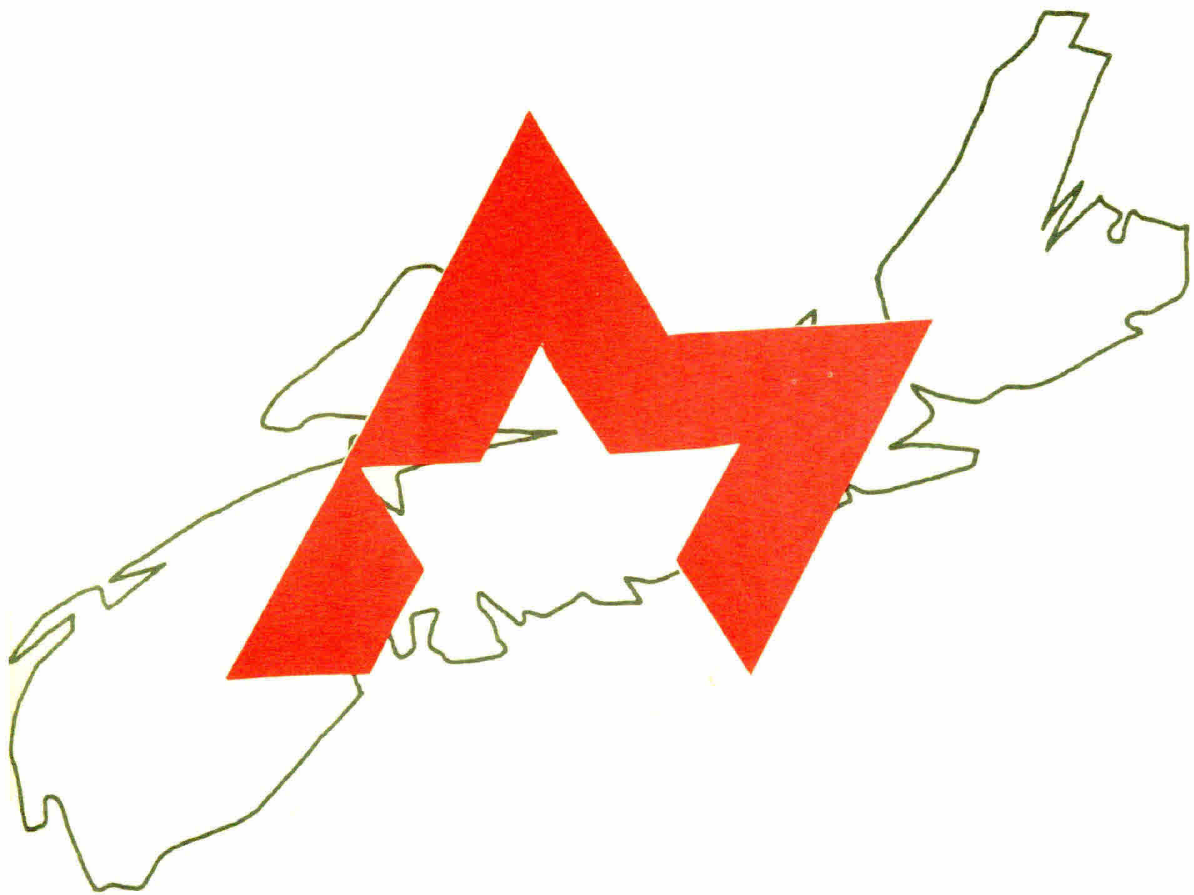


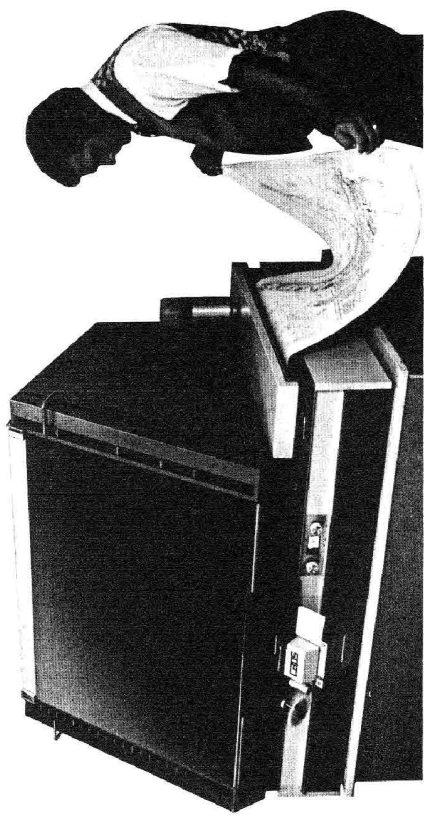
The NOVA SCOTIAN SURVEYOR



OCTOBER 1976



Big prints take the guess - work from your microfilm system.



MICROBOX UNIVERSAL MICROFILM READERS

FEATURING THE MODEL MLK1 (661-2611)
THE LARGEST SCREEN AVAILABLE
SCREEN SIZE - 860MM X 600MM (24" X 34")
DUAL MAGNIFICATION - 21X AND 42X

THIS READER IS SPECIFICALLY DESIGNED FOR VIEWING ENGINEERING DRAWINGS AND DATA MOUNTED IN APERTURE CARDS
A SINGLE CONTROL PROVIDES CONVENIENCE AND FLEXIBILITY IN THE READING OF MOUNTED 35MM MICROFILM ON A ROUTINE BASIS

35MM AND 16MM ROLL FILM AND MULTIPLE FRAMES OF 16MM MICROFICHE CAN ALSO BE VIEWED WITH THE AID OF OPTIONAL ROLL FILM OR MICROFICHE CARRIERS.

OTHER MODELS AVAILABLE	SCREEN SIZE	DUAL MAGNIFICATION
(661-2612) MLK2	610MM X 425MM (17" X 24")	14.8X AND 29.7X
(661-2613) MLK3	435MM X 300MM (12" X 17")	10.5X AND 21X
(661-2614) MLK4	315MM X 315MM (12 1/2" X 12 1/2")	7.4X AND 14.8X

FEATURES OF MICROBOX READERS:

- 1 - EXTREME IMAGE SHARPNESS
- 2 - FULL IMAGE SIZED SCREEN
- 3 - DUAL MAGNIFICATION
- 4 - UNIFORM SCREEN ILLUMINATION
- 5 - COMPACT ADVANCED DESIGN FOR EASIER OPERATION
- 6 - RAPID IMAGE SCAN
- 7 - VENTED IMAGE CARRIER

* FOR MORE INFORMATION ASK FOR OUR TECHNICAL BULLETIN NUMBER 661-0008

THAT'S RIGHT, YOU CAN NOW PRODUCE BIG PRINTS FROM AN ECONOMICALLY PRICED MACHINE. NO MICROFORMS SYSTEM SHOULD BE WITHOUT THIS VERSATILE ENLARGER/PRINTER.

- TROUBLE-FREE AND TIME PROVEN. BECAUSE THE CAPS A1 OR A2 IS SO SIMPLE TO OPERATE, THERE ARE NOT A LOT OF SOPHISTICATED CONTROLS TO GIVE YOU SERVICE PROBLEMS.
- INFINITELY VARIABLE ENLARGEMENT RATIO FROM 7.4X TO 24X. YES, IT MAKES BIG PRINTS, BUT IT MAKES SMALL PRINTS TOO. A MANUAL ADJUSTMENT PROVIDES PRINTS ANY SIZE WITHIN THE RANGE OF 7.4X TO 24X.

- EXCELLENT QUALITY COPIES. THE PRINTS ARE DEFINITIVE IN EVERY DETAIL, SHARP, BLACK ON WHITE ELECTROSTATIC COPIES AT A LOW COST PER COPY.
- FAST PRINT DELIVERY. PRINTS ARE DELIVERED AT THE FAST RATE OF 2 TO 3 PER MINUTE, DE PENDING ON SIZE.
- SIMPLE OPERATION. MANUAL ADJUSTMENTS ARE FEW. PRESS A BUTTON - ADJUST EXPOSURE AND YOU'RE READY TO PRINT.

MICROFILM ENLARGER/PRINTER CAPS MODELS A1 AND A2 24"X36"

- SUPERIOR LENS SYSTEM. YOU'LL BE AMAZED AT THE DISTORTION-FREE PRINTS EMERGING FROM THE CAPS A1 OR A2. EVEN A 24X ENLARGEMENT IS ACCURATE AND OPTICALLY DISTINCT.
- LOW COPY COST. MINIMAL MACHINE COST. THIS CAPS MODEL A1 AND A2 WAS DEVELOPED TO FULFILL THAT SPECIFIC NEED FOR A LARGE PRINT. THE ENLARGER/PRINTER TOO IS ECONOMICALLY PRICED.

- EXCELLENT QUALITY COPIES. THE PRINTS ARE DEFINITIVE IN EVERY DETAIL, SHARP, BLACK ON WHITE ELECTROSTATIC COPIES AT A LOW COST PER COPY.
- FAST PRINT DELIVERY. PRINTS ARE DELIVERED AT THE FAST RATE OF 2 TO 3 PER MINUTE, DE PENDING ON SIZE.
- SIMPLE OPERATION. MANUAL ADJUSTMENTS ARE FEW. PRESS A BUTTON - ADJUST EXPOSURE AND YOU'RE READY TO PRINT.

SPECIFICATION

MAGNIFICATION INPUT

PRINT SIZE
PRINT SPEED
LAMP
ELECTRICAL POWER
DEVELOPMENT
DIMENSIONS

WEIGHT

A2 - (661-3012)

7.4X TO 18X
35MM OR 16MM MICROFILM IN CARDS, ROLLS, STRIPS, JACKETS OR MICROFICHE
ANY CUT SIZE UP TO 18" X 24" (MIN A5)
2 - 3 PRINTS A MINUTE
150 WATT, 24 VOLTS TUNGSTEN HALOGEN
105 - 125V, 200 - 250V 50 60 CPS
ELECTROSTATIC LIQUID TONER
HEIGHT 82.6CM (32.5")
DEPTH 83.2CM (32.75")
LENGTH 108.2CM (42.5")
225 LBS (102 KG)

A1 - (661-3011)

7.4X TO 24X
35MM OR 16MM MICROFILM IN CARDS, ROLLS, STRIPS, JACKETS OR MICROFICHE
ANY CUT SIZE UP TO A1 OR 24" X 3
1.5 TO 3 PRINTS A MINUTE
150W - 24V TUNGSTEN HALOGEN
105 - 125V, 200 - 250V, 50 60 CPS
ELECTROSTATIC LIQUID TONER
HEIGHT 100.4CM (39.5")
DEPTH 111.2CM (43.75")
LENGTH 138.5CM (54.5")
340 LBS (154 KG)

