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# president's message

by Dirk VandenBrink, ALS, PEng.

Well, that summer sure flew by. I certainly hope that all of you had a chance to take a few days off to spend time with your family and recharge for what is likely to be a very busy fall. There are usually no Council or Committee meetings in July, so the summer months are considerably less busy as far as ALSA business is concerned.

In June, Judy and I had the opportunity to attend (on behalf of our Association) the ACLS 2006 National Professional Surveyors' Conference at 'The Grand Okanagan Lakefront Resort,' Kelowna, BC. The weather was great and it was a beautiful setting for the conference. The meeting between association presidents was held in conjunction with a houseboat cruise and dinner on Okanagan Lake complete with entertainment from an exhibitionist water skier. There were various seminars and workshops that took place before the ACLS annual general meeting. I attended the presentations under the theme of 'Moving Towards Aboriginal Self-Reliance' and the presentations on the applications of LIDAR. The new ACLS President is Daniel Fortin. Congratulations Daniel.

In July, Brian Munday and I met with Mr. George VanderBurg, Minister of Government Services, Mr. David Coutts, Minister of Sustainable Resource Development, and Mr. Gary Mar, Minister of International and Intergovernmental Relations. One of the items of particular interest to our Association that came out of these meetings is the Alberta/British Columbia Trade, Investment and Labour Mobility Agreement (TILMA). It is intended in this agreement, that all professionals in one province recognize their counterpart professional in the other province without further testing. The existing Mutual Recognition Agreement between the provinces does not meet the expectations set out in TILMA. A work-

It is intended in this agreement, that all professionals in one province recognize their counterpart professional in the other province without further testing.

ing group consisting of representatives from ALSA and ABCLS has been formed to see how we can meet the obligations of this agreement.

Since the last president's message we have had two Council meetings. The Director of Surveys, Mr. Mike Michaud, continues to join a portion of our meeting when he is able and the exchange of information between his department and our Association continues to be valuable. Representatives from the Practice Review Board also attended the August Council meeting and presented a status report on Phase 3.

The president's tour to Lloydminster, Medicine Hat and Lethbridge took place on September 7th.

A request to participate in a salary survey should be coming

soon from the ALSA office. It was felt that it was timely for such a survey to be done given the present economy. The last time this type of a survey was done there were not enough responses to know that we were giving a good indication of what the wage levels were at so we are hoping for a better response this time.

The annual golf tournament on August 18 was once again a resounding success. The weather was great and a good time was had by all. Team #26, Dan Jones, Brent Irving, Cletus Young and Randy Hudson, claimed the trophy from the APEGGA team who had won it last year and we raised \$1,695 for the JH Holloway Scholarship Fund. Thank you to all who attended.



Team #26 from left to right: Cletus Young, Dan Jones, Brent Irving and Randy Hudson





# councillor's forum

by Bob Wallace, ALS

## Our Dynamic Economy

The economy that has fueled the land surveying industry has been an interesting rollercoaster ride over the last fifty years. Experts have tried to predict its serpentine course while companies in the geomatics industry struggle to cope with the many challenges that result from changing economic times.

In this article, I will summarize the economic highs and lows over recent memory and try to gaze into the crystal ball for the future.

### Baby Boomer Boomtime

In the 1960s, the economy in Canada was booming with the post WW II era. Young families were looking for jobs and new homes. The construction industry was at an all-time high; new subdivisions were being built at a rapid pace. The energy industry in Alberta was also gaining momentum. As a result, a huge demand for land surveyors was created across the country. New surveying programs were created at the University of New Brunswick, University of Toronto, Ryerson Polytechnic, SAIT and NAIT.

This economic pace cooled in Eastern Canada in the latter 1970s, but remained vibrant in Alberta as the energy industry emerged as the leader in the demand for survey services and personnel. The municipal and construction industry remained strong as support for oil and gas exploration. Both Edmonton and Calgary were expanding at a fevered pitch. New roads, schools, malls and office buildings were being constructed to support the people moving to Alberta in record numbers.

Survey companies in Alberta consumed surveying students from across the country as fast as the programs could educate them. Thus originated the saying, "if he or she had a pulse, give them a truck and survey equipment."

As land surveyors we must continue to monitor and maintain our field of practice as well as exploring other areas that would lend themselves to our unique expertise.

### The Dirty Eighties to Late Century Doldrums

As every good thing in life, the economy came to an abrupt halt in the early 1980s. Spiraling inflation producing double digit interest rates combined with the National Energy Program, killed the economy in Alberta. Land survey companies laid off staff and the demand for personnel virtually disappeared overnight. Because there were no job opportunities, fewer people were entering the educational institutions for training as technical staff and as professional land surveyors.

Throughout the 1980s and the early 1990s, the Alberta economy wavered from poor to mediocre because of soft commodity prices. Diversification helped provide new opportunities for land surveyors as the province became less reliant on the highs and woes of the energy industry. Competition between survey firms was intense for the available work and land surveyors created new opportunities for their services. Technology was emerging as a significant tool to land surveyors, allowing them to produce increased accuracy and decreased time on projects. Micro computers became a staple of all firms.

Demand for educated and trained personnel gradually increased, but in the year 2000, if one was to take a snapshot of the ALSA, there emerged a huge gap between the young land surveyors and those

who were a product of the earlier boom times. It appeared that as the older members of the ALSA retired, there would not be enough new members to replace those positions.

### Present Challenges

The economy since the turn of the 21st century has been progressively increasing until today's fevered pace. Alberta's economy, fueled by bullish energy prices and an emerging world economy is presently experiencing unprecedented times. There may not be enough geomatics companies to supply the huge volume of survey business created by this economic inferno. Registration of new land surveyors in the ALSA has been brisk in latter years and the ALSA once again appears to be healthy in its numbers although there may not be enough people to handle the present day workload. The geomatics industry is in a dogfight with many other skilled fields to attract skilled and educated people.

Present technological advancements in the last fifty years, in surveying equipment, software and the availability of online data have revolutionized the way land surveyors perform their duties. Along with this convenience is the large price tag. An oilfield survey vehicle fully outfitted in 1979 may have cost \$25,000. This is pale in comparison to the \$250,000, in today's dollars to ensure the vehicle has all the latest hardware and software, all terrain vehicles and everything else to be functional for today's demands.

### Future challenges? or Self-preservation

Where is the professional surveyor headed? It appears there will be a continued vibrant supply of work for the short term. It is quite possible this may continue for the next

....see Councillor's Forum on page 49





# editor's notes

by Brian Munday, Executive Director

Summertime is a good time to take a moment to get away from the office and think about something other than a “to do” list, check e-mail and retrieve voice mail. This summer, I read a couple of Dan Brown novels (author of *The Da Vinci Code*), installed a new stone retaining wall in the backyard and visited family back in our old stomping grounds of Toronto.

Sometimes, the more I get away from the office and try to not to think about things, the better thoughts I have about how the office is doing and what needs to be done differently. When we get caught up in all of the day-to-day stuff that keeps all of us very busy, we don't seem to have the time to take a look at the big picture things.

My article for this issue of *ALS News* is not going to be a “what I did on my summer vacation” essay and it is definitely not going to read like a Dan Brown novel. I have come to the realization that I have many talents but one of them is never going to be writing the great Canadian novel; it's probably not going to be writing an average Canadian novel either. No, instead I thought I would give you an update on a mish-mash of random thoughts from this summer on what is happening here on the 10<sup>th</sup> floor of the Phipps-McKinnon building in Edmonton.

It has been just over two years since we moved into this building from the CN Tower. I can easily say that the move was a good one for us with the landlord treating us well and being within a short walking distance of many sister organizations. I remember someone asking me about whether the timing was right to make the move; after all, we still had one year left on the lease at the old premises. In this case, the timing was absolutely perfect in retrospect. Since we moved in here, the building has filled up and there are only tiny pockets of space left. Rents have also increased significantly too.

## There is no doubt that the concept and role of professions is changing.

It is ironic that space has become more expensive at a time when technology allows us to do more things from a remote location. We can check e-mail and voice mail from anywhere in the world and we can send and receive documents at any time of the day or night. The concept of working remotely can raise a lot of questions for a regulatory body like ours. When the act and regulation refer to head offices and branch offices, what does that really mean? What makes a branch office a branch office? I can order chicken or pizza by calling one central number and the technology figures out which chicken or pizza outlet is closest and processes my order. What are the implications for a professional regulatory body if the same concept is applied to a profession instead of fast food?

There is no doubt that the concept and role of professions is changing. Justice Cote said as much to us at the annual general meeting. Recently, President Dirk Vandenberg and I met with Gary Mar, Alberta Minister of International and Intergovernmental Relations to discuss the Alberta-BC agreement that establishes closer ties between the two provinces in many areas—including professions. The minister has been quoted as saying that if you are a professional in one province, then it is expected that you will be granted your commission in the other province automatically. We explained to the minister that the land surveying profession in Alberta probably has more in common with Saskatchewan and Manitoba than British Columbia. We also explained that all of the self-governing survey associations in Canada have signed a labour mobility agreement and that, by all accounts, it is working well. When

told that a labour mobility candidate could get his Alberta Land Surveyor commission in as little as ten months, the minister said that was far too long and that their expectation was that it should pretty much be automatic. We discussed the fact that there is already free mobility amongst technologists and the minister suggested several ways this agreement could work. In spite of a number of challenges in making this agreement work and questions we still have about the deal, the minister was insistent that it is going ahead as planned – coming in to effect April 30, 2007.

I mentioned the Alberta-BC agreement at our annual labour mobility coordinators meeting with the Canadian Council of Land Surveyors. It prompted a little bit of interest but everyone seemed to be in general agreement that the agreement was working well. In this issue of *ALS News*, the Canadian Council of Land Surveyors explains some of the other initiatives they are working on. CCLS has established the Associations Forum which allows the CCLS member associations to post each of our *Council Reports*, public relations plans and professional development initiatives. While the Associations Forum is still young, it has the potential to really help each of us learn from one another and not re-invent the wheel ten times for every initiative we undertake. CCLS is also sponsoring a chief administrative officers (that is, executive directors) meeting which will allow me and my counterparts to share ideas and exchange information. The intent is not to duplicate the work of the CCLS directors or the association presidents but to get at the heart of running and operating a self-governing survey association in Canada.

CCLS is doing its best to communicate in a variety of ways to the member associations and the

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member associations' members. The Alberta Land Surveyors' Association is doing the same thing in our own way. We communicate to the members via *ALS News* and our regular Friday email messages. We have resurrected *Boundaries* as an electronic newsletter designed specifically for the public and related organizations. *Boundaries* was once a hard copy magazine similar to *ALS News* in the eighties and early nineties. The feedback on the first issue was good and we will have to keep refining the editorial content to keep it interesting and readable.

By all accounts, weblogs (or blogs) and podcasts are becoming more common ways to communicate. Does the membership have any interest in us pursuing these communication media? Would they actually be used? For years, the Association has been asked to consider adding forums or polls to our web page. We looked into it but there never seemed like there was going to be enough interest to keep the discussions current and active.

There is no doubt that the web has become the first place that many people, including myself, look for information on any particular topic. With that in mind, it has been apparent for quite some time that the ALSA website is in need of an overhaul. We are working on it. One of the challenges in creating a comprehensive information website like ours is trying to figure out how

One of the challenges in creating a comprehensive information website like ours is trying to figure out how both the public and members will look for information and try to present it in a clear easy-to-find format.

both the public and members will look for information and try to present it in a clear easy-to-find format. As our existing website grew, it became a hodge-podge of links and information but the logic for putting certain things on certain pages became pretty fuzzy. So it will be good to pretty much start from scratch and build it up again. In a few years, I am sure we will have to do the same thing to this new site.

I can't promise when the new site will be up and running. As you can imagine, even with new staff coming on board, it is still difficult to find the time to do all of the things that need to be done.

In addition, Ms. Sharon Stecyk is no longer working for the ALSA. However, Mrs. Sharon Armstrong is. Congratulations to Mike and Sharon Armstrong on their August 26, 2006 wedding! All of us wish you well! We tried to convince Sharon to hold the wedding at the AGM; she could have walked down the aisle of the business meeting and been married by the president. It would have made a great theme night. For some reason, she only laughed when the discussion came up. After all, it seemed only fitting for some-

one who has given so much to the ALSA.

Cindy Chomlak has left the Association after working here for the last two plus years. She has gone back to NAIT to go into the Medical Transcriptionist Program. We wish you all the best.

