. This solution was agreed to by both the building's owners and the insurance company and the work required to remedy the situation was completed.

The surveyor admitted, to the adjustor, that he had been aware of the right of way and that he felt he had a responsibility for the extra costs which were incurred by the contractor. The insurance company agreed with the Insured and the claim was settled. In addition to the Insured's $5,000.00 deductible, a claim of $12,500.00 and expenses of $578.70 were paid by the insurance company bringing the total value of the claim to $18,078.70. A portion of the claim paid was for overtime work required to get construction back on schedule because of the delay caused by the survey error.

This claim once again points out the importance of proper interpretation of construction drawings. As this type of error continues to be a major contributor to our claims, I would urge anyone involved in this type of work to exercise as much caution as possible!

SURVEY REVIEW DEPARTMENT CHECK LIST

by JIM GUNN

(The following check list has been prepared by the Survey Review Department for use in its day to day systematic plan checking activity and is being published for information purposes only.)

CHECK LIST SUMMARY

Date____/____/1990

Surveyor's Name _____

Plan Title _____

Plan Number _____

Date Cert/approved ____/____/1990

Date received ____/____/1990

Date copy requested ____/____/1990

Date copy rec'd ____/____/1990

Inspection item	Meets accepted standard	Comments
Response times	yes____ no____	
Appearance/quality	yes____ no____	
Boundaries distinguished	yes____ no____	
Acceptable scale/size	yes____ no____	
Plan orientation	yes____ no____	
Title block	yes____ no____	
Adequate legend	yes____ no____	
Location map	yes____ no____	
Tie to control	yes____ no____	
Bearings/azimuths/dist	yes____ no____	
Streets/ROW's/easements	yes____ no____	
Buildings/encroachments	yes____ no____	
All monuments	yes____ no____	
Identification of ppty owners	yes____ no____	
Natural bdry/watercourses	yes____ no____	
All relevant evidence	yes____ no____	
Area of property	yes____ no____	
Surveyor's certificate	yes____ no____	
Surveyor's stamp	yes____ no____	
Revisions identified	yes____ no____	

References to comments

_____

_____

_____

_____

INSPECTION ITEMS IN DETAIL

SYSTEMATIC PLAN REVIEW

Item	
Response times:	> 30 days between signing the certification or final approval in the case of subdivision plans. Reg.93(3)
	> 14 days between request for copy and receipt of same. Reg.94(4)
Appearance/quality:	> Use of black ink. Reg.46(1) > Neat and clear. Reg.47 > Mechanical lettering Reg.48 > Proper boarder, 10mm Reg.53
Boundaries distinguished:	> Heavier line weight. Reg.49 > Partial surveys should have an appropriate title so as not to suggest that the entire parcel has been surveyed. Reg.62 (a)(ii)
Acceptable scale/size:	> Use of an accepted scale ratio. Reg.51 > Use of inserts when needed to show detail. Reg.52 > Plan size to conform to standard sizes. Reg.54
Plan orientation:	> North towards the top of plan. Reg.55 > Arrow or symbol accurately plotted. Reg.58 > Lettering to read from the right or bottom of plan. Reg.56
Title block:	> Placed in lower right corner. Reg.62 > Proper heading. Reg.62(a) > Name of owner. Reg.62(b) > Location of property. Reg.62(c) > Name of Surveyor or firm. Reg.62(d)(i) > Discreet use of Surveyor/firm name. Reg. 62(d)(ii) > Date of plan. Reg.62(e) > Scale of plan. Reg.62(f)
Adequate legend:	> Bearing system used, how derived, meridian used and date. Reg. 57(a) > Explanation of symbols and abbreviations used. Reg. 57(b) > Bearings and distances measured or adjusted and type of adjustment. Reg. 18 and 57(c) > Scale factor if applicable. Reg. 57(d) > Date of field work. Reg. 57(e)
Location map:	> Appropriate scale and orientation. Reg. 59
Tie to control:	> Bearing and distance. Reg.19 and 60(j) > Magnetic bearings as provided for in regulation 19(a)(b)
Bearings/azimuth/dist:	> Shown and accurately plotted. Reg. 14, 15, 20, 21 and 60(a) > Accuracy sufficient to permit the calculation of a proper closure. Reg. 17 and 61(1)
Streets/ROW's/easements:	> All streets, ROW's and easements shown together with perpendicular widths. Reg. 60(b)(c)

Buildings/encroachments:	> Perpendicular distances shown for all buildings within 3 meters of any boundary. Reg. 60(d) > All apparent encroachments shown. Reg. 60(m)
All monuments:	> Location and type. Reg.60(e)(i) > Proper symbols used. Reg. 36 and 60 (e)(ii)(iii)
Identification of ppty owners	> Names or identifiers of owners and adjoiners. Reg.60(f) > Reference to documentary evidence. Reg. 60(n)
Natural bdry/watercourse:	> Plotted to acceptable accuracy. Reg. 60(g) > Names and direction of flow of all watercourses that intersect boundaries. Reg. 60(h)
All relevant evidence:	> Show all relevant fences, walls, blazes, monuments hedges and descrepancies. Reg. 25, 39, 40 and 60(i) > Plans and documents referred to. Reg.13, 60(n) > Report if necessary. Reg. 67(a)(b)
Area of property:	> Stated within .04% of total or nearest sq. meter or foot except when dealing with irregular boundaries. Reg. 22 and 60(l)
Surveyor's certificate:	> Shown on plan in a form prescribed by regulation. Reg. 64(1)
Surveyor's stamp:	> Shown on plan in a form approved by council. Reg. 64(2)
Revisions identified:	> All revisions dated and initialled. Reg.66
NOTE:	The above check list has been prepared for use by the Survey Review Department and is subject to change. It is not to be considered complete nor is it to be used as a substitute for the regulations as provided by the Nova Scotia Land Surveyors Act. Any or all comments regarding this check list or any matters concerning the Survey Review Department are always welcome.

PROFESSIONAL ATTITUDE OF THE LAND SURVEYOR

by DAVID C. CLARK, N.S.L.S.

Down through the years since the settlement of this country, land surveyors have been highly regarded and respected individuals within society. Early surveyors were looked upon by the citizens of their communities with the same esteem which was accorded their minister or doctor. These land surveyors in turn lived up to the image reflected by their status and responsibilities, and they became role models as early professionals in the development of the land tenure system.

Land surveyors are members of one of civilization's oldest professions and still occupy a unique position in society. The land surveyor is considered to be a public officer in that a single client cannot be fully represented; the land surveyor must have the judicial mind and impartial attitude of an arbiter in order to determine to the best of his or her ability where the boundary between client and adjoining owner is located.

But is the land surveyor of today still held in the same high regard by the public? Do our clients and others with whom we come in contact perceive us to be true professionals? Do we portray ourselves with a proper professional image? Do we fully appreciate the status we do hold in society, or do some of us lack self-confidence and feel subservient to other professionals? Each of us must ask ourselves these questions and then do some personal soul searching to determine why our answers are as they are.

A land surveyor is described as a professional person with the academic qualifications and the technical expertise to practise the art of determining the extent of title or interest in land and the science of measurement for the purpose of collecting land-related information or trends in modern development, to be used in the efficient planning or management of the land, the sea, airspace, and constructed works on, above, or below the surface of the land.

The Association of Nova Scotia Land Surveyors is the professional body created by an Act of the Nova Scotia Legislature to represent all land surveyors in the province. A professional body has been defined as a self-governing organization comprised of individuals who provide a unique service that is in the best interest of the public. The organization has the power to control membership by the setting of educational and training requirements, as well as the power to discipline members and enforce standards for services provided to the public.

There presently seems to be a feeling of need within the land surveying profession for practitioners to recognize their own individual and collective status as professionals. A number of new definitions of "Land Surveyor" and "professional land surveying" have been compiled and published recently to address this concern, and to attempt to convince others that we really are professionals. The ANSLS Survey Profession Committee, along with its solicitor, is working on proposed amendments to the Nova Scotia Land Surveyors's Act which will spell out and clarify our responsibilities as Nova Scotia Land Surveyors.

All of this is constructive and it may even be necessary, but is an updated definition of land surveying all that we really need, to be considered professionals? The answer is no, because being recognized as a professional by others is due largely to one's personal attributes and how they are perceived.

Perhaps the most important personal attribute a land surveyor can have, is an appropriate professional ATTITUDE! Attitude is defined as being "one's state of mind, behaviour or conduct indicating opinion or purpose in regards to some matter". The professional attitude of a land surveyor is comprised of those personal qualities of character, judgement, and understanding that have a direct and vital bearing upon the success or failure of an individual's professional career. Character and personality and ultimately one's personal reputation are based on courage, integrity, determination, ambition, dedication, efficiency, imagination, leadership, and judgement. All of us are born with these qualities to a greater or lesser degree, but the continuing development of each is left to the control of the individual.