* FOR MORE INFORMATION ASK FOR OUR TECHNICAL BULLETIN NUMBER 611-0004

The NOVA SCOTIAN SURVEYOR

Published four times a year by

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS INCORPORATED

Ivan P. Macdonald
President

Burton L. Cain
Editor

A.C. Krasemann
Business Manager

Fred C. Hutchinson
Secretary-Treasurer

Address all communications to P.O. Box 1541, Halifax, Nova Scotia

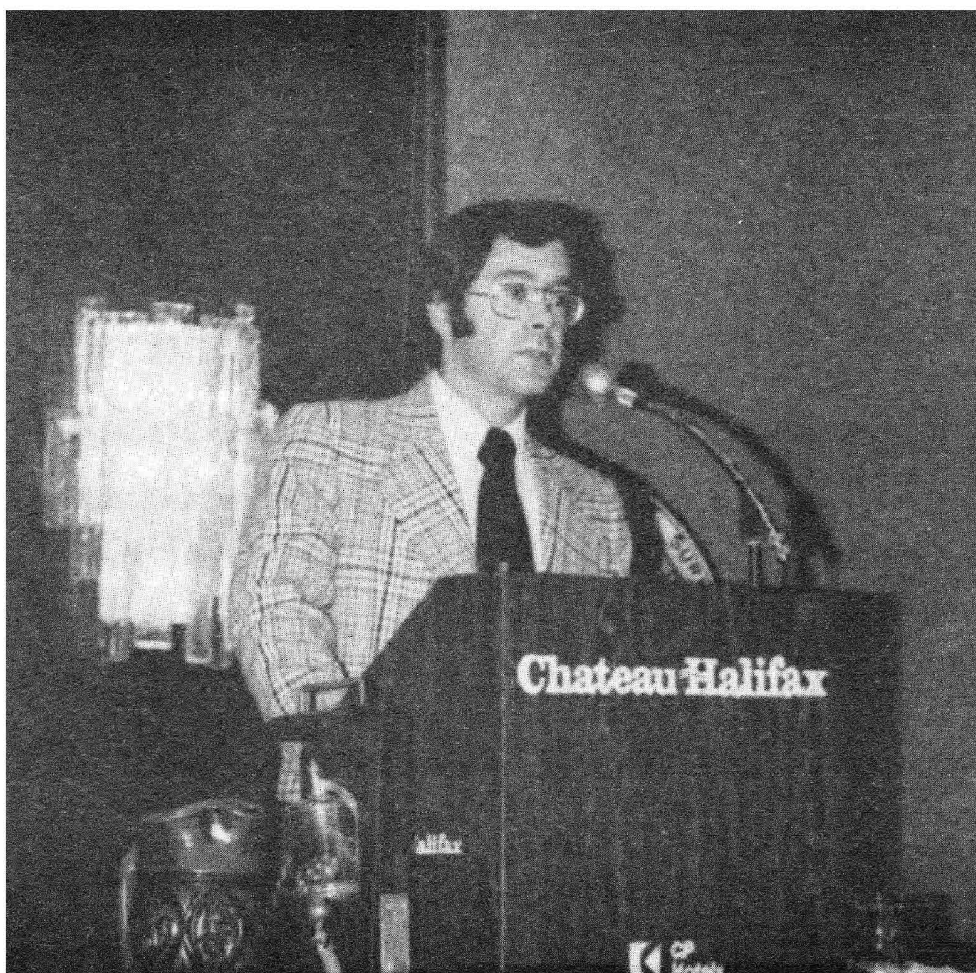
Founded 1951

Incorporated 1955

Vol. 32

OCTOBER '76

No 84



KEITH P. AuCOIN IN-COMING PRESIDENT FOR 1977

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

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

PRESIDENT'S PAGE	-3
FROM THE EDITOR	-4
TO THE EDITOR	-5
LEGISLATIVE COMMITTEE	-7
DISCIPLINARY ACTION BY COUNCIL	-10
COUNCIL MEETINGS	-11
RIPARIAN RIGHTS	- by J. F. Doig.....13
NOVA SCOTIA LAND SURVEYORS' CODE OF ETHICS	- by J. B. Gillis.....14
ITEMS FROM THE NOVA SCOTIA BARRISTERS' SOCIETY	-20
CHITTICK <i>et al</i> VS. GILMORE	-22
STARS OF CONVENTION '75	-32

* * * * *

**** PRESIDENT'S PAGE ****

The Land Surveying profession has been undergoing a change because of the economic climate of our area. It could be described as "cloudy with a few sunny intervals". That might be the way the weatherman would say it, but we all know that we are in times of what may be called "consumerism". Yes, everyone is becoming more aware of the cost of products and services.

The Association is receiving an increasing number of complaints against our members and a number of these imply that we are overcharging for our services. Other complaints accuse us of incompetence or negligence. Of the latter category, a complaint was submitted and as a result of a Discipline Committee hearing and a Council hearing, one of our members was found guilty of gross negligence and incompetence.

I heard a lawyer in St. John's, who is also a member of the provincial legislature, speak to the Newfoundland Land Surveyors and he said that all professions are being questioned these days. He summed up by saying that we all must take a greater pride in the profession of our choice. Also, when I attended the 1976 meeting of the Association of Professional Engineers of Nova Scotia, I heard a very similar concern about their profession but I also heard an encouraging note of pride in the services engineers are providing. I mention the foregoing to help point out the fact that our profession is not the only profession that "Consumerism" is having an effect on.

Land Surveying is a necessary part of our provincial development, because land is the base resource to build on. How could we develop without the physical knowledge of the extent of land title or possession? A land conveyance may be made without a survey but no development of that land can peacefully be carried out without a land surveyor.

We must take pride in our profession because we are looking forward to many changes which will be brought about by our new Nova Scotia Land Surveyors Act and by a new Land Titles System.

Our Association's Legislative Committee has prepared a new Nova Scotia Land Surveyors Act which is before the government and is presently making a detailed study of the proposed new legislation, namely, the Land Titles Act and major and incidental amendments to existing legislation. Our Association is also involved in a study of Survey Standards and accuracy being carried out for L.R.I.S. by members of the Survey Department of the University of New Brunswick. As a member of the Canadian Council of Land Surveyors, our Association's representative is involved in many aspects of land surveying, as it is carried out in all provinces of Canada.

Another committee is preparing regulations which will enable us to raise our education standards to Bachelor of Science or Arts level as approved at the last Annual Meeting.

Within months we will be using metric measure in the field and on our plans. Also, we will be talking about guaranteed boundaries, plan examination, boundary adjudication outside the courts and other interesting changes.

It is up to us now to learn to use all the advances in technology so that we can provide the most efficient services to the public. So that you will be informed, participate in some Association activity. Attend the District Meetings and come to our Annual Meeting in November. Voice your opinion.

From the Editor -

On impulse I was about to entitle my brief contribution "From the Editor's Bench". This, I guess, stems from a regular feature in a magazine I subscribe to entitled "From the Fly Tyer's Bench" and my present preoccupation with pursuing a fine run of salmon in the Maccan River, however, duty calls.

My editorial in the April issue which attempted to solicit material prompted two responses. In a letter from Mr. H. W. L. Doane, which is printed in this issue, he describes it as a "humble appeal", while J. B. O'Neil, Executive Manager, CIS, suggested that I "placed the matter before our membership in a most forthright manner". In talking to some members recently, however, I sense a renewed awareness that contributions from them are necessary to make this publication worth while.

We express our thanks to Mr. Doane for his kind words in support of the Officers of the Association. We also wish to thank Chris Masland for allowing us to print his interesting paper on "Water Lots" in the April issue and to Jim Gillis for his article on our "Code of Ethics" in this issue. Material from those who regularly contribute is certainly appreciated as well.

Don Parker suggests that we might consider having a historical section in the Surveyor devoted entirely to articles, reprints or anecdotes from the past which might be of interest to Surveyors of the present. This could include a series of ten articles on road making in Nova Scotia which appeared in the Nova Scotian some 145 years ago to demonstrate how little the methods have changed in the last century and a half. A series of reports from a Bartholomew Belcher from Fort Belcher is also a possibility. I am informed that Bartholomew is the Patron Saint of drunks and that Fort Belcher is an actual landmark in Colchester County.

If anyone is interested in contributing to a historical article please contact Don Parker or myself.

I will close this disertation with an item Don supplied from the Nova Scotian dated June 1, 1831 which may give some consolation to any surveyor who feels his plans are not up to par.

.."to prove the infallibility of our plans, even our modern plans, it is only necessary to say, that a quantity of vacant land appeared on the plan at the Surveyor General's Office, comprising some hundred acres; this vacant land lay between the rear lines of lots, situated on two roads, running nearly parallel, and not more than 20 miles from Halifax. A gentleman obtained a grant of 200 acres of this apparently ungranted land, paid the fees of Office, Surveying, and other incidental expenses, and obtained for all his trouble and outlay, a large paper with the Seal of the Province, and His Excellency's name; also, a plan comprising several well drawn lines. But, alas! the persons interested in the land, are now informed by the proprietors in the vicinity, where it should be that there are not 10 acres, it may happen that as the land is found, according to our infallible plans, to have the property of extension in some quarters, that it also possesses the power of contraction in others; it would be far better to be satisfied with such a surmise, than to insult respectable persons by affirming that plans and surveyors are of ten fallacious."

To the Editor:

Sir - I have sat by complacently viewing the changes a modern society is inflicting upon us for just about long enough.

Our government has decreed that we must convert to the metric system in order to compete on the international markets. I am quite agreeable to this since more exports mean more business, which means an expanding economy, which in turn creates more jobs and more housing starts, which creates more business for land surveyors.

I can even remain agreeable while I count the metric sized containers on the mile long trains which block my way each morning.

I can remain agreeable while twenty-five millimeters of rain fall where only an inch of rain fell before.

I can remain agreeable while thirty centimeters of snow fell where a foot of snow fell before.

I can remain agreeable while the temperature drops to twenty-five degrees when I feel like settling back in a boat with a case of beer.

I can remain agreeable while our shores are buffeted by one hundred kilometer per hour winds where sixty mile per hour winds blew before.

I can remain agreeable while struggling with a fifty metre chain. After all, no sacrifice is too great for our country, or is it?

I have sat back waiting for the final, most sensible, change to strike the land surveying profession; that being the change from the cursed sexagesimal heritage from the Babylonians of three thousand years ago to a logical decimal system of angle measurement.

I have been disappointed. I have been informed that degrees, minutes and seconds are to be retained since "the availability of hand calculators has made conversion a simple matter".

I must protest. If we are to go only half-way in the conversion process, why go at all? We do not export land. It is not a commodity on the international market to be imported and exported at will. The size of land does not affect the size of a ton of iron ore exported to Japan or the size of a bushel of apples shipped to Great Brittan.

The Metric Commission has done enough damage by making our climate even worse than it was before. Might I suggest that they stuff this metric system in relation to land surveying in the nearest appropriate orifice until such time as they can offer a complete conversion rather than one of convenience.

I remain,

An Old Surveyor.

Dear Mr. Cain:

Being touched by your humble appeal for some word of appreciation or criticism of your efforts as editor, I felt I should drop you a line.

Although I am not practising surveying now I always read "The Nova Scotian Surveyor" with a great deal of interest, and it is amazing to see how the Association has grown over the years.

I was particularly interested in the article on "Water Lots in Nova Scotia" because we owned one on the North West Arm in Halifax.

Mr. Masland has done a tremendous amount of research, and it is an excellent example of the work of a really conscientious surveyor. Someone has said that genius is simply an infinite capacity for taking pains.

I trust that you and all the officers of the organization will keep up the good work because you are doing a splendid job.

