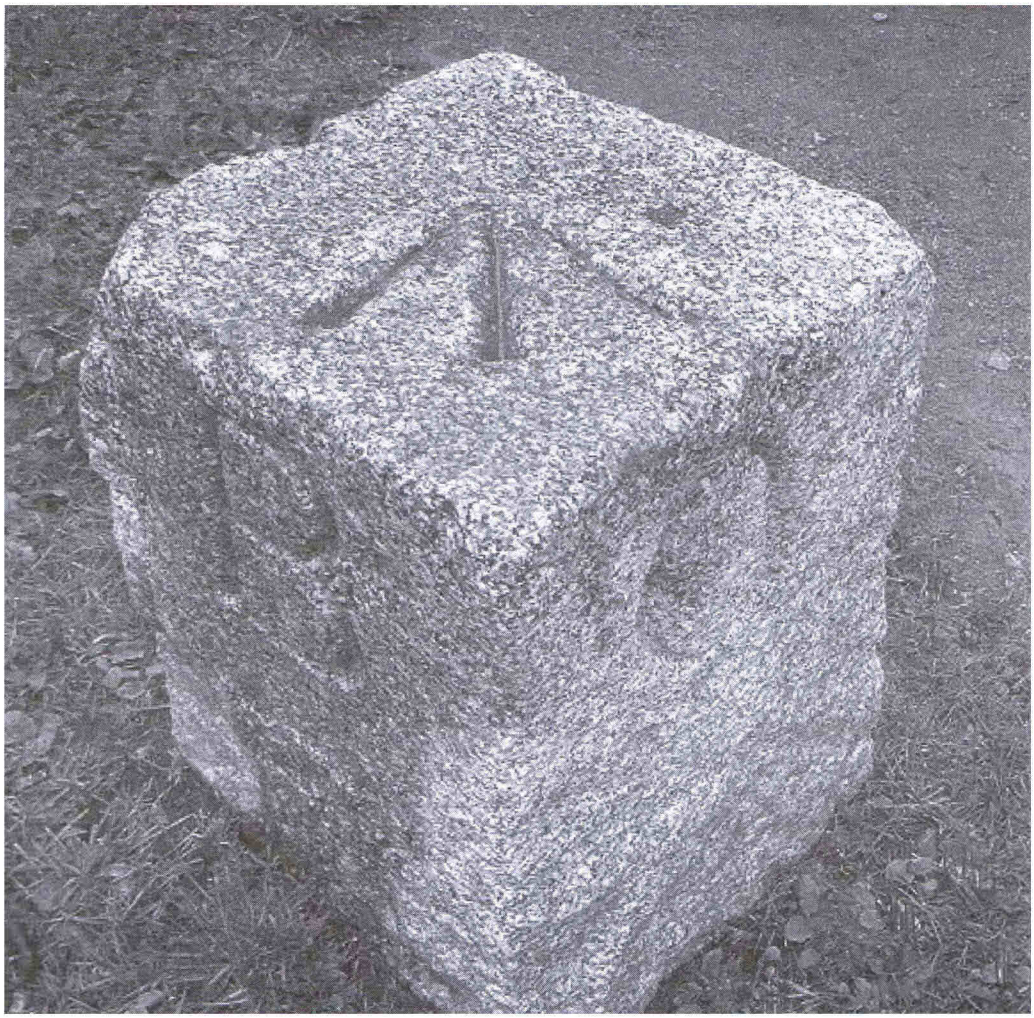
ISSN 0380 - 9242

THE NOVA SCOTIAN SURVEYOR

Summer 2005 No. 174



Board of Ordinance Survey Monument

King's "broad arrow" on top of 15" square granite corner marker points to former military lands at the Camp Hill site, Halifax

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THE NOVA SCOTIAN SURVEYOR

Editor: Fred C. Hutchinson

Production: Kathy Alcorn and Wade Company Limited

Circulation: Free of charge to ANSLS members. To non-members at a yearly rate of $12.00 in Canada and the USA; $16.00 for other countries, plus handling charges.

The Nova Scotian Surveyor is published three times a year. Address all enquiries to: The Association of Nova Scotia Land Surveyors, 325-A Prince Albert Road, Dartmouth, NS, B2Y 1N5 Canada. Tel: (902) 469-7962; Fax: (902) 469-7963; E-mail: ansls@accesswave.ca

PRESIDENT'S REPORT

John Ross, NSLS, CLS

Busy spring. Since writing the last report there have been two council meetings and seven AGMs. We made it to six of the annual meetings while Gerry Pottier represented our association at the other. Personally, during that time, besides the pressures of business, there have been two new grandchildren, a law school graduation and a large family reunion.

Ontario's 113th AGM was held Feb 23-25 at Deerhurst Resort in Huntville. Their theme "Touch the past, embrace the future" was supported by numerous concurrent seminars and break-out sessions. One topic of considerable discussion was underground utilities. Safety is the biggest concern. The safety authority has made the interpretation that driving a survey marker is breaking ground. Electrical cables and gas lines have been struck by four- foot long survey markers and some charges have been laid. You can dial ONE CALL and the utility concerned will do a locate when they get to it but they will only guarantee the location to be within 4 feet. Some members envision doing locates for utilities companies as a business opportunity.

Alberta's 96th AGM was held April 21-23 at Jasper Park Lodge. Some highlights of their meeting:

- resolution to expand student membership category
- resolution that Surveys Act be amended to give governing status to non-original monumentation at certain corners. (Think about that one.)
- discussion about a proposed Boundary Resolution Process to be tried in a pilot area
- launch of their history book entitled "Laying Down the Lines"
- induction of 29 new members.

Newfoundland's 52nd AGM was May 12-14 in St. John's. The highlight was the seminar by Ian Edwards of IBL (Information Brokerage Ltd.) about the Land Gazette. His company is setting up an online survey plan depository targeted to start up December 31, 2005. It will provide some free utilities but plan retrieval will generate a royalty for the authoring surveyor.

The hiring of an executive director is the stated priority of their new president, Bob Leeman. Proceeds from the sale of survey caps, instigated last year, are earmarked to fund this position but are likely insufficient. There is still some dissension about the mandatory use of caps. Several resolutions brought to their business meeting were defeated, but one suggesting a profession fee of $120/hour for a surveyor passed.

Gerald Pottier attended the 123rd AGM of l'Ordre des arpenteurs-géomètres du Quebec in Montreal on June 2-5, 2005. He reported to Council that they have 970 members and a budget of $1.3 million. Their new president is Ms. Marie Parent.

The 95th AGM of the Saskatchewan Land Surveyors Association was held June 2-4, 2005 in Saskatoon. A motion to set the price of Association-sold survey markers at $3 above cost was defeated. A motion carried to amend their Standards of Practice to include a section, Correction of Monuments, "Where a monument which was originally intended to be on a previously surveyed line is found to be off line, it shall be good practice to correct the position of the monument. ....". How would you like to police that one. Gerry? Saskatchewan had no nominee for VP going into the meeting but finally got one from the floor.

We attended a joint meeting of APEILS and ACLS held at Cardigan, PEI on June 21-24. There was a whole suite of seminars including Offshore Issues, Digital Cadastral and Registration Systems and a CCLS-sponsored Loss Control Seminar. At the APEILS meeting, the CCLS Labour Mobility Agreement was signed. On the same day, we attended a ceremony at Victoria Park in Charlottetown rededicating historic meridian reference monuments. The Lieutenant-Governor and others spoke. A reception followed at Fanning Bank. It was covered by the media and was a good example of seizing a public relations opportunity.

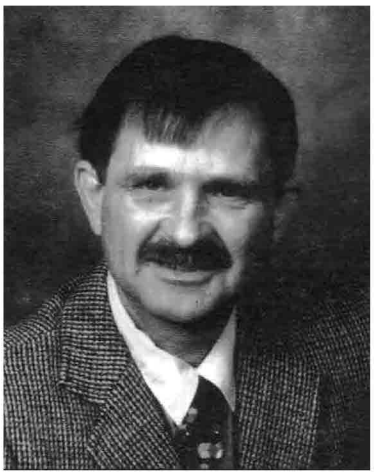
Nationally there is a shortage of survey personnel. Some provinces have enough licensed surveyors, but others are hurting. Everywhere good technicians and CAD operators are at a premium. A larger firm in BC hired our Grant McBurney to facilitate the upgrading of field-hardened survey assistants to technicians. Sounds like an enhanced definition of win-win. The

Alberta creation, *Surveyor-in-a-Crate* (no it's not a funeral home promotion), is a geomatics information kit aimed at the Grade 8 level. It is reported to be very popular. I suggested to Council we should get in line with other provincial associations looking to buy these kits. I recently read how the construction industry in Australia is so starved for workers that a course about construction, with a certificate, was actually set up in high school. Instituting a high school course in geomatics would do much to promote our profession. Geology has been taught in high school so the thought is not that much of a stretch.