True professionalism is acquired gradually as one ascribes to a constant personal concern for perfection after having achieved a high level of knowledge and technical competence. the attitude of a professional person must be characterized by an ever alert conscience, self-discipline, integrity and a sense of justice and responsibility. One must always be conscious of these obligations in all business relationships and continually strive to develop these traits.

It is imperative for a land surveyor to develop and maintain a personal reputation of professionalism. A good reputation is the most substantial and yet fragile asset of a professional's life. One publicized case of lack of integrity is enough to ruin an individual's career and may stain the reputation of the whole profession.

Fortunately or unfortunately, our evolving society contains individuals with many diverging points of view. As professional land surveyors, however, we must be extremely conscious of our own attitudes and must continually be alert to cultivate those qualities of character and personality that are so essential to success.

One of the most serious problems facing our profession at this time, is the imperious attitude of certain individuals and organizations, who consider land surveyors to be technicians. On the opposite extreme, a segment of society mistakenly believes that anyone who surveys is a land surveyor. Our identity problem has evolved over a period of time, and is due primarily to stereotyping and the perception that surveyors do mundane activities and are always dressed in field clothes. Meanwhile, professional land surveyors are suffering from this unfavorable image and disharmony has resulted from snobbery and a lack of understanding.

It is human nature to form strong impressions from the attitudes of people providing services. In our day to day business operations we must always strive to develop and maintain our working relationships in an atmosphere of mutual respect and cooperation. We must be more conscious of the concerns of others and have the courage to get involved and work to set things right. We must keep our clients informed at all times in all matters affecting them as a result of our activities and we must be prepared to ensure that they fully understand the services they receive. Building one's image as a professional begins with implementing a public relations strategy that communicates a business philosophy of competence and responsibility.

With all the changes in technology it is no longer as convenient to involve the client in the conduct of a survey to the extent that once was possible. Thus, the client may develop concerns about our methods, our final results and our fees. We must therefore, be confident in our abilities and make every effort to exhibit an attitude and an image that will reassure the client that we really are professionals.

Our need to communicate with the public to promote our professional image is obvious; it is the key to successfully gaining the respect we desire. It is important to "educate" the public as to the fact that land surveyors are highly trained and qualified professionals. This has become necessary in order to counter the belief in some quarters that land surveyors are qualified to undertake only limited types of work.

It is extremely important to raise the profile of the Association and enhance the image of the land surveying profession. We must work hard to achieve the same trust and respect that was held for those early land surveyors. To do this we must become more visible and leaders within our communities. As individuals we must contribute more to society by our involvement in volunteer groups, advisory boards and other relevant organizations which will help to raise the profile of land surveyors generally. The achievement of a higher profile will provide a foundation upon which the Association can take a more influential role on behalf of the land surveying profession. The Association must collectively start to "bend the ears" of our decision making officials in government as to the goals of the Association and the role of the land surveyor as a professional. It is the responsibility of each of us to do our part to promote, develop and achieve these objectives.

Professionals by their services, responsibilities, conduct and attitude are characterized by the high esteem in which they are held by other segments of society. Professionals have a high sense of individual responsibility and a sense of duty to contribute to the advancement of society. Professionals share a common ideal which puts public service above pecuniary incentives and integrity above individual advantage. This standard of conduct is based on personal service, courtesy, honor and ethics.

The land surveying profession is on the threshold of dramatic changes caused by the recent tremendous advances in technology. This new technology is challenging the traditional land surveyor to quickly evolve into a land information specialist. Educational requirements have been raised in recent years and our educational institutions are preparing surveying candidates for the challenges of the future. Our methods of operation, business procedures, standards and services are to be audited to ensure that we fulfill our responsibilities as professionals.

The "Information Age" is upon us now, and land surveyors must act quickly so that golden opportunities to be involved will not be lost to other disciplines. We must seek new challenges and develop and move forward into areas of expertise that should be the domain of land surveyors as the rightful stewards of the land tenure system. As we prepare to expand our horizons, let each of us consider the attitudes that we have portrayed to the public. Then let us consciously cultivate qualities which will enhance our professional attitude, allowing us to go forward into this new decade as professional land surveyors.

David C. Clark, N.S.L.S., is a professional land surveyor registered in Nova Scotia and the state of Maine. He is a member and past president of the Association of Nova Scotia Land Surveyors, a member of the Maine Society of Land Surveyors and a Fellow Member of ACSM and the National Society of Professional Surveyors.

REFERENCES

Allred, G.K. (1989) The Land Surveyor as a Public Officer, Paper presented at the CISM 1989 Annual Convention

Asselin, Yvan (1989) La discipline: un bien necessaire, Plan and APENS News

Burchell, Thomas J. (1989) Correspondence to the ANSLS Survey Profession Committee

Clark, David C. (1990) To Serve the Public - A Common Goal, The Nova Scotian Surveyor

Clark, David C. (1989) Professional Image of the Land Surveyor, The Nova Scotian Surveyor

The International Federation of Surveyors (FIG) (1989) The Definition of a Surveyor, The ACSM Bulletin

Foster, Robert W. (1988) The PR Principle, ALS News and The ACSM Bulletin

Gold, Kenneth (1987) Surveyor for All Seasons, The Texas Surveyor

Raymond, Gerard (1986) Keynote Address at the ASPRS-ACSM Fall Convention, The ACSM Bulletin

Weidener, James P. (1989) Verbatim, The ACSM Bulletin

Wickenden, William E. (1947) A Professional Guide for Junior Engineers, The Engineering Institute of Canada

PORT HAWKESBURY BASELINE REMEASURE

by JIM GUNN

The federal government has just released the results of the 1988/1989 remeasure of the baseline at Port Hawkesbury and there appears to be some significant changes from the 1981 published values.

Assuming that both the 1981 and the 1989 measurements are correct, there would appear to have been some slight movement in the first two monuments of this five monument baseline. They are careful to point out however that these findings are not conclusive simply because the poor configuration of the baseline does not allow sufficient measurements. Pier 2 is only intervisible with pier 1 and pier 3. This is due to the poor profile of the baseline.

The recommendations resulting from the 1988/1989 remeasures include adding another pier to the baseline and avoiding the use of pier 2 because of its weak configuration and also because movements in this monument cannot be accurately determined.

The following table lists the newly published values for this baseline together with the previous values for comparison. A copy of the complete report on this baseline is available from the Association office on request. Keep in mind that some of the difference between the 1981 and the 1989 values result from a 4 ppm correction that EM&R made to their own equipment at the beginning of 1989.

Port Hawkesbury Baseline

Slope Distance	1981	1989
pier 1 - pier 2	331.8392	331.8364
pier 1 - pier 3	646.2196	646.2169
pier 1 - pier 5	1277.1600	1277.1494
pier 3 - pier 2	314.3894	314.3895
pier 3 - pier 4	298.8789	298.8747
pier 3 - pier 5	630.9414	630.9334
pier 4 - pier 5	332.0637	332.0599

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SURVEYING AND MAPPING EDUCATION AT THE CROSSROADS- CREATING A NEW COURSE

BY D.F. WOOLNOUGH,
HEAD, SURVEY DEPARTMENT, COGS
and J.D. McLAUGHLIN
PRESIDENT, CHAMPLAIN INSTITUTE

(as reprinted from NORTHPOINT, Fall 1989)

In the letters to the editor section of the August/September issue of the "PEGG", the bimonthly publication of the Association of Professional Engineers, Geologists and Geophysicists of Alberta, A. Maclaughlan, P. Eng., asks "Why, then, do we refuse to recognize technologists and technicians?"

In an age when significant changes in emphasis are being experienced in the surveying and mapping field, the question is also relevant to the surveying profession. With the exception of those companies which are run as sole proprietorships, the daily gathering of information for most companies is in the hands of the graduates of the Canadian technical schools and colleges. The latest data we have, viz. the Report of the Task Force on Surveying and Mapping in Canada (the Usher Report), published in February 1985, indicates that (p. 26) 61% of the personnel engaged in surveying and mapping are technicians, as compared to 25% who are professionals.

These two groups have been engaged in a turbulent relationship over the years, ranging from amicability to open hostility and we would suggest that the arguments of the past between professionals and technicians, which have been well documented in this journal and elsewhere, should be put aside. No good will come from a continuation of such rivalry. It is time for all the players on the team to pull together and recognize that traditional surveying and mapping is changing and to examine what is happening and whether we have the ability to understand and respond to these changes. What should be the strategy for implementing any changes - structural, educational and institutional - which will be necessary to allow the smooth transition from the traditional cadastral base of the profession to such new and exciting arenas as geographical information technology and land information management?

Recent developments with relevance to training in technology.