Sincerely,

(Sgd.) Harvey Doane.

* * * * *

N O T I C E

IXTH NATIONAL SURVEYING TEACHERS' CONVERENCE

UNIVERSITY OF NEW BRUNSWICK

Fredericton, N. B.

June 20 - 24, 1977

THEME: RESOURCES FOR MORE EFFECTIVE TEACHING

For further information, please write:

Professor A. C. Hamilton
Chairman, IXth N.S.T.C.
Department of Surveying Engineering
University of New Brunswick
Fredericton, New Brunswick

**** LEGISLATIVE COMMITTEE ****

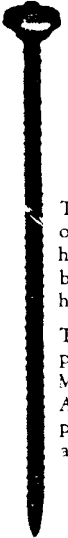
Since our Annual Meeting last fall you probably have not heard a great deal from your Legislative Committee. We would like to inform you that we have been active in your interests, notwithstanding, we did take time off during the months of July and August. We have now resumed our weekly meetings and, of course, the main thrust of our effort is directed toward the proposed new Act.

As you know, we have presented the Act to the Minister of Lands and Forests, and are encouraged by our discussions and meetings with him that there is every likelihood the Act will be presented at the next sitting of the House.

Since last November we have met several times with the Minister, and only minor revisions to the Act have been required as a result thereof. Through the efforts of our Liaison Committee with the Association of Professional Engineers, and also through discussions and meetings with both the Liaison Committee and Executive of APENS, we have been able to secure a Letter of Agreement and support for our Act from the Engineers which has been passed on to the Minister of Lands and Forests. The significance of this support can only be appreciated when viewed in light of the fact that the Minister of Lands and Forests had clearly indicated his reluctance to present the Act to the House, should we be unable to secure the support of APENS.

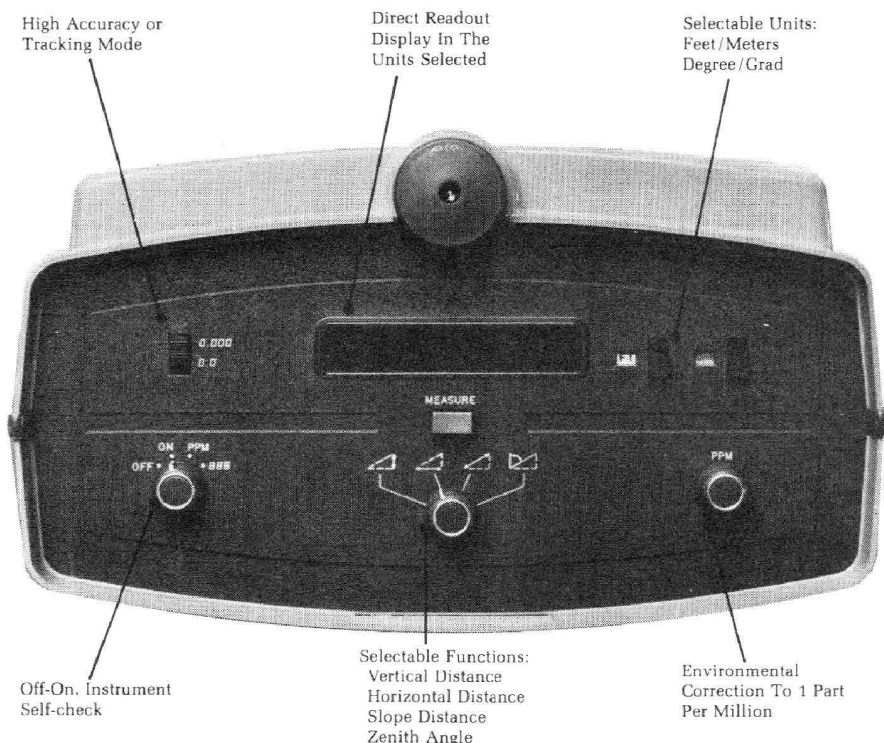
Our latest communication with the Minister's office, earlier this week, is supportive of our anticipation of seeing the Act presented to the next sitting of the House.

Fred W. Roberts
Fred W. Roberts,
Chairman,
Legislative Committee.
October 7, 1976.

		<p align="center">SURVEY MARKER</p>	
<p>The new survey marker consisting of a corrosion resistant aluminum head threaded to a sharpened carbon steel rod and ribbed for better holding characteristics.</p>	<p>This marker has won approval from professional Land Surveyors in the Maritime Provinces and in the U.S.A. Also in departments of federal and provincial governments - utilities and municipalities.</p>	<p>Customized heads, bearing the initials or registry number of the individual may be supplied, but time must be allowed for manufacture.</p>	<p>Proven by years of use Enheat Surveyors Markers are now in use all across Canada and internationally - from the Arctic Islands to the islands of the Pacific.</p>
<p>Another New Service From ENHEAT STEEL DIVISION Manufactured By</p>	<p>Enamel & Heating Products Limited AMHERST, N. S.</p>		

New Total Station.

Angle and automatic horizontal
distance measurements
from one instrument.



Angle and distance measurements couldn't be easier. Or faster. The new HP3810A Total Station lets you read and lay out horizontal distances automatically. It also gives you combined angle and distance measurements. The secret? A built-in vertical angle sensing device, a microcomputer, and a horizontal angle base.

Point the HP Total Station, press one button, and it quickly measures your slope distance, zenith angle, corrects for curvature and refraction and automatically computes and displays your horizontal distance. This time and money saver also has a tracking mode that drastically shortens layout time — making readings every three seconds to speed you from point to point.

With the 20-second least count horizontal angle base, you can estimate horizontal angles to 5 seconds. Imagine, complete angle and distance measuring capability in one compact package — with no need for cables, clamp on's, transit or theodolite. An ideal solution for layout and location work.

You'll also like the other features that make field work easier. For example, the flashing indicator that tells you when the beam is obstructed. The one mile (1.6 km) range that means you don't have to break down those long shots, the feet/metres switch that allows you to select the units, and the built-in handle for out of the case carrying convenience.

These are just the highlights of this remarkable instrument. You can get full details by simply mailing in the coupon. One good look at the new HP Total Station and you'll know you've seen the measuring instrument of the future — today.



Sales and service from 172 offices in 65 countries
Canada 6877 Goreway Drive, Mississauga, Ontario L4V 1L9
Other offices: Dartmouth, Quebec City, Montreal, Ottawa, Winnipeg,
Calgary, Edmonton & Vancouver

Hewlett-Packard (Canada) Ltd.
6877 Goreway Drive, Mississauga, Ontario L4V 1L9

- ☐ I would like to order the HP3810A Total Station.
- ☐ I would like a demonstration of the HP3810A Total Station.
- ☐ I would like a demonstration of the other HP Surveying Products.
 - ☐ Distance Meters
 - ☐ Programmable Calculators
- ☐ Please send me more information on HP Surveying Products.

Name _____

Title _____ Phone _____

Company _____

Address _____

City _____ Province _____ □□□ □□□

Signature: _____

**** DISCIPLINARY ACTION BY COUNCIL ****

As a result of two Judicial Council Hearings held during the past year, one member of our Association, W. S. Laurence, was found guilty under Section 5 (1)(a) of the Nova Scotia Land Surveyors Act and has been suspended indefinitely, with a second member, Arthur E. Briggs, pleading guilty to charges under the same section and receiving an indefinite suspension, to become effective should he fail to pass five exams to be written during the December 1976 sitting of the Association's Final Examinations.

A more detailed report will be presented on behalf of the Discipline Committee, during the Annual Convention in November.

Ivan P. Macdonald
Ivan P. Macdonald,
President.

PENALTY FOR REMOVING MONUMENT

The following article appeared in the Kitchener-Waterloo Record on December 2, 1975:

**REMOVED STAKE, KITCHENER, MD
Ordered to Pay Cost of Survey**

Judge J. R. H. Kirkpatrick gave Dr. Shajahan Steen of 773 Dunbar Road, a conditional discharge if the doctor paid the costs of a property survey commissioned by his neighbor Dr. A. E. Stoffman, 14 Rusholme Road.

Dr. Steen admitted pulling out a surveyor's stake near a hedge dividing his and Dr. Stoffman's property and throwing it in the garbage. He said he thought the stake was put on what he considered his property by persons he thought were going to build a fence around the Stoffman's property.

When Dr. Steen's lawyer, Richard VanBuskirk, protested the judge's move in making his client pay for the costs of the entire survey and not just for replacement of the stake, Judge Kirkpatrick said he would impose a stiffer penalty if that's what the lawyer wanted.

"This offence carries a maximum of a five-year jail term and you're asking for an absolute discharge," said the judge.

Dr. Steen testified he was told by the previous owner the hedge was on his property. He had maintained it since he bought the house. He did not want to see the hedge destroyed by a fence.

Richard Lorentz, the surveyor who drove the stake into the ground, said it was placed atop an iron bar believed to be the original property boundary. It was considered to be a proper boundary marker.

Judge Kirkpatrick rejected Mr. VanBuskirk's plea for an absolute discharge because, he said, Dr. Steen's action has "inconvenienced neighbors, police and the court."

** COUNCIL MEETING **

Council held a regular meeting on June 26, 1976 at the Nova Scotia Land Survey Institute in Lawrencetown.

There was some discussion concerning plans prepared and signed by a Surveyor during the time when he had qualified as a Nova Scotia Land Surveyor but had not gained membership in the Association. It was decided that legal advice should be sought.

Ed Rice gave a financial report and Council had to consider what courses of action might be taken should the raise in dues soon not be approved by the Governor-in-Council. A motion was passed authorizing the Secretary-Treasurer and President to cash existing debentures if necessary.

I am sure most Council Members breathed a sigh of relief when on July 15, 1976 the Governor-in-Council approved the amendment in our By-laws setting our annual membership fees at \$150.00.

A motion was passed that the Executive and Business Manager's financial books be audited in time for presentation at the Annual Meeting. It was felt that a qualified auditor should be employed as it has become a very difficult and time consuming job and, the Finance Committee is located too far away to gain access to the records.

Complaints Committee reported that they had dealt with seven complaints from last year, five of which have been resolved. They now have a total of nine complaints which they are dealing with.

The report to Council by F. W. Roberts, Chairman of the Legislative Committee appears on page 7.

Doug MacDonald reported that Art Peterson, John MacInnis and himself held five meetings to consider the proposed survey regulations. He hoped that the final draft of the proposed regulations should be ready in two weeks.

A subcommittee of the Liaison Committee has been authorized to explore the possibility of establishing joint administration facilities for this Association with APENS.

The Education Committee reported that it had set as its goals and objectives the following:

1. Establish Regulations to raise the education level for Nova Scotia Land Surveyors to the Bachelurate level.
2. Establish a program of continuing education.
3. Establish a program of articles.

They had revised the Education Regulations as presented at the last annual meeting and those were made available to Council for consideration.

The findings of the Discipline Committee in the matter of two complaints against a member were accepted and it was decided that Council hold a hearing on the matter on August 13. This was later postponed until September 10.

Christopher (Chris) Geddes was accepted as a new member and E.J. Cleveland, J.E. Landry, J.A. Redden, F.P. Cottreau and J.P. Alcorn as Junior Members. Letters are to be sent to Colin Bracey, Dominic D. LeLieve and S.M. Bancroft accepting their letter of resignation.

