

The NOVA SCOTIAN SURVEYOR



LABRADOR

NEWFOUNDLAND

St. John's

PRINCE EDWARD ISLAND
Charlottetown

NEW BRUNSWICK
Fredericton

NOVA SCOTIA
Halifax

Atlantic Ocean

APRIL 1969

68°

64°

60°

52°

48°

44°

40°

The NOVA SCOTIAN SURVEYOR

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THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS INCORPORATED

Roy. A. Dumbrack
President

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Secretary-Treasurer

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Mr. Roy Dunbrack, President,
Association of Nova Scotia Land Surveyors,
P. O. Box 1541, Halifax, Nova Scotia.

Dear Sir:

Referring to the meeting held in my office sometime ago with representatives of your association, we submit herewith a copy of a directive sent out to all Regional Managers and Regional Construction Engineers, throughout the province pertaining to the monumenting of rights of way, and more particularly the monumenting of interchange areas.

We sincerely hope that the carrying out of this work will be of some benefit to your association and its practicing members.

Yours very truly,
J. W. Purtis
Director of Engineering

**PROVINCE OF NOVA SCOTIA
DEPARTMENT OF HIGHWAYS
(INTER-DEPARTMENT CORRESPONDENCE)**

Halifax, N. S., January 16, 1969

.....
Location and Date

— All RM's and RCE's —

TO		
Name	Position	Address
Your File	Subject Re: Marking of Rights of Way	H. O. File

As soon as personnel are available in your region kindly proceed to monument all 100 series highways as outlined below.

All Rights of Way on one hundred series highways shall be defined by permanent markers, or monuments, placed along the right of way boundary.

On sections of uniform right of way width, markers will be placed at 1000' intervals with intermediate markers placed approximately on all EC's and BC's. Markers may be located by centre line offsets.

On sections of irregular right of way widths, including interchange areas, markers will be placed at each angle.

Markers shall be of number six (6) reinforcing steel or larger and shall be embedded a minimum of two feet (2') into the ground and extend approximately two and a half feet (2½') above ground level. All markers shall be mounded with stone.

Priority should be given to interchange areas with a view to completing all interchanges this winter. All rights of way being surveyed on 100 series highways as of this date shall be monumented at the time the survey is conducted.

If there is any doubt regarding final property acquisition with respect to interchanges, please contact Claims for copies of final right of way plans.

Please initiate survey AFE per division as required and forward them to this office for approval.

J. W. Pertus
Divisional Engineering.

Mr. J. W. Pertus, Director of Engineering,
Department of Highways,
Provincial Building, Hollis Street,
Halifax, Nova Scotia

Dear Sir:

Thank you for your letter of January 24, 1969 and for the copy of your directive dated January 16, 1969 addressed to all R.M.'s and R.C.E.'s

On behalf of the members of our Association I wish to congratulate you for this tremendous step forward and for the foresight that has been shown.

As you are aware, highway boundaries for the most part have been referenced to the centre-line of the pavement or travelled way and that when re-surfacing or widening happened to change the position of the centre-line, the highway boundary "floated" along with it. We are very pleased that the 100 series highway boundaries will have a fixed position.

This action will not only benefit land surveyors but the general public will at last, have a network of continuing highway control points to which their property boundaries can be referenced. Also tax assessors in the municipalities throughout the province will have a means of comparing property frontages with their old and often times incorrect records. Your own Department can now be assured of an easy method of re-establishing highway boundaries if and when additional property acquisitions are required for re-alignment, widening or improvements made at interchanges. The boundaries so established will also serve as excellent base lines for all forms of highway construction.

The control established along the highways could also be utilized by the Department of Lands and Forests, who, in conjunction with the Atlantic Development Board are now well underway on a program to provide a coordinate survey system and aerial mapping throughout the Province.

Thank you for your cooperation and we look forward to the time when a similar directive could be sent that would implement the monumentation of all trunk highways in the Province.

Yours very truly,
Roy A. Dunbrack, President.

NOTES FROM THE SECRETARY'S DESK

Since the publishing of our last issue, I have had the opportunity to attend the 62nd Annual Meeting in Ottawa, of the Canadian Institute of Surveying. You will find my report of this meeting published elsewhere in this issue.

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The notices for dues went out on the 1st of January. To date many have paid their dues, however those who haven't are reminded that they should have been paid by March 31st, 1969, for their names to appear on the "Roll of Members".

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The "Roll of Members" will be published again this year and should be available by the middle of April. We will again mail it out to all Federal and Provincial Government Departments and Municipal Planning Boards.

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May I remind all members that the Official Association stamp is now available. This stamp may be obtained by requesting it from the Secretary and costs \$3.50 payable in advance. Approximately 35 have been made and issued to date.

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At the time of writing these notes, our President Mr. Dunbrack informs me that

plans are underway to draw up amendments for the By-Laws and Regulations for our Association. The first meeting has already been held between Mr. Dunbrack, Vice-President George Streb and Prof. A. F. Chisholm, Chairman, Board of Examiners.

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I took a few pictures during the C.I.S. Convention in Ottawa, and I will have them for the June issue of the Surveyor.

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Like all publications, the Nova Scotian Surveyor would like to publish more articles, however we do not receive too many from our own members. We would like to see more articles on Surveying in Nova Scotia, so please send them along and we will print them.

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REPORT ON THE CANADIAN INSTITUTE OF SURVEYING CONVENTION

This year I had the opportunity to be one of the representatives of the Association of Nova Scotia Land Surveyors at the Canadian Institute of Surveying's Annual Meeting. The Convention was held on February 5 to 7, 1969 at the Chateau Laurier Hotel in Ottawa. This was my second opportunity to attend this annual event and I was as impressed this year as I was last year when the convention was held in Edmonton.

The Nova Scotia delegation consisted of Prof. A. F. Chisholm, our president, Roy Dunbrack, John Pope, Jack Ryan, Walter Servant, Al Daykin, Jim Chisholm, George Bates, Rusty March and myself. There were also delegates present from New Brunswick, Prince Edward Island and Newfoundland. So the Atlantic provinces were well represented in Ottawa.

The technical papers presented were of the same high calibre as in the past. One of the papers was entitled "Experiences with the U. S. Navy Navigation Satellite System during Summer 1968" and was presented by D. F. Wells, Development Engineer, Canadian Hydrographic Service, Bedford Institute of Oceanography. This paper showed the work being done in Nova Scotia with the use of satellites for survey purposes. We were also fortunate to see the complete film, in color, of "Apollo 8" mission along with a paper by C. W. Schlager, Chief, Space Support Group, Advanced Systems Office, Defence Intelligence Agency, Washington, D. C. on "Extraterrestrial Mapping, Charting and Geodesy Support of N.A.S.A. by the Department of Defence. I thought these were two of the outstanding papers given at the Convention. In another section of this issue, you will find a list of all the papers which were presented at this meeting.