While the obvious changes in the surveyor's life can be seen in the introduction of such technical innovations as EDM, computers and total station technology, these are only the visible superficial evidence of a series of technological changes which are influencing not only the surveyor's traditional techniques but are also creating new products and new markets. While it may come as no surprise to most surveyors that the regulations governing the use of cellular telephones in Canada come under the Railway Act (because of the railroads' initial interest in telecommunications), they find it difficult to relate to the fact that the bounds of their profession, governed by some Surveys Act, are now as far from cadastral surveying as cellular phones and cable television are from railroads and that, with a few exceptions, the survey legislation is as much in need of updating as the Railways Act. The technological changes which most have had considerable difficulty keeping up with, have led and are leading to changes in style, presentation and even philosophy which only a few are able to keep abreast of. This is not their fault - rather it is the fault in large measure of an educational process which has been unable to keep abreast of the changes and, as a result, our ability to plan for a successful future is being restricted.

We are constantly being told that surveying is now a measuring and information science (see, for example, Mathews, J. and Raymond, G. in The Canadian Surveyor, v.35, #3, p.211, 1981), yet our textbooks still define the subject with emphasis on the former and very little mention, if at all, is made of the latter (see, for example, Surveying Principles and Practice by B.F. Kavanagh and S.G. Bird, Prentice Hall, at page 3). Recent projections (Geomatics Atlantic Market Study, Fredericton; report prepared for the Champlain Institute, September 1989) give estimates of a multi-billion dollar a year market evolving over the next decade for this industry which specializes in location dependent information. This is at least an order of magnitude larger than the conventional surveying and mapping business. Energy, Mines and Resources Canada sees this GIS field as sufficiently important that it now forms one of the five main divisions within the Surveys, Mapping and Remote Sensing Sector (Journal of the CISM, vol.43, #2, P.165).

These new fields and their requirements for personnel are blurring the traditional boundaries between the branches of surveying. Where, before, one might comfortably spend a lifetime as a "cartographer" or as a "cadastral surveyor", we now have the challenge and opportunity to grow into worlds which are being opened to us by the blending of the new GPS and GIS technologies with the traditional strengths of the cadastral surveyor.

Indeed, it is imperative that we do - there are others waiting in the wings to take up the slack if we do not pull together. Taken thoughtfully and planned carefully, such technologies will help us expand into these new worlds; if our training is mismanaged, the new technologies will consign us to a minimal position, forever to remain the "traditional" surveyor.

If the nature and scope of the surveying profession are to change (and we would suggest that there is really no choice), one of the causes will be the construction of large land-related databases and the subsequent integration of the databases into distributed networks. This will require input from a position oriented profession which is broader than our current "traditional" surveying and mapping. GPS and GIS are the tools by which these developments will be implemented and we must be trained to understand the techniques, their implications and the changes which they can engender.

Are we prepared for these changes?

Our success in making this transition to a profession working with integrated spatial data information will, to a large extent, be a function of our educational system's ability to react to these changes. Beyond reacting to changes, our educational system must teach us (and itself be competent with) the ability to anticipate and plan for change and how to take a pro-active role in our future. Specifically, with the emphasis on changes in data gathering techniques and the high level of technician input into the data gathering and management processes, the bulk of the burden will lie on the technical schools and colleges. They will be responsible for training for an increasingly capital-intensive and computer-based environment where the highly skilled technician will play a central role in the management of the technology.

The Usher Report lists 24 technical level institutes in Canada (op cit, p.124) but currently the Canadian Institute of Surveying and Mapping's list of courses eligible for the Hans Kilinkenberg Award and for the Two-Year Membership Award is only 21, a drop of 3 in 4 years. Usher also indicates (op cit, p.28) that "increasing numbers are enrolling in such courses" but we are aware of serious enrollment problems in not a few of the above mentioned institutes and at least two course offerings have been cancelled in the last two years. At the same time, employers are continually asking the educational institutions for employees who can work in an integrated surveying/GIS environment and those schools which can produce such individuals report an almost insatiable and certainly unfillable demand for such graduates.

How then, can we explain this strange dichotomy - on the one hand great demand, on the other a decline in the number of course offerings. Added to this is a third interesting phenomenon - some colleges, for example the Nova Scotia College of Geographic Sciences, are experiencing rapidly rising student enrollment numbers, going in the face of what appears to be a general national trend. The answers lie entirely within the realm of the above-mentioned changes in the profession. To be a marketable commodity, a graduating technological student must be able to function in the changing world of surveying. To portray the profession as a marketable commodity to students making career choices, involves an active campaign at the high school level to attract motivated and highly academically qualified students in the face of stiff competition from the other professions.

Certain factors are keys to the success of these endeavours:

(a) Graduates must be of immediate use to their employer, with sufficient ability to move with the employer into the new realms of production. Our traditional courses have had little problem supplying the classical markets of straight measurement - only those courses able to supply additional training can supply the new markets.

(b) The training must be of a generic nature and not specific to any one instrument of technique, to permit the graduate to keep up with rapid technological change. This change is so fast that, for example, training in specific methods which an EDM uses for phase discrimination (think of the hours spent trying to understand the functioning of the Kerr cell in a Geodimeter) are a waste of time and effort at the technician level. The technician's job is to use the instruments intelligently and to this end he/she must be taught the principles of instrument use. Given the basic principles of a micrometer, for example, a technician can move from one micrometer instrument to another with an ease which would not be available if he/she had been trained only to use a specific model of instrument. This example can be taken a step further. If the student understands the principle of the micrometer, then instrument adjustment becomes a simpler operation. The use of coordinates is of basic importance in GIS but if there is not an understanding of the variations in coordinates due to changing map projections, datum changes or new adjustments, then the fundamental GIS process of integrating data from differing data bases becomes contaminated.

(c) The survivors will be those who are trained in measurement and information science together, as a symbiotic whole and who realize that a fundamental basis of all our new techniques is position, and we are the one group of people who have a basic training in positioning. What have traditionally been looked upon as the outside or optional subjects for cadastral surveyors - cartography, planning, computing, environmental impact and social geography - must now be presented as an integral part of the surveyor's curriculum. Cadastral surveyors have also been trained in a discipline which has as a fundamental role the delineation of the land tenure system. Such training provides a sound base for the integrated studies required to succeed in the future, looking beyond technology to the broader legal, social and institutional issues.

(d) We cannot foresee technological change slowing down in the near future and so our educational system must

(i) supply sufficient knowledge of the basic subjects (whatever they may be) so that students can cope with rapid change and

(ii)it must allow upgrading and retraining to be just as efficiently given as it produces the basic training.

To quote from the recent White Paper on a Community College System for Nova Scotians, entitled "Foundation for the Future", "the... system must respond to the increasing demand for lifelong learning. In today's rapidly changing economy, people are no longer certain that the training they received in their youth will continue to be adequate for the rest of their lives. Retraining, upgrading and updating are essential" (Foundation for the Future, Province of Nova Scotia, February 1988, p.55).

To implement such a learning process requires that we acknowledge certain very pertinent points about our current educational offerings.

Firstly, many of our learning institutions face major budgetary problems in trying to keep pace with technological change. The successful institutes have used a variety of strategies to meet this challenge, for example, moving funding from capital acquisition to rental budgets so as not to be saddled with obsolescent equipment. One of the characteristics of institutions showing declining student enrollment appears to be their inability to meet the budgetary challenge and it may well be that we cannot afford the above numbers of institutions and that rationalization, consolidation and specialization may have to take place.

Secondly, the institutes must have well trained and enthusiastic faculty who have an interest in further training themselves. We are now beyond the days of he who retires from practice and goes into teaching as a precursor of retirement. Faculty must be mentally active, academically sound, given the opportunity to acquire further knowledge through continuous upgrading and be appropriately remunerated.

Thirdly, we must have a pedagogical system that allows for retraining of older graduates at the same time as it is teaching "traditional" classes. This requires an acknowledgement that the person being retrained has limited time at his/her disposal for this process - for example, he/she may not be able to give up or take a day a week for nine months but may well be able to take two or three weeks during a traditional slack period. The educational system must recognize this and be so structured that continuing education can be easily obtained.

Fourthly, and perhaps most importantly, is the requirement for high quality students. We have to market surveying and mapping to high school students as an upbeat, exciting and academically challenging career, with an appropriate remuneration and a professional recognition which is country-wide and vertically integrated in the profession. In this, we are trying to find increased numbers of better academically qualified students from a decreasing pool of high school students, in the fact of stiff competition from other vocations.