Josie Kumar has started her employment with us. She is bright and energetic and is already an excellent addition to the ALSA.

Don George has also announced his intention to step down as Assistant to the Director of Practice Review and retire effective April 30, 2007. I'll probably say a few kind words about him in a future issue of *ALS News* but we still have to work together for a few more months so I can't be too nice yet.

It's been a great summer and, as we look ahead, the committees are going to be gearing up again with almost all of them meeting in September. I know that it will be difficult for you to find the time to attend one more meeting when you have so much other work to do but no one has ever said to me that they didn't get more out of volunteering for ALSA work than they put into it.

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## Question Time

**Why do I read in Council Report that some decisions go back to Council for "second reading?" Why is that done?**

**Answer:** There are two reasons why a Council motion is given two readings.

First, any amendments to the policy manual require two readings of Council. This gives the membership the opportunity to comment on the changes before they are adopted.

According to the Association policy manual, the Alberta Land

Surveyors' Association believes that policies are statements that clarify how the Association will be governed and organized and that direct the future discretionary action of Council members, committees and staff. At all times, there must be concern for the legality of all proposed policies and steps must be taken to ensure that no proposed policy is in contravention of any federal or provincial statute or regulation or existing Council policy.

Policies will be initiated throughout the year. The policy recommendation will be discussed by the

Council members and revised if necessary. The motion pertaining to the policy recommendation will be tabled for a second reading at a subsequent meeting of the Council.

Second, every request for budget variation must receive unanimous approval Council, in lieu of which it will be referred to the next meeting of Council, at which time a simple majority will carry. Often, a Council member will vote against a budget variation request just to allow the membership the opportunity to read the motion and comment on it before it is approved.





# letters

## British Columbia-Alberta Trade, Investment and Labour Mobility Agreement (TILMA)

On April 28, 2006, the governments of Alberta and British Columbia entered into a landmark agreement that creates Canada's second largest economic region with 7.5 million people. It does that by eliminating barriers to trade, investment and labour mobility between our two provinces, effectively turning Alberta and British Columbia into a single free trade area.

The agreement covers barriers to interprovincial trade in all sectors of the Alberta and British Columbia economy with few exceptions. When the accord comes into force on April 1, 2007, the two most western provinces will enjoy a more open energy market, fewer distortive provincial subsidies to business, the end of duplicate registration fees for commercial trucks, and greater access to government procurement, especially for professional services.

When fully implemented in April 2009, the agreement will provide for the enhancement of labour mobility for trade workers and professionals, the elimination of duplicate business registration requirements and the reconciliation of standards and regulations that facilitate trade, investment and labour mobility. Also, by that time, Alberta will have concluded negotiations with British Columbia to extend coverage to financial services, crown corporations, municipalities and publicly-funded academic and health entities.

The private sector has been long pressing for all levels of government to remove impediments to business and mobility. A Canadian Federation of Independent Business survey of its Alberta and British Columbia members showed over-

whelming support for a comprehensive bilateral free trade agreement. In its recent report, the Conference Board of Canada suggested free trade should be the standard in all jurisdictions and encouraged bilateral and regional arrangements that enhance free trade within Canada.

Both Alberta and British Columbia have been advocating a broader, more inclusive national Agreement on Internal Trade (AIT). I hope this agreement stimulates interest from other provinces and federal government to aggressively tackle inter-provincial trade and mobility barriers.

Moreover, this agreement has an effective and enforceable dispute settlement mechanism. One of the main deficiencies in the AIT is there are no consequences for governments that choose to ignore their AIT obligations or the decisions of a trade panel. It is my hope that this will be viewed very positively by the private sector that Alberta and British Columbia are very serious about dealing with barriers to interprovincial trade and mobility.

In the meantime, as both governments enter into transitional discussions, further consultations with stakeholders and negotiations to implement the new accord, I encourage you to take the time to become familiar with the agreement and provide me with any feedback you may have.

GARY G. MAR, QC  
MINISTER OF INTERNATIONAL  
INTERGOVERNMENTAL RELATIONS  
MLA CALGARY MACKAY

## Provincial Land Use Policy

The Government of Alberta is developing a comprehensive land use policy framework for the province. As part of this process, the stage that will precede more extensive public consultations, the

Canada West Foundation has been contracted to conduct a series of stakeholder focus groups to identify the desired attributes or characteristics for such framework. The objective is not to address particular land use challenges, but rather to construct an overarching policy framework within which such challenges might be addressed. Without doubt, this is one of the most important policy development issues facing Alberta today. I am writing, therefore, to invite you to join 150 participants at the front end – the truly creative end – of this policy process. The Foundation will be hosting 12 stakeholder focus groups, each comprised of 12-13 individuals like yourself with experience and interest in the field.

I do hope that you will be able to join me. It is hard to imagine a more important or challenging area of policy development, and I am convinced that you will enjoy the opportunity to share your insights, and to participate “on the ground floor.”

DR. ROGER GIBBINS, FRSC  
PRESIDENT AND CEO  
CANADA WEST FOUNDATION

## Science Alberta Foundation

We have had another successful year. We brought science, math and technology to over 600,000 Albertans in 171 communities as we continued to decrease our cost per user ratio and increase our quality, creativity and effectiveness.

We were created fifteen years ago to encourage youth to pursue careers in science, math and technology. The severe shortage of workers that Alberta has experienced in the past year, clearly demonstrates that what was a “should do” fifteen years ago, is a “must do” now, as our future knowl-

edge workers are sitting in Alberta classrooms today.

We live in a global economy, driven by science and technology. Alberta's continued prosperity depends on a well-trained workforce that is able to compete globally in a knowledge-based economy. Engaging students in science and technology is vital. We must foster a greater enthusiasm in these areas and expose students to the multitude of careers available to them, as we develop our skilled workers for tomorrow.

Science Alberta Foundation's outstanding resources make science, math and technology relevant and engaging for children, youth, teachers, families and communities. We are committed to continuing to create these unique resources, to investing in Alberta's prosperity, and to inspiring minds and changing futures.

It is with great pride that we send you our annual report for 2005-06. I wish to express our heartfelt thanks to our many sponsors, donors, Alberta Innovation and Science and the many individuals who support the important work that we do keeping Alberta's future bright.

ARLENE I. PONTING, PHD  
CHIEF EXECUTIVE OFFICER

## Review of the Personal Information Protection Act

An all-party committee is currently undertaking the first legislated, comprehensive review of the Personal Information Protection Act and as Committee Chair, I encourage your input.

As stated in the Personal Information Protection Act (PIPA), the Act governs the collection, use and disclosure of personal information by organizations in the private sector in a manner that recognizes both the right of an individual to have his or her personal information protected and the need or organizations to collect, use or disclose personal information for purposes that are reasonable.

Key dates in the review process include:

- submissions accepted until September 15, 2006;
- a preliminary report issued to the public for comment in May 2007;
- comments on the preliminary report accepted until early September 2007; and
- a final report from the Review Committee submitted to the Legislative Assembly of Alberta by early November 2007.

More information on the review is available at

[www.pipareview.assembly.ab.ca](http://www.pipareview.assembly.ab.ca)

CINDY ADY, MLA CALGARY SHAW  
CHAIR

Thank you for the opportunity to comment on the Personal Information Protection Act.

The Alberta Land Surveyors' Association will limit its comments to Part 6, Section 55, of the Personal Information Protection Act and Part 7 of the PIPA Regulation concerning professional regulatory organizations.

The Alberta Land Surveyors' Association believes that the existing provisions in the Act and Regulation are sufficient and do not need to be amended. While the Alberta Land Surveyors' Association has not applied to the government for a Personal Information Code, we have established a privacy policy which provides the same level of protection but is customized to our specific circumstances. The ALSA privacy policy is on the main page of our website, [www.alsa.ab.ca](http://www.alsa.ab.ca), and is available to anyone who requests it.

Neither any member of the public nor any member of the Association has expressed any concern about the Alberta Land Surveyors' Association's existing privacy policy or has recommended that it be adopted as a personal information code.

The Alberta Land Surveyors' Association, established in 1910, is a self-governing, professional association legislated under the *Land Surveyors Act*. The Association regulates the practice of land surveying for the protection of the public.

D.H. VANDENBRINK, ALS  
PRESIDENT

## Scholarships

On behalf of the University of Calgary, I am pleased to advise you that the recipients selected for the following awards are:

- *John Deyholos Memorial Award*  
—**Britton William Armstrong**
- *J.H. Holloway Scholarship in Geomatics Engineering*  
—**Trevor Paul Phillips**

I would like to take this opportunity to express to you the thanks of the University of Calgary for the provision of this award. The financial reward and support you offer to the students here is greatly appreciated. Please do not hesitate to call if you have any questions or comments regarding the administration of this award or the University awards program in general.

Thank you once again for your generous consideration of University of Calgary students.

MAUREEN EVANS, ASSOCIATE DIRECTOR  
STUDENT AWARDS AND FINANCIAL AID  
UNIVERSITY OF CALGARY.

## Regional Meetings 2006-2007

### Calgary

October 5, 2006  
January 31, 2007  
March 27, 2007

### Edmonton

September 28, 2006  
January 30, 2007  
April 3, 2007

### Grande Prairie

October 3, 2006  
February 6, 2007  
March 29, 2007

**All the meetings will be held from 5:30 p.m. to 8:30 p.m. (cocktails at 5:30 p.m. dinner at 6:00 p.m.)**



# association notes

## New Members

### #765 MacLeod, Kevin N.



Kevin MacLeod was born in Baddeck, Nova Scotia on December 20, 1965. He graduated from Baddeck Rural High School in 1984, received a Survey Technology Diploma from the College of Geomatic Sciences in 1987 and a B.Sc. Surveying Engineering from the University of New Brunswick in 1991.

Stan Longson, ALS served as Kevin's principal from June 2001 to June 2006. Kevin is also a professional engineer. Commission as an Alberta Land Surveyor was received on June 30, 2006.

Initial surveying experience was in control, oil & gas and GPS controlled aerial photography. Kevin is currently focused on municipal, legal and engineering surveys.

Curling, travel and spending time with family are leisure activities that Kevin enjoys. He is currently employed with Stantec Geomatics Ltd. in Edmonton.

Kevin is married to Trinda. They have one son, Connor, age six months.

### #766 BEBLOW, Terry



Terry Beblow was born in Regina Saskatchewan on October 3, 1968. He graduated from F.W. Johnson Collegiate High School in Regina in 1986, obtained a CAD Technology Diploma from SIAST in 1990 and a

B.Sc. in Geomatics Engineering from the University of Calgary in 2003.

Alberta Land Surveyors Tony Brown, Allan Main and Garry Schirrmacher served as principals from August 2003 until he received his commission on July 4, 2006.

Terry intends to pursue his SLS commission and plans to apply for his P.Eng. designation this fall.

Surveying experience includes municipal, oil & gas, engineering and construction and residential.

Sports, movies and economics are some of the areas that Terry enjoys when he is not surveying.

Terry resides in Edmonton and is employed with Stewart Weir & Co. Ltd.

### #767 STUDER, Sean M.

Sean was born in Calgary, Alberta on November 17, 1972. He graduated from Immaculata High School of Kelowa, BC in 1990 and went on to receive a B.Sc. from the University of



Calgary in 2001.

Articles were served under Craig Hughes, ALS from June 2002 until he received his commission on July 6, 2006. Sean is also an engineer-in-training with APEGGA.

ALSA committee involvement included serving on the Public Relations Committee from 2003 to 2005. Sean is also the social chair for the International Right-of-Way Association, Chapter 48.

Sean has been involved primarily in oil & gas surveys in central and southern Alberta. He is presently employed with McElhanney Land Surveys (Alta.) Ltd. in Calgary.

Sean enjoys scuba diving, skiing and travelling.

Sean is married to Evelyn and they have one child, Cayden, age one year.

### #768 AUSTIN, Jonathan M.



Jonathan Austin was born on June 22, 1976 in Port Alberni, BC. He graduated from Mount Sentinel High School in 1994 and is also a graduate of

the British Columbia Institute of Technology.

Scott Westlund served as Jonathan's principal from January 2004 until he received his commission on July 6, 2006.

Surveying experience includes oil patch (six years with McElhanney Land Surveys (Alta.) Ltd. in Calgary as a draftsman and plan checker) and municipal (three years with Stantec Geomatics Ltd. in Calgary as a party chief and plan checker).