An all-out effort was made during this meeting to promote the 63rd Annual Convention of the C. I. S. which is to be held on April 15, 16, and 17, 1970 at the Hotel Nova Scotian in Halifax. The convention committee, under the direction of Al Daykin, lead the delegates from the Atlantic Provinces and Massachusetts and their wives. We arrived in Ottawa on the same flight as Robert McCleave, M.P. for Halifax and the leader of the Opposition, Robert L. Stanfield. Both these gentlemen joined in with our group and we were greeted when we left the plane by the President of the C. I. S., Angus C. Hamilton and his wife. In the terminal we were also greeted by two pipers and a drummer accompanied by about 50 C.I.S. members from Ottawa. Our biggest promotion of the 1970 meeting was a 'Coffee Party' sponsored by the Atlantic Provinces C.I.S. and the hostesses were the Atlantic Provinces ladies. This party was attended by over 600 people, including several MPs from Nova Scotia, and Senator Harold Connolly. The guest of honor was Mrs. Robert Stanfield. Coffee was served to our guests along with cups of steaming hot clam chowder which was served from a dory. Entertainment was supplied by Anne Murray and Bill Langstroth. The Atlantic Provinces ladies were dressed in their respective tartans. They greeted the guests and dist-

ributed literature on the Atlantic Provinces. Rusty March chaired the program and invited all those present to come to Nova Scotia in 1970. Our 'Coffee Party' was one of the most successful social events held during the Convention.

Two other social events that were outstanding were the Quebec Soiree, sponsored by the Quebec Land Surveyors and the Annual Dinner and Dance sponsored by the Ottawa Convention Committee. The Quebec Soiree consisted of a buffet supper made up of dishes from the province of Quebec and served in the ballroom of the Chateau Laurie which was decorated with skis, tobaggons and snow shoes. Music was supplied by an accordianist and a fiddler. Following dinner a dance group performed Quebec folk dances. This demonstration by the Quebec Land Surveyors was their first bid to have the C.I.S. 1972 Annual Meeting in Quebec City during the winter carnival.

The Dinner and Dance brought the 62nd Annual Meeting to a close. Dinner was served buffet style and buffalo meat was one of the many delicious dishes that were available. During the course of the evening, a group of ladies (wives of members from the Ottawa area), put on an hilarious skit which showed what a survey party, made up of women, would be like working in the north in the summer time. This event was attended by over 70 members and their wives.

While in Ottawa during the three day meeting, I spoke to many delegates from Ontario, Manitoba and Alberta, and it was pleasing to hear so many of them say they were already making plans to come to Nova Scotia in 1970. It was also reported that many C.I.S. members wrote to headquarters saying they were not attending the meeting in Ottawa in order to save money to make the trip to Halifax in April, 1970.

To all members of our Association, may I suggest that you also start planning to attend the C.I.S. Convention in 1970 and see surveying, mapping and photogrammetry at its best.

E. P. RICE, Secretary-Treasurer

CORRESPONDENCE

President, Association of Nova Scotia Land Surveyors,
P. O. Box 1541,
Halifax, Nova Scotia
Dear Mr. Dunbrack:

It was with a great deal of pleasure that I, along with my wife, was able to attend as your delegate the 1969 Annual Meeting of the Association of Ontario Land Surveyors held in Toronto, February 10th to 12th. We were received very cordially by President Fred Pearce and his Council at all of their functions.

The main topic of papers and deliberations was regarding the introduction to the Ontario Government new legislation for the conduct of Ontario Land Surveyors. The two principal changes of legislation appeared to be;

(1) the pre-requisite for commission as an Ontario Land Surveyor shall be a degree in surveying from a recognized University.

The need for this change appears to be spurred on by the fact that the Universities have of late been dropping survey courses from the Engineering degree course from whence prior to the end of the Second World War over eighty per cent of the land surveyors acquired their survey education. At the present time the O. L. S. roster lists approximately twenty per cent as having a University degree. The remaining eighty per cent now acquire their education principally through technical schools which are not set up to provide the advanced specialized instruction required for the surveyor of today.

(2) Provisions within the Survey Act which will allow registered partnerships and limited companies of surveyors to be formed.

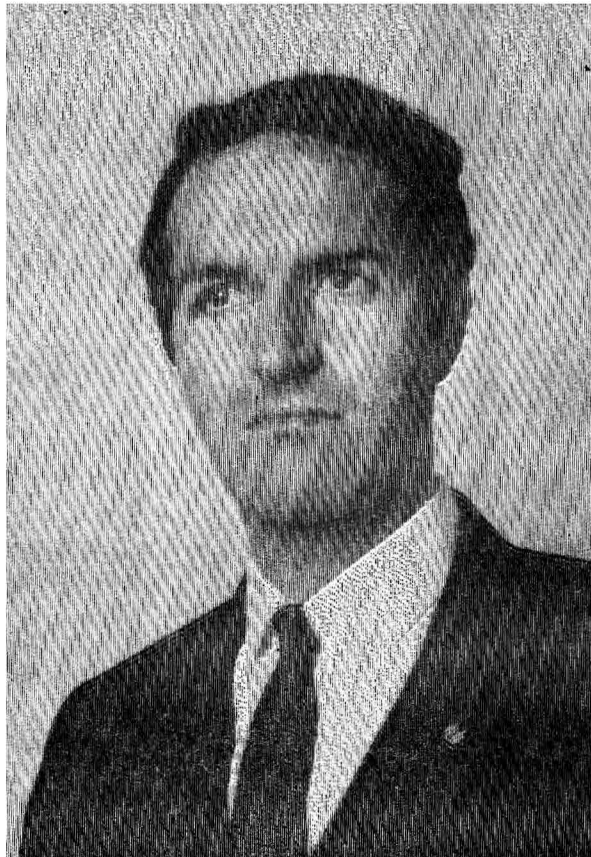
Until the present time such companies have not been allowed to practice surveying under the Ontario Survey Act. Some of the reasons for incorporation appears to be

continuity of the survey operation by Associates upon the death or departure by one of the members.

The acquiring of the high priced survey equipment often requires financing by lending institutions which prefer lending to a registered company rather than to an individual. Taxation benefits also can often be gained by an incorporated company. Incorporation also allows for greater flexibility for the distribution of shares or company interest to associates, employees and especially to specialists in the broader surveying and mapping field who are not necessarily registered land surveyors.

Yours very truly,
Walter E. Servant.

TORRENS LAND TITLES SYSTEM
by Lorne Elkin Rozovsky, B.A., LL.B.
Member of the Nova Scotia Bar



(presented at the Annual Meeting of the Nova Scotia Land Surveyors, Halifax, Nova Scotia, November 2, 1968)

In 1858, the legislature of the Province of South Australia passed a Real Property Act with the following preamble:

“Whereas the inhabitants of the Province of South Australia are subjected to losses, heavy costs and much perplexity by reason that the laws relating to the transfer and encumbrances of freehold and other interests in land are com-

plex,, cumbrous and unsuited to the requirements of the said inhabitants, it is therefore expedient to amend the laws.'