It's been clear, and it has now become overwhelmingly so, that public relations has to be a priority for us. As an example, a lawyer in the New Glasgow area said to me recently that, as part of the lawyers' LRA training, they should be told what it is surveyors do and how it is done. This same lawyer writes a column in a local periodical. His last article was about his purchase of a property in a sheriff's sale. He issued cautions and recommended legal services. He promoted the new land registry and advised it was worth the cost. Then he bragged that he had scrounged up a location certificate done for someone else and detailed the considerable extent to which he relied on it. He added he obtained services of a plumber, carpenter, roofer, electrician, gas fitter, appraiser and banker. Here is the fellow who just admitted he doesn't know what we do or how we do it, recycling an out of date location certificate without any qualms. I applaud recycling but doubt if you could buy life insurance based on a physical exam done five years ago. Further, imagine what response would be forthcoming if one of my employees phoned that lawyer and requested a free copy of a certificate of title he had done a number of years previous on the premise of saving one of my clients a few dollars. Imagine a bank accepting it, even if it was available. It is clear that enhancing awareness and appreciation of our profession is a must.

EXECUTIVE DIRECTOR'S REPORT

F.C. Hutchinson, BA, NSLS, CLS



Summer at last. Well, at least according to the calendar. The April showers came in May and extended into June. June and July temperatures are lower than normal but great for surveying and black flies.

The use of GPS seems to be on the increase according to plan submissions to the Survey Review Department. This is a technology that our predecessors could only dream about. Gone are the days of signal flares, climbing trees and trial lines. "Oh, the good old days!" Trust me, they were not that great when it comes to surveying.

The Mandatory Continuing Education Program is now into its second year. All members were required to submit a reporting form by March 1, 2005 for the year 2004. The majority did but about 25% did not. This resulted in my sending out notices to those individuals who had yet to report, followed by emails and then phones calls that were likely considered harassment calls. I am pleased to report that there has been 100% compliance with reporting and only six members did not attain the required 20-point minimum.

It is recommended by the Continuing Education Committee and accepted by Council that these members be given the opportunity to obtain 40 points by the end of 2005. This will allow the members to continue their participation in the Program. The only glitch is that the Program requires a total of 100 points in three years so a goal for these members and some others is to acquire more than 40 points in 2005 so that year three is not a killer.

100% member participation is something that all members can be proud of since it shows professional unity and demonstrates to the public that we are serious about our commitment to continuing education.

I am presently working on a mini take-home examination, worth 10 points, that members could request. A first aid course is also a good activity to consider, since an eight-hour course would give the attendee 8 points and maybe save a life someday. Visit www.stjohnambulance.ns.ca for a course near you or take one of their online courses. Another site to consider from the comfort of your home is www.staffkit.com for online training with a diploma.

Our Strategic Planning Committee is now into the final stages of their investigations prior to proposing an action plan for the next several years. The action plan will plot a course for our association for the next five to ten years. It should be noted that our Regular membership stands at 177, Life at 20, Retired at 39, Student at 24 and Associate at 2. The average age of our membership is 56 so the next few years will be interesting with respect to membership levels and sufficient operating revenue. Many self-governing professions in Canada, including surveying, are currently facing declining membership and rising fees.

On another topic, surveyors and field crews are usually obsessed with the placement of the elusive lot corner with a solid steel marker that will last a lifetime. Everyone, however, should exercise caution when placing survey markers to make sure that underground utilities are considered. Does the street contain buried power and communication lines? Are you in an area that contains natural gas lines? The areas of Burnside and Crichton Park, in Dartmouth, are presently being serviced with natural gas with other areas of the Province to follow.

Underground power lines in new developments carry 14,400 volts, which is more than enough to stand your hair on end for those who still have some. The penetration of a gas line will usually guarantee you and your closest associates an early retirement with no money worries.

I ask for your continued cooperation and support as we approach the second half of the first decade of the second millennium. If history is a window on the future, land surveyors will still be in business at the start of the third millennium.

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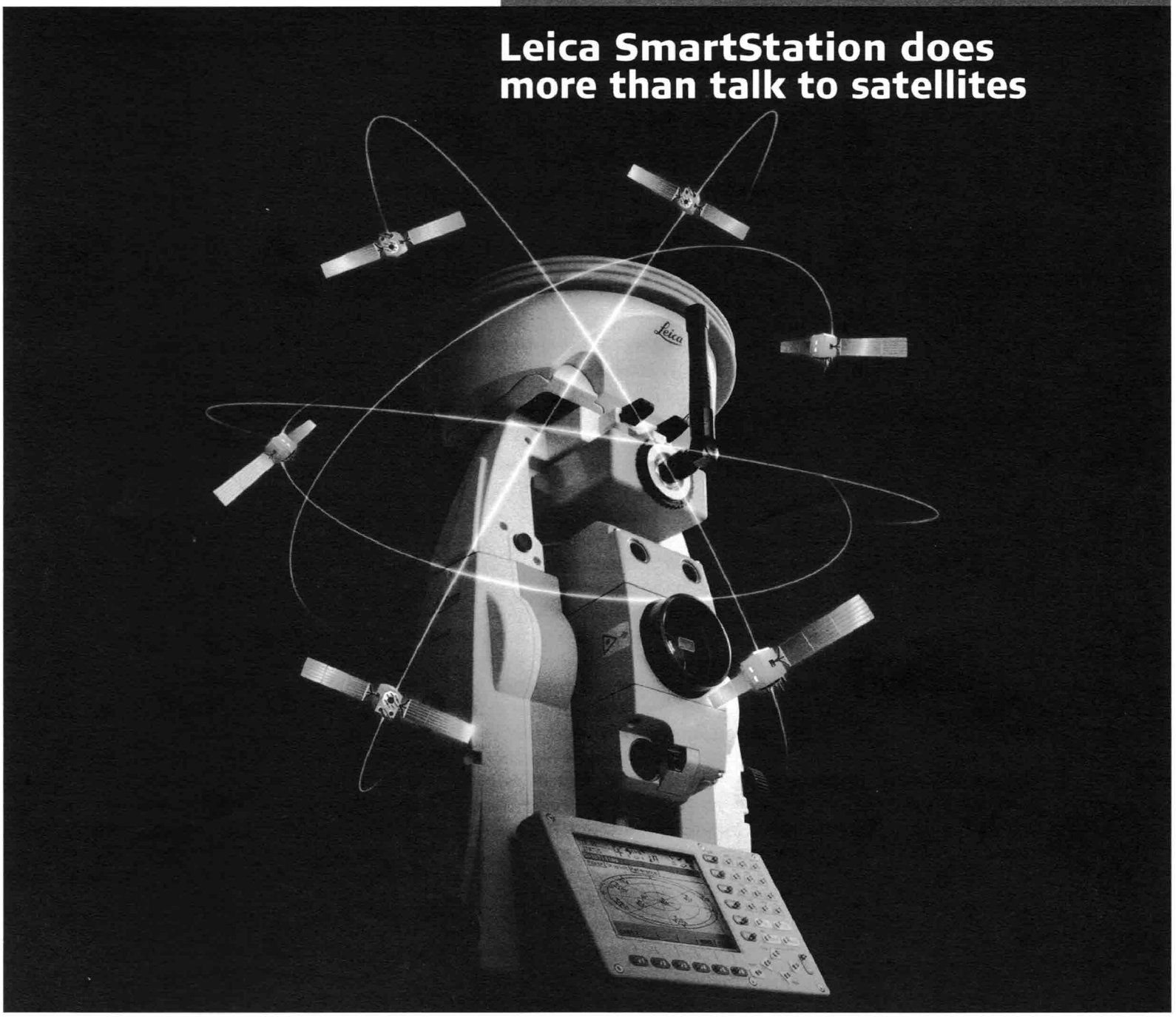

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SRD MANAGER'S REPORT

by Gerry Bourbonniere, NSLS

During the period January 1 to June 30, 2005, 225 more plans were submitted to SRD than in the same period in 2004. This increase appears to support the comment continually heard in the office this year that all surveyors are busy.