Travel, hiking, music and basketball are a few leisure activities that Jonathan enjoys.

Jonathan is married to Julie. They have one son, Benjamin, age 9 months.

### #769 VOLLICK, Stephen M.



Steve Vollick was born in Orillia, Ontario on May 22, 1963. He graduated from Midland Secondary High School in 1982 and went on to receive a

B.Sc. from the University of Toronto.

Steve came to Alberta as an affiliate member and holds a commission as an Ontario Land Surveyor.

Surveying experience includes working in the private sector in northern and southern Ontario from 1990-1999. He also worked for the Ministry of Transportation in Ontario from 1999 to 2005. Steve received his commission as an Alberta Land Surveyor on August 1, 2006. He is currently employed with Focus Surveys Limited Partnership in Slave Lake.

Leisure activities include fishing, biking, golfing and travel.

Stephen is married to Maureen. They have two grown children—Sean, 20 years and Bailey 18 years.

## #770 TUCKER, Cory R.



Cory Richard Tucker was born in St. John's, Newfoundland in 1976. He graduated from Booth Memorial High in 1994, from the College of the

North Atlantic in 1999 and received a B.Sc.Eng. from the University of New Brunswick in 2003.

Articles were served under John Stephens, ALS from October 2003 until he received his commission as an Alberta Land Surveyor on August 28, 2006.

Most of Cory's surveying experience is oil and gas related in central and northern Alberta. He presently serves on the ALSA Standards Committee and is currently employed with Focus Surveys Limited Partnership in Edmonton.

Hunting, fishing, snowmobiling, skiing and billiards are a few of Cory's leisure activities.

Cory and his new wife Dana reside in Edmonton.

## Members on the Move . . . . .

### ACTIVE MEMBERS

**Jonathan Austin, ALS** received his commission (#768) on July 6, 2006. He is employed with McElhanney Associates Land surveying Ltd. in Penticton BC. Jonathan's contact information is: 102 - 123 Martin Street, Penticton, BC V2A 7X6; Tel: (250) 492-7399; Fax: (250) 492-5488; E-mail: jaustin@mcelhanney.com

**Terry Beblow, ALS** received his commission (#766) on July 4, 2006. He is employed with kStewart, Weir & Co. Ltd. in Edmonton.

**Ken Drake, ALS:** mailing address has changed to PO Box 2519, Drumheller, AB T0J 0Y0.

**Kent Croucher, ALS** is now employed at Focus Surveys Limited Partnership in Grande Prairie. His new e-mail address is kent.croucher@focus.ca.

**Patrick Marshall, ALS** took employment with Maidment Land Surveys Ltd. on September 5, 2006.

**Kevin MacLeod, ALS** received his commission (#765) on June 30, 2006. He is employed with Stantec Geomatics Ltd. in Edmonton.

**Patrick Marshall, ALS** has a new e-mail address—pdmarsh@telus.net.

**Sean Studer, ALS** received his commission (#767) on July 6, 2006. He is employed with McElhanney Land Surveys (Alta.) Ltd. in Calgary.

**Mark Sutter, ALS:** new e-mail address: mark.sutter@swg.ca.

**David ten Broek:** new e-mail—david.tenbroek@focus.ca

**Cory Tucker, ALS** received his commission (#770) on August 28, 2006. He is employed with Focus Surveys Limited Partnership in Edmonton.

**Stephen Vollick, ALS** received his commission (#769) on August 1, 2006. He is employed with Focus Surveys Limited Partnership in Slave Lake.

**Scott Westlund, ALS** has moved to Winnipeg. His new address is 27 MacAlester Bay R3T 2X6; E-mail: swestlund@shaw.ca.

### HONORARY LIFE MEMBERS

**Ted Rippon, ALS (Hon. Life)** has moved to 35 Erin Ridge Road, Suite 403, St. Albert, AB T8N 0G6.

### CORPORATIONS

**AGP Geomatics Ltd.** is now located at 17930 - 105 Avenue, Suite 201, Edmonton, AB T5S 2H5. Tel: (780) 453-2292; Fax: (780) 484-6796.

**Beairsto Lehnrs Ketchul Engineering Ltd.'s** address has changed slightly. They have added Suite 101 to thie address. All other contact information remains the same.

**Global Surveys Group Inc.** has moved to #210, 4954 Richard Road SW, Calgary T3E 6L1. All other contact information remains the same.

**Pals Surveys and Associates Ltd.** of Whitecourt has relocated to 4105 - 41 Avenue. E-mail, phone, fax, website and mailing address remain the same.

**Stewart, Weir & Co. Ltd.** has relocated to 2121 Premier Way, Suite 140, Sherwood Park, AB T8H 0B8; Tel: (780) 410-2580; Fax: (780) 410-2589.

### ARTICLED PUPILS

**Chris Beaugrand** articulated to Roger Leeman, ALS of Usher Canada Limited in Calgary on September 1, 2006.

**Meredith Bryan** of Calgary articulated to Stan Longson, ALS of Stantec Geomatics Ltd. in Edmonton on August 15, 2006.

**Norman Chan** articulated to Jim Sharpe of Midwest Surveys Inc. in Calgary on August 21, 2006.

**Andrew Christian** transferred articles from Bruce Drake, ALS to Dwight Wiberg, ALS of Focus Surveys Limited Partnership in Edmonton on September 1, 2006.

**Aaron Clapperton** articulated to Allan Main of All West Surveys Limited Partnership in Calgary on August 11, 2006.

**Scott Colvin** articulated to Rob Scott, ALS of Stantec Geomatics Ltd. in Calgary on August 14, 2006.

**Michelle De Neve** articulated to Jacques Dupuis, ALS of Can-Am Geomatics Corp. in Calgary on June 8, 2006.

**Luke Dixon** transferred articles from Barry Fleece, ALS to Jason Thistle, ALS of Global Oilfield Surveys Inc. in Calgary on June 15, 2006.

**Tyler Fox** articulated to Roger Leeman, ALS of Usher Canada Limited in Calgary on July 10, 2006.

**Cameron Henry** articulated to Jason Paziuk, ALS of Vistion Geomatics Inc. in Calgary on July 25, 2006.

**Ashley Large** articulated to Ron Hall, ALS of Focus Surveys Limited Partnership in Calgary on September 5, 2006.

**Krista Lovse** articulated to John Lovse of Terramatic Technologies Inc. on August 5, 2006.

**Roger Luard** articulated to Don Grant, ALS of AMEC Land Surveys Limited in Sherwood Park on August 2, 2006.

**Jennifer Setiawan** articulated to Damian Gillis, ALS of Focus Surveys Limited Partnership in Calgary on August 10, 2006.

**Jonathan Tingley** articulated to Doug Cloake, ALS of Usher Canada Limited in Edmonton on September 13, 2006.

**David Young** articulated to Jim Stuart, ALS of Global Oilfield Surveys Inc. of Calgary on August 9, 2006.

#### **ASSOCIATE MEMBERS**

**Greg Hebb:** contact information: Midwest Surveys Inc., 9918 - 75 Avenue, Edmonton T6E 1J2. Tel: (780) 433-6441; Fax: (780) 439-2614; E-mail: ghebb@midwestsurveys.com.

## National Standards on Integrated Surveys

This note is to inform you of a national initiative "National Standards for Integrated Surveys" and an associated project to develop a set of integrated tools for land surveyors to effectively process conventional and geo-referenced survey observations in support of the integration of legal surveys initiative. The Canadian Council of Land Surveyors is supporting the initiative by facilitating communication with the surveyors' associations and exploring the opportunities for the creation of enabling tools for land surveyors.

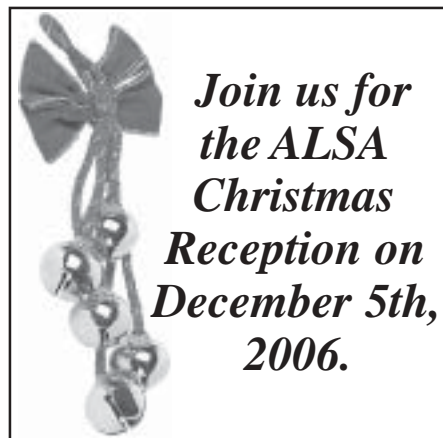
As you may know, the Canadian Council of Geomatics (CCOG) passed resolution S05-10 in June 2005 whereby each province and territory agreed to develop and implement a plan to require georeferencing of new legal surveys (integration of surveys) according to the principles and standards set out in the resolution. This resolution sets the stage for the provinces and territories to develop and implement the necessary steps to migrate to mandatory georeferencing of legal surveys according to the national standards.

Another CCOG resolution (S06-01) was passed at the April 2006 meeting that recognizes the benefit of the land surveying community to collaboratively create an integrated set of processing tools that will enable land surveyors to effectively

adjust conventional and georeferenced survey observations.

I believe that there is an opportunity for the national survey community to collaborate on the development of an integrated set of tools through the GeoConnections program and to improve links to CCOG. Please review the attached draft letter of intent that outlines a project proposal that is to be presented through the GeoConnections program under their recent announcement of opportunity (AO). The submission is being spearheaded by the Land Title and Survey Authority of British Columbia through Rick Hargraves, Surveyors General and Director Land Title and Survey.

*G.A. (BERT) HOL, BCLS  
CCLS PRESIDENT*



## Josie Kumar Joins the ALSA Office Staff

Josephine Kumar (Josie) commenced employment with the Alberta Land Surveyors' Association on September 5, 2006.



Josie has a business undergrad diploma from NAIT and is currently studying Computer Systems Technology (CST). She tells us that she enjoys working in an office environment and loves to meet new people.

Previous employment was with Alberta Energy and Alberta Infrastructure & Transportation.

Some of Josie's other interests include music, dancing, travelling and spending time with family friends.

Josie will be involved with the Professional Development Committee, Editorial Board, Nominating Committee, and Standards Committee. She will also be responsible for keeping the ALSA database up to date with respect to member information. Josie's e-mail address is kumar@alsa.ab.ca.

Please join us in welcome Josie to the ALSA.

## David Thompson Bicentennial Report

### **Invermere, British Columbia**

On July 18, 2003, Delores and I, representing the Surveyors Historical Society and the Land Surveyors' Association of Washington Historical Society (LSAWHS), attended the unveiling of a large bronze statue of David Thompson and his wife Charlotte Small Thompson. Delores and I were the only Americans besides featured banquet speaker and author, Jack Nisbet, at the function. Both the Surveyors' Historical Society (SHS) and LSAWHS had donated \$500 each towards the statue, resulting in our name(s) on the sponsor plaque.

### **Spokane, Washington**

From September 30 through October 1, 2005, the Surveyors Historical Society together with the LSAW Historical Society sponsored the SHS 2005 Rendezvous "Surveying the Northwest with David Thompson." This event was held to coincide with the grand opening of "The Map Makers Eye," an exhibit featuring David Thompson at the Northwest Museum of Arts & Culture. Surveyors from many states, together with the provinces of British Columbia and Alberta attended the two-day function.

On March 17 and 18, 2006, Delores and I, representing the LSAW Historical Society together with the Surveyors Historical Society, attended the two-day official launch of the American DT200 Committee at the Northwest Museum of Arts and Culture in Spokane, WA. The MAC was the site of the SHS 2005 Rendezvous in September/October. It was attended by more than 80 people representing various government and private groups.

### **Edmonton, Alberta**

On March 30, 31 and April 1, Delores and I, again representing the LSAW Historical Society together with the Surveyors Historical Society, attended the 2.5 day official launch of the Canadian DT200 Committee at Fort Edmonton Park in Edmonton, Alberta. It was attended by more than fifty people representing various govern-



*David Thompson and Charlotte Small Thompson Statute at Invermere, BC*

ment and private groups. The event was sponsored by the Alberta Land Surveyors' Association, thanks to their donation of \$5,000.

### **Salmon, Idaho**

Delores and I attended the August 19 BOT meeting of the Idaho Society of Professional Land Surveyors, asking for support of the DT200 and specifically, converting the DT exhibit currently at the MAC in Spokane into a travelling exhibit. Other opportunities to promote our surveying profession via the bicentennial were also be discussed.

### **Libby, Montana**

Delores and I have been asked by the chair of the American DT200 Committee to attend their quarterly meeting on September 7 and 8 in Libby, MT. It is my understanding that no surveying organization from any state has volunteered to serve on the commission that represents all of the United States. We will be in attendance and let you know the latest plans of the American Commission.