Gentlemen, such a preamble would suit Nova Scotia land registration today. When one remembers that real estate ranks with stocks, bonds and commodities as a major tool in the development of a dynamic and progressive economic system, it boggles the mind to think that down on Spring Garden Road, and in numerous other places in the Province, there exists a land registry office which embodies a system which is archaic, expensive, inefficient and an insult to the intelligence of everyone who uses it for dealing with modern 20th Century business transactions.

The purpose of any type of land registration system is to provide an answer to the question asked by the prospective recipient of land or an interest in land; does the party with whom I am dealing have the interest which he says he has. A registration system is to give the questioner notice of the type of interest which the other man has. If there are several interests involved, it should give notice as to their priorities and to enable one to determine the rights of all parties claiming an interest in a particular piece of property. The system should also notify the person dealing in land as to whether the physical piece of land which is to be acquired is in fact the piece which the grantor owns.

The land registry system which is used in Nova Scotia does not provide us with an answer to these questions. It merely provides a system which one can use to produce these answers. It establishes a method by which one can trace the history of a piece of property in order to determine who has interests in the property. To do this it is necessary to search back through the lists of transactions year by year for at least 40 years to find what the solicitor calls a good root of title — that is, a deed which can be clearly said to be in the hands of the person purported to own it at the time. This is the keystone of the entire search. In many instances, one has to search back for more than 40 years in order to discover this. It is a common sight to see discouraged article clerks trudging down to the Crown Lands office to look for the original Crown grant, written in beautiful but illegible 18th century handwriting, having failed to find a good root at the Registry Office.

Once the good root of title has been discovered, the searcher comes up through history year by year, recording the transactions which affected this piece of property. He will determine whether mortgages are still outstanding, whether the property has been split up, whether there are court orders outstanding against this property, etc. Often he may discover a break in his search. This is caused by the fact that it is not land or title which is recorded but deed, and therefore the search is made, at least in the Nova Scotia system, via names of people — from grantor to grantee, and then from that grantee as a grantor. He may find that a person who received the land never gave it away according to his search, even though he knows that this person no longer owns it. The problem is that it may have been granted by will which was not recorded, or that the owner was a single woman or widow who married and thus gave the property in another name. This fact does not always come out at first, due to sloppy language in the deed itself.

This process may take an hour or two, or it may take days, even weeks. If the transaction is large enough, the cost is worth it. On a small piece of property it is not worth the solicitor's time, nor the clients money, to go through a full search. In certain cases the solicitor will simply not be able to certify the title as being good. The client will just have to take the title on faith or not at all.

At the end of this long process, the solicitor will issue his client with a certificate of title. The reason for this is that the registry system has not provided the client with the answer to his question. It has only given the solicitor a method by which to find the answer. Therefore it will not stand behind any answer given to the client. Thus the

client's protection is his solicitor's certificate. Hopefully the solicitor is insured. Therefore, even though the solicitor may not have done the search himself — his clerk may have done it — he will stand behind it in language as circumscribed as possible.

As long as a document is in the form proscribed by statute, it may be registered. The registry has no responsibility as to its legal effect or validity. It is recorded for whatever it is worth. It is up to the solicitor to assess its legal value. Based on his solicitor's advice and certification, the purchaser of a property takes it at his own risk after having his solicitor investigate the title. The registry system itself guarantees nothing. You may be compensated by your solicitor or his insurers should it be discovered that you have not received a good title, but you may lose the land or there may be an encumbrance against it which prevents the development planned for it, or at least make such plans much more expensive and time consuming in order to get rid of an encumbrance which was not discovered in the search. And that is why the registry system is expensive, time-consuming and inefficient.

Therefore, there are two basic problems — one of title and the other of description. While I have not dealt with the latter so far, it is just as important. In transactions involving hundreds of thousands of dollars it is discouraging to deal with land descriptions which read: Twenty-three chains in a northerly direction from a birch tree marked with a G to the place where Rodney Boutilier is building his boat; thence in an easterly direction 10 chains to where the old stream which runs by Molly Grant's barn flows into the lake; thence in a westerly direction 19 chains along the several courses of the brook to the bridge which George Smith built, and so on. The difficulty is that all the points mentioned have disappeared or moved long ago, and yet to facilitate the drawing up of the deed and also in future searching, these descriptions are used again and again in granting and re-granting the property long after such a description has become invalid. This little gem I leave to the surveying profession to sort out. I can only say that watching solicitors bending over plans sketched on brown wrapping paper in the registry office with rulers and compasses, is a sight for sore eyes. One wonders what has happened to the majesty of the law.

Fortunately these problems, need not exist. There is a better System and this is what makes the present situation so frustrating.

To overcome these problems, an Australian, (who by the way was not a lawyer) Sir Edward Torrens, devised a system of land registration which was based on the system used to register ships. Torrens' background was as collector of customs from 1840 to 1853, and Registry General of Deeds from 1853 to 1857. His system led to the Real Property Act of South Australia of 1858. The first Canadian Act was the British Columbia Torrens Registry Act of 1871, with modifications by a Subsequent Act in 1899. Since then Alberta and Saskatchewan have followed suit with pure Torrens systems, unlike that of British Columbia. Ontario and Manitoba have each instituted a land titles system which exists alongside a land registry system. Nova Scotia has legislation under which a land titles system of sorts may be started, but it is not used because of the expensive and time-consuming procedure required to start it.

The basic object of the Torrens Land Titles System is to eliminate the trouble and expense of going behind the register and the last registered title in order to investigate the history of the title in order to satisfy one's self as to the validity. In the registry system the purchaser of property can only acquire such title as the Vendor possesses and therefore must determine what he does possess. The chain is only as strong as its weakest link. Torrens established his system so that one could rely on the last registered deed. Therefore it was a system of registering land titles rather than deeds as is done in the registry system. Therefore, in the land titles system if a deed is registered the person to whom title is given by that deed is in the fact the owner. He has title by law. Everytime a deed is registered, title passes because of the mere

fact that it is registered. A certificate of title is issued by the registrar to show this. It is valid until cancelled.

In practice, then, what happens is that the registrar, rather than merely taking in documents and recording them is obligated to, within certain limits, rule on the validity of title. If he feels that the person wishing to register a piece of property has good title to it he will register it. The basis of his decision is outlined in the enabling statute. He then issues a certificate of title which is kept in the register. The issue of this certificate absolutely vests the title in the person to whom it was issued. This is not a mere guarantee of title. This act of the registrar gives indefeasible title to the certificate holder. The land cannot, except in particular circumstances, be taken from him. If there is any defect in the title, it is cured. What is on the certificate has been made by statute a legal fact. The holder has legal title against all the world. What went before, any chain of title, becomes immaterial. Therefore, it is not necessary for a person dealing with a registered owner to look behind his title. Because he is registered as the owner, he is the owner. A person who acquires property from a registered owner in good faith and for value obtains an indefeasible title regardless of any infirmity which the Vendor's title may have had.

Suppose someone presents a forged instrument to the registrar and the registrar enters it in the register and issues a certificate of title, the person who committed this act would not obtain title by so doing it, but anyone purchasing the property from him and relying on the register would get good title. The buyer of registered land does not have to go behind the register. It is up to the registrar to prevent registration if he finds any irregularities.