It was reported that Orrin Clark owes dues for the past five years and is thereby no longer a member in good standing but is practising land surveying. It was decided that the Attorney General's office be informed and that public notice be given that Mr. Clark is no longer a member in good standing and is not entitled to practise surveying pursuant to Section 16 of the Act.

Ivan Macdonald, Allison Grant and Stewart Cameron were appointed to form the nomination committee for election of the new executive.

PROMPT DELIVERY FROM

D & B Riley

SURVEY STAKES, HUBS, LATHES
SQUEEGEE, PICKETS

WINDSOR
P.O. BOX 14 R.R. #2
HANTS CO., N.S.

PHONE 798-3656
798-3398

Nova Scotia Land Survey Institute

OPERATED BY

THE DEPARTMENT OF EDUCATION
PROVINCE OF NOVA SCOTIA

CARTOGRAPHY (1 year)
PHOTOGRAMMETRY (2 years)
SURVEYING (2 years)
PROPERTY MAPPING (1 year)
SURVEY ASSISTANT (1 year)

FULL PARTICULARS FROM

The Principal
Nova Scotia Land Survey Institute

Lawrencetown, Nova Scotia.

BOOK REVIEW

RIPARIAN RIGHTS

A compilation of various papers, judgments, historical records and references pertaining to riparian rights, with some emphasis on the common law application to Manitoba, for the use of land surveyors, land managers and land administrators.

A. C. Roberts, Director of Surveys, Department of Renewable Resources and Transportation Services, Winnipeg, Manitoba, 1976, 320 pages. \$3.00.

One who would venture toward some understanding of the law as it relates to water boundaries needs all the help he can get.

This compilation will provide a great deal of assistance.

It is divided into three principle sections: Historical Information; Papers and Extracts; Court Cases from English and Canadian Law.

The section on Historical Information, of some 59 pages in length, contains extracts of regulations pertaining to the survey of Dominion Lands periodically from 1871 to 1961. It also holds Department of Interior instructions dated 1915 and 1916 for the survey of water areas, plus copies of official correspondence of this same Department relating to water boundaries within Manitoba.

Among the Papers are well known presentations such as "The Effect of Bodies of Water in Legal Surveying" by Hadfield (1967) and "Water Boundaries" by Viminitz (1958). But one also finds others which will be new to all but a very few. Two such are surely "Considerations on Riparian Rights in Non-Navigable Waters" by P. A. Beique, Q.L.S. (1934) and "Riparian Rights" by D. J. Thom, K.C. (1931).

Extracts, embodying riparian definitions and case law, are taken from The English and Empire Digest, Halsbury's Laws of England and The Canadian Encyclopedia Digest.

The Papers and Extracts section is 180 pages in length.

Nineteen court cases are reported in the third section of this compilation and two of these are Nova Scotian. *Shey vs. McHeffey* (1868) concerns the changes in the course of the ox-bow Avon River at Windsor, while *McKay vs. Huggan et al* (1892) deals with land in Pictou County formed in Barney's River by ice jams rather than by accretion.

Mr. Roberts has performed a fine service in making available all this information on the law of water boundaries. It represents a great deal of time and research. In addition to his regular duties with the Province of Manitoba, he has served since its inception as Chairman of the Advisory Committee for the Department of Surveying Engineering, University of New Brunswick.

The compilation is in looseleaf form without a permanent binder attached. This can always be secured locally. The price of the publication, in this day and age, is barely that of the cost of printing.

NOVA SCOTIA LAND SURVEYORS' CODE OF ETHICS

by James B. Gillis

March 29, 1972

The word "ethics" is not susceptible to an exact definition; however, Bouviers' Law dictionary gives about the best attempt. It states "that branch of moral science which treats of the duties which a member of a profession owes to the public, to his professional brethren, and to his clients, is ethics". In other words, ethics are rules of professional conduct.

Ethics are a product of the consensus of people concerned and the results of agreements on the part of those who will be governed by the codes. They are not imposed from without, but are derived from within the group whose interests they are designed to advance. If surveyors are to maintain a respected position as professionals, they must look beyond the force of the law to ethical standards which prohibit the doing of that which the law does not forbid. Ethics are often unenforceable, for they depend for their effectiveness on moral suasion and group pressure.

"Honesty, justice, and courtesy form a moral philosophy, which associated with mutual interest among men constitutes the foundations of ethics. The surveyor should recognize such a standard, not in a passive observance, but as a set of dynamic principles guiding his conduct and way of life. It is his duty to practise his profession according to these Canons of Ethics"¹. The proof of observance of ethics lies in the opinions of others.

LAND SURVEYORS' ETHICS IN NOVA SCOTIA

Without ethics, a group of people can never be a profession. Realizing this, most groups of land surveyors have adopted some form of ethics. The Nova Scotia Land Surveyors' Act allows for a code of ethics for the Association of Nova Scotia Land Surveyors. Section 4(g) of the Act states: "The Association, with the approval of the Governor-in-Council, may make by-laws 'providing a code of ethics for the guidance of members.'" In about 1965-66 an "ethics committee" was formed by the Council, and a Code of Ethics was drawn up. It exists now as by-law 26 of the Association.

This Code of Ethics was adopted as a guide, and a brief explanation of its details may help. The surveyor must always carry out his work as a professional. He must not allow his name as a surveyor to be associated with any enterprise but that of the highest standards, for the public will not have high opinion or respect for that about which they have doubts. He must inform his clients of any information pertinent to the work which the client has a right to know, for if he neglects to do this and the client finds out later, it could cause ill feeling and certainly would not enhance the confidence a client has in a surveyor. He shall also keep all information the client gives to him confidential, for it is his professional duty to respect the rights to privacy of the client; however, he has a duty to the public to report those illegal or unethical actions or plans of action, which he discovers, for to not report these would be to act as an accessory to anything which might take place. It is not his duty to, in any way, try to harm the business or professional reputation of anyone, but it is his duty to report any wrong-doings to the proper authority, whether it be the police, a professional association, a trade union, or whatever. They will take the necessary action. His work must all be of a standard which is set down by the Association, and anything less than that should be done again. He should never attempt to do work at which he is not proficient, for a sub-standard job could easily result, and this would serve to damage the reputation of the surveyor involved, in particular, and all

¹Richard C. Vaughn, Legal Aspects of Engineering, Prentice-Hall Inc. 1962, p. 50.

surveyors in general.

The professional surveyor must adhere to the scale of minimum fees, which the Association sets, and must not undercharge to attract customers. This would be unfair competition, and not worthy of a professional person. The compensation for the service rendered must be adequate and just, and a person who holds a salaried position while working as a part-time surveyor, must not use this position as an advantage over those who make their living as surveyors. It is the right of the full-time surveyor that a person who does not make his living in this way, should not be able to compete unfairly with him for it. He must accept compensation for a service from only one party, unless all interested parties have given prior consent to the contrary, for to do otherwise would imply that his interests lay other than with the client who originally hired the surveyor for the job. The surveyor must not quote a firm price for "land surveying" (defined as the determination of any point or of the direction or length of any line required in measuring, laying off, or dividing land for the purpose of establishing boundaries or title to land); for this would be unethical competition for a job, and not worthy of a professional.

A surveyor should not use unethical forms of competition to obtain work. He must not advertise by using business methods, which are often beneficial to the advertiser, and detrimental to others; however, the customary use of professional cards is quite suitable. The surveyor should never attempt to supplant another surveyor, and take the job himself, nor should he pay a commission or anything of the like, in an attempt to secure employment. Both of these things are totally unprofessional, and are detrimental to everyone concerned. They tend to lower the public opinion of anyone who practises these actions. Finally, a surveyor should not review the work of a fellow surveyor for the same client, without his knowledge, for this form of employment is not fair to the original surveyor, and if any errors or discrepancies are found, he should first have a chance to correct or defend them. The second surveyor has just as much chance of making mistakes.

PROFESSIONAL STATUS IS THE RESULT OF OBSERVANCE OF ETHICS

It is a fact that ethics are often unenforceable. Professional codes recognize duties to the cause of learning, to the clients or patients, and the public as well as to colleagues.

*"These professional codes are the result of circumstances peculiar to the learned professions. The learned professions are bound together in a common discipline, which creates a spirit of fraternity, scholarship and public service. The customer is a client or patient, not an opponent in the game of trade. Some gratuitous services to clients and patients are contemplated. In principle, the profession is devoted to public service, and financial gain presumably is second."*²

Thus, the Encyclopedia Britannica defines professionalism. It goes on to say that business typically calls for skill, not learning, and the objective is profit, not service, while professionalism is a way of thinking and living, rather than an accumulation of knowledge and power.

Property of land surveying predates written history. It is thought to have begun in ancient Egypt, to replace boundary monuments, after the Spring floods of the Nile River washed them away each year. These boundary lines were referenced to base lines which were established above the reaches of the highest flood waters by applications of geometry and trigonometry. There are also references to land boundaries, corner marks, and so on, in the Bible. All this goes to show that

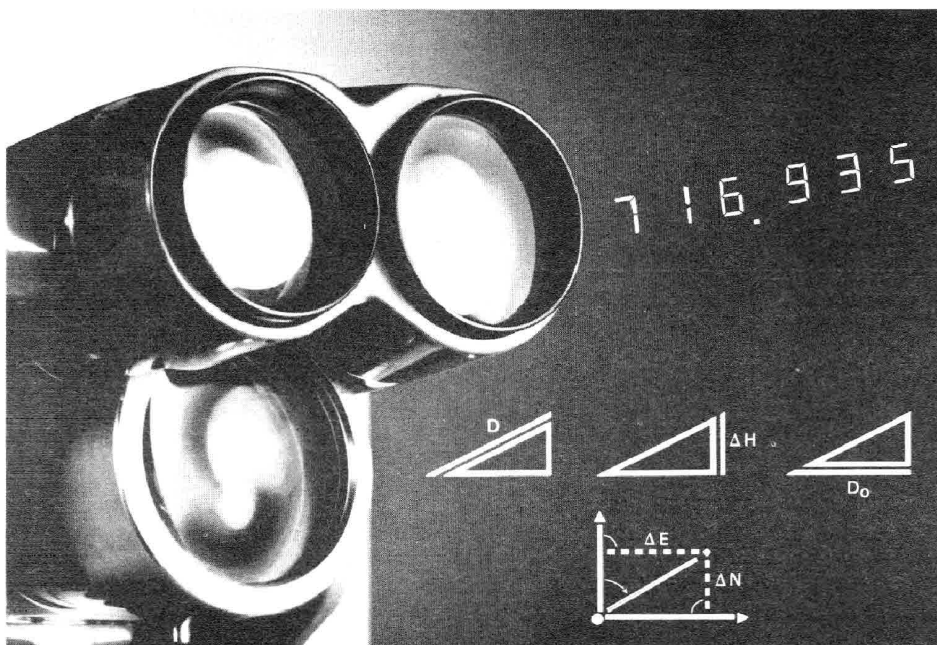
²Encyclopedia Britannica, Volume IV, p. 471.