Our recommendations

We suggest that the time is appropriate for an in-depth review of surveying and mapping education at the technician level. Such a review has already been endorsed in principle by the council of the Canadian Institute of Surveying and Mapping at its June 1989 meeting in Halifax and we would suggest that CISM should be the lead sponsor of this national study in technical education. Such a study should:

(a) update the data in the Usher Report and supplement these with the latest supply/demand figures for technicians, including projections for the future

(b) inventory current course offerings, their equipment and training facilities

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(c) provide an analysis of what course offerings should be considered basic to any technical surveying and mapping education
(d) analyse the needs for retraining and recommend educational techniques to supply these to the work place

(e) evaluate the relationships between the universities and the colleges to ensure that Canada is being provided with the correct mix of personnel to take us into the next century

(f) examine the certification process for technicians and indicate whether a national common standard is desirable and attainable

(g) comment upon the relationships between the professional and technical survey associations and make recommendations which will allow for a team approach to surveying and mapping and which may include recommendations for changes in the broadening of current legislation

(h) indicate what the sources of funding are for technical education in the profession; whether these are adequate and what fiscal structures should be in place to provide the recommended educational setting.

We believe that Canada has a unique blend of educational offerings which can be used to mould a successful team to take up the challenges offered to us by the new worlds created by modern technologies. We must ensure that our fundamental curricula are sound and that the courses taught can be kept up-to-date in our rapidly changing world.

Career Opportunities

"BEGINNING at a hole in the ice..."

by ROSALIND C. PENFOUND

Reprinted from **Nova Scotia Law News**,
Volume 15, No.1, September 1988

There is a story about a deed being recorded in a Registry of Deeds in Prince Edward Island, the Schedule 'A' to which read something like this, "...Beginning on the shores of the Northumberland Strait... thence northerly..., thence westerly..., thence southerly..., and thence westerly to the place of beginning." Think about it. The property described by these words is really the whole of Prince Edward Island, except the lot intended to be conveyed. I am uncertain if such a deed was recorded or if this is just a little Maritime legal folklore. All of us who have occasion to review property descriptions from time to time can likely remember several which contained an obvious error, albeit perhaps not quite such an extravagant one as this.

A common error is the Schedule 'A' which describes the land generally as "ALL that certain lot, piece or parcel of land... being Lot No. 14..." and proceeds to specifically, by metes and bounds, describe Lot No. 15. In such a case the court would apply the maxim, falsa demonstratio non nocet (see McDonald v. Gallagher (1915), 48 N.S.R. 332). Falsely describing the property as Lot No. 15 in the face of an accurate metes and bounds description will not void the deed. The false part of the description will be rejected.

Should a description be ambiguous enough that it is impossible to discern the intention of the grantor from the document, extrinsic evidence may be admissible. In Fidelity Realty Ltd. et al v. Rockingham Realty Ltd. et al (1976), 17 N.S.R. (2d) 527, the Nova Scotia Supreme Court, Appeal Division had occasion to consider the circumstances under which extrinsic evidence should be allowed. MacKeigan, C.J.N.S., at p. 529:

> The learned trial judge referred to and quoted extensively from authorities establishing the principle that in the construction of an instrument extrinsic evidence is admissible to identify the persons and things to which it refers if there is a latent ambiguity, uncertainty or vagueness in the wording of the description in the instrument...

Inappropriate References

Many descriptions of properties in addition to stating metes and bounds describe the property by other references which might have seemed appropriate at the time. Some examples:

> "Bounded on the west by the 20 acre field being a cow pasture at the present time..." —-cows are noted for not staying in one place.
>
> "Beginning at a spot 200 feet from the western boundary of the Old Fog Road..." —-the edge of the road and the road allowance are two different things and both may have changed from the time when the description was written.
>
> "Being and intended to be the lands formerly owned by John Albert Cooper..." —-more a hindrance than a help until one realizes that "Cooper" was Mr. Albert's profession (barrel maker) and looking for title documents under "C" would be useless.
>
> "Beginning at the large rock on the side of the road..." —-rocks not being unique or immovable, locating "the one" might be a problem.
>
> "Beginning at a hole in the ice..." —-*#!!!
>
> "Continuing in a westerly direction to the tree near where John MacDonald shot the bear last spring..." —-reminds me of a notation found on the back of an old photograph which belonged to my late grandmother, "Hugh, last week" —-which last week? which last spring? which tree?
>
> "Being and intended to be the same lands conveyed by Joe Blow to Fred Smoe by deed dated July 15, 1949 and recorded in the Registry of Deeds in Halifax in book 2178 at Page 309" —-successive deeds with this type of reference are a joy.

LRIS numbers

At the Land Registration and Information Service we are very pleased when we see a deed which, in addition to a metes and bounds description, references our property identification number —"LRIS#4097854", or "intended to be those lands depicted on LRIS Map #5P1105NE as PID#4078954". However, using the LRIS property identification number (PID) instead of the usual form of legal description should be avoided. Recently a document was recorded in the Halifax Registry using only the PID, which contained a typographical error - no such number existed and the grantor owned several parcels, making the intention less than obvious.

Such a deed might be void for uncertainty. In Degaust v. Lacey (1979), 34 N.S.R. (2d) 522 (N.S.S.C., T.D.), Jones J. cited with approval from DiCastri, Law of Vendor and Purchaser, 2nd ed., at p.356:

> Where a description is so vague or contradictory that it cannot be ascertained from the language of the deed, or by something extrinsic to which it refers, what land in particular is meant to be conveyed, the deed is without effect.

Aside from the possibility of error in referencing the PID, there are other reasons for not using these numbers alone to describe property being conveyed. The land referenced on our maps by a particular PID may change significantly so that a parcel shown as PID #1110111 now may be different from the parcel referenced in the future by that number. For example, if several lots are subdivided from a larger parcel, the newly created parcels are given new PID's and the remaining portion of the original (parent) parcel retains the original number; so the number now represents less than it once did. Should the only remaining piece of the original parcel be a roadway, it would carry the parent PID until the road was deeded to the Department of Transportation, when we would retire the number. If a landowner purchases a small strip of land from his neighbour as an addition to his own land then the PID for his lot now references a larger and different parcel than in the first instance, and vice versa for his neighbour.

Additional Information

Obviously the more information contained in a property description the better. Information additional to the metes and bounds description can be very valuable. Here are a few suggestions.

1. If at all possible add at the bottom of the Schedule 'A' a "Being and intended to be ..." clause noting the particulars of the grantor's acquisition of the property. This saves time for those searching title and makes the grantor's intention abundantly clear even if a typographical or other error finds its way into the description. In addition, it is of great assistance to LRIS property mappers who's job it is to keep ownership information as accurate and up to date as possible for those properties in areas served by an LRIS Regional Office.

2. If the LRIS PID number is available reference it in the description. Attach a copy of the appropriate portion of the map as a Schedule 'B' also if you wish.

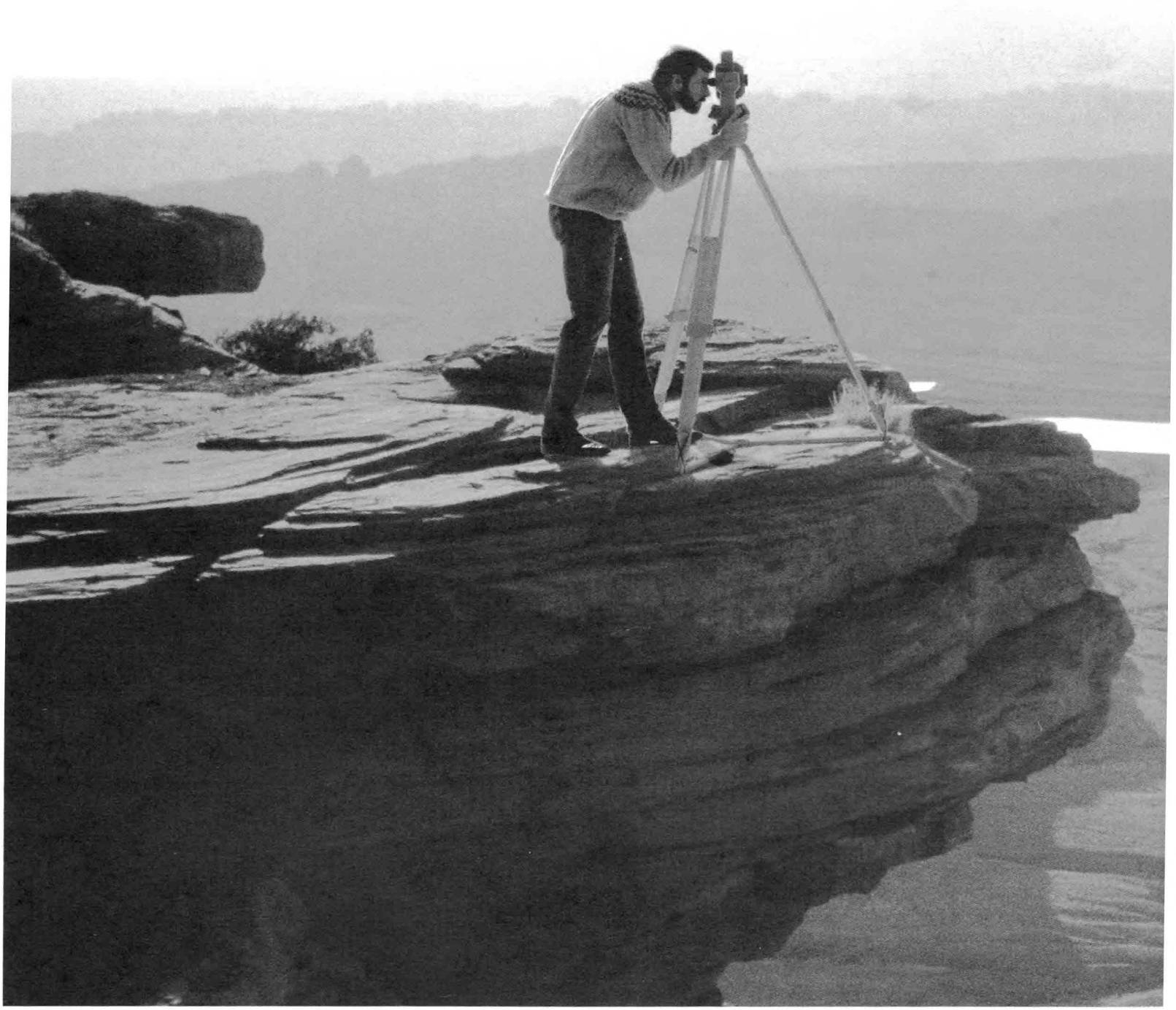
3. References to previously released mortgages should be removed. The property is no longer "subject to ..." such a mortgage and seeing it in the description may be somewhat disconcerting to the purchaser.