You may note that there has been little or no American participation

by surveying groups or organizations. Either the events were of no interest to the surveying profession or we are neglecting our opportunity to increase the public's knowledge and appreciation of our profession and our responsibility to remember our surveying heritage and honour those surveyors that have gone before us.

Attached to this report is a letter asking for additional funding and support for this Bicentennial. The funding will support various projects honouring David Thompson: North America's greatest surveyor. Delores and I are not asking for any funding for reimbursement or our travel expenses or anything else. We will continue paying our own way on all things.

*DENNY (AND DELORES) DEMAYER  
LAND SURVEYORS' ASSOCIATION OF  
WASHINGTON HISTORICAL SOCIETY*

**Editor's Note:** *The Alberta Land Surveyors' Association contributed a further \$500 to the David Thompson Bicentennial*

# net notes

*by Brian Munday  
Executive Director*

### **Body Art in the Workplace**

[www.salary.com/advice/layouthtmls/advl\\_display\\_nocat\\_Ser64\\_Par140.html](http://www.salary.com/advice/layouthtmls/advl_display_nocat_Ser64_Par140.html)

### **Dress Codes Deciphered**

[cnn.com/2005/US/Careers/08/18/dress.code/index.html](http://cnn.com/2005/US/Careers/08/18/dress.code/index.html)

### **Decoding the Dress Code**

[http://www.salary.com/advice/layouthtmls/advl\\_display\\_nocat\\_Ser64\\_Par138.html](http://www.salary.com/advice/layouthtmls/advl_display_nocat_Ser64_Par138.html)

# Multimedia Land Record Systems Proposal to ALSA to Fund Graduate Students

by Dr. Michael Barry, Associate Professor & Associate Head Undergraduate Studies

## Background

This is likely to be an ongoing project engaging several graduate students over a number of years.

Written documents and maps often do not capture much of the complexity associated with evidence relating to boundaries, land use planning proposals (e.g. environmental impact assessments) and many aspects of land tenure and cadastral systems in general. Multimedia in the form of photographs, videos, sound recordings of oral testimony from witnesses, aerial photographs, CAD files, orthophotos and data in a variety of other forms are becoming increasingly important as technology now allows surveyors to use these media. For the surveyor, multimedia data hold the added advantage in that they can be captured in the field and, with limitations, can allow informed decisions to be made by the land surveyor in the office without necessarily having to visit the site.

There are two major questions relating to multimedia data which warrant investigation. First, how does one store, query and retrieve multimedia data effectively in an integrated cadastral information system? Second, what procedures should one follow to ensure that the data are likely to be admissible as legal evidence in the event of a dispute? How these questions are to be studied are articulated as project one and project two below. It is envisaged that project one should commence first, followed by project two. I have done some work on project two; I now need to do some testing on actual storage and retrieval before I can develop analysis on the second question which is of sufficient depth.

## Project One:

### *Integrating Multimedia Data in a Land Records System*

#### **Objectives**

The primary objective of this project is to develop a working system of land records software which incorporates multimedia data and spatial data. In so doing, alternatives for the most effective data structures and storage methods, search and retrieval algorithms can be developed and tested. The design should be such that data can be migrated to or integrated with a GIS. The work will involve theory relating to database design, data structures, data storage, data compression and data management in a manner which integrates spatial data, non-spatial data, and multimedia data.

#### **Methodology**

Some preliminary work interviewing surveyors on how they use / are likely to use multimedia data has been completed. A significant amount of work has been done on the broad database design. What is required now is a system which stores and retrieves various forms of multimedia data efficiently. A series of MSc projects should achieve this.

In this first project, the student should:

- 1) further explore how surveyors use/are likely to use multimedia data in their daily operations;
- 2) further develop the existing database design;
- 3) develop efficient means of implementing this design by examining existing database storage, research and retrieval algorithms, and developing and coding new algorithms.



- 4) conduct field trials as part of the design and development process.

#### **Outcomes**

- This project will contribute to the development of a system of multimedia land records software, which, once operational, will be available as licensed freeware.
- There will also be publications in refereed journals and in professional journals (e.g. *ALS News*) and trade journals on methods of storing and retrieving multimedia data.
- Ongoing manpower development by graduating MSc and PhD students.

## Project 2: Creating, Storing and Retrieving Data that are Admissible as Evidence

A major technical and legal challenge is ensuring that multimedia data are admissible as evidence in court. This is a particularly relevant standard in light of the fact that multimedia data often require both editing and compression of the files. Multimedia data tend to be regarded as hearsay evidence as one cannot cross examine a video recording, a photograph or a sound file. Thus any alterations to a digital multimedia data file through

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Overall, these two projects will contribute to developing a world class programme in land tenure and cadastral studies at a university in Alberta.

editing or compression may render it inadmissible in court. Further, the onus may be on the person providing the evidence to prove that there has been no tampering with the evidence. Video contains both visual and audio data records, and this is the area on which most of the effort will be concentrated.

Based on work done to date, relevant guidelines include: 1) the video recording must be proven to be authentic and accurate, and proven to contain all of the parts necessary for completeness; and 2) the parties involved must verify the recording. Digital watermarks and digital signatures appear to be the two primary methods of authenticating digital video data. In the long term, from a technical perspective, the prototype work on digital signatures suggests the most promise. Some argue that digital signatures are a superior form of authentication as, unlike watermarks, they cannot be inverted and they do not alter the image. However, work on using watermarks on compressed digital video data appears to be more advanced, and commercial products are available.

### **Objectives**

The overall objective is to develop methodologies to minimize the risks of multimedia data being inadmissible as authentic and admissible evidence in court.

### **Method**

The study will involve the following activities:

- 1) A study of relevant literature (e.g. case law) from around the world relating to the admissibility of multimedia data as evidence in court and methods to ensure that data are admissible.
- 2) Testing of various software to effect data compression to balance quality, ease of use and compression.

- 3) Testing of available watermarking, digital signatures and encryption software to arrive at the different alternatives for authenticating data.
- 4) Field trials.

### **Outcomes**

- This project will contribute to knowledge about how to capture, compress store and retrieve multimedia land records in a manner which reduces the possibility of the data being excluded as evidence in a dispute.
- Publications in refereed journals and in professional journals (e.g. *ALS News*) and trade journals on methods of storing and retrieving multimedia data.
- Ongoing manpower development by graduating MSc and PhD students.

### **Significance of the Work and Benefits to ALSA and its Members**

Overall, these two projects will contribute to developing a world class programme in land tenure and cadastral studies at a university in Alberta.

Of specific significance is that multimedia is being used increasingly as evidence in court trials. Land surveyors are using multimedia increasingly too, as digital data storage capacity increases and the cost thereof falls.

It is imperative that data is stored efficiently and can be retrieved effectively, while at the same time being considered acceptable as evidence.

The two projects will contribute to a larger investigation of multimedia in land records systems which has generated a significant amount of interest internationally.



## The Canadian Council of Land Surveyors

*A NATIONAL CONSENSUS BASED ENABLING FORUM PROVIDING PROACTIVE LEADERSHIP TO ITS MEMBER ASSOCIATIONS*

Its prime objectives are to provide national strategies, and national and international representation, for land surveyors within the geomatics profession.

The Canadian Council of Land Surveyors (CCLS) is a council created by the surveying associations themselves to provide a means to interact at a national level. In the mid-70s, a group of association presidents wanted a structured way to follow-up on the initiatives discussed at the informal gatherings that took place as they visited each others' annual meetings throughout the year, and CCLS was created. It began with a group of volunteer directors and a volunteer secretariat, and five primary objectives. Today, CCLS has a permanent office in Ottawa, two staff members, and 15 national initiatives on its current agenda. Each initiative has a strategy in place and is being worked on by a group of volunteers from the member associations. Some initiatives, such as governance, communication, and strategic planning, are ongoing processes. Other initiatives involve current national issues defined as priorities by the associations through the CCLS forum.

This article will describe the focus and structure of CCLS and present a few of the initiatives as examples of how CCLS works for surveyors on a national level. I hope this will help you understand CCLS, how its mandate differs from the association's mandate and how you can become involved if you have an interest in the surveying community at a national level.

I know everyone groans at mission statements and I do as well, but I'm beginning to understand how a good mission statement can be used to keep an organization on track and in focus. The CCLS

The Canadian Council of Land Surveyors (CCLS) is a council created by the surveying associations themselves to provide a means to interact at a national level.

mission statement is shown at the top of this article. Embedded in the statement is a clear picture of what CCLS is. CCLS is national. CCLS is consensus based. CCLS is a forum. The vision is also clear on who CCLS is for, the member associations, and on what CCLS does. CCLS leads, provides strategies, and represents its members' associations nationally and internationally. When CCLS rewrote its mission statement it asked the questions: Who are CCLS's clients? What should CCLS be doing for them and how can CCLS realistically do that within its resources? The main objective was to improve CCLS's effectiveness.

Reviewing the CCLS mission was a year and a half's work, and I'm not going to describe it here, but we came up with a set of well-defined key roles for all of the players in CCLS, a set of integrated communication plans, a process for mapping out the national agenda and setting priorities, and a process for building consensus around the issues on that agenda. All the details were contained in the CCLS Guide to Governance Policy and Processes which is a concise, ten-page document, posted on the CCLS website for any of those process people out there.

The associations themselves are the members of CCLS. In fact, the associations as a group **are** CCLS. Through the CCLS forum they provide the issues. They develop the strategies to tackle the issues. They build consensus around these strategies. They support CCLS's initiatives and implement the strategies which they helped define

in the best way that they can within their own organizational structure.

Building consensus is an iterative process and success depends on two-way communication, active participation of association volunteers, and timely, considered and comprehensive feedback from the association councils. Consensus is needed in order to have the buy-in of the associations which will implement the strategies. There must be consensus in setting the priorities, in developing the strategies, in funding the implementation and in the implementation itself. It is understood that strategies will be implemented by the member associations after a consensus has been reached by those associations at the CCLS forum. The strategies developed through CCLS are based on this premise and developed with association implementation in mind. Consensus does not have to mean one hundred percent agreement or participation by all eleven member associations. If consensus is not reached then an initiative is not necessarily a failure. The process of discussion at a national level and identifying a lack of consensus at a particular time is valuable in its own right.

CCLS is not project-oriented for one very real reason. CCLS does not have the resource base required to implement projects at a national level. To put that in real terms, CCLS's annual revenue is about \$170,000, less than 5% of the combined annual revenue of our member associations.

The next few paragraphs highlight some current initiatives to illustrate how CCLS acts as a forum for building consensus and developing national strategies for implementation at the association level.

**Public Awareness** has been a priority issue for the associations for many years. It is also an issue which is difficult to tackle with limited resources and with the huge scale of the topic itself. CCLS has set a specific target of developing a web-based resource for teachers and career councillors to encourage high school and junior college aged students to consider surveying as a career. It will be a catalogue and access point for existing materials and resources and may pave the way to identifying gaps in those resources and the development of strategies to fill those gaps. The initiative is not a duplication or a replacement of the association-based PR work and it's not a national advertising campaign. It will combine information, resources and experts from the associations and provide a national, web-based tool that associations can use in their own local and regional communication and public awareness plans.

**The Syllabus Review Initiative** is an in-depth review of the core academic syllabus currently used by the Canadian Board of Examiners for Professional Surveyors (providing academic review of candidates for ABCLS, ALSA, SLSA, AMLS and ACLS) and the Atlantic Boards of Examiners (providing academic review of candidates for ANLS, ANSLs, APEILS, and ANBLS), and a direct comparison to the Ontario and Quebec requirements. It is the first of several steps in increasing the harmonization of standards for entry to the survey profession. Representatives of all the regions are working on reviewing the academic requirements for relevance, clarity and transparency and especially for commonality. CCLS is providing a forum to build consensus-based national academic syllabus. The associations have the legislative mandate to set their own requirements. CCLS is providing leadership to build on the

Building consensus is an iterative process and success depends on two-way communication, active participation of association volunteers, and timely, considered and comprehensive feedback from the association councils.

commonalities. It will work to provide flexibility, to accommodate regional differences required by the associations without maintaining the variations that have built up over time and do not represent real differences in entry requirements. The more we accomplish in this regard the easier it will be to attract candidates to the profession and to increase mobility of both students and professionals.