It has been suggested that I clarify to the members the time requirements for submissions. This suggestion was made by a member after it was explained that site inspections or reviews have been performed on early versions of plans which were later revised for whatever reasons. Has anyone made changes to a plan at the request of the approving authorities prior to the plan receiving approval? Did I hear it said that this never happens? Generally, if the first version was sent to SRD, a copy of the revised plan is not received.

As stipulated by Regulation 94(3), plans of retracement surveys and Surveyor's Location Certificates are to be submitted within 30 days of being signed. However, plans which are used for subdivision purposes do not have to be submitted until 30 days **after final approval** for the subdivision is received. Although the latter may create some administrative work for the members, it would be appreciated if this procedure is followed.

Scale Factor

In his report in this issue of the "Surveyor", Executive Director, Fred, comments on the apparent increasing use of GPS technology by the members. As required by the regulations, it is noted on plans if "scale factor" has been applied and if so, the value used. There is an increasing number of plans which state GPS technology was used, show a tie of upwards of 20,000 feet to a Nova Scotia Coordinate Monument and state "no scale factor applied". My knowledge of GPS is certainly limited and my personal use is nil. However, my general understanding is the coordinate values obtained by the use of GPS are on the "grid". I have discussed this with a member who has extensive knowledge and personal use of the technology. He concurs that the derived coordinates are on the "grid" and distances between GPS coordinates are "grid" distances. This being correct, I suggest that scale factor is included in the observations made with GPS and is applied to the coordinate tie within the observations.

Is the statement "no scale factor applied" somewhat erroneous? I suggest that GPS is used to bring control to the site, standard survey methods (perhaps combined with GPS) are used on site and it is to the conventional measurements which this statement applies.

I have had discussions with some members who wish to convert the coordinate tie based on GPS observations to "ground level" by applying scale factor. Does this make the statement "no scale factor applied" correct? Perhaps, if the intent is only to show all measurements as "ground" distances. But, would not scale factor be applied in the survey, albeit in reverse. Further, at least one member normally qualifies his long coordinate tie as "Grid". Generally, he also states "scale factor not applied". It is my belief

that this member is identifying two types of measurements shown on his plan. The coordinate tie is "grid" and the measurements relating to the site itself are measured (possibly adjusted) but no scale factor has been applied to them.

I suggest these examples support my limited perception of GPS observations and, with my comments, provide the members with something to consider. I am certainly open to suggestions and comments from those more informed than myself.

Title Blocks

A reminder of Regulations 62(b) and 62(c) re the requirements in title blocks.

(b) "the name(s) of the present or recent owner(s) of the parcel under survey."

I suggest this does not include the name of a **possible future owner** of the property as may be indicated by "under conveyance to ..." in the title block.

(c) the location of the parcel under survey in terms of **street**, city, county and province or **highway**, district, county and province ..."

There is a tendency to **omit the street name or highway reference** in title blocks.

Areas

There is an increasing trend to show on plans the areas of parcels to one tenth (0.1) of a square foot (and also one hundredth (0.01) of a square foot). Both of these, even for parcels with natural boundaries or in some cases where it is stated the parcel was not surveyed, are shown to decimal units. Regulation 60(l) dictates the requirements for areas of parcels under survey. Areas for parcels with natural boundaries are not to be "shown with greater apparent accuracy than can be obtained from the field data".

I suggest that areas of parcels which include natural boundaries should not be shown even to 1 square foot (or 1 square metre). How accurately was the **entire** boundary located? Make the decision on the accuracy to report (5?, 10?, 25? square feet/metres) based on the survey, but qualify it with more or less (±).

The area of mathematically complete parcels should be shown to one square foot. However, if the plan is in metric measure, by Regulation 60(l) the area of these parcels is to be shown to the nearest 0.1 square metre. One may interpret this regulation as requiring the area in imperial measure to also be shown to the nearest 0.1 square foot. I suggest that this is somewhat impractical given the accepted closure requirement of 1:5000 plus 30 millimetres.

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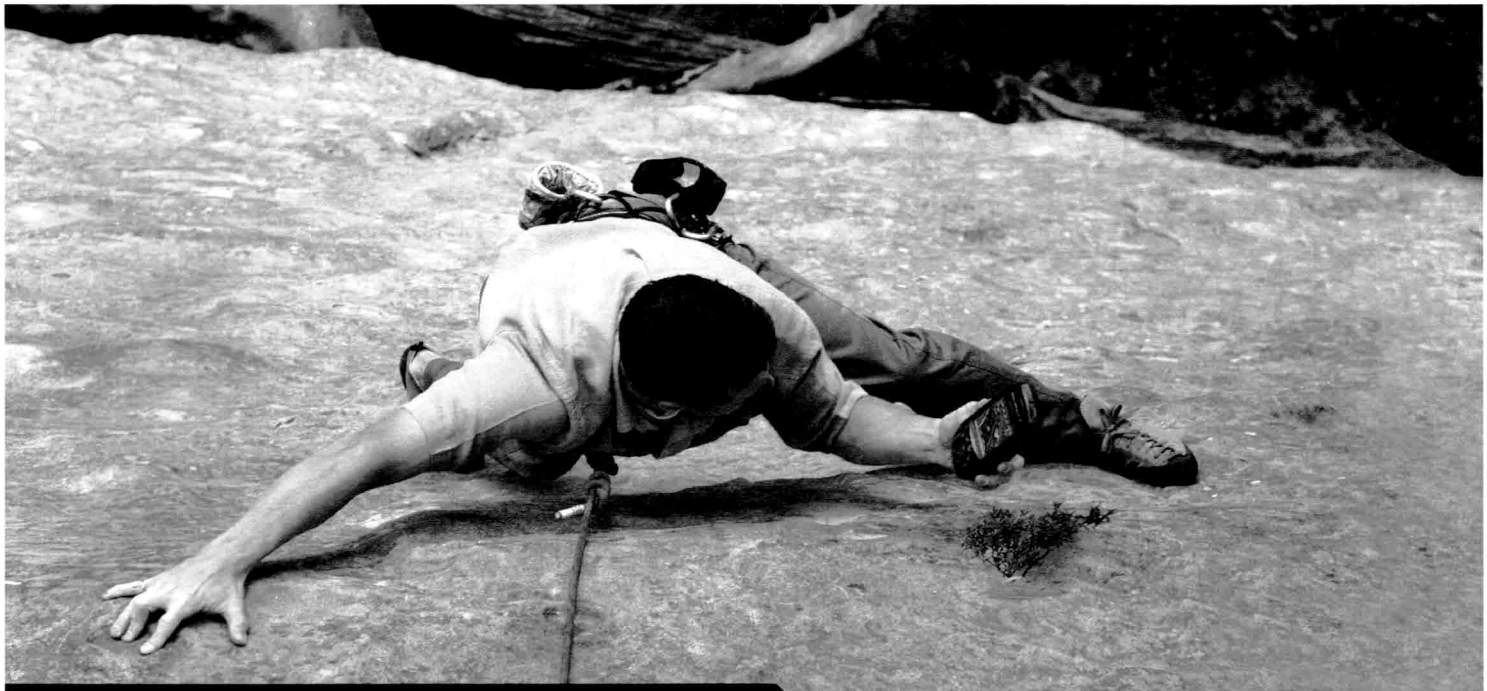
THALES



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CCLS Working for You

Ray Pottier, NSLS - CCLS Director

Over the past year and a half that I have been representing the Association of Nova Scotia Land Surveyors as CCLS Director I have been asked a number of times what the Canadian Council of Land Surveyors (CCLS) does for our Association or for individual members. It is certainly a valid question. The quick answer is that the CCLS does a lot for us and we get great value for our money.

On the home page of the CCLS website the first two paragraphs describe what the CCLS is and what the CCLS objectives are.

"The Canadian Council of Land Surveyors (CCLS) is a federation of ten provincial and one federal associations representing the disciplines of cadastral, geodetic, hydrographic and photogrammetric surveying, and land information management."