4. Reference any restrictive covenants that affect the property in the description, even if they were not referenced in immediately preceding deeds. This makes their existence clear to everyone.

5. If there is an easement described in the Schedule 'A' be sure it is clear whether it is a benefit or burden on the property.

6. Don't be hesitant to correct an obvious mistake in a description. If it makes you feel better, add a "formerly incorrectly shown as..." clause. It is in everyone's interest to have all descriptions as accurate and complete as possible.

Rosalind C. Penfound



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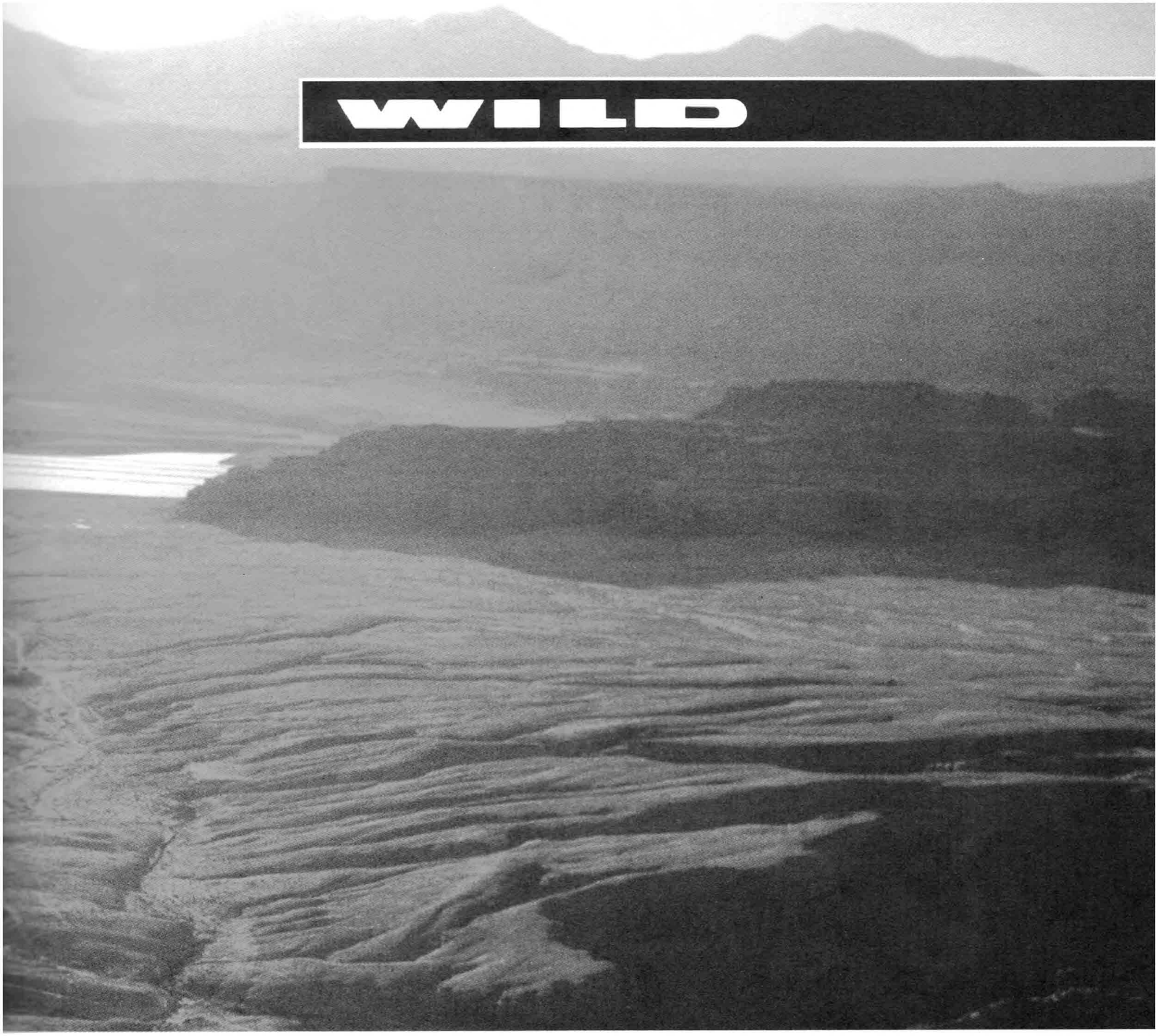

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THIS BUSINESS OF SURVEYING

by G. K. (KEN) ALLRED, A.L.S., C.L.S.

As presented at the Association of Ontario Land Surveyors Annual Meeting on February 22, 1990 - Ottawa.

The theme of this paper is intended to address the concept that professions in general and the land surveying profession in particular are established with a primary motive of operating in the public interest as opposed to the commercial interest.

Despite the fact that a professional person must charge `fees' for his or her services in order that he can maintain his family, community and professional obligations, the professional is not in fact in a `business' with the sole motive of producing a profitable balance sheet.

Perhaps I can start our discussion with a short anecdote about an architect and an artisan. The architect was designing a new church and had an idea for a magnificent new chandelier to highlight the chapel. The architect asked the artisan how much it would cost to construct this new chandelier, to which the artisan replied: "$10,000.". After it was completed the architect was so pleased that he decided to add four additional but slightly smaller chandeliers to his design. He approached the artisan and asked the cost of the additional four chandeliers. The artisan replied "$60,000.". The surprised architect then asked why the first one would only cost $10,000. yet the additional four would cost $15,000. each. The artisan replied: "Building the first one would be a challenge; building the other four would be work!"

I would suggest that professional practice is much the same as the work of an artist. The files where you are clearly assisting a client to solve a unique new problem become an interesting and challenging labour of love, whereas the day to day routine jobs are merely that - routine! They may pay the bills but they do not give the personal satisfaction which makes life and practice worthwhile.

So how about **This Business of Surveying**!

Are you in the **business** of surveying? Or do you practice the **profession** of surveying?

Or perhaps you are in **business** to practice the **profession** of surveying.

Is the **business** aspect or the **professional** aspect most important to your practice?

Or to put it another way, is it the **commercial** interest or the **public** interest that is paramount to the surveying profession?

The Commercial Interest

I think it is generally conceded that the main objective of business is to make a profit. Profit is necessary for any business to survive. The question however is always: What is a reasonable profit?

David Olive, Toronto author of **Just Rewards** quotes the former dean of Your University as stating: "Most managers think of profits and market share as moral. Their professional training has encouraged them to think that making as much money as they can for their companies is a primary moral obligation in itself."

The Public Interest

As a comparison it is instructive to refer to the often quoted US case of **Stiner v. Yelle:**

"A `profession' is not a money-getting business. It has no element of commercialism in it. True, the professional man seeks to live by what he earns, but his main purpose and desire is to be of service to those who seek his aid and to the community of which he is a necessary part. In some instances, where the recipient is able to respond, seemingly large fees may be paid, but to others unable to pay adequately, or not at all, the professional service is usually cheerfully rendered."

This decision was obviously handed down before such social phenomena as legal aid and medicare, but nevertheless the message still has relevance to our discussion.