**The CCLS Expanded Profession Task Force** researched how the expanded profession has been dealt with across the country. The detailed report produced by that Task Force includes a description of the various models that are in place or being developed by associations as well as other organizations. There are six associations who currently have an expanded profession model in place. All of them are different. The conclusions of that report give recommendations for follow-up work for a more coordinated approach to the issue. The next step is to receive feedback about the findings and possible directions from the associations and to discuss the development of a national strategy to take us into the future.

The Association of New Brunswick Land Surveyors reported to the CCLS Board that **railways** in that province are **restricting access** to their lands by requiring their personnel to accompany anyone entering railway lands and charging a significant fee. There are

safety issues to be considered but there are also issues of restriction for the survey profession in accessing the information they require to complete their work. CCLS communicated with all associations to determine the current scope of this issue and has published a report based on the findings. CCLS will facilitate a discussions of strategies and recommendations based on association input.

We have two other long-standing programs at CCLS that are very active. The **CCLS Professional Liability Insurance Program** is tailored specifically to Canadian surveyors and overseen by a committee of surveyors. It is available to any Canadian surveyor and is particularly valuable to surveyors outside of Ontario and Quebec where the demographics will not support provincial programs. Without this program, surveyors in other regions would have to look to general, engineering-based programs for their professional liability insurance.

The **CCLS Board of Examiners Coordinating Committee**, as the name implies, works to coordinate the efforts of the boards of examiners across Canada. These groups are brought together under CCLS and provide a coordinated approach to academic standards and qualification.

I hope this article has provided you with some idea of how CCLS works for and with your association. If you are interested in any of the issues outlined here or national issues in general, please let me know. We have been working hard to make sure that our volunteers on task forces and committees don't get over-worked and burned out and we would love to have more involvement through the associations. For those of you with such programs, it also looks great on your continuing education reporting form.

SARAH J. CORNETT, OLS  
CCLS EXECUTIVE DIRECTOR  
WWW.CCLS-CCAG.CA



# book reviews

by Ken Allred, ALS

## David Thompson "An Adventure of a Lifetime" by Dawna-Lea Ringer

*He (David Thompson) is recognized for having mapped more of North America than any other explorer.*

It is fitting that Dawna-Lea Ringer has published this children's activity book as a kickoff to the David Thompson bicentennial celebrations. Hopefully its wide distribution will get many youngsters and their parents interested in David Thompson and his many achievements and will generate participation in the bicentennial events that will take place over the next several years.

This short book (50 pages) will be of interest to children eight years of age or older. It would be a great book to read to your children or grandchildren. After you've read it to them, they can complete the various challenging puzzles and pictures.

The book tells the story of David Thompson's life and adventures from his schooling in London, England to his retirement and death in Montreal at the age of 87. The story is told from the perspective of Chisel, the beaver, and is interspersed with pictures and activities that children can relate to while learning about David Thompson through his travels across Western North America as a surveyor and fur trader.

As well as learning about the fur trade, the book will teach children about native birds and animals, geography, native Indian tribes and their languages, and mathematics.

The book is available from One Sparrow Images, 579 Day Road, Golden, B.C. V0A 1H2 for \$10.00 plus shipping. An order form plus excerpts from the book and a view of the outstanding cover picture are available at:

[www.onesparrowimages.com](http://www.onesparrowimages.com).

## Made to Measure "A History of Land Surveying in British Columbia" by Katherine Gordon

*"Made to Measure" is another monument in the history of the Canadian land surveying profession.*

Katherine Gordon has a great gift for telling the history of the British Columbia surveying profession. She has woven the adventures of land surveyors in with the archival history of the formation of the colonies of Vancouver Island and British Columbia to create a fascinating story about the trials and tribulations of surveyors now known as British Columbia Land Surveyors. Gordon has sourced a wealth of technical and academic literature, government documents, personal papers and oral interviews to chart the course of the creation and development of the professional association in an interesting and entertaining fashion.

*Made to Measure* is a complete history of the advancement of surveying as well as mapping in British Columbia with stories about urban, rural, railway, triangulation, provincial and international boundary surveys as well as many references to the men and women who have been instrumental in the development of the province. The author also deals with the delicate situation of native land claims and how the surveyors worked with native bands on the original surveys of reserve lands up to the present settlement of land claims.

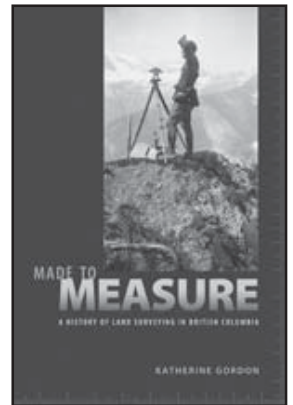
This hard cover book contains a number of interesting features not normally seen in a book. First, the author uses a very smart method of dealing with the multiple forms of measurement that we all have to

worry about. Rather than using a proliferation of confusing conversions she deals with the appropriate measurement for the period and sets out a general guide for

those who wish to convert to the terminology that they are familiar with. Second, she has carefully chosen the names for the titles of each chapter based on a quotation from one of the sources used in that particular chapter with a special section entitled "Notes on the Chapter Headings" at the end. As can be expected she has an extensive bibliography which in itself is worth the price of the book. She also has a number of general sources and a list of useful and interesting websites. The index is very useful. The book also contains a great collection of black and white photographs of surveyors and relevant survey activities throughout its 373 pages.

*Made to Measure* is a book that any Canadian land surveyor would enjoy reading. It is interesting, educational, well illustrated and contains many anecdotes that we can all relate to. *Made to Measure* is another provincial land survey association's contribution to the recordation of their fascinating history for the enjoyment of future generations.

The book is in the ALSA library and is available for purchase from the Association of British Columbia Land Surveyors at #306 - 895 Fort Street, Victoria, B.C. V8W 1H7. Price \$32 plus shipping. Website [www.bclandsurveyors.bc.ca](http://www.bclandsurveyors.bc.ca)—click on Foundation.

















# spr director's message

by Fred Cheng ALS

## Towards Achieving Measurement Redundancy

### Background

In the past eight months, I have observed a serious lack of measurement redundancy during my review of land surveying practices. Measurement redundancy is a requirement of our Manual of Standard Practice (MSP).

Often, I am provided pages of printed co-ordinates and then expected to accept them as field notes of the survey. It appears that these co-ordinates were generated from either data collectors, or Global Positioning System (GPS) observations. At times, I receive the explanation that Real Time Kinematic (RTK) redundancy was achieved by gaining lock and logging followed immediately by losing lock, relocking and relogging.

I have often asked practitioners to provide their detailed in-house policy to demonstrate how the practitioner achieves measurement redundancy.

Once a statutory iron post is placed in the ground and the plan is registered at the Land Titles Office, the iron post governs the property corner wherever it is placed in accordance with the Surveys Act. As such, it is extremely important that the iron post is in the correct position. Alberta Land Surveyors should make every effort towards placing survey monuments with care and due diligence, by introducing stringent redundant measurements during the course of their surveys.

In my opinion, co-ordinate printouts are not field notes simply because a printout of a set of numbers could mean a lot of things, we do not know if they are raw data, adjusted data, co-ordinates generated from computation, and/or they could be altered. If the information

Some practitioners are hung up on technology and readily accepting "black box" solutions that come out of a GPS receiver.

is derived from conventional surveys using a theodolite and data collector, we require the practitioner to submit a copy of the raw data file of his field measurements.

As for GPS RTK redundancy, recording and losing lock, and immediately regaining lock is hardly considered redundant observations; even if done with an intervening time span. Re-measurement from the same base station set-up on the same day it was performed can only be considered a blunder check, and should not be considered to have eliminated any systematic errors or random errors. An independent set-up, preferably on a different day, is recommended. Also, proper written field notes are essential for keeping track of different field conditions for GPS observations at different epochs.

Some practitioners are hung up on technology and readily accepting "black box" solutions that come out of a GPS receiver. Without proper methods, sufficient checks and balances to ensure random, multipath, systematic and other errors are eliminated, the survey is not reliable.

One practitioner suggests that, in RTK surveys potentially multipath, systematic, human, random, and other sources of error may be reduced by the following redundancy measures:

- performing the surveys again on a different day;
- using different receivers for the base and rover (i.e. switch receivers);
- re-observing under different ionospheric conditions;

- re-observing using different HI's (height of antenna in this instance);
- careful selection of a different base station location preferably with reduced multipath and improved field condition;
- be aware of other surveyors working in the vicinity, their same frequency signals might interfere with yours; and
- using different procedures for blunder checks often during the surveys (i.e. using time change and/or dropping the integers to ensure multipath and poor PDOP conditions are remedied).

If one suspects the observations are not reliable one should try some or a combination of the above suggested procedures and see if the results would improve. After all, it is your name that stays on the plan and resides on public record for a long time.

### Current Standards on Redundancy

Currently, Part C, Section 1.4 of our MSP calls for practitioners to provide redundant checks on their work as stated below:

*All surveys conducted under the Surveys Act must be verified by one or more of the following:*

- closure on prior or current work;
- closure on existing Alberta Survey Control;
- check-measuring all observations; or
- other appropriate means.

*Sufficient field measurements shall be made to ensure there are no errors of layout or measurement.*

Also, as for measurements and accuracy for GPS surveys, MSP Part C, Section 2.4 states:

*The position of every monument included in a GPS survey either found or placed shall be verified with sufficient redundant observa-*

tions. This applies to both static and kinematic surveys.

## Redundancy in Conventional Survey Measurements

With permission, I have reprinted a practitioner's field instructions and procedures for attaining redundancy in his field surveys.

*As with a conventional survey, your work must be checked. All important points must be checked, including all found evidence, any ASCM tied-in for horizontal control, all planted posts on an R/W survey and well centre on a wellsite survey... Your check shot should be no more than 2.0 cm from your original.*

*An alternative technique is to tie it in conventionally. If you have to get your instrument out for a side shot anyway, this may be the most practical method.*

*When tying-in to Fd Is, you can check them to (against) plan. If they fit plan to 1:5000, they won't need any other work. However, if you are at a hard to get at location, do not have the other point tied-in yet, and you do not want to risk having to come back to it, consider double shooting it anyway.*

*We are still having problems with insufficient check measurements with the field works.*

*I want to go through what evidence has to be checked, what is a suitable check and what is not. The following evidence must always be checked:*

- all found posts;
- all planted posts;
- any tied-in in ASCM's;
- well centre (both horizontally and vertically);
- any found spikes or I. bars if used for control.

*The following are suitable checks:*

- checking found evidence to plan distance (if it fits 1:5000 for better);
- directly including in a loop that closes;
- using other plans (1:5000 or better);
- using your own work or GPS to (1:7500 or better);
- double shooting with GPS (this GPS observation procedure is

We anticipate that each and every practitioner observes similar examples and develops redundancy measurement procedures of their own which best cater to their resources.

*administered to support previous conventional measurements and simply used as a check);*

- tie in with both GPS and conventional (use caution not to over control it);
- an angle and distance from different set-up;
- an angle from different back sight and check chaining;
- if placed on line, shooting the long distance and both short distances;
- for elevation (if trig, vertical distance should be booked in both phases).

*The followings are not suitable checks:*

- a doubled angle is required to reduce horizontal collimation error and to avoid booking errors. It is not an independent check measurement;
- shooting the same distance multiple times, booking either metres/feet or horizontal distance/slope distance/vertical angle are required but only to check booking error. These are not to be used as independent check measurements;
- coming off or tying-off to evidence that has not been check measured itself is not a sufficient check.

*In short, it is not checked until you have proven that it is where your field notes say it is. All these techniques have been discussed in detail. We appreciate your cooperation in ensuring the overall quality of our work.*

The above is one of many good examples that we have observed. We anticipate that each and every practitioner observes similar exam-

ples and develops redundancy measurement procedures of their own which best cater to their resources.

## Redundancy in GPS Survey Measurements

I have received several in-house GPS policies from different practitioners. They are professionally developed and can be used as yardsticks for other surveyor's practices.