INFORMATION

DRAFTING, DESIGN, REPRODUCTION, SURVEYING, TECHNICAL SCHOOL
MATERIALS & EQUIPMENT; WADE DI-LINE &
DI-LAR, TRANSTEX & TRANSLAR PAPERS & FILMS; DRAWING TABLES.

More range.
More features.
More possibilities.



The DI3S offers more.

There are many EDM's on the market. But can any match the DI3S? Check the features yourself. Range is 1000 m to one prism, 1600 m (1 mile) to 3 prisms, 2000 m to 9 prisms. Measurement is fully automatic. Accuracy is $\pm (5 \text{ mm} + 5 \text{ ppm})$. And you're always certain because the standard deviation of the measurement is displayed. Most instruments only give the slope distance. The DI3S displays slope distance plus horizontal distance, difference in height, and even coordinate differences. Atmospheric, sea level

and scale factor corrections are applied. Readout is in metres and feet. In tracking mode, the measurement repeats automatically every 3 seconds for setting out on land or water. The DI3S combines with Wild T1, T16 and T2 theodolites. With the T1 and T16 it transits for angle measurement in both positions. Write for brochure G1 329e or, better still, ask for a demonstration of the Wild DI3S Electronic Reduction Tacheometer. Remember, you'll do much **more** with the DI3S.

Wild Heerbrugg Ltd.
CH - 9435 Heerbrugg/Switzerland

WILD
HEERBRUGG

norman wade company ltd

429-5002



INFORMATION

DRAFTING, DESIGN, REPRODUCTION, SURVEYING, TECHNICAL SCHOOL
MATERIALS & EQUIPMENT; WADE DI-LINE &
DI-LAR, TRANSTEX & TRANSLAR PAPERS & FILMS; DRAWING TABLES.

You can rely on a Wild.



For any job.

Surveyors requiring high precision, tackling difficult problems, in charge of large projects, work with surveying instruments made by Wild Heerbrugg. They know that only top-quality products will provide the accuracy and assurance they need.

At Wild Heerbrugg precision and reliability have long been a tradition. Research and development and the application of modern technology

ensure that Wild instruments are leaders in the surveying field. The vast network of representatives, consulting offices and repair workshops provides top-class service and advice as well as an interface in the continuous dialogue between customer and factory.

Are you one of the ever increasing number of surveyors who use Wild instruments? Find out more by asking for brochure G1 906e.

Wild Heerbrugg Ltd.
CH-9435 Heerbrugg/Switzerland

WILD
HEERBRUGG

norman wade company ltd

429-5002

surveying is one of the oldest established learned practices, and further shows that surveying through length of establishment and history, also has a place in the list of professions. This country, and others, were opened up by surveyors, who did the preliminary mapping and also the laying out of land. These men were often of fine exemplary character, and lived their lives in an upright and conscientious way. The case has often been that the early surveyors of this country were leaders of men who opened up the country. By their way of life, and the ethics they lived by, these men helped to set an example of professionalism for surveyors to follow.

Thus, surveying has come to be known as a profession, but it has had to change much over the years. Just as medicine and its applications have gone through many modifications, surveying has made many advances through time, and is still doing so. "The versatility of procedures, and the necessity of correlating old records and practices with modern usage, legal and title methods, makes the profession of land surveying a complex vocation. The day of the rule of thumb surveyor is gone. In his place is the professional land surveyor, educated in principles of modern field and office analysis and practice, use and adoption of modern equipment, trained in legal and title applications to land problems, and able to exercise the faculties of sound judgment and experience." ³ In this way William Wattles very aptly describes the modern surveyor. What he doesn't say, however, is that it is still his ethics, his way of pursuing his vocation, that makes this man a surveyor, and that the proof of the observance of ethics lies in the opinion of others. The "others" are the public, and their opinions of a profession stem largely from their methods of advertisement. Commercialism or business condones self and product laudation. Professionalism does not condone either. Professionalism, and its public relations must be quietly and unobtrusively communicated by reflection to the public. Surveyings' public relation must reflect an image or attitude of service to the public. If this is done, and the Code of Ethics is adhered to, it will follow that the public will recognize surveying as true profession.

PRIVILEGES AND OBLIGATIONS WHICH HIS ETHICS GIVES TO A SURVEYOR

The first-rate land surveyor is a superior person, who is ethical and has the intelligence to appreciate his role as sometimes judge and jury - acting for both his client and the adjoiner.

The surveyor serves his clients faithfully, but refuses to do anything which is illegal, unethical, or infringes on his duty to the public, adjoining parties, or to his fellow practitioners. He has an ethical obligation to question the client in sufficient detail to obtain a thorough understanding of the client's needs and requirements. He also has an ethical obligation to fully inform the client of his needs. The client expects, and is entitled, to receive a thorough professional discussion of his problem and a detailed explanation of what services his surveyor is going to render him. Anything less not only creates a poor impression but deprives the client of a surveyor's professional advice and judgment.

The surveyor, in his profession, has a duty to keep records of all his work, in a responsible manner, and to be able to defend his position on any surveys he has made. He must make it clear to his clients the legal and ethical responsibility of the surveyor, to the public.

In the eyes of the law, the land surveyor is treated with professional respect. He is accorded all the liability of a professional person, and this liability is independent of the fee charged for a piece of work. This liability is one of the greatest deterrents to sub-standard work.

³ William C. Wattles, LS, CE, "NOVA SCOTIAN LAND SURVEYOR" "Land Surveying - A versatile profession" Vol. 17; No. 43, 1965, p. 13.

A cornerstone of professional conduct is integrity, and in view of this, a surveyor must discharge his duties with fidelity, to the public, his employer, and clients, and with fairness and impartiality to all. It is his duty to interest himself in public welfare, and to be ready to apply his special knowledge for the benefit of those around him. He should also uphold the honour and dignity of his profession, and avoid association with any enterprise of questionable character. In his dealings with fellow surveyors, he should be fair and tolerant.

One of the chief rewards of the surveying profession, is the willingness of title companies, lawyers, courts, and land owners, to accept the opinion of a surveyor on matters of title - not because he has any special legal status, but merely because he has presented his case with a thoroughness and sound reasoning that, combined with an established reputation within his community for technical skill, knowledge, and integrity, give his work and word an authority that is acceptable to those who have the power and function to translate his opinions into decisions with the weight of law.

To conclude this report on ethics, I feel it would be suitable to use a quote of Curtis Brown's ⁴ from a talk he gave to the American Congress of Surveying and Mapping. It is a question to be asked of all professional land surveyors to determine if they are following the Code of Ethics which has been set down for them. This quote reads as follows:

"Have you contributed anything to the survey profession, or do you just sit back and let others advance the profession? Is earning a dollar by any means more important than maintaining a principle? Will you sell your signature? Do you degrade your fellow surveyors? Are you active in your professional society? Have you actually pushed the cause of all surveyors, or do you, selfishly, only look out for yourself?"

The answers to these questions will have to be made by every member of the Survey Profession in Nova Scotia, and any other professional surveyor, for that matter. Let us hope that it is a favourable one.

4 Curtis M. Brown "Professional Status of Land Surveyors" Surveying and Mapping, March 1961.

* * * *

BROWN, Curtis M. "Land Surveyors' Ethics", Surveying and Mapping, Volume 20, 1960 edition.

Author Encyclopedia Britannica, Volume 4.

BROWN, Curtis M. "The Professional Status of Land Surveyors" Surveying and Mapping March 1961.

VAUGHN, Richard C., "Legal Aspects of Engineering", Prentice Hall Inc. 1962.

BAUER, Sol A., "What Does the Property Owner Owe His Client", The Nova Scotian Surveyor", Volume 12, Number 30, March 1962.

SLACK, Tracy B., C.E., PLS, "Professional Status of Land Surveyor", The Nova Scotian Surveyor, Volume 12, Number 30, March 1962.

PAFFORD, T.W., "The Future Public Image of the Land Surveyor", Surveying and Mapping Volume 24, No. 3, September 1964.

DIX, Walter S., "Professionalism", Nova Scotian Surveyor, Volume 14, No. 35, June 1963.

DIX, Walter S., "The Surveyor - His Professional Image", The Nova Scotian Surveyor Volume 17, No. 44, June 1965.

WATTLES, William C., L.S., C.E., "Land Surveying - A Versatile Profession", The Nova Scotian Surveyor, Volume 17, No. 43, March 1965.

THE FOLLOWING ITEMS ARE RE-PRINTED FROM THE NOVA SCOTIA LAW NEWS
PUBLISHED BY THE NOVA SCOTIA BARRISTERS' SOCIETY

VOID CONVEYANCE

Reid v. Reid, S. H. 04560, Jones, J., February 24, 1976.

A testator had conveyed by deed some 25 acres of real property to the defendant, except for a portion on which a house stood, which was later bequeathed to the plaintiff. This action was brought after the testator's death, the plaintiff claiming that he is entitled to the house and a lot of land surrounding it which is reasonably necessary for the occupation of the house.

The land was not subdivided in accordance with the Planning Act. In dismissing the action, it was held, following Halifax Relief Commission v. City of Halifax (1965), 50 D.L.R. (2d) 69 (N.S.S.C.-App. D.), that the deed conveying the property was void, since the transaction was illegal. Both parties are left in the position they were in as a result of the transaction, in this case in possession of part of the land. It was stated that the only solution is a partition of the land by agreement in accordance with the provisions of the Planning Act.

ILLEGALITY IN CONTRACTS DISCUSSED.

CONVEYANCING

UNFILED PLAN RENDERS DEED VOID

A provision of the Planning Act has the effect of rendering void a deed, mortgage, lease and other instruments which result in the subdivision of land unless the section has been complied with.

The section in question is section 50 subsection 7 of the Act.

This establishes the following procedure with respect to amending of a plan of subdivision:-

- (1) preparation of a plan by a surveyor
- (2) submission of the plan to the Clerk of a Municipality or Development Officer
- (3) Certification of approval by the Clerk or Development Officer showing date of approval
- (4) registration by the Council in Registry of Deeds
- (5) notation by Registrar on the original plan of subdivision referring to the amending plan.

SUBSECTION 8 OF SECTION 50 reads as follows:

No deed, mortgage, lease or other instrument which results in the subdivision of land in accordance with an amending plan of subdivision shall have effect until subsection (7) has been complied with.

The effect of the foregoing is to render void any instrument which results in the subdivision of land unless all the provisions of subsection 7 have been complied with, including the notation required to be made by the Registrar of Deeds on the original plan.

When dealing with a property described in an amending plan of subdivision, care should be taken to see that not only has the plan been recorded and bears the information required by subsection 7 but also that the Registrar has made the appropriate notation on the original plan of subdivision. Failure to observe this precaution might result in a void deed or mortgage.

C. W. MacIntosh, Q.C.

DEPARTMENT OF SURVEYING ENGINEERING UNIVERSITY OF NEW BRUNSWICK

Bachelor of Science in Engineering

Master of Science in Engineering

Master of Engineering

Doctor of Philosophy

Further information from

Chairman

Department of Surveying Engineering

University of New Brunswick

Fredericton, N.B.