More recently, the **Honourable Bette Stephenson, M.D.**, in her then capacity of Minister of Education, Colleges and Universities of the Province of Ontario, was somewhat more to the point in addressing a 1984 Bar Admission ceremony, and I quote:

"The professional practitioner deals on an individual basis with clients in a close relationship rather than at arms length.

The rule of Caveat Emptor cannot apply when the expert practitioner sells his services to the layman, because the consumer of that service is an individual in need of expert assistance - not an opponent in a game of trade.

The professional practitioner expects to provide some gratuitous services and is ever mindful of his duty to sustain the honour and integrity of his profession in all conduct.

The members of a profession must not simply maintain the standard of morality and ethics generally accepted by society - they must strive to practice at levels superior to those commonly followed."

Each member of a profession has a responsibility to fulfil daily requirements of ethical professional practice and to assist the profession in the discharge of its significant duties as well.

In recent years our society has become confused and materialistic. Competition is rampant, yet quality is king. Unfortunately in many fields, particularly the service sector, the unsophisticated consumer does not have the expertise to assess the value of complex products and services. Professional practitioners have a public duty to assist clients (and potential clients) to ensure that they obtain the services most suitable to their requirements, and to ensure that they do not select either less than, nor more than the services they require to deal with their affairs.

The Basic Difference

Nothing distinguishes the professional from the businessman more than the reliance on ethics in fulfilling his commitments to colleagues, employers, clients, and society as a whole. Where the **Businessman's Creed is:**

Profit,
Product,
People, and
Principle

in that order, the professional must exactly reverse the order and importance of these four criteria to read:

Principle,
People,
Product, and **lastly**
Profit.

I don't think there is much argument that the basic premise of business is to make a profit and don't get me wrong. I'm not suggesting that 'profit' is a dirty word because profit is necessary in the operation of any business whether it is a commercial or a professional endeavor. The point I wish to emphasize with regard to the **Businessman's Creed** is that the four P's are listed in order of priority: profit, then product, then people and lastly principle. The professional on the other hand is not primarily concerned with the making of a profit. Certainly a professional practitioner must ensure that his practice operates with efficiency and that he earns a sufficient wage to fulfill his family and community obligations but his raison d'etre must not revolve around the balance sheet.

Traditionally business has been identified with profit-taking and professions have been the protectors of the public interest.

Madame Justice Bertha Wilson however, recently observed that: "There seems to be a cross-over between the professional and the business world." ..... " We see businessmen taking refresher courses in the humanities and professional people such as lawyers studying business administration and computer science."

Despite this cross-over, in her comments to the 1985 convocation of the University of Alberta, she upholds the belief that: "Membership in a profession should be in and of itself a guarantee of competence." Likewise she acknowledges the need to place "honesty and professional service to client" ahead of "acquisition of personal wealth, power and prestige."

The Surveying Profession

The land surveyor has a particularly onerous responsibility in this regard in that he must act not just in the interests of the client but also in the interests of society at large.

Every survey done for a client is in fact, a survey of the boundaries of one or more of the client's neighbours and potential adversaries. The surveyor is a `public officer'.

Your president in the fall issue of the Ontario Land Surveyor, appears to be of the opinion that only les arpentenurs geometre du Quebec hold the distinction of being `public officers'. I would argue that all land surveyors whether they be in Quebec, Saskatchewan or Ontario are `public officers'. Land surveyors are not `public officers' merely because some statute says they are, but more importantly because of their mandate to exercise the function of property boundary determination on behalf of the state.

A surveyor does not represent a single client in establishing the client's boundaries, but rather he represents society at large. Every boundary monument marks a boundary between at least two unique properties. The surveyor, therefore, must be fair and impartial to all parties; he cannot give undue consideration to his client's interests in disregard to the interests of his clients neighbour and potential adversary. His interests are quite different than those of a doctor, lawyer or accountant each of whom normally need act with only the interests of a single client in mind. To quote **Tom Shanks, D.L.S.** in his 1923 article entitled **`The Status of the Dominion Land Surveyor'**: "He must preserve in all his work the judicial mind and the impartial attitude of an arbiter, rather than the bias of an advocate." Despite the fact that a surveyor's professional opinion is always subject to appeal to a court of law, the reality of the situation is that the work of the land surveyor is seldom challenged, and is usually accepted by landowners without question. The surveyor is in all practicality the final boundary arbiter - he performs a quasi-judicial function in establishing property boundaries.

Another unique and very important responsibility of a cadastral surveyor which can be attributed to his duty to society at large, is with regard to the ultimate effect of his surveys and the plans resulting therefrom. The initial surveys conducted by the cadastral surveyor form the basis for the settlement patterns of a nation and its communities. This concept is so beautifully illustrated in the little storybook called **`The Silent Guide'** by **Frank C. Wilson** who I understand is a former member of your association. In this book which I presume you are all familiar with, Wilson describes the evolution of a seedling in the forest, through its growth to a small cedar, and then its transformation into a survey post marking a township corner, eventually marking a block corner and finally being replaced by an iron post marking the boundaries of a bank in a busy urban community. A lovely, nostalgic story about the evolution of our country from forested hinterland to the productive communities which most Canadians live in today.

Parcels of land ownership are one of the most indelible features on the face of the earth. Land divisions created in Biblical and Roman times are permanently etched into the social and cultural fabric of the Middle East and Southern Europe visible to this very day. Land tenure based on real property boundaries, is a fundamental precept in all societies, both ancient and modern.

The modern cadastral surveyor must attempt to foresee future developments in preparing his subdivision documents since they will become the basis for all land records; the cadastre of the nation. Taxation and assessment records, municipal mapping and infrastructure records; basically all land information records for all levels of government as well as private agencies and individuals will rest on the cadastral foundation laid down by the surveyor. His logic and anticipation of future directions will influence development decisions for ages after he is gone.

Conclusion

The land surveyors duties and obligations to the public in general overshadow those duties which are directly fulfilled for the client per se. Unfortunately however, the public functions of the surveying profession are often taken for granted by surveyors and not understood at all by the public.

How many of your clients actually have the understanding of legal boundary principles sufficient to make a decision as to whether they have received a quality product or not? Nine times out of ten, they will look at the plan and then the invoice, and if the plan is reasonably neat and the invoice is less than what they have expected, they will be completely satisfied. But look out if that invoice is 10% higher than your estimate or what some realtor suggested it should be! The fact that you didn't find sufficient evidence and established their boundaries strictly by mechanical methods, doesn't mean a thing to them, unless of course the survey shows an encroachment or some other obvious problem, and even then many clients will accept your opinion with out question. To place the land surveyor in the competitive world of low-balling and corner cutting will eventually result in a deterioration of our system of land tenure.

Since I started with an anecdote related to professional fees perhaps I can end on the same note:

This story relates to an article which recently appeared in the BCLS quarterly - The Link. It was a reprint from an article originally written in 1925 in the Journal of the Dominion Land Surveyors Association, which incidentally was also a co-production of the Ontario Land Surveyors' Association. The article was entitled: "A few thoughts on Surveying as a Means of Earning a Livelihood." The thesis is made that: "the difference between a professional man and a tradesman is that the latter charges the value of the job to himself (i.e. his time), the former, the value to the client." Needless to say it was the authors opinion that surveyors act like tradesmen in the way they value and charge for their services by the hour as opposed to the value of the service to the client and society. Some might argue that with the low public perception of the value of surveys, that surveyors are better off charging on a time basis - at least the surveyor gets something for his services. The author went on to state that: "A surveyors responsibility is directly proportionate to the value per foot of the property surveyed and an ad valorem scale of charges is the only one that will gain for the surveyor in general practice an adequate return for his services.

I hope that these comments have been reflective of the role of the land surveyor in Canadian society and particularly his role in serving the public interest. The primary motivation of a professional is to help individuals solve their affairs, not necessarily for the monetary rewards involved but for the personal satisfaction and the challenge of doing a good job and seeing the end result of that service. A land surveyor like all other professionals must divorce himself from the competitive world around him and remember his raison d' etre - to serve!

This business of surveying is first and foremost a profession - operating with the public interest as it guiding light.

G.K. (Ken) Allred, A.L.S., C.L.S.

MURPHY'S LAW APPLIED TO SURVEYING

BY ELBERT BASSHAM
URBAN ENGINEERING, CORPUS CHRISTI, TEXAS

Abstract: Murphy's Law is stated in the general form and examples are given to illustrate the Law as it specifically relates to surveying.

Several years ago the general law delineating the behaviour of inanimate objects established by Edsel Murphy came to my attention. Its very profundity was overwhelming at first, but further experience with the law has convinced me that it is the only law that is universally applicable. The contributions of Edsel Murphy's Law are not often fully appreciated and it is deemed that this is, in large part, due to inherent simplicity of the laws itself.

It is my intent to show that the Law of Murphy has produced numerous corollaries and it is hoped that by noting some examples, the reader may obtain a greater appreciation of Edsel Murphy, his law, and its ramifications in surveying.