It is interesting to note that the state government of Victoria, Australia has developed a set of formal guidelines towards GPS observations in legal surveying applications. The following are selected highlights from their GPS philosophy in legal surveying [Eddie Cichocki, Office of Surveyor-General, State Government of Victoria, Australia, 2006]:

- "Legal Traceability" is the term used to describe the traceability of physical measurements back to a recognized-value standard.
- The National Measurement Act 1960 (of Australia) requires measurements made for legal purposes to be in terms of the Australian legal unit derived from reference to an appropriate standard of measurement.
- Measurements made for legal purposes are substantiated at law through a continuous chain of verifications from the recognized-value standard to a working standard being the device used to take the measurements.
- For GPS, an associated recognized-value standard is the Australian Fiducial Network (AFN). It was gazetted as a standard on April 22, 1998.
- There is currently no formally accepted process to provide legal traceability of GPS measurements. Despite this, GPS can, and is, being used for legal measurement on cadastral surveys.
- GPS should not be used as the sole method of determining length in cadastral surveys.
- A quality-assurance approach based on best practice guidelines for the use of GPS for surveying applications is recommended.

- General and specific requirements (for utilizing GPS in cadastral surveys):
  - The guidelines generally refer only to relative GPS positioning, which requires two or more GPS receivers.
  - Users should familiarize themselves with the procedures contained in the GPS equipment and software manuals.
  - Redundant observations should be built-in to detect errors.
  - Conventional observations of an appropriate accuracy to be included.
  - Connection, where possible, to at least two known Third Order or better markers in the Survey Control Network.
  - All ancillary equipment must be in good adjustment and repair.
  - Generally, GDOP no greater than 8 & elevation mask not less than 15 degree.
  - Occupation times should be increased where multipath is likely.
  - Rapid static
    - attention to be paid to multipath errors.
  - Post Processed Kinematics Baselines
    - each point should be re-occupied in a different session with different satellite geometry.
  - Real Time Kinematics
    - base stations should be located in a low multipath environment.
    - re-occupations of points should be made.
    - new base stations on very large projects should be established using static or fast/rapid static GPS techniques.
  - Analysis of Results
    - least squares network adjustments for classic static and rapid static techniques.
    - misclosure comparisons for techniques where there are no direct measurements between stations (i.e. RTK or rapid static).
  - Digital Data Storage
    - raw observational data, results from baseline processing and final adjustments, should be archived (RTK or rapid static).
- GPS measurements are being supported/validated by comparison with 'known' ground markers, multiple occupancy of stations and comparison with conventional measurements.
- Abstract of field records (proposed) needs to clearly show or state:
  - the method used to perform the survey;
  - the base stations and coordinates of the origin of the GPS datum control (if appropriate);
  - the measurements that have been derived from GPS observations.
- Survey report (proposed) to include:
  - details of the equipment used;
  - the process used to validate the equipment;
  - an indication of the integrity of the measurements;
  - details of the base stations used and their coordinates (if appropriate);
  - the observation technique employed;
  - the method of reduction and software used;
  - a statement of the precision obtained.

The above excerpts are highlighted from the guidelines to be utilized in Victoria, Australia and are contained in their GPS Best Practice Guidelines that were produced by ICSM (Intergovernmental Committee on Surveying and Mapping). Further details regarding the Victoria government recommended procedures for the use of GPS in legal surveys are now included in their publications entitled, *Standards and Practices for Control Surveys (publication SPI)*, and *Survey Practice Handbook*. They can be found in the following web sites respectively: [www.icsm.gov.au/icsm/publications](http://www.icsm.gov.au/icsm/publications) and [www.land.vic.gov.au/surveying](http://www.land.vic.gov.au/surveying).

Similar guidelines regarding GPS in cadastral surveying can be found in the New South Wales government document entitled, *Surveyor General's Directions (Document no.9) GPS Surveys*. Within which, it refers to another ICSM document entitled, *Best*

*Practice Guidelines - Use of the Global Positioning System For Surveying Applications*, and it can be found in the following web link: [www.icsm.gov.au/icsm/publications/sp1/sp1.htm](http://www.icsm.gov.au/icsm/publications/sp1/sp1.htm).

## A Private Practitioner's Opinion on GPS Redundancy

I had lengthy discussions with one of our members, whom has been practicing extensively with GPS since its introduction to land surveying in Alberta. This private practice member is of the opinion the method of initialization—loss of lock—re-initialization or time interval methods do produce redundant observations if performed under the right conditions. "Under the right conditions," is difficult to quantify and, as a result, less experienced individuals may find they are not achieving accurate positions when they have mistakenly accepted confirmation of position using this technique.

The above initialization—loss of lock—re-initialization method is perceived to almost always produce a precise confirmation measurement (i.e. two coordinated observations that are within 0.02m of each other); while the (initialization – loss of lock – time interval method) might appear to provide a less precise confirmation measurement, it in fact provides a lot more confidence in the position.

This same individual is of the opinion that, as a profession we should be placing less emphasis on precision and more on reliability (i.e. accuracy, and detection of blunders) in our work.

His rankings from best to worst redundancy technique to confirm a GPS position is tabulated as follows:

1. GPS position confirmed by conventional or other completely independent positioning technique;
2. Position confirmed by being part of a closed GPS network, consisting of static observations, wherein the position is occupied at least a second time on a different day;

- 
3. Multibase observations (i.e. not two bases with one-point observation but two separate occupations of the monument);
  4. Time separation with new GPS satellite constellation;
  5. Time separation (30 minutes or less); and
  6. Observation—loss of lock—re-initialization.

The second procedure puts the most emphasis on GPS accuracy, and blunder detection. For additional reference, please consult the “Guardpost” article on RTK and Measurement Closures published in the December 2005 issue of *ALS News*.

All of the above discussions assume that the GPS personnel has undergone rigorous trainings and that GPS system, procedures, and techniques have been verified through calibration/validation on the Alberta Government’s GPS Three Dimensional Positioning Basenet [*ALS News* Winter Issue

1990 Vol. XIX-1]. As section 11(2)(b) of the Surveys Act stipulates that electronic linear measuring equipment used by land surveyors be calibrated against this standard of measure periodically.

### Conclusion

The above excerpts and discussions for achieving redundant measurements in GPS (and conventional) surveys are, in my opinion, good references. It should be noted though they are not considered to be Practice Review Board or Systematic Practice Review directives.

As I understand, the current MSP standard for achieving redundancy measurement is under review by the Standards Committee. In the meantime, I urge every practitioner to develop their own policy to achieve reliable survey results based on their resources such that redundancy can be achieved in a consistent fashion within their own practice.

Please note that redundancy is not just confined to field practices and procedures. If proper checks and balances are in place in both the field and office, getting it done right the first time is achievable. For example, in some instances, field errors can be identified during a stringent plan examination process. In addition, good records and note keeping is key to achieving communication between field and office staff to further detect and resolve potential errors.

In closing, the Professional Development Committee has developed and designed two seminars this fall to assist practitioners and article students to achieving measurement redundancy and improve field notes keeping. A Field Notes Seminar will be held October 25, 2006 and a practical GPS seminar will be held in this November. I urge all practitioners utilizing GPS to attend these two seminars. I hope to see you there.



# spr corner

by Fred Cheng, ALS - Director of Practice Review

## Case Study No. 28: Perils of Issuing an “Old” Real Property Report— *are we providing due diligence as professionals?*

*The purpose of this article is purely educational. No names or identifying legal descriptions are included. Opinions expressed herein are those of the author.*

### Background

We have experienced an increased number of calls from the public requesting old copies of real property reports, for the purpose of buying and selling properties.

In one instance, a property owner indicated he kept the real property report (RPR) since he had moved into his house in 1986, and he is contemplating on re-using it as he is intending to sell his property.

In another instance, a practitioner had been pressured by a property owner to release a missing page of a real property report that she had lost. She had purchased the house in 2000 and received a photocopy of an RPR which was prepared for one of the previous owners in 1989. The property owner is of the opinion that she has copyright of the RPR. Is the property owner's reasoning valid? Think again! The RPR was prepared in 1989 for a previous owner prior to the possession of her house. In fact, she is the third-time user of the RPR in the chain of events. In essence, the copyright still rests with the land surveyor who had prepared the RPR in 1989. All the property owner possesses, at present, is a photocopy of a 17-year old RPR. And, of course, one page of the RPR is now missing, therefore rendering the document incomplete.

The practitioner, the property owner and myself engaged in a three-way telephone conference. The property owner insisted she was entitled to the missing page of the RPR. The land surveyor insisted

he would need to perform a field inspection today if a copy of an RPR was to be re-issued.

I could not agree more with respect to the land surveyor's professional opinion. The practitioner has earned my utmost respect in terms of providing a duty of care to the public at large. With his stern discretion, he has potentially reduced his liability, and indirectly protected the property owner from future problems.

### When is a Real Property Report considered outdated?

In general, a real property report is prepared for a specific client, reflects the improvements the day of the field survey, showing the name(s) and other particular information that would appear on the Certificate of Title (C of T) on the day that the title search was performed and other current relevant information at the time of certification.

With some real property reports, the surveys and the title search may be only a few months old and in some cases, they could be many years old. What is our professional liability in re-cycling out-of-date real property reports?

I cannot offer an answer as to how “old” an RPR need be to be considered outdated, but the examples above would likely apply even if the RPR was a few months, or even a few weeks old. Perhaps, there is no liability at risk if the re-issued RPR reveals the current situation of the property, but how is the practitioner to know if anything has changed on the property without at least a field inspection. Certainly a vintage RPR should not be re-used, simply because it does not reflect the current standard. If I

With his stern discretion, he has potentially reduced his liability, and indirectly protected the property owner from future problems.

were the purchaser of a property I would be very cautious if I were to receive a copy of a real property report showing a title number of a C of T reflecting a different person as a lawful owner other than the vendor of the property, and that the date of the RPR was a few years old.

Another example of a real property report that could be considered “obsolete,” by definition, would be one that is showing the foundation of the basement on the RPR only, where the property and building are currently fully developed. An RPR of that nature would soon have to have fences, face bricks, siding, eaves, sundecks, and other structural improvements added to the building foundation. In my opinion, this type of real property report should not be re-cycled under any circumstances.

As land surveyors, we cannot easily prevent the public from re-cycling them when they obtain an old copy of the RPR from somewhere. However, let us remind ourselves that we owe some professional responsibilities to the public and should not re-cycle or re-use real property reports.

### Fundamental Principles

Let us look at some fundamental purposes of a real property report survey and some case laws pertaining to using “old” surveys.

As per the Real Property Report brochure published by the Alberta Land Surveyors' Association, a real property report is a document

prepared by a professional land surveyor and is relied upon by the following parties for their identified specific purposes:

- (1) Property Owners—property owners are to be informed of:
  - the locations of improvements within the property boundaries,
  - any encroachment from or on adjacent properties, and
  - property compliance (or non-compliance) with municipal requirements.
- (2) Property Purchasers—property purchasers are to be informed of:
  - the boundary and improvement locations on the property, and
  - any problems relating to the property boundaries.
- (3) Municipalities—municipalities are to be assisted in:
  - determining compliance (or non-compliance) with by-laws and fire codes, and
  - the planning and development process.
- (4) Property Sellers—property sellers (vendors) are to be pointed out or shown any potential future legal liabilities resulting from problems related to property boundaries and improvements.
- (5) Mortgage Lenders—lending institutions are to be informed of:
  - conformance (or non-conformance) of improvements with municipal bylaws, and
  - problems that may have to be resolved prior to registration of the mortgage.
- (6) Realtors—realty professionals are assisted by:
  - providing a visual representation of the property for sale,
  - meeting requirements of the real estate listing/purchase contract, and
  - having the necessary information to assist in avoiding delays in completing property transactions when a real property report is arranged early in the sales process.

As professional land surveyors, we owe a duty of care to the public to provide current and accurate information, whether or not the

## As professional land surveyors, we owe a duty of care to the public to provide current and accurate information...

RPR would be relied upon by the legal profession or a lending institution to facilitate a real estate transaction. What are the legal ramifications and implications if land surveyors issue an out-of-date RPR to the property owner?

In a recent British Columbia Supreme Court ruling, Honourable Judge Mr. Justice Brooke established the following as negligent misrepresentation in the *Verlaan v. Von Deichmann et al* case [(2005) BCSC 1816], one must prove:

1. a duty of care was found on a “special relation” between the parties,
2. the representation was untrue, inaccurate or misleading,
3. the representation was negligently made,
4. the representation made was relied upon by the representee, and
5. the reliance was detrimental to the representee in the sense that damage resulted.

Other case law referencing the terms “duty of care” and “special relation” are: English House of Lord’s case *Hedley Byrne & Co. Ltd. v Heller & Partners Ltd.* (1964); Canadian’s cases *Kovalik et al v Schick et al* (1977), *Lac Mortgage Co. v. Tolton* (1986), and *Queen v Cognos Inc.* (1993). [Author’s note: the above cases should not be considered as an exhaustive listing of reference. For instance, in the *Queen v Cognos Inc.* case, the Supreme Court of Canada judges cited over forty cases dealing with the subject matters of duty of care and special relation.]