THE FOLLOWING COURT DECISION IS REPRINTED FROM THE DOMINION LAW REPORTS. WE TRUST YOU WILL FIND THE DECISION AND THE CASES JUDICIALLY NOTICED INTERESTING AND OF VALUE FOR YOUR FUTURE REFERENCE.

CHITTICK et al. v. GILMORE

50 D.L.R. (3d)

*New Brunswick Supreme Court, Appeal Division, Hughes, C.J.N.B.,
Bugold and Ryan, JJ.A. - August 3, 1974.*

Real property - Adverse possession - Colour of title - What acts sufficient to establish adverse possession - Limitation of Actions Act, R.S.N.B. 1952, c. 133, ss. 29, 60.

The defendant had obtained a tax deed in 1948 which included the property in dispute. Although the tax deed was void the defendant was unaware of this and was in "possession" under colour of title. The plaintiff held paper title to the property and alleged that the defendant had trespassed on it. The land was unfenced. Between 1948 and 1973, the defendant had cut wood on the land each year and, in 1950 he built a camp on the property where one of his employees lived for three years. Finally, in 1957, he opened a gravel pit and removed gravel from it each year. The plaintiff's predecessor in title, her husband, was aware of these acts. The plaintiff was successful in obtaining an injunction restraining the defendant from acts of trespass and in recovering damages for past acts. A counterclaim for an order declaring the plaintiff's title had been extinguished was dismissed. The defendant appealed.

Held, the appeal should be dismissed. The defendant was only in actual possession during the three years when his employee lived in the camp on the property and when he or his work crews were cutting trees or removing gravel. Even if the opening of the gravel pit and removal of gravel from it was to be regarded as continuous actual possession there was a hiatus in actual possession between 1953 and 1957 when the only act of possession was the cutting of wood. This was not a case where land had been improved by the clearing and cultivation of a portion of it under colourable title whereby actual possession of the part was to be extended by construction to all the lands within the deed.

(*Stewart v. Goss* (1933), 6 M.P.R. 72; *Sherren v. Pearson* (1887), 14 S.C.R. 581; *Wood v. LeBlanc* (1904), 34 S.C.R. 627; *MacMillan v. Campbell et al.*, (1951) 4 D.L.R. 265, 28 M.P.R. 112, *apld*)

Evidence - Hearsay - Plan of survey - Surveyor verifying plan - Whether plan hearsay.

Where a surveyor verifies a plan of survey and affirms that it represents his observations on the ground, the plan is not hearsay. It is admissible to show what he knew or believed with respect to matters illustrated on the plan.

(*Anticknap v. Scott* (1914), 16 D.L.R. 20, 26 W.W.R. 952, 19 B.C.R. 81, *distd*)

APPEAL from a judgment granting an injunction and awarding damages for acts of trespass and dismissing a counterclaim for an order declaring that the plaintiff's title had been extinguished.

David G. Barry, for defendant, appellant.

Hugh H. McLellan and C. Dwight Allaby, for plaintiff, respondent.

The judgment of the Court was delivered by

HUGHES, C.J.N.B.: - This is an appeal by the defendant from a judgment in the Queen's Bench Division whereby it was ordered that the plaintiff was entitled to (a) an injunction restraining the defendant, his agents, servants and employees from trespassing on the plaintiff's property situate in the Parish of Lepreau in the County of Charlotte, described in para. 2 of the statement of claim and restraining them and each of them from removing, selling or dealing with any wood, gravel or rock from the plaintiff's said property, and (b) damages to be assessed by a Master of the Supreme Court, and (c) costs of the action, and directing that the defendant's counterclaim for a declaration that the plaintiff's right to take proceedings to recover the property is barred and her right and title there-to extinguished, be dismissed without costs.

The action was commenced by a writ of summons issued August 3, 1973, for alleged trespasses by the defendant to the westerly half of a lot of tract of land granted to James Dawson by a Crown grant dated October 16, 1822, in which the land, herein sometimes referred to as the "Dawson Grant" is described:

all that Lot or tract of Land situate in the Parish of Pennfield and county of Charlotte in our Province of New Brunswick and bounded as follows, to wit Beginning at a Spruce Tree on the South side of Saint Andrews Road two hundred and seventy rods East of the twenty-eight mile Board and at the North East angle of Lot number twenty-three Military Location and running along the said Lot South by the magnet one hundred and forty chains of four poles each thence East twenty-five chains, thence North one hundred and thirty chains to a Fir Tree on the said Road thence along the said Road by its various courses to the place of beginning containing three hundred acres more or less with ten per cent allowance for Roads and Waste, being wilderness land and also particularly described and marked on the plot or plan of Survey hereunto annexed.

From the exhibits admitted in evidence it appears that the Dawson Grant is bounded westerly by Lot No. 23 granted by the Crown to Thomas Shaw, April 14, 1834, and easterly by a parcel of land granted to Richard Bartlett by Crown grant dated May 8, 1826.

The plaintiff, who brought this action as executrix of the estate of her late husband who died in the spring of 1972 as well as in her own right, claims title to the westerly half of the Dawson Grant through a deed from John Fisher to Richard Shaw dated April 13, 1846, and duly registered in which the land which she claims was described as follows:

ALL that certain piece of parcel of land, situated in the Parish of Pennfield, County of Charlotte, Province of New Brunswick and bounded as follows, to wit:

BEGINNING at a spruce tree on the south side of the Saint Andrew's Road, 270 rods east of the twenty-eight mile board and at the north-east angle of lot number 23 military location and running along the said lot south by the magnet one hundred forty chains of four poles each;

THENCE east twelve and one-half chains;

THENCE north one hundred thirty-five chains until it strikes the said road; and

THENCE along the said road by its various courses to the place of beginning, containing ninety-five acres more or less with ten per cent allowance for roads and water lands, the above being the one-half part of a certain parcel of land and premises being ninety-five acres aforesaid and running across the lot aforesaid, twelve and one-half chains aforesaid to a cedar post drove into the flats on the southern extremity of beforementioned line.

The abstract of title of the lands comprised within the Dawson Grant shows that Elizabeth Shaw conveyed the westerly half to Samuel Edward Chittick by a deed dated April 16, 1947, which was duly registered. Mr. Chittick resided on the property from 1947 until his death and the plaintiff who married Mr. Chittick in 1950

has resided on the property ever since her marriage.

Notwithstanding the fact that the grant by the Crown of the Dawson Grant and the conveyances through which the plaintiff claims title describe a single lot extending southerly from the old St. Andrews road there is cogent evidence that the Dawson Grant consists of two separate parcels of land separated by land previously granted by the Crown in 1813 to John Salkeld. At the present time the Dawson Grant is traversed by the new Saint John-St. Stephen highway on the southerly side of which the plaintiff's residence is located. A railway right of way of the Canadian Pacific Railway Company and a transmission line right of way of the Power Commission also cross the Dawson Grant northerly of the new highway.

The defendant admits that the plaintiff is the registered owner of the westerly half of the Dawson Grant but denies that the acts of trespass which the plaintiff alleges he committed took place on the plaintiff's property. The plaintiff, therefore, had the burden of providing that the *locus in quo* was within the boundaries of her property.

The defendant claims all that part of the Dawson Grant lying northerly of the new highway under a deed dated April 23, 1948, which he obtained from the Sheriff of the County of Charlotte in which the Sheriff purported to convey:

ALL that certain lot, piece or parcel of land situate lying and being in the Parish of Lepreau, in the County of Charlotte and Province of New Brunswick on the south side of the old St. Andrew's Road containing 300 acres more or less and being the lot granted by The Crown to James Dawson.

The defendant conceded that his tax deed is void because no taxes were legally assessed or owing with respect to the property when it was sold for taxes but he contends he entered into possession of the portion of the property presently in dispute under the tax deed and that he acquired a title to it by adverse possession prior to the commencement of the action and pleads the *Limitation of Actions Act*, R.S.N.B. 1952, c. 133, ss. 7, 8, 9, 29 and 60.

The learned trial judge found the alleged trespasses took place within the western half of the Dawson Grant claimed by the plaintiff as located on the ground by H. P. Lingley, a New Brunswick land surveyor, and as shown by him on a plan of survey dated August 16, 1973, and admitted in evidence as ex. P-1. The Court also found that the defendant had failed to establish a title by adverse possession to any part of the land claimed by the plaintiff.

In this appeal counsel for the defendant sought to have the judgment reversed contending the trial Judge erred in law (a) in admitting into evidence ex. P-1; (b) in not holding the plaintiff was estopped from bringing the action because of the actions of herself and her predecessors in title; (c) in not holding the defendant had proved title by adverse possession, and (d) in not holding the plaintiff was estopped from claiming damage for trespass.

To establish that the alleged acts of trespass by the defendant were committed within the westerly half of the Dawson Grant the plaintiff engaged Mr. Lingley to locate the boundaries of the land which she claimed. Mr. Lingley examined the plans attached to the Crown grant to Dawson dated 1822, the grant to Bartlett and others abutting the easterly boundary of the Dawson Grant issued in 1826, the grant to Shaw of Lot No. 23 abutting the westerly boundary of the Dawson Grant issued in 1834, and the grant to John Salkeld issued in 1813, all of which grants were received in evidence, and also some other plans on file in the Department of Natural Resources.

While there does not appear to be any dispute as to the correct location of the boundaries of the Salkeld Grant on the ground, it is impossible to reconcile the boundaries of the Dawson Grant with those of the Salkeld Grant as shown on the plan attached to the grant to Bartlett and others of land abutting the easterly

side of the Dawson Grant and with the Shaw Grant of Lot No. 23 which abuts its westerly boundary. The plan attached to the Bartlett Grant shows the north-westerly corner of the Salkeld Grant extending westerly into the Dawson Grant approximately 12.5 chains or half the width of the lot while the plan attached to the Shaw Grant shows the Salkeld Grant extending the full width of the Dawson Grant so as to divide it into two portions, and extending westerly into the easterly side of Lot No. 23 in the Shaw Grant about 50 to 100 ft.

Mr. Lingley stated that in his opinion the plan attached to the Crown grant to Bartlett which grant was made after the grant to Dawson does not show the Dawson Grant in its proper location and that Lot No. 1 in the Bartlett Grant overlies the Dawson Grant to the extent of about 13.5 chains along the whole of its easterly side. He speculated that the Crown grant to Dawson was issued without any actual survey having been made of the land granted and consequently the plan attached to the grant to Dawson does not disclose that it overlies a portion of the Salkeld Grant.