Everything depends on the register and the registrar who enters the title in it. If, for instance, the registrar forgets to enter on a certificate of title a memorandum of an encumbrance which would lessen the title given by a clear certificate, the purchaser of such a property for value obtains title exactly as the certificate reads — without encumbrance. The registrar is the defender of the system. It is up to him to satisfy himself that the title is good. He may make decisions as to whether or not a title can be registered but only within the bounds set down by statute. He is not a judicial officer. He is restricted to the material in his office and the methods under the Land Titles Act in the making of his decisions. However, there are provisions provided for appeals from his decisions.

The entire system is protected by an Assurance Fund. With title passing by the mere act of registration, it is quite possible for a person to lose their interest in land — possibly through a mistake made by the registrar and his staff. Such a person cannot get his land back nor his interest in it since by law he no longer owns it. The person on the register owns it. Therefore, an Assurance Fund is set up in order to compensate him monetarily for what he has lost.

Regarding this Assurance Fund, Torrens himself said:

“Indefeasibility is indispensable if the dependant or derivative character of titles, out of which, as has already been demonstrated, all the evils of the English system of conveyancing originate, is to be got rid of; as despite every precaution, a mistake may be made in granting indefeasible title, it becomes necessary to provide compensation to persons who may possibly thereby be deprived of land. For this purpose a fund is created . . . ”

Thus the person who suffers because of a mistake is compensated by money rather than returning his land to him. This is based on the economic principal of encouraging

the use of capital to improve land by allowing persons, because of the indefeasability of title, to depend completely on the registrar's certificate.

This fund usually comes out of registration fees collected by the registrar. It is very different, however, from the title guarantee system as found in some of the American states. That system indemnifies the holder of the title if the title proves to be defective. The Torrens system requires no guarantee of title since by law the title is good. The Assurance Fund protects those who have lost out because of the title being good.

At this point, one may well pose the question: what can I register and what types of interests are excluded? Under the Torrens system the only instruments capable of registration are those instruments which can, according to the statute establishing the system, pass title or affect a registered charge upon the land. Because the statute is designed to set up a simple system of title registration, it usually tends to be rather restrictive. Basically, of course, it must be an interest in the land.

The problem created by this situation is that many instruments which are registerable now under the Registry System are not registerable under the Land Titles System. This means that when a certificate is given for a transfer of land with or without memorandum of easements, these interests would be wiped out as soon as registration takes place. To avoid this, an instrument called a "caveat" has been established. The caveat takes the middle course between not securing the non-registerable instruments at all, and allowing them by statute which would destroy the simplicity of the system.

The caveat is an instrument which is entered at the registry as a warning that there are non-registerable interests outstanding. It prevents dealing with the land without taking into account those interests. In other words, it protects the caveator's rights, but does not enlarge them. It has no effect on the claim contained in the caveat.

Basically there are three types of caveats. The first prevents bringing of land under the system and in this way works something like an interlocutory injunction. Pending disposition of the matter, registrations are prevented from proceeding.

The second type of caveat is filed by the Registrar himself. It prevents the transfer of land belonging, or allegedly belonging, to the Crown. It also prevents dealings where it appears to the registrar that an error has been made in registration. It is devised as a check on fraudulent registrations.

The third type is filed by third parties in order to prevent subsequent dealings in the property. Generally speaking, anyone claiming an interest in land may lodge such a caveat preventing registration of the land unless such instrument is made subject to their interest as outlined in the caveat. This might include an easement, a licence, an unwritten trust option to purchase, restrictive covenants, etc.

Risking the chance that further explanation of the intricacies of the Torrens land titles system might discourage my listeners, I would point out that despite the original theory by which everything concerning a title would be in the register, this has not worked out in practice. Many of the reservations, of course, depend upon the particular statute establishing the system. Usually, however, it does not include reservations from the original Crown grant, unpaid taxes, public easements, expropriations, rights of expropriation, rights of way or easements created by any other act, etc.

A prior certificate may also upset any registered certificate and therefore an historical search may have to be done to discover whether such a certificate which has not been cancelled exists. However, this type of error rarely occurs today. A misdescription may be a statutory exception upon which ground one may have to look beyond the register. The matters which are not located in the register, though, are far fewer than those in the registry system. Often the amount of money involved determines whether one will trust the last certificate. The fact remains, however, that one can,

with these few exceptions, rely on the certificate. One cannot rely on the last document registered in the registry of deeds.

Needless to say, the register would also not show zoning or other by-laws, acts between a mortgagor and mortgagee, etc. However, what is covered by the system and what is not, depends upon the particular statute establishing it.

The introduction of such a system directly affects members of the surveying profession. To be efficient, all land in the system must be described exactly on the basis of a survey, not as is the present situation in Nova Scotia. Usually the area to be covered is divided into plots by the grid system, so that any parcel of land may be spotted immediately.

It should be mentioned at this point, that the registry of deeds as it now exists in this Province could be improved by a complete survey of the Province so that deeds could be registered under plot plans rather than under grantors and grantees. An historical search would still have to be made, but it would then be possible to restrict one's search to the particular piece of land in question, rather than examine each and every deed granted by the grantor in question in any particular locality, when only one or two will be relevant. Furthermore, much of what is now done by hand should be done mechanically, even though vast improvements have been made over the last few years. This, however, merely makes the system, as they say, "less worse".

No system, of course, is perfect and so the Torrens land titles system has its faults. Because its very basis is statutory, it can be inflexible and not meet changing needs if the Legislature does not keep it up to date. Westerners have found that it does not work too well in the field of mineral rights for example. Often governments are accused of using the Assurance Fund as a source of revenue, and imposing fees almost as a tax rather than as a source of money to build up the Fund. On the other hand, the Assurance Fund can become too small if not enough is collected in fees, or if too many claims are made against it.

Each jurisdiction which has instituted the land titles system has made some variations to it. British Columbia has not followed Torrens' basic ideas but has followed the general scheme, and has most of the advantages which our system lacks.

The features of the Torrens Land Titles system are as follows:

1) There is established a state system of land titles registration with the state assuring that title is good, within certain limitations. The state also operates the system's machinery.

2) All transactions must be registered in order to gain validity. A transaction is not valid in the form of a document drawn up between the parties and not registered.

3) The certificate of title which is issued on registration by the registrar with its memoranda of subtractive interests is intended to be a complete and accurate record, within the limitations of the exceptions already mentioned, of all transactions affecting the property. Therefore, basically, it is not necessary to look elsewhere than the certificate.

4) An assurance fund is usually provided to compensate those persons who suffer by reason of the operation of the system itself, or by errors on the part of the registry staff.

5) Each property is recorded as a unit of land which is surveyed and described in an accurate and standard method.

This has made it possible in Alberta to begin and conclude a land transaction in an hour. As Sir Robert Torrens said, it is reliable, simple, cheap and fast. Compare the situation here. We are 100 years behind the Australians. Let us enter the 20th century.