Prior to 1964, the courts had held that where there were no contractual agreement or fiduciary relationship established, negligent misrepresentation was not actionable. However, since the *Hedley Byrne* case in 1964, the courts have

taken “duty of care” into consideration and have applied the doctrine in other upcoming cases since.

“Duty of care,” according to Black’s Law Dictionary (fifth edition), is those obligations of performance, care, or observance which rest upon a person in an official or fiduciary capacity; as the duty of an executor, trustee, manager, and so on.

A “special relationship” develops whenever a practitioner provides advice or information on the subject matter of his profession. The courts view that a duty of care would arise when there is a special relationship that exists between the parties involved, which would cause a duty upon one party (i.e., the executor, trustee, manager, professional land surveyor etc.) to exercise reasonable care to making accurate and reliable representation to the other party.

A case of particular interest pertaining to the land surveying community is the *Kovalik et al v Schick et al* case where the Manitoba Court held that an offer to supply a building location survey (author’s note: a building location survey is similar in nature to a real property report in Alberta) from a surveyor, meant that the survey had to be a current survey. The meaning of a survey is a document where the property and buildings located thereon are shown, and that it be an up-to-date survey at the time it was received. In a Nova Scotia case, *Ravina and A & R Properties Ltd. v. Kanigsberg, Dordon, Stern & Freeman et al*, the Nova Scotia Supreme Court has ruled that solicitors certifying title for a property purchaser must advise their clients to obtain an up-to-date survey (building location certificate) before closing the transaction. Whereas in the *Lac Mortgage Co. v Tolton* case, Honourable Queen’s Bench Judge Mr. Justice Jewers ruled that the defendant, a Manitoba solicitor, failed to adhere to standard practice in advising his client of the danger of advancing mortgage proceeds without a building location survey and therefore he was liable to the plaintiff for any damages following from his failure

to do so. Judge Jewers not only indicated that the solicitor had failed to notify the mortgage company to obtain an up-to-date survey but rather the danger of not obtaining one. More importantly, Mr. Justice Jewers also ruled that the defendant was not entitled to rely upon a statutory declaration of the property owner.

## Current Standards in Terms of Updating/Re-issuing of RPRs

Part D, Section 7 of our current Manual of Standard Practice (MSP) deals with the preparation, updating/re-issuing, authentication and other requirements with respect to real property reports.

With regard to general standards for RPRs, Part D, Section 7.2 of the MSP states:

*A surveyor performing a survey to identify, locate and illustrate improvements and the extent of the parcel shall prepare an Alberta Land Surveyor's Real Property Report according to this standard.*

With respect to updating and re-issuing RPRs, Part D, Section 7.8 of the MSP states:

*A field inspection and confirmation of title is required to update old real property reports. Previous reports shall not be re-issued unless brought up to date and conform to current standards."*

And, with regard to authenticity of RPRs, Part D, Section 7.9 states: *To identify original real property reports, each original report shall bear a permit stamp, if applicable, and an original signature, both in a different colour than the printed document.*

In April of 1996, there was an overhaul in the standards regarding RPR surveys (the Manual of Good Practice was changed to the Manual of Standard Practice), and the standard is constantly evolving due to continually arising issues.

Changes to RPR standards from the last few years now require land surveyors to express an opinion on the boundary of the property, registered interests against the title (registered easements and rights-of-way) and showing the following:

- physical improvements situated thereon;

- improvements encroaching from an adjoining property; and
- improvements encroaching on to registered easements or rights-of-way.

In addition, a copyright symbol, the name of the practitioner, and the (current) year of survey are to be shown on the plan portion of the RPR.

Since 1996, minimum survey requirements for improvements have been added, amended or deleted and are now identified within Part D Section 7.6 of the MSP with respect to RPRs.

It is my opinion that there are three main components in the process of real property report surveys. They are:

- documentary research (plan, titles, encumbrances, and other information/records research);
- field measurements (which usually in the form of field surveys); and
- plan and report preparation, and certification.

All of these elements have to be conducted in accordance with the Surveys Act (see exception under Part D, Section 7.3) and adhering to the MSP standards.

## Discussions

Could the subject Alberta Land Surveyor have breached the duty of care if he had agreed to forward a copy of the old RPR to the property owner without conducting a field inspection? In my opinion, he would have compromised his professional integrity by contravening Part D, Section 7.8 of the MSP.

The property owner may readily endorse a statutory declaration declaring that no changes have been made to any improvements within the property. However, could one be certain that the neighbours on all sides do not encroach onto the subject property? Only a land surveyor with the trained skills could reveal this and indicate as such by his opinion expressed on the real property report.

Other uncertain elements, to name a few, could creep into the property report process are:

1. Might there be a change in municipal by-laws between today and the initial issuing of the RPR

The responsibility is upon us to exercise due diligence in preventing future RPR re-use and thereby avoiding unnecessary headaches.

17 years ago rendering the previous compliance certificate invalid?

2. Might the property be subjected to a potential claim for adverse possession?
3. Might other stakeholders (for example, utility companies register an instrument (for example, caveats, encumbrances) against the title which could cause some existing improvements to encroach onto these encumbrances?

All of the above will have to be thoroughly researched and field inspected prior to issuing an updated edition of the RPR.

## Food For Thought

As mentioned earlier, we cannot easily prevent the public from re-using real property reports when they obtain an old copy of it from some sources other than from land surveyors. The responsibility is upon us to exercise due diligence in preventing future RPR re-use and thereby avoiding unnecessary headaches.

Although the current MSP calls for different colours of ink to be used for the signature and the permit stamp, are there other techniques to prevent the recycling of real property reports?

The Association of Canada Lands Surveyors (ACLS) asks that their members affix an embossed seal onto their plan for authenticity. Could the MSP be updated to follow this practice to reduce the risk of liability of the land surveying professional? *[Author's Note: Currently, ACLS members have a choice of affixing an embossed seal or a printed/digital permit seal on their plans.]*

Please provide any suggestions for improvements to Council, so we may all continue to ensure the public is best served.





# guardpost

by Dwight Wiberg, ALS

*The opinions expressed in this article are that of the Practice Review Board member and not necessarily of the Board.*

I believe my fellow Board members conspired against me to perform the most onerous task required of each member. That task is to write a Guardpost article; I thought I had completed my duty by writing the June 2004 article. However, here I am procrastinating to the last minute to come up with something new for you to contemplate.

I attended the last Council meeting of August 29, 2006 to provide some insight on the PRB's program and to discuss some areas of concern. There are three areas of concern that the board is finding on reviews.

The first involves common standards for RTK surveys. This is not a new problem but is one that lacks a clear consensus as to redundancy measurements. The reviews of practitioners who have used RTK technology for a number of years show that they have their own in-house methods that they believe are acceptable for requirements of the MSP and their own risk analysis. There are, however, more of the small to medium sized practitioners who are considering, or have already purchased, the RTK equipment but do not have the years of experience of the larger companies. As the reviews of these small to medium practices come before the Board, the Board has responded by requesting that a policy be developed and reported back to the Director. The Standards Committee has been tasked to review GPS standards this term and we anticipate a clear standard will result.

The second concern continues around Section 47 (delayed posting) plans. The Director of Surveys office has indicated that monuments are not getting placed or not reported being placed within the standard one-year time period and that extension requests are either late or ignored altogether. During practice reviews, if the Board finds any

This is my last term as chair of the PRB and I would like to thank all of you who have participated in the board with me and contributed to the discussions and decisions.

delays in monumentation, extension requests or LTO certification forms, the practitioner is usually requested to sign an undertaking agreement to ensure timely monumentation takes place. In discussion with some practitioners who regularly employ Section 47, it is time that we as an Association review this section. Perhaps we need to amend the one year requirement to two years. This time period would then align with the two-year construction completion certification municipalities require of the developer. Also, the Association needs to review the need to post the rear lot corners as the majority of those seem to get destroyed. I opine that some research and statistics are required in that regard before any meaningful debate can occur.

The third concern pertains to dormant plans. The Board's definition is:  
*Any survey, the plan of which was required to be registered in the Land Titles Office, that does not get registered within the required time frames.*

*Part C, Section 3.8 of the Manual of Standard Practice states: If a statutory monument has been established but is not shown on a plan registered in the Land Titles Office, the surveyor must register a plan, called an Establishment of Monuments Plan, within two years of the monument establishment. This does not negate Sections 44 and 46 of the Act.*

*Sections 44 and 46 of the Surveys Act provide a 90 day deadline for registering a plan for re-establishments of Part 2 and Part 3 monuments.*

*For the purposes of Systematic Practice Review, the Practice Review Board is only concerned with surveys that do not meet the requirements of Part C, Section 3.8.*

While rather convoluted, it does agree with the MSP and the Surveys Act. The Board deals with dormant plans as part of the Phase 3 SPR. Every practitioner must report on the amount of and history of dormant plans. We have found some practices with plans that were surveyed more than ten years ago which are mostly oil and gas related pipeline right-of-way surveys. In these instances, the practitioner is requested to create a process to deal with the plans and provide regular reports to the Director of Practice Review. All practitioners are also requested to advise if they have a process for tracking plan registrations and if not, to prepare one. The Board believes these measures will alleviate the dormant plan issue. However, the Association should consider the root cause of these unregistered plans and then recommend changes. This is an issue that needs to discussion and debating within and outside of the Association if it is ever to finally be resolved.

This is my last term as chair of the PRB and I would like to thank all of you who have participated in the board with me and contributed to the discussions and decisions. Most of my appreciation goes to the Practice Review Team of Dawn Phelan, who keeps the machine running, and Fred and Don for their thorough reports and insights.



## pdC corner

by Ed Salmon, ALS

### Beyond the Scope of Practice in Municipal Surveying

As every new member of a committee has no doubt said, you learn a lot when you join your first committee. My first lesson was a simple one. When you are in Fort McMurray and get an agenda on Tuesday for a meeting in Red Deer on Thursday, make sure you get there! If you don't, a vote is taken and you end up spending a couple of weekends sitting in your office with writer's block. I am supposed to be painting my garage... On second thought, maybe this isn't such a bad thing.

In the September 2005 issue of *ALS News*, Patrick Marshall wrote an excellent article that discussed how articulated students should get surveying experience in areas of surveying other than the one they primarily work in. I would like to go farther and suggest knowledge in areas outside of surveying can be a great asset to your client and the public when dealing in the area of municipal surveys, as an example.

As a land surveyor, much of my work has been in the area of municipal surveys for both the private sector, as the surveyor carrying out the work, and in the public sector, as Supervisor of Subdivisions in Wood Buffalo. During this time, I have found the most challenging work involves working for individual land owners. Many have never built or sold a home or developed land and have no idea about the requirements of subdivision and development. An example would be someone who owns a parcel of relatively undeveloped land and wants to subdivide and sell. Often the first point of contact for them is the local municipality or city who, more often or not, sends them to a land surveyor. Unlike many professional developers, who come with their own team of engineers, planners and lawyers, the individual land owner walks in to the land surveyor's office with absolutely no

...as land surveying becomes more specialized, it is more important that land surveyors maintain an understanding of other professions that become involved in surveys.

understanding of what needs to be done.

In this case, one of the jobs of a land surveyor is to explain not only what the land surveyor does but what other requirements may arise during the process and how they are to be completed. These other requirements are usually in areas outside the scope of practice for a surveyor and may include engineering reports, environmental reports, off-site levies charges, developers' charges and development agreements for infrastructure, to name a few. If the surveyor has a working understanding of these and how they can be completed, the land surveyor can walk the client through the entire process. The land owner then understands that the subdivision and development of land is more than just lines on paper and posts in the ground. This then allows the land surveyor to be the one expert the public can go to. Without this additional knowledge, the land surveyor would become just another off-the-shelf service provider the land owner must go to.

All this, however, is not to say that the land surveyor needs to have a deep understanding of civil engineering, urban planning and planning law. Often I refer to what is needed as "vocabulary skills" where the main goal is to understand what is being asked and how to either direct your client in that direction or get it done on your client's behalf. These vocabulary skills are most often gained through experience, which in my case, often means by making mistakes. There are, however, other avenues where land surveyors can go to gain a basic understanding of other profes-

sions. For land surveyors in the municipal field these include:

#### **Introduction to Planning Law (University of Alberta):**

This is a certificate program offered by the U of A Faculty of Continuing Studies. It consists of a number of courses that go in depth into Part 17 of the Municipal Government Act. These courses cover all aspects of planning law in Alberta including the power and responsibilities of municipalities. These courses can be taken individually and can be completed by distance learning.