As is well known to those versed in the state-of-the-art, Murphy's Law states, "If anything can go wrong, it will." Or to state its more exact mathematical form: 1 + 1 #2, where # is the mathematically symbol for harder ever is."
To show the all-persuasive nature of Murphy's Law, I offer a small sample of its applications to surveying.

1. No survey is repeatable.

2. All constants are variable.

3. In any given miscalculation, the fault will never be placed if more than one person is involved.

4. Any error that can creep in, will. It will be in the direction that will do the most damage to the calculation.

5. In any given computation, the figure that is most obviously correct will be the source of error.

6. In any given list of numbers there will be at least one with two digits transposed.

7. During computation, Murphy's Law supersedes both the Sine and Cosine Laws.

8. A plat of a subdivision will have mistakes.

9. Original drawings will be mangled by the copy machine.

10. The contractor will show up and stand around watching just when you discover that there is a mistake in your work.

11. The boss will show up just when you stop to take a break.

12. A tripod will always be bumped during the measurements, not before, nor after.

13. An instrument will not be discovered to be out of adjustment until the big survey is completed.

14. The calculator battery will run down in the middle of a long, involved chain computation.

15. The distance meter battery will be discovered to be run down upon arrival at the most inaccessible point on the survey.

16. The iron rod that you have been digging for is always just one side of the hole.

17. The rain starts after all the equipment is out and the theodolite set up and backsighted.

18. A point falling anywhere near water will be in the water.

19. A just sharpened pencil point will break.

20. Traffic will increase when you set up in the centerline of a street.

21. If a stake is driven into the ground, a dozer will run over it.

22. On a long site someone out of hearing will stand in the line-of-sight.

23. In any give COGO run, a card having a coding or keypunching error will product the worst possible results on the plot such as great circles or figures reduced to mass of irrelevant lines.

(reprinted from the Empire State Surveyor, March 1990 Issue)

BOOK REVIEW

Land Information Management: An introduction with special reference to cadastral problems in Third World countries, by Peter F. Dale and John D. McLaughlin, Oxford University Press, 1988, ISBN 0-19-858405-9 pbk, pp. 266, illustrated, $37.50 Cdn. at University of New Brunswick Bookstore, Fredericton, N.B., E3B 5A3.

The surveyor, by the nature of his work, is part of a land information system. But the extent to which individual surveyors will participate in the systems which embrace them, will depend upon local circumstances and their own inclinations.

Here is a book which, in plain terms, examines the essentials of land information systems. It will be useful to those who do not fully understand all components of information systems, and who wish to learn something about their variety, how they are constructed and how they are intended to operate. One must realize, though, that every last detail cannot be recounted in a book of fewer than 300 pages. Here are the high points, the principal concepts, and the main interrelationships.

Each of the 12 chapters is preceded by a three or four-line statement of contents, which, further condensed, give an indication of the book's range:

Nature of land; need for information systems; concept of information management.

Registration of proprietary interests in land.

Property valuation; management of the fiscal cadastre.

The multipurpose cadastre.

Nature of control frameworks; spatial referencing.

Surveying and mapping both from a geometric and a land information point of view.

Digital mapping and methods of handling data.

Problems in the storage and management of data related to land.

Extent to which costs and benefits can be quantified.

Priorities in developing a land information system.

Resources and constraints on operations.

Recommendations for less developed countries.

Each chapter is followed by references which support or further explore the matters dealt with therein. One of the two appendices contains a check-list for evaluating a cadastral system; the other contains a list of requirements which need to be considered in developing a multipurpose cadastre.

In four pages of Chapter 4, the authors offer a brief description of the Land Registration and Information Services, under the Council of Maritime Premiers. Some of the findings of various studies of the organization are presented also. **Land Information Management** went to press but months before the decision was taken to terminate LRIS, and (at least in N.B. and in P.E.I.) to operate provincial land information agencies or departments. Precisely what N.S. will do, and under what structure, still remains to be seen. What also remains to be seen is whether any significant amount of interprovincial coordination can be achieved between the three agencies. (Or four, if Newfoundland joins the group.)

With a book of this kind, which after all is a summary of how several complex topics relate to each other in matters both technical and political, one must be careful not to read into things more than is practicable. Broadly speaking, it tells what can be done with today's technology, but it does not (as the writer of the foreword claims) enable "realistic decisions to be made on the technology that best meets" particular needs. No single book could do that.

John McLaughlin, at the time of writing, was Chairman of the Surveying Engineering Department at the University of New Brunswick; he is now President of Champlain Institute. Peter Dale is Reader in Surveying, North East London Polytechnic.

J.F. Doig

BOOK REVIEW

The Elements of Style, Third Edition, by William Strunk Jr. and E.B. White, MacMillan Publishing Co., 1979, ISBN 0-02-418220-6 pbk., pp. 85, $6.95 Cdn.

Everyone who wants to write clearly needs this little book.

It won't do your writing for you; but if you follow its rules, and refer to it habitually, you will improve your capacity to write clearly.

It contains 11 rules of usage, 11 principles of composition, a few pages on matters of form, and a list of words and expressions commonly misused. Following this material are some suggestions on writing style and a list of reminders.

Elements of Style was first written by William Strunk Jr. and printed in 1919; it was revised in 1935, 1959 and twice in the 1970's. Revisions, for the most part, have introduced words and expressions of recent vintage which are used in fresh examples.

Mr. Strunk's theme remains unchanged:

> Vigourous writing is concise. A sentence should contain no unnecessary words, a paragraph no unnecessary sentences, for the same reason that a drawing should have no unnecessary lines and a machine no unnecessary parts. This requires not that the writer make all his sentences short, or that he avoid all detail and treat his subjects only in outline, but that every word tell.

Everyone, of course, agrees with the precept when we find ourselves readers. On becoming writers, we frequently set this principle aside.

But the most trouble comes from the neglect of elementary rules. The belief takes hold that it's the thought, rather than its form, that counts. So why bother about those pesky fellows, the rules? Besides, good writers have been known to break the rules anyway. But Messrs, Strunk and White have been through all this before.

> It is an old observation that the best writers sometimes disregard the rules of rhetoric. When they do so, however, the reader will usually find in the sentence some compensating merit, attained at the cost of the violation. Unless he is certain of doing as well, he will probably do best to follow the rules.

The elementary rules of usage and composition total 22, or four fewer than the letters in our alphabet. Initial practice with them will lead to later confidence in their use.

One sample from "Words and Expressions commonly Misused":

> **Farther. Further.** The two words are commonly interchanged, but there is a distinction worth observing: farther serves best as a distance word, further as a time or quantity word. You chase a ball farther than the other fellow; you pursue a subject further.

To paraphrase an industrial review, "It's hard to imagine a surveyor or manager who doesn't need to express himself in English prose as part of his job".

William Strunk Jr. was a professor of English at Cornell University; E.B. White, one of his students in the 1920's, became one of America's most accomplished essayists.

The continuing demand for **Elements of Style**, over a span of 70 years, is its best endorsement. It may be found in the reference section of any bookstore.

J.F. Doig

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The objects of the Association are:

(a) To establish and maintain standards of

(i) Professional ethics among its members, student members and holders of a certificate of authorization, in order that the public interest may be served and protected, and

(ii) knowledge and skill among its members, student members and holders of a certificate of authorization; and

(b) To regulate the practice of professional land surveying and to govern the profession in accordance with this Act, the regulations and the By-laws; and

(c) To communicate and co-operate with other professional organizations for the advancement of the best interests of the surveying profession.