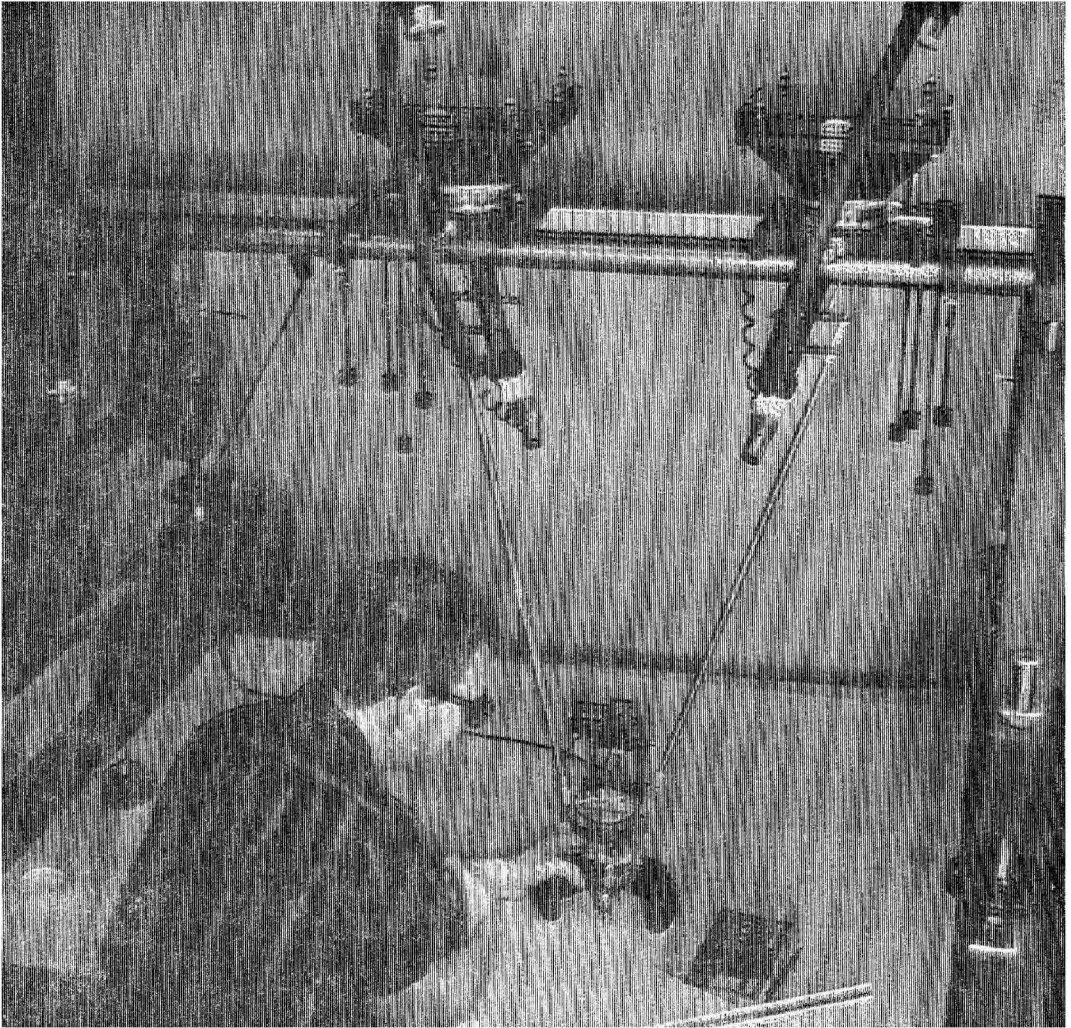


Photo captioned "Pictured is a Kelsh Plotter, a precise three-dimensional instrument for mapping from air photographs, two of which are currently in use in Nova Scotia.

The birth of the aerial survey industry in Canada dates back to the close of World War II, although the idea of using aerial photography as a means for speeding up mapping is not new, extending back to the first world war. However, it was the last war that really developed the techniques of interpreting or extracting information from air photographs, and saw the development of airborne electronic instruments and other specialized equipment, which have since been adapted for survey purposes.

But aerial photography and subsequent developments in the fields of mapping and interpretation is not a new science. More than one hundred years ago a French army officer experimented with a glass plate camera supported by a string of kites and realized the first aerial photograph. Here in Canada our first air photo was taken in 1883 by Mayor Elsdale of the Royal Engineers and in fact, was a photograph of the Citadel here in Halifax taken from a captive balloon. Canadians were rather prominent in the early pioneering work in this field—Captain E. Deville, then Surveyor General of Canada, made some significant developments at the turn of the century, and first introduced these techniques in Canadian mapping procedures.

During the period since the war, there has been a spectacular growth within the

air survey industry brought about by an ever-increasing demand for these services. Today a relatively small number of companies, less than twenty all told, now have an aggregate capital investment of millions of dollars, employ approximately 1,500 highly skilled men and women and conduct operations over the whole of the free world. Through their operations at home and abroad these firms have earned for Canada a high position of respect for their engineering and technical skills in aerial surveying.

Two Nova Scotians, Dan Owen and Charlie Whitman, carried out the first aerial forest survey in Canada, a contract carried out in Labrador in 1919. Here in Nova Scotia the use of aerial photos for forestry purposes was first introduced in 1934 by G. W. I. Creighton, now Minister of Lands and Forests. Having just returned from Germany where he studied photogrammetry for one and one-half years at the forest School at Tharandt, he was certainly one of the first Nova Scotians trained in aerial survey techniques. During the next twenty years air photos were used more and more by the Department of Lands and Forests in the development of our forest resources. In 1953 the first base maps were produced from Federal Government mapping as a means to record the first complete forest inventory of the Province carried out during the 1953-57 period. Today some fifteen foresters located in Truro engaged in photo interpretation, supported by twenty cartographers and photogrammetrists in Halifax, are continually up-dating our forest inventory maps for Nova Scotia.

Another notable Nova Scotian who gained international recognition in photogrammetry was the late H. L. Cameron of Acadia University. He was an authority on certain fields of research involving high altitude photography and published papers on geology, archeology, historic sites and water current speed determinations, all based on the use of aerial photography.

For some fifteen years, various commercial firms in Canada have carried out extensive private as well as government mapping for a variety of purposes. In 1959, the first commercial company, Atlantic Air Survey, was established in the Maritimes to provide aerial survey services here in this area. During the past nine years, from their Dartmouth offices, a small staff of surveyors, photogrammetrists and cartographers have mapped everything from a pile of sand to estimate volume content, to routes for the Trans-Canada highway and other trunk roads, watershed areas for dam site and water reservoirs, microwave routes, airport sites, as well as town and cities for engineering and planning purposes. Perhaps the most comprehensive job undertaken by Atlantic Air Survey was the complete mapping of the City of Halifax, consisting of 235 maps sheets at a scale of 40 feet to 1 inch. In addition to streets, sidewalks, houses, and contours at 2 foot elevations, the plans showed such details as manholes, fire hydrants and individual trees, all from low level aerial photographs.