"CCLS is a national consensus based enabling forum providing proactive leadership to its member associations. Its prime objectives are to provide national strategies, and national/international representation within the geomatics profession."

In order to meet the above stated objectives the CCLS oversees a number of committees and initiatives dealing with specific issues of interest or concern to our member associations.

The following is a brief description of a few of the initiatives and committees currently being worked on by the CCLS.

Board of Examiners Coordinating Committee

As part if its duties this committee administers the National Accreditation Program and assesses Canadian Baccalaureate Degree programs in surveying every 5 years.

Distance Learning Committee

This committee is charged with developing a distance learning mechanism for Canadian land surveyors and the work is ongoing. This initiative is important to our Association members in view of our fledgling mandatory continuing education program.

Expanded Profession Task Force

A newly formed committee looking into the possibility of including other geomatics professionals in our provincial associations. Expanded profession was a topic that surfaced in our strategic planning sessions the 2004 AGM.

International Committee

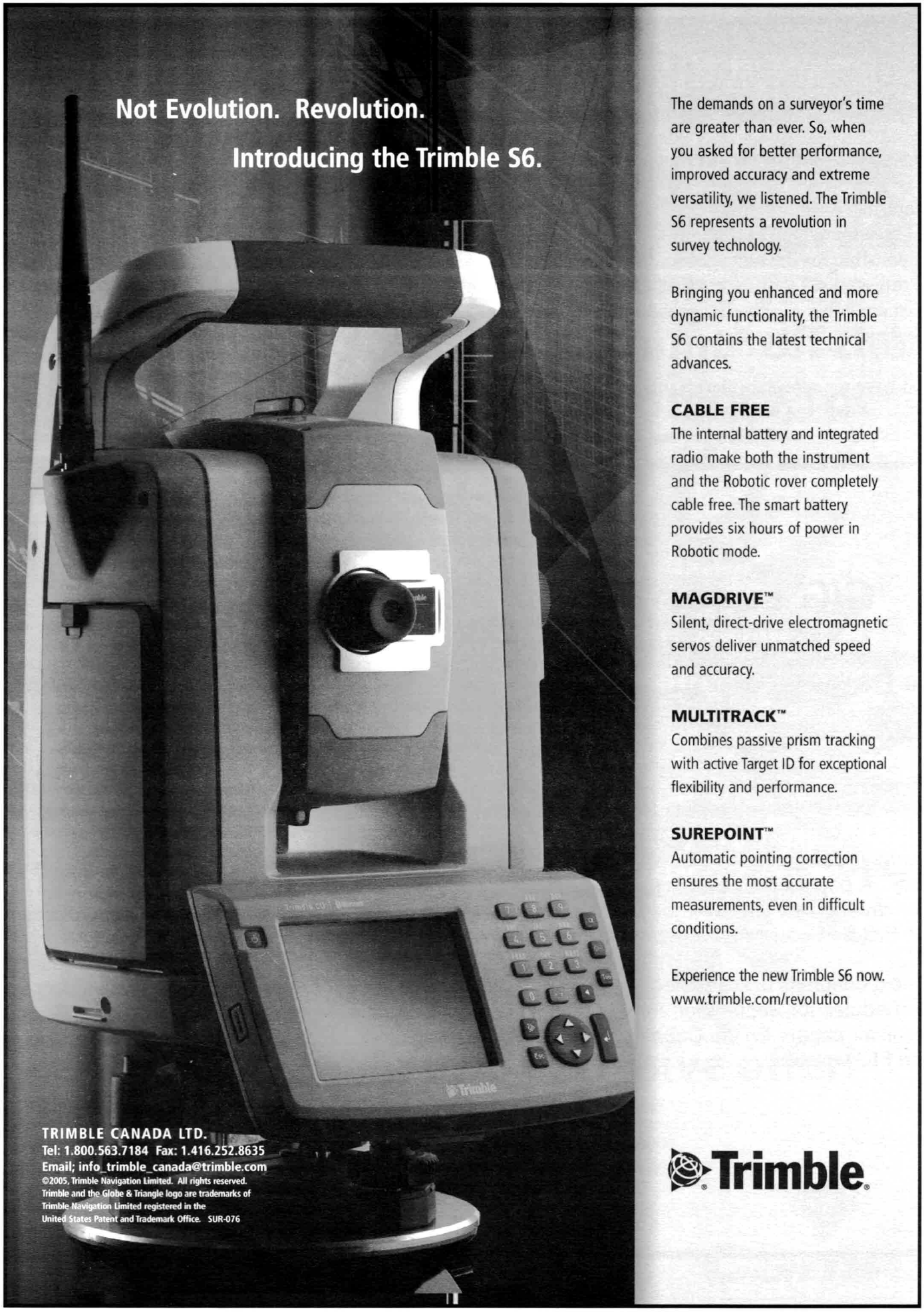
The International Committee has represented the CCLS and has been responsible for negotiating a Mutual Recognition Document under the North American Free Trade Agreement (NAFTA) with national representative organizations of Mexico (FECITEUM A.C.) and the United States of America (NSPS).

Labour Mobility Initiative

The Labour Mobility Initiative was administered by the CCLS and enabled the eleven surveyors associations to negotiate a Memorandum of Understanding under the Labour Mobility Chapter of the Agreement on Internal Trade which had been signed by Provincial and Territorial Governments in 1996.

National Forum on Entry into the Profession

This forum was held in Winnipeg in March of 2004 and the National Forum Committee continues to work on addressing the six resolutions outlined in the



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National Forum Final Report and agreed to in principle by the ANSLS Council.

Professional Liability Insurance Committee

Perhaps the most important committee of the CCLS for a large number of our members. The committee is responsible for the management and direction of the Professional Liability Insurance Program as well as a number of other responsibilities outlined in the Terms of Reference.

If you have a particular interest in a specific issue or would like to be involved at the committee level, please contact me through the Association office the CCLS office or a current committee member. We are always pleased to explain our work to interested parties and we welcome input and participation.

The CCLS website (www.ccls-ccag.ca) contains more complete information about our above initiatives and committees as well as contact information for directors and committee members.

CIG Loses Bid for FIG Congress in 2010

G.K. Allred

At the FIG Working Week in Cairo, Egypt, Sydney, Australia was chosen as the site for the 2010 FIG Congress. The Congress is tentatively schedule for April - May 2010. Edmonton, Canada and Vienna, Austria were also contenders for the 2010 Congress.

Andrew Leyzack of Burlington, Ontario was elected as chair-elect of Commission 4 - Hydrography. Andrew will take over as Chair of Commission 4 after the next congress in Munich in October 2006.

Seventeen delegates from Canada attended the working week in Cairo, presenting a total of twenty papers. A paper entitled *After the Tsunami – How the Surveying Profession Can Participate in the Reconstruction*, by Daniel Roberge of Quebec City was chosen as paper of the month and published in the FIG e-newsletter. All papers are available on the FIG website. <www.fig.net>

The next congress is scheduled for Munich, Germany on October 6-13, 2006. Regional conferences are scheduled for September 26-29, 2005 in Havana, Cuba and March 9-12, 2006 in Accra, Ghana. The call for papers for the Cuba conference closes on May 31, 2005. Further information is available on the FIG website.