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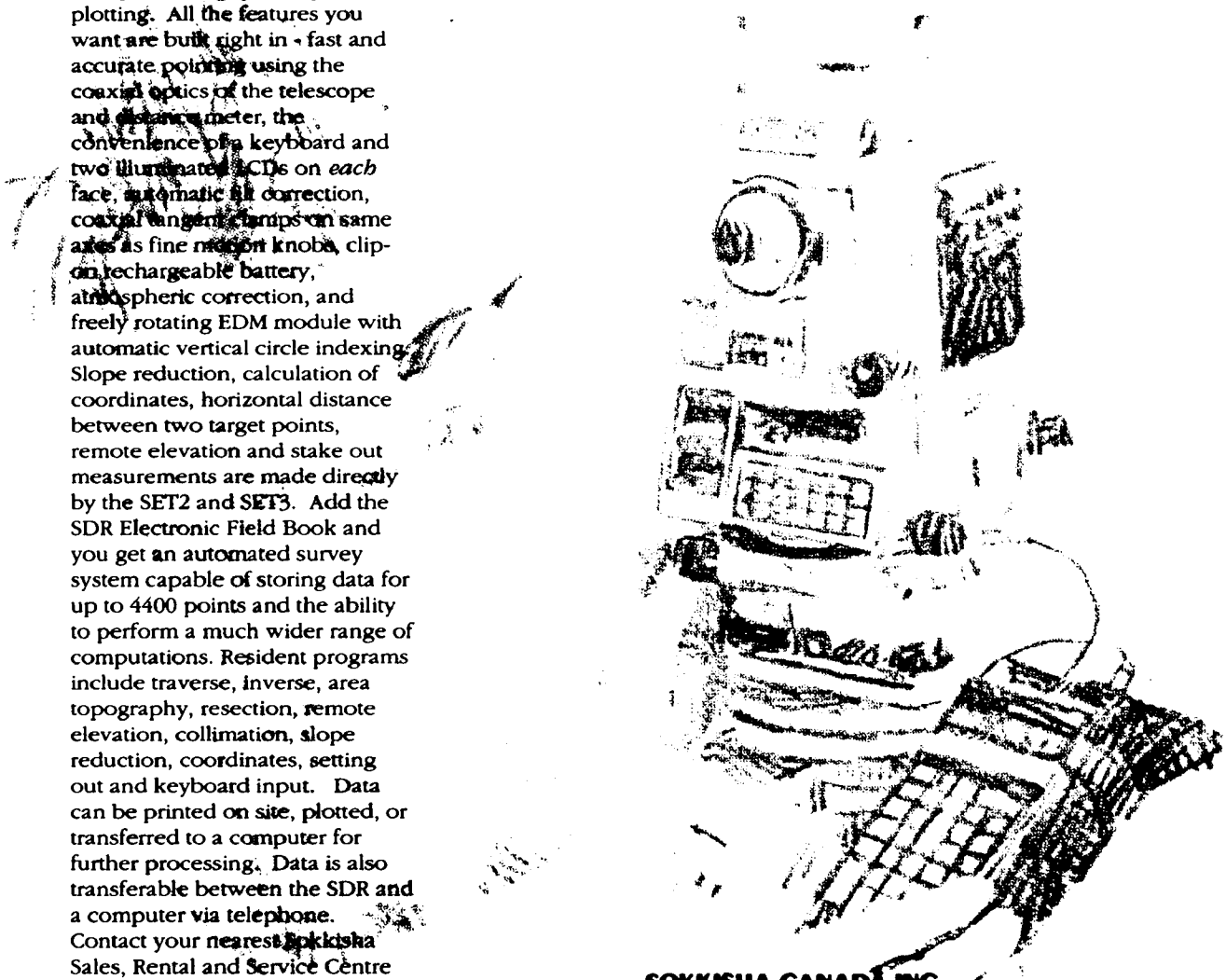

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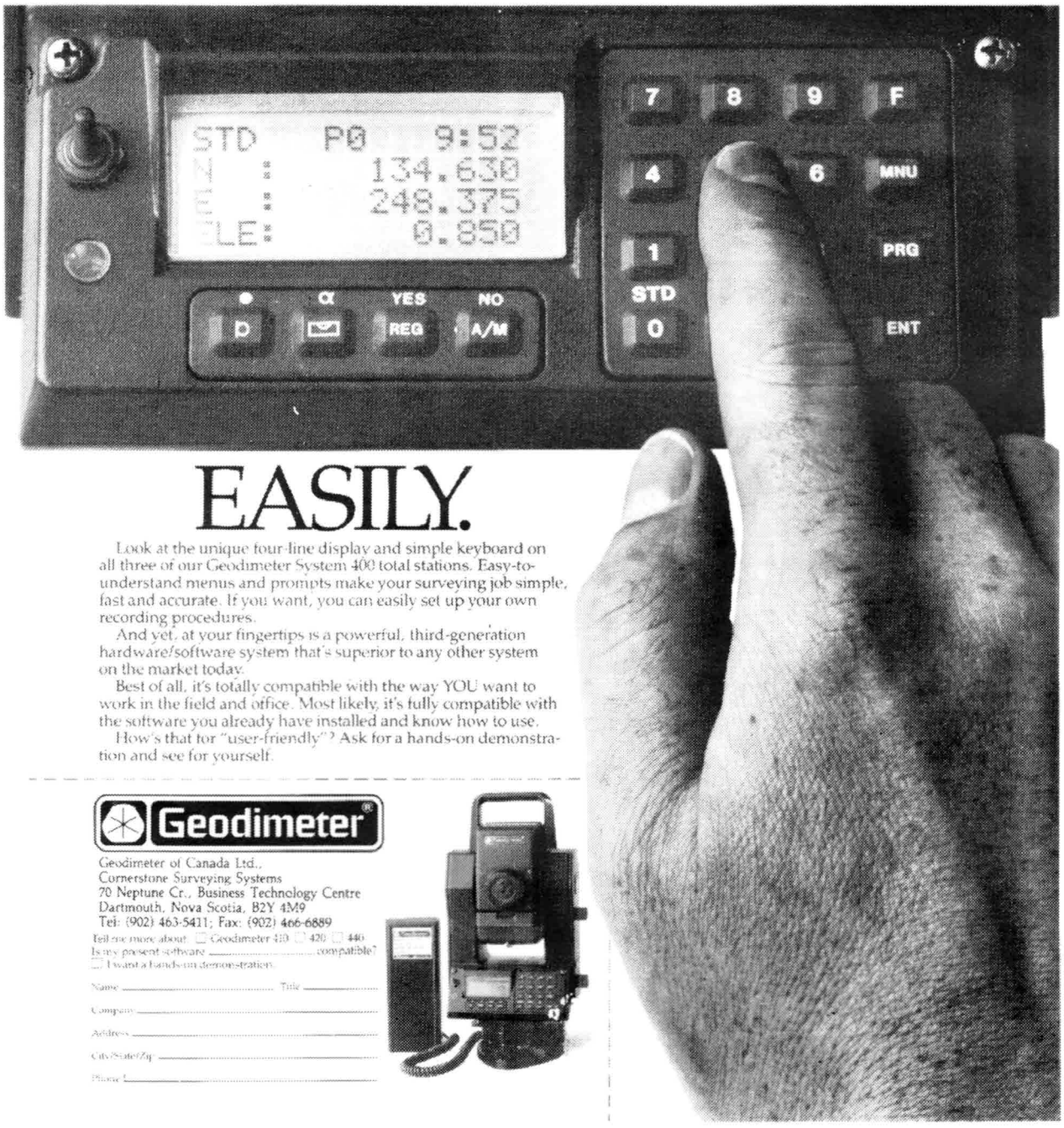

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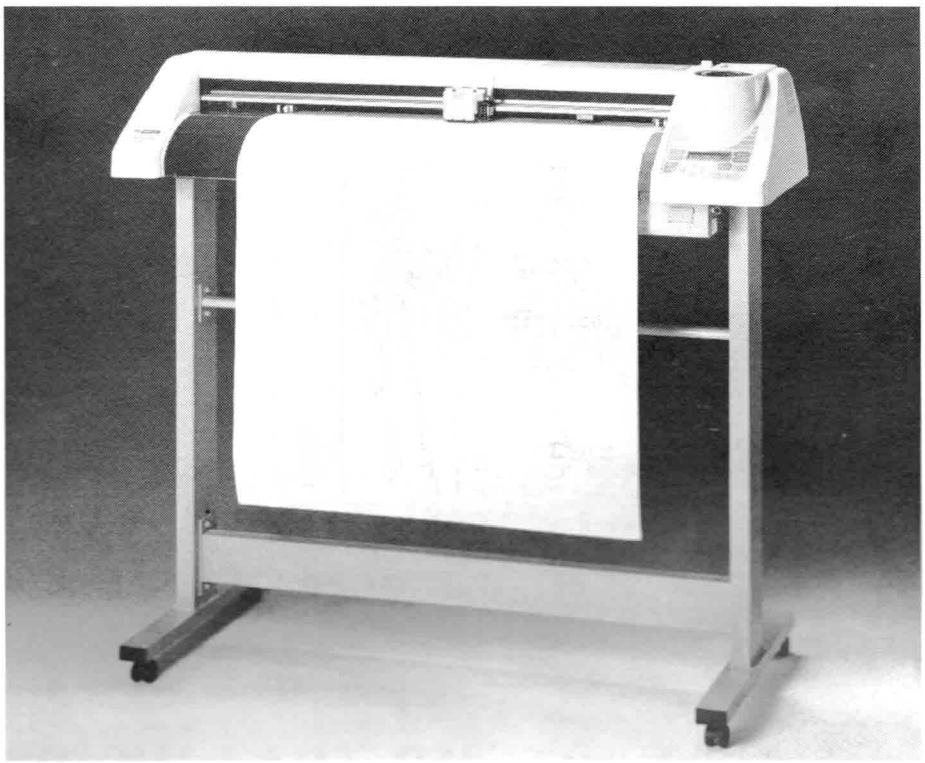

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