But aerial surveys have a variety of uses in the fields of forestry, geology, soils, agriculture, hydrology and even archeology. In all countries of the world technical experts and administrators are aware of the fact that intensive economic development of large regions is impossible without accurate and reliable maps. Mapping is, in fact, the cornerstone of all development. There is little doubt that it is only with the help of aerial surveys that these maps can be produced efficiently and expeditiously and with maximum economy.

SURVEYS UNDER THE ATLANTIC DEVELOPMENT BOARD

by Willis F. Roberts, Director of Surveys, New Brunswick

The Atlantic Provinces Surveys and Mapping Program

The Atlantic Province Survey and Mapping Program was developed over a two year study period under the joint leadership of the respective Directors of Survey, Representative of the Department of Energy, Mines and Resources of Canada, a representative from N.R.C. Universities and private industry. The result of this study was a Brief presented to the Atlantic Development Board and the announcement in February, 1968, of a Four Million Dollar grant to further the project. The A. D. B. worked closely with the provinces in preparation of the brief and will continue to work closely with us during the program.

Summary of the Requests for Financial Assistance For the Two Year Period

New Brunswick	\$ 1,446,000	
Nova Scotia	923,000	
P. E. I.	1,008,000	
Newfoundland	600,000	
Sub-Total		\$ 3,977,000

Background

If the natural resources of the Atlantic region are to be exploited efficiently and quickly, considerably more effort and money must be devoted to the improvement of land registration and mapping.

The result of earlier haphazard allocations of land, the lack of adequate geographical control on which to base land descriptions and maps, and a land title system that permitted overlaps and gaps, have resulted in incomplete land records. Consequently, there are very few maps which are suitable for resource development, urban planning, and resource management. Furthermore, large scale up-to-date maps, good basic surveys and property records are basic requirements in preparing rate-payers rolls which assist in equitable and complete tax collection. All provinces suffer from all the disadvantages of deeds registration which have no verification of the validity of the title for description or position of the lands. In some areas, there is a complete lack of knowledge of the location of thousands of squatters along coastlines, and in Newfoundland the interior of the province is almost completely unknown.

The Program

The aim of the program for each of the provinces, with the exception of Newfoundland at this time, is the establishment of an accurate land title registration system. The first order of ground control is geodetic and this is established by the Federal Department of Energy, Mines and Resources. Assurance has been given by officials of that Department that where the first order of control is not completed, priorities will be established to have the work scheduled to coincide with the phasing of the proposed mapping and surveying program.

The program is divided in four phases:

Phase I —Provincial Co-ordinate System (2nd Order Control)

Phase II —Large Scale Mapping

Phase III—Land Titles and Registration

Phase IV —Data Bank

PHASE I — The initiation of a coordinate control system of precisely established monuments at pre-determined intervals in each Province.

The system to be the fabric on which all properties will be related and on which all engineering surveys can be integrated.

PHASE II — The initiation of a Provincial base and topography map series vary-

ing in scale from 100' to an inch to 2000' to an inch, with each map a multiple of the next scale. The maps are photogrammetrically compiled from the control established in Phase I and on the Provincial projection.

PHASE III — A proposal to implement a computerized Torrens system of land titles in each Province. From Phase I we can theoretically obtain a numerical indefeasible location of each parcel of land. The parcel can then be numerically plotted on the maps obtained under Phase II permitting publication of present day ownership maps. If indefeasible title to the lot is obtained, the result is a pure land titles. The final step is to enter the above data into a computer with capability of storage and retrieval on a minimal time unit—thus doing away with our present time-consuming and costly searching of title.

PHASE IV — A proposal to establish an integrated environmental data bank—in other words, an extension of Phase III. Firstly it is proposed to add all data required for engineering services such as the routes of water mains, sewers, transmission lines, underground cables for the purpose of instillation, maintenance and repairs or extension of these services. The bank could eventually encompass all applied science data and present the data either on computer output sheets or assembled on maps related to specific coordinate monuments.

The Data Bank has a further function which is the recording and storing of social or environmental data, which when required can also be directly related to specific land holdings. Environmental factors could include population of specific areas, size of families, age, levels of education, work force status, incomes, etc. This type of detail and the ability to relate it graphically is essential to any form of comprehensive land use planning. It will be of considerable assistance in the implementation of ARDA programs, and in any situations involving changes in municipal boundaries and population shifts.

Progress

Certain parts of this program have been carried out in the respective provinces, but limited in extent due to our economy. It was estimated a period of 30 to 40 years would be required to complete the project. The aim of the Atlantic Development Board grant is to cut the time limit to 10 to 15 years by capital grants to cover the initial high cost of equipment, and to pay the full cost of the first two years with the possibility of a cost sharing program for the following ten years.

New Brunswick has been carrying on Phase I for the past eight years, Phase II for two years and starting Phase III on a study basis. Newfoundland has been carrying on Phase I for three years and Phase II for one year. Nova Scotia and Prince Edward Island are beginning Phase I this year and Phase II in 1969.

Our last aim is the coordination of all Provincial programs in order that technical knowledge gained by one Province in the fields of surveying and mapping could be of assistance to the other Atlantic Provinces. It is for this reason our joint program has merit.

Organization With The Program

Management Committee—The program will be carried out under the general direction and supervision of, and in accordance with standards set by, a Management Committee comprised of one senior representative of each of the participating provinces, to be appointed by Provincial Order-In-Council, a representative of the Board,

who shall act as Chairman, and a representative of the Department of Energy, Mines and Resources of Canada, who shall normally act as Vice-Chairman.

Sub-Committees

Due to the highly technical nature of most phases of the program and the necessity of establishing administrative procedures which will expedite decision making and permit fast approval of expenditures, Sub-Committees covering four areas of the Program were established.

The four areas are:

1. Ground Control (Phase I);
2. Mapping, including aerial photography (Phase II);
3. Purchasing of equipment;
4. Construction of buildings.

It is considered likely that additional Sub-Committees will be established later to cover aspects of the Program as it develops.

To maintain adequate control while providing facility of action, it was decided that each Sub-Committee will be chaired by a member of the Management Committee. Also, on most Sub-Committees there will be a representative from the Department of Energy, Mines and Resources or the National Research Council.

The Sub-Committees are empowered to program their specific areas of responsibility, to make decisions and approve expenditures. The latter, the approval of expenditures, will be made only if it is anticipated that delays in assembling the Management Committee to receive its authorization would impede the progress of the program. However, if such approval of expenditures be made by the Sub-Committees, they must be tabled at the next meeting of the Management Committee and receive its ratification.

It appears most unlikely that any instances would arise where ratification would not be granted as the Sub-Committee will include the highest technical ability at both the federal and provincial levels. If such a reversal of decision did occur, however the province making the expenditure would not be reimbursed out of Program Fund. Also, if the Sub-Committee could not reach an unanimous decision on any aspect within their area of responsibility, they must in spite of delays, refer the matter to the Management Committee as a whole for its consideration.

The Sub-Committee will in fact be the working parties. They will schedule the program, propose the form of contract, type and quantity of equipment, establish test procedures for checking on work by contractors to assure that required standards are met and be responsible for the actual surveillance of all Phases of the program. The ultimate control, however, rests with the Management Committee.