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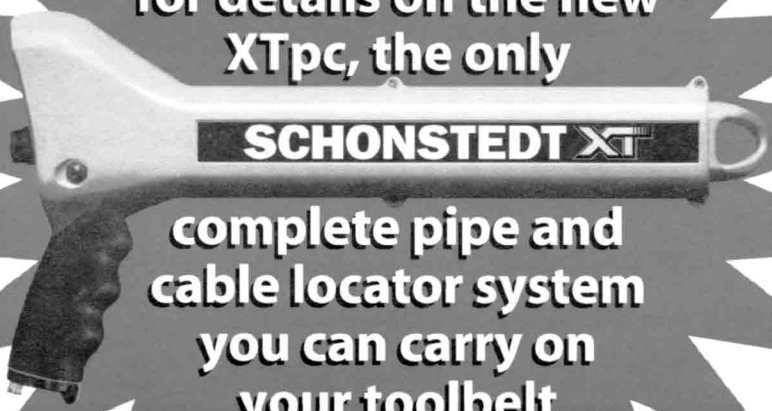

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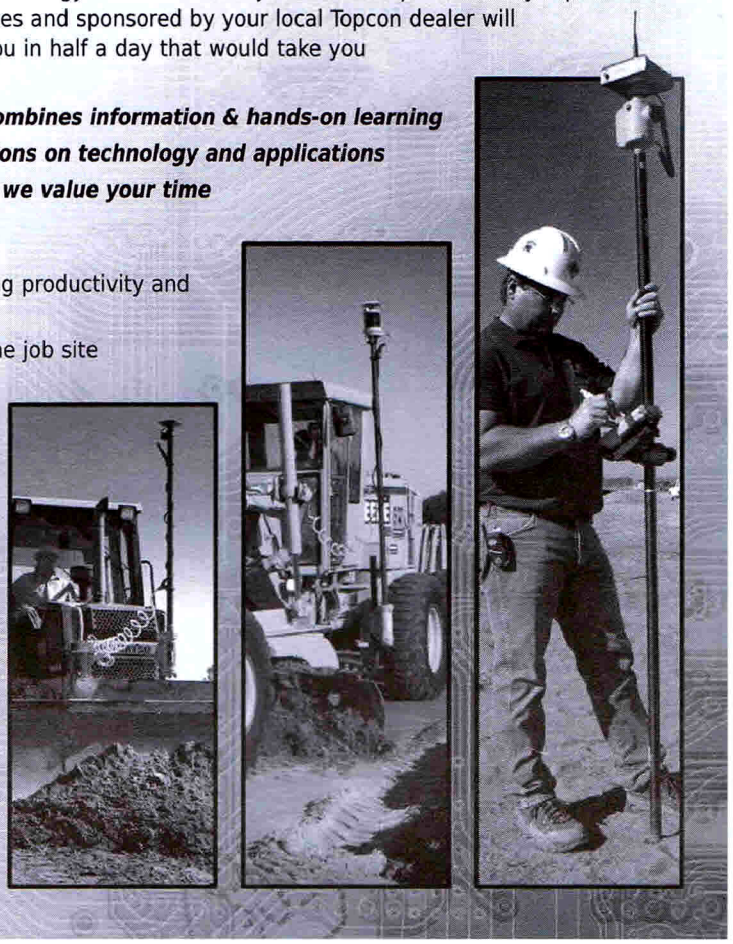

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Antarctic Hydrographic Survey led by Canadian

by John Cunningham, NSLS (Ret'd), CLS

During the winter of 2004, I spent my vacation as NIWA's (New Zealand's National Institute of Water and Atmospheric Research Ltd.) "Surveyor-In-Charge" for a hydrographic survey being conducted in the Western Ross Sea of the Antarctic, for the

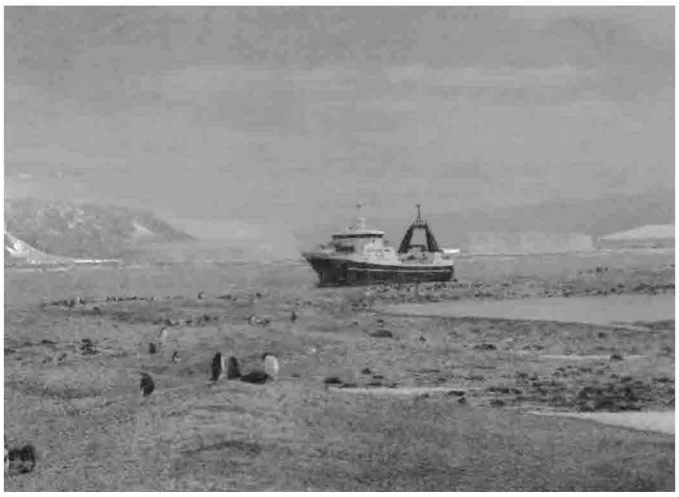
Hydrographic surveyor John Cunningham on the deck of the *Tangaroa*. The large basaltic rock jutting out is Faveau Pillar, with Foyn Island and Bull Island Behind.

purpose of making new and modern navigational charts for the area. The deep water research vessel *Tangaroa* departed Wellington, NZ on Jan. 27th. The *Tangaroa* is a Norwegian built stern trawler having a length of 70m, beam of 14m and draft of 7.5m. She is equipped with Simrad EM300 and EM3000D multibeam echo sounders and a POS/MV 320 motion sensor. We arrived at Cape Adare on Feb. 3rd after a long and moderately comfortable steam across the Great Southern Ocean. The average air temperature was –2c with an average seawater temperature of –1.2c. Seawater in this part of the world freezes at about –1.6c. During the most southerly part of our survey the seawater temperature reached -1.5c and the Captain decided to head further north and not risk the poor visibility conditions when car sized "bergy" bits may be indistinguishable from the newly frozen ice surface and be a hazard to the ship.

The survey was constantly changing areas due to the presence of many gigantic floating tabular icebergs that measured at 55-65m above water with a few being 110m high. Many icebergs were grounded and had been since at least 2001 when the *Tangaroa* was there last.

One highlight of the trip was seeing the huts at Cape Adare built by the first humans to have spent the winter in the Antarctic in 1899. For me the biggest highlight of the trip was going ashore at Possession Island, an Adelie penguin rookery of some 20,000. We arrived sometime after the rearing period of the penguin chicks and there were less than 2,000 penguins left. They are beautiful with their coal black and snow white feathers.

Two storms disrupted the survey. The first lasted 4 days with average winds from the south at 45-50 knots, and with no shelter we simply had to ride it out. The second also lasted 4 days, but this time we ran for the shelter of Protection Cove. The southerly winds exceeded 90 knots and the anemometer (wind speed meter) was blown to pieces during this second storm.



The *Tangaroa* surveying the beach of Possession Island, An Adelie penguin rookery, and the awe-inspiring Antarctic continent behind.

Running in parallel with the hydrographic survey was a biodiversity survey for the Ministry of Fisheries, which included scientists from Italy, Germany, Britain, and New Zealand. The hydrographic team was composed of hydrographic surveyors from the UK, Australia, New Zealand, and myself the sole Canadian/North American on board. The total ship's compliment numbered 43 including an ice pilot from South Africa.

The multibeam sonar technology used on the *Tangaroa* will be the same that we use off the east

coast of Canada in pursuit of our UNCLOS (United Nations Conference on the Law of the Sea) extended continental shelf claim.

The worst day of the trip occurred on March 8th while in transit back to Wellington, when during southwesterly winds of 45 knots the combined sea and swell were recorded at a maximum of 12 meters. These huge seas only lasted about 6 hours. The *Tangaroa* safely reached Wellington on March 13th.

The survey returns were completed on April 29th and delivered to LINZ (Land Information New Zealand).

John Cunningham is a Hydrographic Surveyor, Maritime Region and is currently part of the DFO/NRCAN UNCLOS Continental Shelf Project Team.

2004 Surveyor of the Year Raymond V. Pottier, NSLS

President Jeff Fee (left) presents the Surveyor of the Year award to Ray Pottier

On October 16, 2004, President Jeff Fee had the pleasure of presenting the "Surveyor of the Year" award to Ray Pottier, NSLS. The award is given to an individual who has demonstrated a strong commitment to community service and Association affairs.

Ray Pottier received has early survey training at the Centre of Geographic Sciences (COGS) from 1977-79 and was commissioned as a Nova Scotia Land Surveyor in 1985. In 1996 he became a Regional Crown Land Surveyor with the Department of Natural Resources, a position he still holds today.

Prior to that, his career took him to countries that most of us only read about. He has worked in the Beaufort Sea area positioning drill ships and collecting hydrographic data. In 1981-82 he was employed as a party chief on a hydrographic survey of the Nile River in Egypt. Following that, he was involved with navigation and positioning for oil exploration on the continental shelf off Eastern Canada and undersea cable surveys from Newfoundland to New Jersey.

Ray has also worked on projects in Hudson's Bay and the Great Lakes regions of Canada, in the counties of Haiti, Trinidad, Angola, Brazil and Australia. He was also a project manager on the Northumberland Strait Fixed Link Project. From 1993-96 he was self-employed as a land surveyor in rural Nova Scotia cutting boundary lines and staking lots but he also continued to provide high-tech services to former associates.