Mr. Lingley cruised the property claimed by the plaintiff but was unable to find the point of beginning referred to in the description of the grant from the Crown. In order to locate the western boundary, he first located what he believed to be the westerly boundary of Lot No. 24 in the grant to Shaw and measured easterly across Lots 24 and 23, a distance of 1,937.9 ft. to a point which he regarded as the easterly boundary of Lot No. 23, and the westerly boundary of the Dawson Grant. In doing so he found that the measurement of the width of the two lots came within 12.1 ft. of the correct width of the grant to Shaw. He then ran a course northerly to the old St. Andrews road along which he found evidence of a very old line on which were trees bearing three hacks indicating they were on a boundary line. This marked line extended from the new highway northerly to the hydro line crossing the property claimed by the plaintiff. He then ran his line southerly crossing the new Saint John-St. Stephen highway and found the line well marked on the headland next to the Lepreau Basin. He said this line was much older than another line which he observed and believed had been run by Land Surveyor, Morrell, in 1949. He also noted that when he projected his line to the northerly side of the St. Andrews road the line was approximately 10 ft. easterly of a post which bore markings indicating a division line between Lots 23 and 22 the side lines of which were prolongations northerly of the side lines of the Dawson Grant and the Shaw Grant as shown on the plans attached to those grants. He also found that the line run by Surveyor Morrell which was approximately parallel to and 89 ft. easterly from the line run by himself would, if projected southerly, pass through the residence occupied by the plaintiff on the southerly side of the new highway. Having located the westerly line of the Dawson Grant, Surveyor Lingley measured easterly a distance of 12.5 chains to establish the easterly boundary of the property claimed by the plaintiff, and ran this line parallel to the westerly boundary of the Dawson Grant.

On cross-examination Mr. Lingley conceded that if the length of the westerly boundary of the eastern portion of the Dawson Grant, viz., 72 chains, 50 links, as specified in the deed thereof dated July 28, 1846, from John Fisher to Robert Stafford, was correct, the Dawson Grant would have to be located about 500 ft. westerly of the location claimed by himself to be correct since the scaled length of the westerly boundary of that portion of the Dawson Grant shown on ex. P-1 was about 65 chains or between seven and eight chains short. He also conceded that he did not verify the place of beginning as located by him with the measurement to the 28-mile board referred to in the grant to Dawson.

While Mr. Lingley's evidence taken alone is by no means conclusive that he has located precisely the boundaries of the Dawson Grant there is other evidence which lends support to the conclusion that his westerly boundary line is approximately correct. Shortly after the defendant purchased the property in 1948, he engaged a land surveyor, Ralph Hanson, to determine the boundaries of the Dawson Grant. The defendant testified Mr. Hanson ran a line marking the westerly boundary in a location if projected southerly would have passed through the house in which the plaintiff and her husband resided and he realized the line was probably

not correctly located. Later he took the matter up with the Crown Land Office in Fredericton and as a result Surveyor Morrell surveyed the line run by Hanson and apparently confirmed it. This line is approximately 89 ft. easterly of the line run by Mr. Lingley which in turn is approximately parallel to and about 50 ft. easterly of the Mink Brook road which leads southerly from the old St. Andrews Road. There is evidence that Moses Shaw, one of the predecessors in title to the plaintiff who resided in the house presently occupied by the plaintiff, in the early 1930's, conducted lumber operations on the disputed area and regarded the Mink Brook road as his westerly boundary.

Counsel for the defendant contended the learned trial Judge erred in law in admitting into evidence ex. P-1, on the ground the plan is based on hearsay, and cited *Anticknap v. Scott* (1914), 16 D.L.R. 20, 26 W.W.R. 952, 19 B.C.R. 81, in support of that contention. In that case the Court rejected, as hearsay evidence of two land surveyors who had not actually inspected the property lines in dispute and had no personal knowledge of them but testified from field notes made by their assistants.

A plan based wholly on hearsay has, of course, no evidential value. In my opinion ex. P-1 is by no means solely based on hearsay. It shows the lines and surveyor's monuments found by Mr. Lingley in the general area of the disputed property even though such lines and monuments are not proven to be correctly located. It also shows the lines which Mr. Lingley believes correctly represent boundaries of the westerly half of the Dawson Grant. Without the plan a large part of the evidence adduced by both parties would not have been intelligible. Furthermore, it was used in cross-examination by counsel for the defendant. Mr. Lingley verified the plan and thereby, in effect, affirmed that it represented his observations on the ground. To that extent it was admissible to show what he knew or believed with respect to the matters which are illustrated on the plan.

As the defendant adduced no evidence to show that the boundaries as located by Mr. Lingley are incorrect the learned trial Judge was justified in concluding on the evidence before him that the boundaries of the western half of the Dawson Grant as located by Mr. Lingley and shown on ex. P-1 were correct and that the plaintiff was the owner thereof subject to the defendant's claim to title by adverse possession.

I see no merit in the defendant's contention that the plaintiff is estopped from bringing the present action because she and her late husband did not bring an action earlier to prevent the defendant from cutting pulpwood and removing gravel from the property which they claimed to own. Even if the defendant believed Mr. Chittick was acquiescing in the use of the property the defendant certainly did not act to his detriment in taking pulpwood, firewood and gravel from the property. This is not a case where an owner stands by and permits an innocent trespasser to improve the owner's property in the belief that it is his own.

The only remaining ground of appeal is the defendant's contention that he has acquired title by adverse possession to the *locus in quo* and that by virtue of ss. 29 and 60 of the *Limitation of Actions Act*, the plaintiff's title was extinguished before the action was commenced.

The learned trial Judge found the acts committed by the defendant and his servants and agents on the disputed area had been open and visible and were known or should have been known by the plaintiff and the late Mr. Chittick but that the acts were not sufficiently continuous to establish a title by adverse possession.

The alleged acts of trespass took place on that part of the western half of the Dawson Grant containing about 65 acres which lies between the Salkeld Grant and the southerly side of the old St. Andrews road. This was unfenced and I gather from the whole of the evidence that there was no division line between the eastern half and the western half of the Dawson Grant until it was established by Mr. Lingley in 1973.

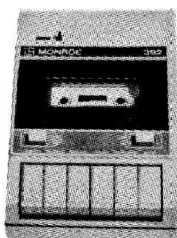
**MONROE**

Alpha 325

3767 Howe Ave.

Halifax, Nova Scotia

Telephone (902) 454-6405

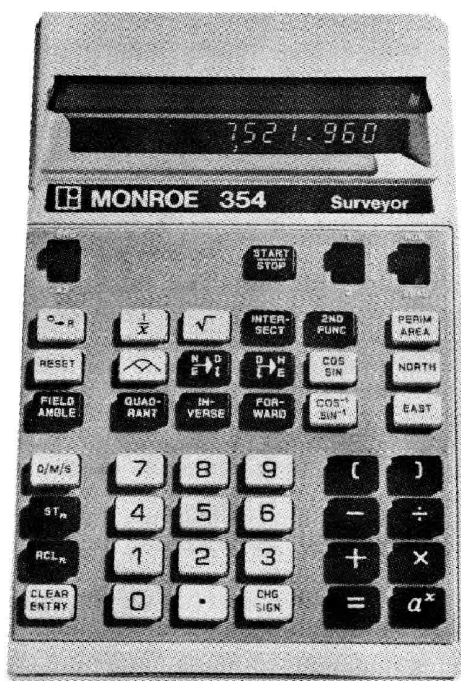


The Monroe Alpha 325 is more powerful and easier to use than any other mid-priced desktop computer in the world because:

- Built into the Alpha 325 are over 100 preprogrammed operations for logarithms, trigonometry, statistics, metric conversions and the ability to compute in degrees, grads, radians and degrees, minutes and seconds.
- Programs and data are stored on a tape cassette.
- By itself, the Alpha 325 holds 416 program steps plus 12 data registers.
- All arithmetic operations are performed algebraically, just as they're written on paper. Plus parentheses four levels deep.
- It has both a printer and display, yet it takes up less room on your desk than the average in-basket.

A magnetic tape drive is included to allow you to read programs or data into the Alpha 325. The tape drive can as easily receive programs or data from the Alpha 325 and record them for future use. And your entire program library can be stored as a unit since a single 1-1/2 ounce cassette holds over 150,000 program steps or 4,000 data values.

354 Micro Surveyor



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

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

For the very first time, there's a portable calculating machine that works your problems exactly the way you think them. But, that's only the beginning. The Micro Surveyor does the really tough stuff, too. Like balancing, area cut-offs, horizontal and vertical curves. That's because it's a dual program machine, which means you can have two different 80 step programs in memory at the same time. Right out there in the field it will run curve stakeouts, compass and Crandall adjustments and three-point resection.

The display is big and bright. It tells you about angles in degrees, minutes, and seconds—in quadrants or azimuths.

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

The defendant testified that he entered into possession of the whole of the Dawson Grant extending from the new highway to the old St. Andrews road in 1948 and although his deed purported to convey the whole of the Dawson Grant containing 300 acres he does not claim the land south of the new highway. Shortly after obtaining the tax deed to the property he attempted to establish the westerly boundary. He also testified that in each year from 1948 until 1973, he cut an average of 75 cords of pulpwood and firewood but the evidence is not clear whether this quantity was taken from the whole of the Dawson Grant or only from the westerly half. In 1950 he built a camp near the westerly boundary of the property and one of his employees lived in the camp for the next three years. In 1956 the defendant located a gravel pit on what is shown in ex. P-1 as approximately the whole width of the westerly half of the Dawson Grant and he bulldozed a road from the pit across the property. He stated that between 1957 and the commencement of the present action he removed gravel from the pit each year. A small field surrounded by a barbed wire fence located near the old St. Andrews road was used by the Defendant as a place to keep cattle. The fenced area is mainly on the eastern half of the Dawson Grant but a portion of it extends into the westerly half.

The defendant testified he told the late Mr. Chittick in 1948 about the line run by surveyor Hanson and stated that he was never aware that Mr. Chittick claimed any part of the land easterly of the Mink Brook road and that he thought Mr. Chittick's land lay westerly of that road. There is very little evidence to show that Mr. Chittick ever visited the disputed area other than on one occasion in 1966, when he attempted to stop the defendant's workmen from cutting trees in the vicinity of the Mink Brook road. Mrs. Chittick testified she was present on that occasion and that when her husband was unable to stop the cutting he consulted a lawyer in Saint John who wrote the defendant concerning the alleged trespass. Shortly thereafter the defendant visited Mr. Chittick at his home and told him he owned the property and that Mr. Chittick did not own anything there and had no right to put the men off the property. I find it impossible to believe Mr. Chittick was unaware the defendant was taking pulpwood, firewood and gravel from the property. Witnesses for the plaintiff suggested that Mr. Chittick objected to the defendant's trespasses but this is denied by the defendant. There appears to have been some discussion between Mr. Chittick and the defendant concerning the latter's claim to the Dawson Grant as a result of which the defendant consulted three solicitors in succession. Mrs. Chittick stated that her husband decided to take action against the defendant in 1971 but died before he was able to do so.

The evidence, I think, establishes that the defendant entered into possession of the disputed area under a *bona fide* belief that he had acquired ownership of it under his tax deed. The fact that the deed was invalid does not disentitle him from claiming the benefit of the colour of title: See *Stewart v. Goss* (1933), 6 M.P.R. 72 at p. 82. I am unable to determine from the evidence when the defendant found that his deed was invalid.

The acts of possession relied on by the defendant are those which an owner of land such as that in dispute might normally be expected to do. Counsel for the defendant contends that all that is necessary in order to entitle the defendant to the benefit of title by adverse possession is proof of acts of ownership normally performed by owners of land of the kind in dispute. He cites *Limitations of Actions in Canada* by J. S. Williams at p. 101 in support of the proposition.