The Sub-Committee presently established are to be chaired by the following members:

1. Ground Control — Neil Flemming
2. Mapping, including Aerial Photography — H. B. Robertson
3. Purchase of Equipment — A. C. Hamilton
4. Construction of Buildings — H. H. Hoyt

TECHNICAL DIRECTOR

To facilitate the work of the Management Committee, it is intended that the Board will engage a Technical Director on a full time basis, whose function will be to assist the Management Committee in its work, and under its direction to consult with and advise the participating Provinces with regard to the organization and performance of the various phases of their programs, including scheduling, standardization of tender documents and contracts, contract awards and the supervision and surveillance of the work; the Technical Director will also act as Secretary of the Management Committee, but will not be a member thereof.

TERMS OF REFERENCE — TECHNICAL DIRECTOR

To be Technical Director of the Atlantic Provinces program of mapping and land registration sponsored under the grant of the Atlantic Development Board for the period of two years, April 1, 1968 to March 31, 1970, and to be responsible to the management committee.

The duties associated with the office will be:

1. In co-operation with each province, to organize specific projects within the various phases of the program such as scheduling, standardization of tenders and contracts, supervision of the projects and surveillance of all approved work;
2. To prepare a brief for submission to the Atlantic Development Board, by September 1968, for financial assistance to establish a scientific resource unit;
3. If the unit is established, to act as its chairman and give details scientific assistance to each province through each phase of their programs. Until the establishment of such a unit, to offer their assistance to the limit of the capabilities of the Department of Natural Resources of New Brunswick;
4. To prepare a brief by September, 1969 for all the Atlantic Provinces for continued assistance from the A.D.B. and suggested cost-sharing arrangement for the continuation of the program for the next eight to ten years.
5. To promote the education of the needs for large scale mapping and a land titles system, similar to that of the Torrens system, of all levels of government, of allied professions and of the public in general.

A POINT OF DECISION

The design of a computer based land titles and its direct relationship with an environmental integrated data bank is very enticing and monumental in size, but difficult to execute due to no known precedents. The computer based land titles is being designed on the premise that for the first time indefeasible locations as well as title can be granted for each lot.

STAGE I — Planning Development and Design Stage

Stage I is a pencil and paper exercise of three to five months duration to write a computer based land titles systems and to document the approaches necessary to implement a computer based Torrens System, or any other approach to a Torrens System, which is uncovered during the exercise and agreed to be worth investigating.

The exercise is being conducted by a system analyst, lawyer, and survey engineer with back up assistance. Without limiting the scope of the exercise the participants will be responsible for:

1. Drafting a land titles act which would be compatible with electronic data storage and retrieval.
2. Prepare documented approaches for such a system by studying:
 - (a) The human procedures in transferring land, by the vendor, purchaser, registrar, assessor, lawyer, etc.
 - (b) The number, type, seasonal variations, volumes of transactions and how to process them.
 - (c) The amount and content of information to be stored and the organization required. The form in which the information is to be presented.
 - (d) The form of standard output or dressed up transfer documents.
 - (e) Equipment requirements from pencils to type of CPU and file storage whether tape, disk or a combination.
 - (f) Costs and benefits in identifiable dollars by comparison of present costs, estimating implementation cost and annual maintenance costs.
 - (g) Costs and benefits require value judgements such as savings in time and

effort by those concerned with land transfer; increase value of properties, economic development and planning.

(h) The legal problems both to its affect on the legal profession and security of title to society.

(i) With a flow chart of known procedures and a logic diagram in time scale of predicted procedures.

to deduce whether it is economically feasible to develop a land use data bank followed by a demographic information data bank.

CONCLUSION

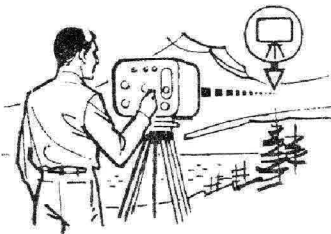
The program is progressing on schedule but in Phase III and IV we need all the assistance we can obtain. We would appreciate your views and ideas along with a copy of any information concerning the phase that may cross your desk. In the future we welcome you to visit any of the Atlantic Provinces and observe our program.

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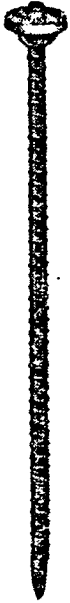
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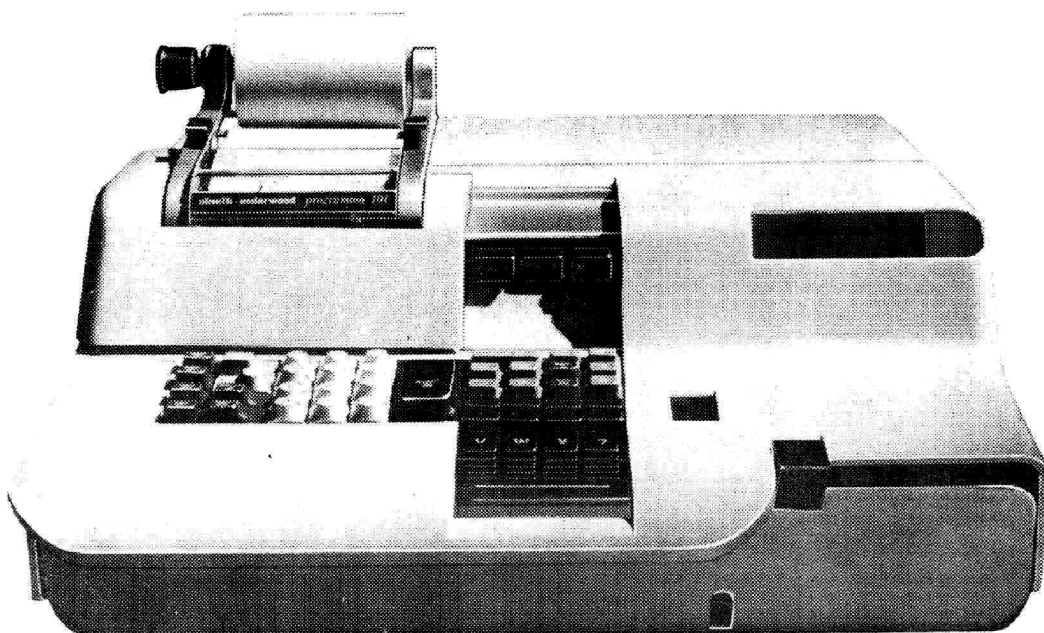
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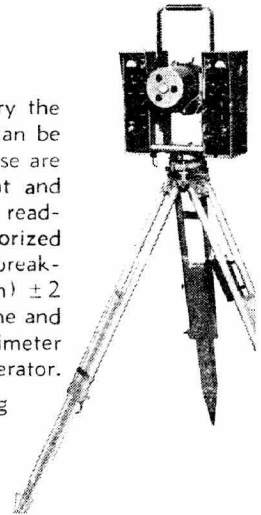
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Laser speeds tidal flats survey

A new engineering laser has been used successfully by a Vancouver engineering company to conduct a foreshore profile survey for the proposed \$65-million superport at Roberts Bank in British Columbia.