Being fluent in French and English aided Ray in his position as President of the Pottier Family Association and in organizing a Family Reunion for the 2004 Acadian World Congress. He has been a frequent speaker at COGS, community events and Association seminars. For more than 10 years he has been a member of the Knights of Columbus. Ray has served two terms as ANSLS Councillor for Zone 1. He has also served as Convention Chairman for several of our annual general meetings and has assisted with other meetings over the years. He currently represents Nova Scotia on the Board of Directors for the Canadian Council of Land Surveyors.

If you plan to talk to Ray about his career and surveying you should first read up on coordinate transformations, GPS, hydrography, continental drift and have a map of the world close by as a reference. Congratulations Ray!

THE THREE C'S OF CONSTRUCTION LAYOUT (NOT JUST CHECK, CHECK, CHECK)

BY PAUL J. GREGOIRE, OLS, CLS

AS SEEN IN "THE ONTARIO LAND SURVEYOR", WINTER 2005

One of the functions of the AOLS members who serve on the Insurance Advisory Committee is to assist the insurance adjuster in survey matters relating to an insurance claim or a potential claim made by a policyholder. On most occasions the events or survey activity giving rise to the claim are fairly straightforward, on other occasions a more detailed review of the project activity is required.

A review of a number of the claims made over the past few years would reveal that there are numerous ways (some would say an endless number) in which the surveyor finds himself party to a claim. Some claims do not result in damages and are reported due to an over abundance of caution, other claims can be resolved by mutual agreement between all of the parties involved, and still others lead to litigation and result in payment of damages.

The following article attempts to outline some of the survey practices, which if followed, may help reduce the surveyor's exposure to risk and potential liability claims. A majority of these best practices are most relevant to our field staff, who are the eyes and ears of the surveyor on each project. Some of the practices are relevant to the computations staff or the project manager and/ or the project surveyor. The survey practices are grouped into one of three categories. A detailed look at each of these categories will help the surveyor identify the scope of work that is to be contracted. It will help to identify potential risks and will assist in preparing a successful plan to complete the work in an efficient and cost effective manner.

* Communication issues
* Contractual issues
* Computations issues

(1) Communication Issues

What are the client's requirements and specifications/tolerances, i.e. building corners, gridlines, offsets, temporary benchmark locations?

What are the client's critical timelines for project start-up?

What are the existing site conditions, i.e. can a crew work safely on site or is there construction activity ongoing, such as earthworks or the installation of services that will affect your work? Familiarity with the site prior to providing a written quotation is essential - don't take the word of someone who may not have personally been on the site or who provides general information, which you rely on to make assumptions. Go visit the site prior to preparing a fee estimate.

Determine what the future work schedule is going to be – can a crew lay out all key points in one or two days or do they need to return to the site twice a week for the next month as excavation progresses, i.e. caisson layout. (This has a big impact on pricing the work).

Has the client provided a set of drawings that are stamped "Issued for Construction" and has the client provided you with a clear understanding of his expectations on which you are to base the fee estimate.

Ensure that you understand the work schedule so that you have enough time to prepare for upcoming project requirements and are not rushed into providing layout before all the initial prep work has been completed.

When issuing survey returns to the client (or third parties), which include data derived from other sources, be sure to include a disclaimer note on the plan indicating the source of the data and that you provide no assurances as to it's correctness and accept no responsibility for it's use. Provide a similar disclaimer for topographic surveys conducted during winter conditions.

(2) Contractual Issues

Provide a written estimate or quote so that you can obtain proper work authorization for the survey layout work to be undertaken. This can be in the form of a sign back, a purchase order, etc. Include a defined scope of work, an identified work schedule and an agreed upon compensation (lump sum or hourly rates) prior to commencing work. It's a good idea to specify that you require advanced notice prior to sending a crew to the site, you may not always be able to prevent rush requests for urgent layout but it gives you an out if you need some lead time prior to attending on site.

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Obtain written authorization for additional survey work, i.e. a sign back letter of authorization or client purchase order. Ensure that the party chief does not undertake work that was not scheduled or approved for layout that day, i.e. don't let the site super redirect the crew's activity to do extras that were not planned nor approved.

Identify who is responsible for work that has to be redone due to design changes or construction activity. This can be minimized by ensuring that you only work from drawings that have been "issued for construction."

Document each survey milestone as well as each change order including telephone/fax/Email correspondence with the client, the site superintendent and each of the other consultants from whom you have received data or who have issued instructions to you.

(3) Computations Issues

Review the approved site drawing to ensure that building and site dimensions work, i.e. that the building closes and the site dimensions agree with the boundary survey.

Pre-compute site boundary geometry and position the building to ensure setbacks comply with minimum requirements and the approved site plan.

Compute grid line positions relative to the building face and position caisson locations relative to grid intersections.

Establish horizontal and vertical control stations on site and reference these points for future re-establishment. Level loops are to be closed, reduced and double-checked at the time of field observation.

Integrate cadastral fabric to horizontal control if applicable.

Compute layout data for the field crew by preparing a coordinate list and/or polar layout for all points from each control station.

Upon completion of layout, the field crew must provide confirmation of what was laid out by preparing a sketch for the site supervisor. The sketch must clearly indicate offsets used and illustrate the location of the site's temporary benchmark(s).

Complete an office review of all layout performed by the field crew after each field trip. Check the notes to ensure that redundant measurements have been taken and that closures have been calculated and checked by the crew while on site (i.e. level loops).

General Do's & Don't's

Do not accept a digital file from the client or his consultant for layout purposes without getting the hardcopy version of the site plan marked "Issued for Construction."

Do not accept a site benchmark from another source without first verifying the elevation by levelling to an independent municipal benchmark.

Do not accept the contractor's layout points for layout without proper verification.

Do not accept revised site drawings for layout purposes without first verifying in the office that all new values work.

Do not work from a set of drawings that are only available in the site trailer.

Do not issue or provide benchmark information to a third party in the field.

Use published dimensions only – do not scale drawings or interrogate digital files for dimensions without proper checks.

Issue a sketch illustrating the building, gridlines, property boundaries, etc. with final computed dimensions to the architect to get confirmation that the siting is correct prior to field layout.

Ensure all points that are laid out have redundant ties or check measurements to eliminate blunders.

Elevations for temporary benchmarks must be derived from at least two municipal benchmarks.

Confirm the source of the vertical datum of the drawings and establish a minimum of **two** temporary benchmarks (TBM) in close proximity to the site.

Run a level loop through the site control (turning on each control point) and close on to a second municipal benchmark (ensures an independent, redundant check).

Do not establish temporary benchmarks on objects that can move (including survey monuments, fire hydrants, utility pads, posts and poles) but instead use things that are stable, i.e. the finished floor slab of an adjoining building, a spike in a tree that is outside the construction area.

Finally, review all of the layout prior to allowing the contractor to use it – it's your last chance to check, check, check.

The points raised in this article will hopefully serve as a

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reminder to all survey staff about the importance of proper planning and field procedures as well as the need to institute proper quality control and quality assurance in our daily survey practices. By following these good practice guidelines, our clients will be well served and the chances of being involved in an insurance claim will be minimized.

.....

Paul Gregoire, OLS, CLS, is an Associate Partner at Marshall Macklin Monaghan Limited. He can be reached by email at gregoirp@mmm.ca.

News from the Side of the Road ...

- Kevin Fogarty, # 660, is now self-employed with Fogarty Surveying.
- Gerald Eisnor, # 525, has resigned his commission.
- Valerie George, # 587, is acting the acting Manager for the Bridgewater and Pictou LIS offices and has built a new home in Antigonish.
- Frank Gillis, # 599, is currently doing contract surveying in Western Canada.
- Richard Green, # 387, has moved to retired membership status.
- Mervin Hartlen, # 365, has resigned his commission.
- David Himmelman, # 500, has moved to retired membership status.
- Peter Lohnes, # 556, has moved to retired membership status.
- Clive MacKeen, # 511, is now employed full-time in Alberta.
- Wayne Mailman, # 589, is now self-employed as a title searcher.
- Paul Slaunwhite, # 607, has retired from S D M & M.
- Bruce Turner, # 482, has resigned his membership.
- Erwin Turner, # 431, has moved to retired membership status.
- Ed Weaver, # 574, has moved to retired membership status.
- Brian Cameron, # 358, has resigned his commission.
- Allan Chisholm, # 605, is now employed with the NS Dept. of Transportation and Public Works.
- Ernest Boehk, # 66, has moved to retired status.