The nature of the possession necessary to extinguish the title of a true owner where a claimant seeks to establish title by adverse possession was decided by the Supreme Court of Canada in two decisions. In the first, *Sherren v. Pearson* (1887), 14 S.C.R. 581, the alleged trespasses occurred on a strip of woodland lying between two roads which the jury found to be within the boundaries of the plaintiff's deed. The defendant claimed by adverse possession, relying on his cutting of trees on the disputed area for a long number of years previous to the action. I quote the following passages from the judgment of Ritchie, C.J., at pp. 585-7 as relevant to the issue to be decided in the present case:

To enable the defendant to recover he must show an actual possession, an occupation exclusive, continuous, open or visible and notorious for twenty years. It must not be equivocal, occasional or for a special or temporary purpose.

I cannot discover anything in this case to indicate that the defendant or those under whom he claims at any time made an entry on the land with a view of taking possession of it under a claim of right or color of title, or with a view of dispossessing the actual owner, such as running the lines around it, spotting the trees, or acts of this character, assuming such would have been sufficient against the true owner, or by any other open, visible, continuous acts, and there is no evidence whatever to show that the acts relied on were done with the knowledge of the owner. The acts relied on were nothing more, as against the true owner, than isolated acts of trespass having no connection one with the other. The mere acts of going on wilderness land from time to time in the absence of the owner and cutting logs or poles, are not such acts, in themselves, as would deprive the owner of his possession. Such acts are merely trespasses on the land against the true owner, whoever he may be, which any other intruder might commit. There was no occupation of the lot by the defendant; there was nothing sufficiently notorious and open to give the true owner notice of the hostile possession begun. An entry and cutting a load of poles or a lot of wood, being itself a mere act of trespass, cannot be extended beyond the limit of the act done, and a naked possession cannot be extended by construction beyond the limits of the actual occupation, that is to say, a wrongdoer can claim nothing in relation to his possession by construction.

Assuming then that the old Palmer road, as found by the jury, was unquestionably the true dividing line between the Pearson and Sherren Lots, the possession would follow the title unless displaced by evidence of an exclusive, continuous and uninterrupted possession of twenty years by the defendant. As was said in *Doe d. DesBarres v. White* (1 Kerr N.B. 595), the presumption is that the owner remains in possession of that which is not actually in possession of others until proof be given of acts of possession by the defendant. It is sufficient for the plaintiff, as owner of the fee, to show the land continued in its natural state, and uninclosed, within twenty years before action.

(EMPHASIS ADDED.)

Then in *Wood v. LeBlanc* (1904), 34 S.C.R. 627, the Court considered what facts must be proved by a claimant who enters and occupies land under colour of title in order that the title of the true owner be extinguished. I quote from the judgment of Davies, J., the following passages at pp. 633-4:

I agree that seisin in fee may and will be presumed from evidence of the actual possession of a house, field, close, farm or messuage. But I cannot find any authority for extending the application of any such presumption to large tracts of wilderness lands which may be held in construction possession, nor do I think it can on principle be so held. It is the actual possession which justifies the presumption. The very basis from which it arises is absent in the case of constructive possession only. When and while actual possession is in a man seisin will be presumed to the extent of his actual possession or occupation. But the moment he ceases actually to possess or occupy, that moment the presumption ceases, and it does not arise at all with respect to lands of which there is no actual possession or occupation. To my mind, therefore, the question is not whether those through whom the plaintiff or defendant claimed first trespassed upon and temporarily occupied the disputed lands or a part of them, but the onus of proof being upon the plaintiff whether with respect to the lands off which the trees in question were cut (or the block of such lands contained within the colourable title deeds) he has shewn such open, notorious, continuous, exclusive possession or occupation of any part of such lands as would constructively apply to all of them, and operate to extinguish the title of the true owner and give plaintiff a statutory one. The nature of the possession necessary to do this in the absence of colourable title was fully considered by this court in the case of *Sherren v. Pearson*. It was there decided that isolated acts of trespass committed on wild lands from year to year will not, combined, operate to give the trespasser a title under the statute.

AND AT PP. 635-6 HE STATED:

Now, in my judgment, the possession necessary under a colourable title to oust the title of the true owner must be just as open, actual, exclusive, continuous and notorious as when claimed without such color, the only difference being that the actual possession of part is extended by construction to all the lands within the boundaries of the deed but only when and while there is that part occupation. And before it can be extended it must exist and is only extended by construction while it exists. It may be that a person with colourable title engaged in lumbering on land would be held while so engaged and in actual occupation of part to be in the constructive possession of all not actually adversely occupied even if that embraced some thousands of acres within the bounds of his deed. But it is clear to my mind that if and when such person withdraws from the possession of the part by ceasing to carry on the acts which gave him possession there he necessarily ceases to have constructive possession of the rest. His possession in other words must be an actual continuous possession, at least of part.

When the lumbering ceased in the spring of the year and actual occupation of any part of the lands ceased, then as a necessary consequence all constructive possession ceased with it.

AND AT PP. 639 HE STATED:

Evidence that a party claims land by possession either with or without color of title is not sufficient when it merely establishes that the claimant used the lands in the same way and for the same purposes as an ordinary owner would. A true owner of lands is not bound to use them in any way. He may prefer to leave them vacant. While they are vacant he still retains the legal possession, and he only ceases to be in legal possession when and during the time that he is ousted from it by a trespasser or squatter, who has acquired and maintained what the law holds to be an actual possession. If the squatter claims to have ousted him by constructive possession he must prove a continuous, open, notorious, exclusive possession of at least part of the lands the whole of which he lays claim to under his colourable deed.

IN *MacMILLAN V. CAMPBELL ET AL.*, (1951) 4 D.L.R. 265, 28 M.P.R. 112, Harrison, J., with whom Richards, C.J., concurred, said at p. 272 D.L.R., p. 122 M.P.R.:

The case of *Sherren v. Pearson* (1887), 14 S.C.R. 581 approving of *Doe d. DesBarres v. White*, supra, together with *Wood v. LeBlanc* (1904), 34 S.C.R. 627, are generally regarded as settling the law in reference to adverse possession, and from these cases it is apparent that mere cutting of wood from time to time over a piece of land is not such continuous possession as is necessary in order to establish title. But when such lumbering is combined with the continual marking out of boundaries, which boundaries are brought to the attention of the owner of the land, and when, as in the case at bar, it is admitted that a portion of the disputed strip has been acquired by clearing and cultivating, then there would appear to be sufficient evidence to establish adverse possession, and I would so conclude.

In the present case there was, in my opinion, an actual possession by the defendant of the disputed area during the years 1950 to 1953 when the defendant's employee Hayes lived in a camp on the property but that thereafter there was no actual possession of the property by the defendant other than while he or his work crews were cutting trees or removing gravel. This, in my opinion, is not a case where land was improved by clearing and cultivating a portion of it under the colorable title of a deed defining the boundaries of the property which might bring the case within the class of cases where seisin in fee will be presumed from evidence of "actual possession of a house, field, close, farm or messuage" referred to by Davies, J., *Wood v. LeBlanc*, supra. Even if the opening of a gravel pit and the removal of gravel from it between 1957 and 1973 could be regarded as a continuous actual possession of the gravel pit there was a hiatus in actual possession between 1953 and 1957 when the only act of possession proved was the cutting of pulpwood and firewood.

In my opinion the evidence supports the conclusion of the learned trial Judge that the defendant failed to establish an actual possession during the whole of the statutory period sufficient to extinguish the title of the plaintiff and her deceased husband through whom she claims title.

The appeal should, therefore, be dismissed with costs.

- Appeal dismissed.



Atlantic Air Survey LIMITED

Now with four mapping instruments -
two Wild B8's & Wild A8
Zeiss Stereometrograph
and a large staff of mapping specialists.

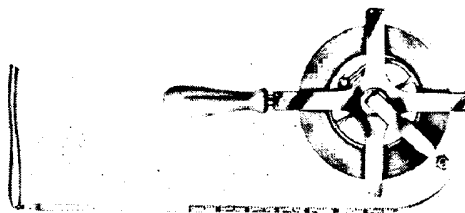
Drop in to see our new facilities at
850 Windmill Road, Burnside Park,
Dartmouth, N.S.

PRECISION COPY CAMERA AND
ENLARGER
FULLY AUTOMATIC FILM PROCESSING
AERIAL PHOTOGRAPHY
TOPOGRAPHIC MAPPING
ORTHOPHOTO MAPPING
GESTALT SERVICE CENTRE FOR
CANADA

ATLANTIC AIR SURVEY LIMITED
P.O. Box 187, Dartmouth, N.S.
469-7901

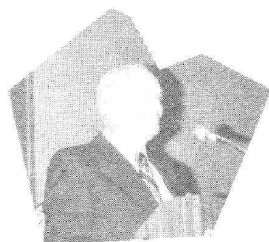
The Cooper Group

CRESCENT · LUFKIN · NICHOLSON · WELLER · XCELITE



Lufkin measuring tapes and rules with English and Metric graduations. Complete line of engineering and surveying tapes and accessories. For further information or catalogue contact:

The Cooper Tool Group Limited
164 Innisfil St.
Barrie, Ontario L4M 4V5
Telephone (705) 728-5564

****STARS** OF CONVENTION '75**

nova scotia
land surveyors...
**THINKING
METRIC?**

so are we
and we have a variety
of materials in stock.

WESTWARD
INDUSTRIES
6061 Young Street • Halifax, N. S.
455-7276

Get the full measure of the Tellurometer range



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

Survey instruments

CA1000. A lightweight microwave system for geodetic survey. It has an accuracy of 5 parts per million and a range of 30km (18½ miles). Its operation is so simple that the remote station can be manned by unskilled personnel.

CD6. A lightweight infra-red system with a high accuracy over a range of up to 2km (1½ miles), which makes it ideal for cadastral survey. Signal reflection is from a suitable target/reflector, so a remote instrument is not needed.

MA100. A well established cadastral infra-red instrument ideal for use in civil engineering and underground applications. A mean square error of only 1.5mm is guaranteed, but many users claim 1mm or better.

Ruggedised equipment

MRA3 and MRA5. Two microwave systems of extremely rugged construction ideal for use under severe environmental conditions. The MRA5 features antenna separation for integral or remote (up to 25m/27 yd) operation and a fully automatic numerical display gives less than 20 seconds measurement time.

Position fixing systems

Systems based on the well established MRB201, integrated with plotters and computers and using auto-tracking antennae, are ideal for use in plotting and position fixing for such work as precision dredging, cable laying, off-shore rig positioning and aerial survey.

For worldwide service, contact:

UK: TELLUROMETER (UK) LTD, Roebuck Road, Chessington, Surrey KT9 1RQ.
SOUTH AFRICA: TELLUROMETER (PTY) LTD, P.O. Box 23, Plumstead, Cape.
USA: TELLUROMETER USA, 89 Marcus Boulevard, Hauppauge, NY11787.
CANADA: TELLUROMETER CANADA LTD, 1805 Woodward Drive, Ottawa K2C 0P9.
AUSTRALIA: D. R. JOHNSTON & CO. (PTY) LTD, Stanhill 33, Queens Road, Melbourne SC2.
JAPAN: OKURA TRADING CO. LTD, 3-6 Ginza Nichome, Chuo-Ku, Tokyo 104.

TELLUROMETER

Regd. T.M.

a PLESSEY Company

Tellurometer is a Registered Trade Mark.