● **Three-Day Job:** Swan Wooster Engineering Co. says the laser turned a difficult, time-consuming and expensive survey of the tidal flats into an easy three-day job.

The Roberts Bank flats are exposed for more than 10,000 ft at low tide. While this exposure makes profiling possible, the difficulty of walking through the deep mud and the long distances involved make it extremely difficult to run even one complete traverse in the short periods between tides.

By using the new engineering laser mounted on a conventional transit, however, Swan Wooster found it possible to run four 10,000 ft traverses each day while the flats were exposed.

Designed and manufactured by University Laboratories Inc. in California, the laser produces a harmless, pencil-thin line of bright red light that can be seen for several miles by crew members wearing special protective goggles.

● **Simple Operation:** "It's one of the most useful and time-saving new instruments we've been introduced to in a long time," says Swan Wooster project engineer John Patton. "All we had to do was set the transit/laser on a bearing, level it, then follow the beam."

Aided by walkie-talkies, the surveyors were easily able to locate the spot (at 10,000 ft the diameter is less than 7 in.) at the extreme outer edge of the mud flat and home in on the thin red beam, taking readings every 200 ft.

"There was absolutely no doubt about the readings we were taking," says Patton. "They had to be right. The laser

beam can't flicker, waver or sag. We simply aligned the rod with the beam every 200 ft and the spot gave us our reading."

Heart of the instrument is a lasertron plasma tube that is factory sealed and completely impervious to dirt, dust, heat, cold or ocean spray. And the only controls are "on-off" and "line-battery" power switches for either 115 volts ac or 12 volts dc.

● **Remote Uses:** Derrick Adams, president of Adams Marine & Electronics Ltd., Vancouver, which is marketing the laser in western Canada, says the instrument could revolutionize some survey and construction techniques — particularly in difficult terrain in the Arctic and other remote areas of northern Canada.

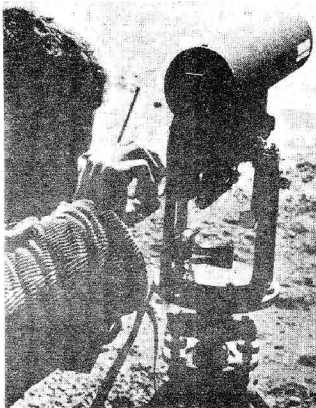
Used with an ordinary transit, the laser can guarantee perfectly aligned pipelines and tunnels; level forms, pilings and roadbeds and accurate plumbing and alignment of buildings. It can also be adapted for triangulation position fixing.

Addition of a fan lens accessory gives a precisely oriented, vertical or horizontal, fan-shaped beam to control the position of a moving barge or dredge, to compare the height of a row of pilings or to check the plumb of a building.

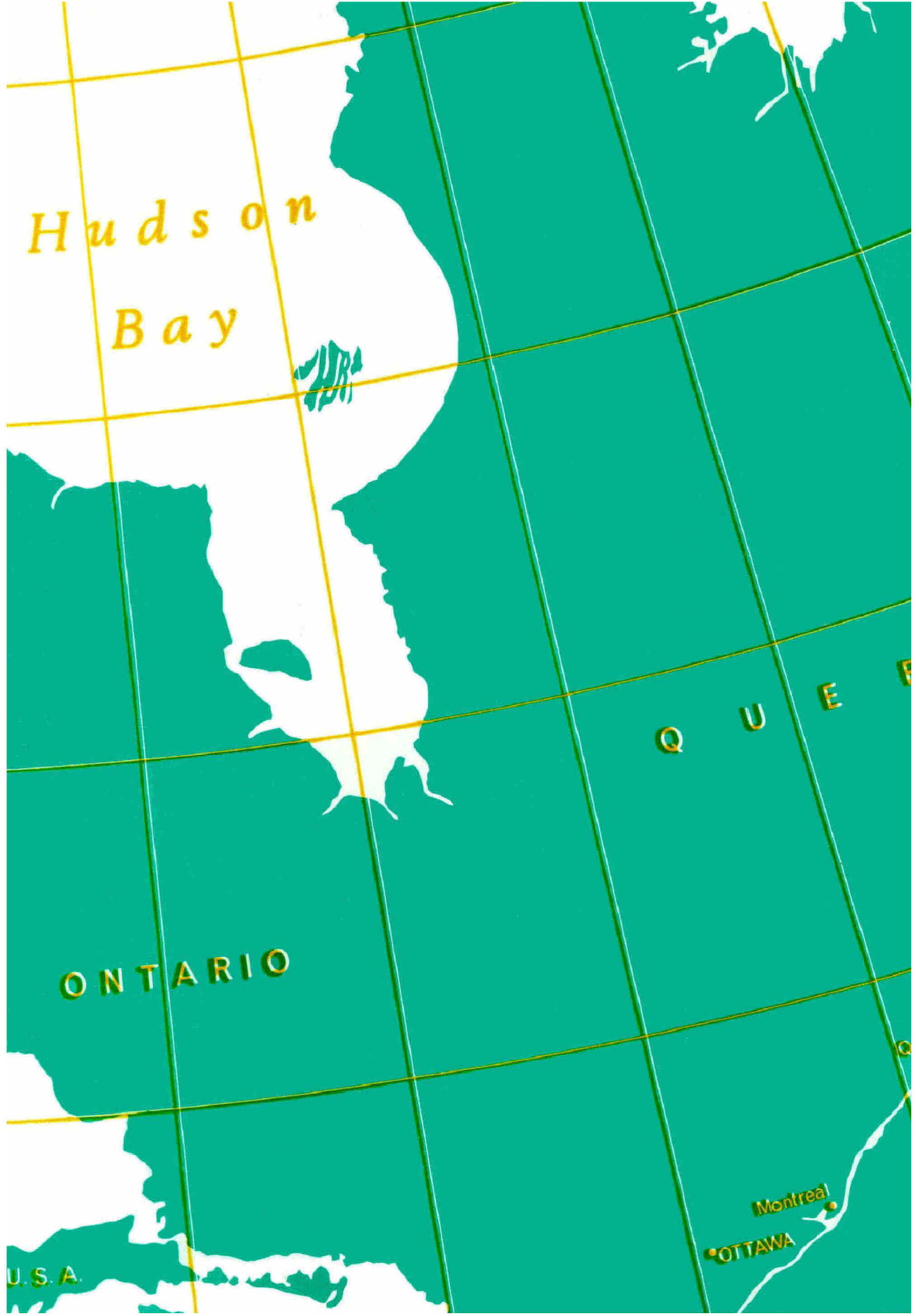
Use of the laser in the Roberts Bank project, it's said, has proved the value of the instrument in foreshore construction survey and other hydrographic survey applications that call for an independent collimated beam of light (over land or water) that can be intercepted at any point.



FOUR 10,000-ft traverses daily were possible over tidal flats using new laser.



RODMAN wears special goggles as protection against laser's pencil-thin red beam.



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