CREATIVE THINKING

by Bob Daniels, NSLS, CLS

From time to time most surveyors have been reviewing field notes prepared by the field crews and have been less than happy with the neatness, completeness or accuracy of the data. As a result, they may mutter to themselves "what were those guys thinking" or for that matter were they thinking at all.

I have always been of the opinion that anyone who can use the latest electronic survey equipment efficiently, carry out a survey in the field with minimum instruction and work in the most adverse conditions and weather must be intelligent, resourceful and thinking all the time. This was demonstrated to me recently by one of our survey crews.

Our company was carrying out a large topographic and hydrographic survey over an environmentally sensitive area. Part of the site was covered by water and there were areas of mud flats along the water's edge. Our staff was instructed not to venture onto the mud flats for both safety and environmental reasons.

With all of the topographic data gathered, with the exception of the area of the mud flats, our crew gave some thought to how they would get the remaining data. They decided that they would try and get measurements with the reflector-less total station. However, the mud was too dark and the angle too flat to get reliable measurements. As they were peering through the total station, a seagull wandered into the field of view and stopped to enjoy the afternoon sun.

Somewhat frustrated with not being able to get a measurement to the mud, they decided to take a close-up look at the seagull. To their amazement they were staring at a brilliant white, almost flat surface -- the seagull's breast. A press of the distance button resulted in a precise measurement. What luck, the mud flats were dotted with seagulls, numerous walking targets wandering aimlessly back and forth over the inaccessible area.

For the rest of the afternoon they scanned the mud flats taking measurements to various seagulls. To ensure adequate coverage, they would walk around the perimeter of the mud flats causing the seagulls to scurry from one area to another. Using a target height of 0.5 feet as the average height of the seagull above the ground, the survey was completed.

Very clever if you ask me.

.....

Mr. Daniels is a Nova Scotia Land Surveyor and a Canada Lands Surveyor. He is employed in private practice and monitors the link "Ask a Surveyor" at www.sdmm.ns.ca

2005 COGS Award Winners

This year's recipients of the prizes awarded annually by ANSLS to deserving students at COGS are:

G.T. BATES SCHOLARSHIP
For attaining highest standing
in the
Survey Technician Program
was awarded to
PETER J. WOODYER

J.E.R. MARCH PRIZE
For best kept field book
in the
Survey Technician Program
was awarded to
RICARDO A. VALAZQUEZ

J.A.H. CHURCH PRIZE
For showing the most
progress in the
Survey Technician Program
was awarded to
JOSHUA K. COCHRANE

Congratulations!

Preserving Our Self-Governance

by Bill Buck, P.Eng, OLS, CLS, Registrar

One of the most common complaints we encounter from the public is that a surveyor, or an employee of a surveyor has entered onto someone's property without permission. Often the caller will complain that the person was belligerent and simply told them they have the right to be there, or flashed them an old copy of Section 6 of the *Surveys Act*. Our right to entry privilege astounds most people and even the police often do not recognize this right. The unfortunate thing about such incidents is that they damage the reputation of our Association and all Ontario Land Surveyors. Most of us have heard it said that on average a single dissatisfied customer will tell nine other customers about their dissatisfaction with a company. The same thing may be applied to the public's perception of surveyors.

Recently I attended a conference entitled "The Art & Science of Regulation." One of the speakers, John Carlisle, who is both a doctor and a lawyer, pointed out that Canada is almost the last country in the world to have self-regulated professions. He stated that the idea of self-regulation is "counterintuitive," and one has only to look at recent recommendations that police forces should not be investigating themselves to realize that this suggestion may be applicable to all self-regulating bodies. If we want to maintain our status, we must make every effort to maintain the public's trust. To do this, we must maintain a very open agenda, putting the public trust first and measuring everything we do against that. We must ask ourselves whether members of the public will be able to understand how what we do, that is, the way we govern ourselves, is in their best interest.

Dr. Carlisle posed the following questions:

1. How many "imposters" are there practising out there without a licence from your association? (Not zero was his suggestion)
2. How many members are carrying on dishonest or unscrupulous schemes that you don't know about? (Also not zero)
3. Are those members who practice under restrictions or conditions complying with them?
4. Do you have a reliable method of detecting clusters and patterns in your complaints stream? Do you look for them? (How will you explain?)
5. Can you explain the public benefit of being the only group of professions left who do not require public reporting of misconduct and/or incompetence?
6. Do you have an annual public meeting at which questions and deputations from all interests are received?
7. Are complainants an irritant to be managed or the lifeblood of our chance to maintain the standards of our profession?

Although some of these questions may not apply as directly to our Association as they do to others, they are still food for thought. If, as the *Surveyors Act* states, our principal object is to ensure that the public interest is served and protected, we have to examine all of our processes from that perspective. Interestingly, I received a call recently from someone who was very upset that, in her words, an "unshaven and unwashed" looking individual had jumped the fence from her neighbour's yard into hers, and jumped back again when confronted. She had already called the police, who of course told her that no one had the right to trespass on her property. I was able to explain our 'Right of Entry," but I also explained the Association policy regarding notification, identification, and so on. She asked my why this information wasn't available on our website. This was a good question to which I had no good answer. It is there now.

That same day, I received a call from another unhappy customer. He asked me whether his surveyor could refuse to show him his complete file on his survey. "Why," he asked, "are his lawyer and his doctor required to show him their files while our members are not?" He went on to ask about our complaints process. "Who sits on the Complaints Committee," he asked? When I explained that there were five Ontario Land Surveyors and one Lay Councillor, he replied "Oh. Pretty stacked isn't it? How many complaints do you get in a year, and how many result in discipline? Oh, you mean only one or two result in discipline? Sounds like you are protecting your members, not the public."

These are typical of calls that we get on a regular basis, and if we can put ourselves in the position of these callers, we may gain a better understanding of what we have to do to cultivate and maintain the public's trust in us. As Dr. Carlisle repeated several times during his presentation, "What are you going to say to the W5 reporters when they ask you how your

actions protected the public interest?"

After I wrote the draft of this article the front-page story in the weekend Toronto Star focused on a doctor who, in spite of being found incompetent, was allowed by the College of Physicians and Surgeons to continue practicing, albeit under supervision. He now faces additional charges of incompetence relating to some 40 new patients. The article contended that the College was not protecting the public and that ministerial intervention was required. The reporter's suggestions included making all complaints public, imposing harsher discipline penalties and tying practice privileges to performance. This type of adverse publicity can influence government policy, which may inevitably lead to changes in the self-governance model of all professions. It is quite possible that, if enough people complain to their MPP that some surveyor hopped the fence into their backyard, we will have a fight on our hands to maintain our right-of-entry privilege. Given the public's growing awareness and perceptions of self-regulation it is also more than likely that we will be forced to publish all complaints and discipline decisions publicly.

One of my father's favourite sayings (I know this from having heard it several hundred times) is, "Nothing stays the same." We need to look at all of our processes through the eyes of the public and be prepared when W5, or the government, comes knocking at the door.

Note: A follow-up article was printed in the Toronto Star one week after the original article. It reported that a six-member council has been appointed by the Province to study the legislation governing the complaints and discipline process for all 21 colleges that regulate health professionals, and make recommendations by March 2006. Will the rest of us be far behind?

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Reprinted with permission from *"The Ontario Professional Surveyor", Summer 2005.*

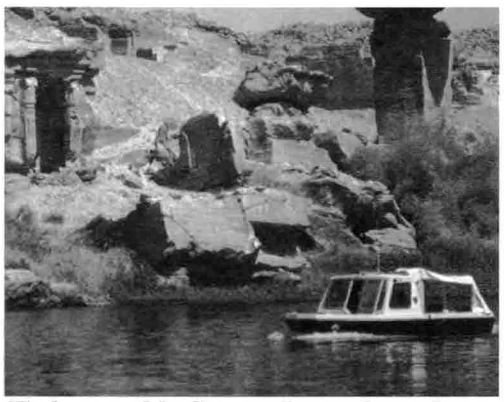
Nile River Hydrographic Survey: A World Away and a Generation Past

Raymond V. Pottier, NSLS

Early in the spring of 1981, just two years after my graduation from the Centre of Geographic Sciences, I received a call from Kenting Earth Sciences Limited in Ottawa. I was offered a job as survey technician on the Nile River Hydrographic Survey, a project that would turn out to be, for me at least, a job of a lifetime. While working with Kenting in the Beaufort Sea a few years before I had gained some experience in hydrographic surveys and the survey technician job I was hired for soon turned into a hydrographic crew leader's assignment.

As survey projects go this one was nothing short of huge. It would take months of preparation before we even left Canada and the survey team I joined in Egypt would spend over two years completing the project. During the startup phase at Kenting's Ottawa office, in between getting all the required immunization injections, I was recruited to write some small bits of software that would be used in the navigation program as well as lend a hand in any other job that came along.

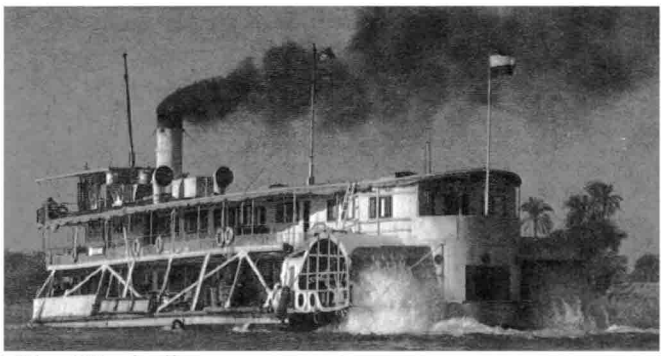
Even with preparations for the hydrographic survey far from complete in Ottawa, the first survey parties left for Egypt to start work. The first part of the project was to survey a third order control network along the Nile River with survey marker locations that coincided with the required location for the radio navigation transponders we would later use on the hydrographic survey. Each survey crew used a Wild T2, a Wild DI-4 Distomat, and a Roelof's Prism (fairly high tech for the early 1980's). Now, surveying a third order network in the desert sounds fairly easy but as it turns out, it is almost never cloudy in Egypt and the summer temperatures hover around the 40° C mark most days. Scorching temperatures notwith-standing,



Hydrographic Survey Launch on the Nile

by late July when the hydrographic survey crews were finally ready to start sounding, the control survey crews were far enough ahead that the hydrographic survey would not catch up.

The second part of the survey was the actual water depth data collection. The two hydrographic survey crews were equipped with, what was then, the absolute state of the art equipment on two brand new diesel powered jet boats. The suite of survey equipment included an Atlas Deso 20 dual frequency digital depth sounder, a Del Norte 540 Trisponder microwave radio navigation system, an HP Printer, and a navigation display for the helmsman all



The "Karim"

integrated by an HP 9826 desktop computer with a whopping 24K of internal memory. The hydrographic survey proceeded on predetermined survey lines spaced about 200 metres apart on most of the river and about 20 metres apart in more densely populated areas.

The hydrographic survey crews were housed on the "Karim", an old steam driven sternwheeler that once belonged to the Egyptian Royal Family. The "Karim" was the perfect hydrographic survey office since it could easily move along the river as the survey progressed.

The third part of the project included data analysis, data processing, and preliminary plotting tasks. The data were subjected to rigorous quality control checks, plotted and then hand contoured. All this was also done in the hydrographic survey office aboard the "Karim" which allowed the hydrographic surveyors to have a hand in the quality control process. The digital data and the quality control plots were sent back to Canada where the final maps were made. The maps were then sent back to Egypt for client approval.

As I consider this project in the context of the equipment we have available to us today, it appears that it would still be a daunting task. The third order control network would no longer be required since the positioning task could easily be handled by RTK GPS with accuracies that could not even be imagined in the early 1980's. I imagine that the mapping would be done on some GIS platform instead of hard copy maps but all the remaining tasks would be substantially the same as they were then.

This project really turned out to be, as I wrote earlier, a job of a lifetime for me for a number of reasons. It was my first experience with international travel and gave me an appreciation for different people and cultures that has served me well over the years. I learned my first lessons in managing a survey crew of up to 35 people (both Egyptians and expatriate Canadians). The project eventually became the subject of a technical paper I wrote in partial fulfilment of the requirements for registration as a Nova Scotia Land Surveyor. I enjoyed exploring the country and meeting its people as few foreigners are ever permitted to experience. Egypt is so steeped in the history of civilization and of surveying that it still seems a bit unreal to me that I actually lived and worked there for almost an entire year.

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Editor's Note: Raymond Pottier is currently employed as a Crown Land Surveyor by the Nova Scotia Department of Natural Resources.

A little golf humour ...

I think I've finally figured the game out: if it goes right, it's a "slice." If it goes *left*, it's a "hook." And if it goes straight, it's a miracle!

A golfer hit his ball into a ravine. His buddies heard several 'whacks' until he finally got the ball out. One buddy asked, "How many strokes did it take you to get out of there?" He said, "three", but the friend said, "I heard seven." The golfer's reply was, "Four of them were echoes."

Surveyors are Key Members of the External Land Registration Advisory Group

Nancy Saunders, Acting Director - Registry 2000 Project

With the expert assistance of surveyors and lawyers, more than 42,000 of Nova Scotia's 540,000 land parcels have already been converted to the new land registration system which was implemented province-wide over the past two years. Despite the huge change that the new system has meant for real property professionals (e.g. surveyors, bankers, lawyers, Realtors, title searchers) and land registration office staff, the conversion process is running smoothly.

Notice for Zone Councillors

Contact Mark Coffin @ 424-7228
or
Nancy Saunders @ 424-5316
if you would like an update on Land Registration at your upcoming Zone meetings or a discussion on a related issue or topic.

In large part the successful implementation is due to the fact that Service Nova Scotia and Municipal Relations (SNSMR), is continuously receiving suggestions for improvement and streamlining to the procedures, forms and system functions, and has set up mechanisms to ensure that this feedback is carefully considered and changes are implemented where appropriate.

Surveyors are playing a key role in this feedback process, and sit as members of a special advisory group which meets monthly to review outstanding procedural issues. The External Land Registration Procedures Advisory Working Group (AWG) consists of representatives from SNSMR, the Nova Scotia Barristers' Society and the Association of Nova Scotia Land Surveyors (ANSLS). The surveyor members are: Andy DeCoste, Derik DeWolfe, Carl Hartlen and Peter Lohnes.

The function of the group is to provide fundamental input into land registration policy, procedures and system functionality as well as advise the government on proposed regulation and forms changes. The group also provides advice regarding business practice and operational issues and input into communications and LRA education matters.

Initially, the group was formed to deal with issues regarding procedures and forms and focused on issues that primarily affected lawyers. They discussed procedures for converting condominium units and defining the system functionality for submitting the Applications for Registration. In February 2005, the group expanded to include surveyor representatives from around the province. The input of surveyors is invaluable to the AWG as there are many issues that require their unique expertise.

Issues of Interest to Surveyors:

1. Defining what lawyers should / should not be permitted to do when compiling descriptions for the purposes of the Parcel Description Certification Application

   - Proposed regulations were drafted that attempted to put parameters around four areas of concern:
     a. *De facto* consolidations where the original parcels are not surveyed;
     b. Attempting to improve vague old descriptions by re-writing them;
     c. Creating a new description of remaining lands;
     d. Defining the extent of possessory title

for a portion of a parcel that is being claimed by adverse possession.

- The wording of the regulations was troublesome to the AWG members and did not define with certainty what we wanted to restrict, so the regulation was not put forward for consideration.

- Surveyor members of the AWG are working with the ANSLS Land Titles Committee on a re-draft of the regulation and will report to the AWG in an upcoming meeting.

2. Incomplete consolidations and related remedies:

   - Reviewed many scenarios and proposed remedies for each.

   - Currently compiling a reference resource document to increase efficiency and consistency for lawyers, surveyors and mappers.

3. Easements discrepancies:

   - Reviewed many scenarios where easements are not substantiated by a grant or express reservation.

   - Compiled a table of scenarios and related solutions.

   - Proposed an amendment to the *Municipal Government Act* related to easements on subdivision plans.

This is just a sample of the kinds of issues which are raised and discussed at the AWG. Often the resolutions to these issues are complex and involve the development of detailed procedures and proposed changes to various regulations and legislation, which in turn requires consultation with other business areas within SNSMR or other departments. A temporary solution in the form of a policy is often required until regulations and legislation can be officially amended.

SNSMR would like to express its thanks to the surveyors who work on this committee and to those who provide input and feedback to the AWG members through other ANSLS committees.

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