#### **Project Estimating Courses**

Local community technical schools and colleges will often offer evening non-credit courses on project cost estimating for the construction industry. These give a good understanding of the costs behind development projects. This will help in letting land surveyors understand some of the other costs in land development.

#### **Area Structure Plans (ASP)**

Most everyone remembers these as one of the statutory plans you had to know for the law exam, and, as I did, probably promptly forgot they existed soon after the exam. However, prior to doing work in an area, check to see if there is an ASP for that area and go through it. Often it will have requirements for subdivision or development not in the land use bylaw.

...continued on page 49







# public relations

by Jarl Nome, ALS

## Trig-Alta Math Contest

Recognizing that the future of our profession lies in the hands of today's children, it is critical that we interest youth in the profession of land surveying at an early age.

The Made to Measure "science-in-a-crate" project (recently developed through a joint initiative between Science Alberta Foundation and the ALSA) does just this, and is experiencing huge success amongst the junior high schools in Alberta.

Seeing the success of Made to Measure, and looking to carry this enthusiasm into the realm of high school, the Public Relations Committee is forging ahead with an initiative to establish a Trig-Alta math contest targeted at Grade 11 students.

The idea is simple—develop a set of math questions that are tied to the everyday business of a land surveyor, have students answer the questions in an exam-like setting, grade the responses, and award prizes to the top achievers.

Sound new and interesting? Well, sort of. The truth is that the idea for the contest originated from Trig-Star, a similar math contest held in the USA, and organized by the National Society of Professional Surveyors.

Through preliminary research, it is estimated that a contest like this will reach approximately 2,000 students, out of approximately 12,000 - 13,000 students in any one grade in any one year. Can you imagine trying to touch this many potential future Alberta Land Surveyors through one-on-one discussions or career day presentations!

It is intended that this contest provide the bridge mechanism necessary to continue interest in land surveying from the Made to Measure crate forward to the early years of high school, where students will make course choices (i.e. pure math vs. applied math) critical to

The Trig-Alta contest will generate enthusiasm about land surveying and will provide a relatively inexpensive mechanism for the hands of the ALSA to reach out to the Alberta Land Surveyors of tomorrow.

their ability to move forward with post secondary education to begin a career in the field of land surveying.

Sadly, there are instances where students realize their interest in land surveying too late and find themselves playing catch-up to upgrade high school courses to levels necessary for college or university entrance. By cultivating an early interest in our profession, we hope that this circumstance can be avoided.

Members of the Public Relations Committee recently met with a group of retired teachers (known as DHM) to begin initial brainstorming towards the bank of questions that will be necessary to run the contest. The DHM, with the assistance of the ALSA, will create questions that are related to the pure math curriculum and situations that Alberta Land Surveyors encounter on a daily basis. The questions will interest students in the activities and career opportunities available in geomatics and will help them to connect concepts learned in the classroom to actual, real-world scenarios.

In order to allow the necessary time for development and marketing, we are targeting the contest to be unveiled in the spring of 2007. In the interim, exam questions will be finalized, and the ALSA will attend the larger math teacher conferences, specifically MCATA (Math-

ematics Council of the Alberta Teachers Association) to promote the contest.

The official release of the contest will be accomplished via a mail package sent from the ALSA to each school in Alberta at the start of the 2007-2008 school year. The package will contain information about the math contest (target group, purpose of the exam, prizes, timelines, sample questions, etc.) and career information about land surveying and geomatics.

The onus will then be on the individual math teachers in each school to send a reply to the ALSA requesting to take part in the contest. Based on these requests, the ALSA will then print and forward exams out to each Alberta school that requested to take part.

The first writing of the exam will take place in March 2008. It will occur on the same day, province-wide, so as to minimize question leakage. It will be written by Grade 11 Pure Math students and will contain questions based primarily on subject material learned during the previous school year (i.e. Grade 10 Pure Math). The exam will be approximately 50 minutes in length (in order to accommodate a typical school period) and will contain a mixture of multiple choice, short answer (numerical response) and written response questions. Calculators will be allowed.

Upon completion of the exam sitting, the supervising teachers will return the exams (both questions and answers) to the ALSA. The ALSA will then forward the exam answers to the retired teachers (DHM) for marking. Multiple choice questions will be marked by the same computer software used by the Alberta Teachers Association. Short answer and written response questions will be graded by a team of experienced people assembled by DHM.

...see *Public Relations* on page 49



# education news

## University of Calgary

### UofA Team Sponsored by iCORE Wins Royal Institute of Navigation Michael Richey Medal

A team of researchers from the University of Alberta (UofA) and the University of Calgary (UofC) won the 2006 Royal Institute of Navigation (RIN) Michael Richey Medal for the best research results published in *Navigation*, the journal of the Royal Institute of Navigation. The award-winning research was conducted by UofA MSc candidate Ross Stirling in 2002-03 under the co-supervision of professor Ken Fyfe, Dept of Mechanical Engineering, UofA, and professor Gérard Lachapelle, CRC/iCORE Chair in Wireless Location, Dept of Geomatics Engineering, UofC. Mr. Stirling was partly financially supported by Professor Lachapelle's iCORE grant.

The research results were published in *Navigation* in a paper titled "Evaluation of a new method of heading estimation for pedestrian DR using shoe-mounted sensors" in 2005.

Dr. Fyfe and Mr. Stirling are now both working at Dynastream Innovations Inc., a privately owned Alberta-based company positioned in the global marketplace. The company has world-leading expertise in the research and development of proprioceptive devices using inertial and wireless technology for consumer, commercial, medical and industrial markets.

The award will be formally presented to the authors at the RIN Annual General Meeting in London, U.K., in October.

### Mr. Andrew Hunter— Assistant Professor

The Department is pleased to announce that Mr. Andrew Hunter has accepted the position of assist-

ant professor in the area of cadastres and land tenure.

Mr. Hunter holds a Bachelor of Surveying from the University of Otago and an MSc in Geomatics Engineering from the University of Calgary. He is a Professional Registered Surveyor with the New Zealand Institute of Surveyors, and he has extensive research experience in land tenure, land information systems and geospatial information systems. Mr. Hunter's current research is focused on the acquisition, use, and analysis of dynamic spatial data under the interrelated themes of Geographic Information Science, Spatial Statistics and GeoComputation. The primary application fields within which his research includes environmental applications related to animal tracking, land use planning and cadastres. He will complete his PhD in Geomatics Engineering, University of Calgary, in December 2006. Mr. Hunter has won a number of awards for both teaching and research excellence, and he has a strong record of professional experience within the land surveying community.

Mr. Hunter will take up this position in the Department of Geomatics Engineering in January 2007.

### Jau-Hsiung Wang wins MECS 2006 Best Student Paper Award

The Department of Geomatics Engineering is pleased to announce that Jau-Hsiung Wang won the Best Student Paper Award for the International Workshop on Artificial Intelligence and Applications at the International MultiConference of Engineers and Computer Scientists (IMECS) Conference 2006 held from June 20-22 in Hong Kong, China, for his paper entitled "The Aiding of MEMS INS/GPS Integration Using Artificial Intelligence for Land Vehicle Navigation."

## University of New Brunswick

### Department Surveys Historic Gun Battery

The Department recently surveyed a historical monument in Saint John, New Brunswick. Red Head Battery overlooks the Saint John River estuary and there were concerns that the site would be lost to erosion of the cliff face below. Construction of the gun battery began during the American Civil War when tensions between the Union states and the United Kingdom almost resulted in military conflict. The battery site was used as a training camp during World War I and as a dummy gun position during World War II.

The field work at Red Head Battery was carried out last summer by Dr. Kevin Pegler, assisted by Tomas Beran and Bessie Liu. The collected data was processed to produce a topographic plan of the site which will be used in the future archeological investigations. The survey was undertaken on behalf of the New Brunswick Military Heritage Project, an activity of the Military and Strategic Studies Program of the University of New Brunswick.

For further information about the Red Head Battery and its future, see

### University of New Brunswick Researchers Want to Save Redhead Battery

<http://northernblue.ca/mblog/index.php?/archives/138-University-of-New-Brunswick-Researchers-Want-to-Save-Redhead-Battery.html>

### Fortress Saint John: Red Head Battery

[www.saintjohn.nbcc.nb.ca/Heritage/Fortress/RedHead.htm](http://www.saintjohn.nbcc.nb.ca/Heritage/Fortress/RedHead.htm)

### The New Brunswick Military History Project: Saint John City

[www.unb.ca/nbmhp/02\\_NBMHPsites.htm#sjcity](http://www.unb.ca/nbmhp/02_NBMHPsites.htm#sjcity)

...see Education News on page 49



# legal notes

## ABORIGINAL LAW

**TREATY RIGHTS—The Parkland County Subdivision and Development Board had no obligation to consult with applicant Indian Band prior to issuing development permits for privately owned land near a reserve.**

Application for leave to appeal a decision of the Parkland County Subdivision and Development Board approving the development of a gravel pit by B Ltd. The Board held a public hearing to consider two appeals of the Board's decision. The Board sent notice of the appeal hearing to B Ltd. and adjacent landowners and advertised additional notice of the hearing in the local newspaper three days later. Applicant Indian Band first learned of the hearing on the day it was held. A representative appeared at the hearing and made representations on behalf of the Band opposing the issuance of the permits but did not request an adjournment. The Board denied the Band's opposition and issued the permits. Applicant argued that the provincial Crown or its delegate should have consulted applicant with respect to their aboriginal rights and treaty rights.

**HELD:** Application dismissed. Applicant was unable to show anything on the record that should have alerted the Board that applicant received inadequate notice of the hearing. There was no duty on the part of the Board to consult with applicant. The Board did not have to ensure that B Ltd. consulted with applicant, as there was no obligation on the part of B Ltd. to consult with applicant. Because the Board did not possess the authority to decide constitutional issues, they did not need to consult with applicant first. Also, there was no duty of consultation on the Crown or landowners regarding privately owned lands. Finally, there was no allegation that govern-

ment was involved in the proposed B Ltd. development, so the duty to consult did not arise. An enhanced right of notice did not exist where aboriginal bands were affected by developments on private lands near their reserves.

***Paul First Nation v. Parkland (County)*, [2006] A.J. No. 405, Alta. C.A. Ritter J.A., Apr. 19/06. Digest No. 2603-001 (Approx. 5 pp.)**

THIS ARTICLE ORIGINALLY APPEARED IN THE MAY 19, 2006 ISSUE OF THE LAWYERS WEEKLY PUBLISHED BY LEXISNEXIS CANADA INC.

## Callihoo v. Canada (Minister of Indian Affairs and Northern Development)

*This is a summary of the Court of Queen's Bench of Alberta file Callihoo v. Canada (Minister of Indian Affairs and Northern Development), 2006. The full text of the judgment is online at [www.alberta.courts.ab.ca/jdb/2003-/qb/civil/2006/2006abqb0001.pdf/](http://www.alberta.courts.ab.ca/jdb/2003-/qb/civil/2006/2006abqb0001.pdf/).*

At the heart of this lawsuit is an assertion of rights on behalf of members and descendants of the former Michel Indian Band No. 472. The problem for this group is that the former Michel Band is no longer recognized as an entity under the Indian Act, R.S.C. 1985, c. I-5. The parties agree that an enfranchisement was completed in 1958 to allow Band members to take individual titles to Reserve lands. The dispute concerns the effect of that Enfranchisement and the timeliness of asserting legal claims against Canada and Alberta over 40 years later.

The Plaintiffs' claims can be divided into three general categories with consequent remedies: interests in land held by the Crown in right of Canada and Alberta, confirmation of residual rights and status, and contravention of constitutional rights.

The interests in land claimed include interests in beds and shores of Lake Gladue, interests in mines and minerals, and interests in road allowances. These land interests were transferred to Alberta by Canada, and the Plaintiffs argue that the transfer was subject to their unsurrendered and continuing interest in these lands. Further, they seek a declaration that lands surrendered in 1911 were wrongfully taken from the Michel First Nation without its consent and contrary to the terms of Treaty 6 and the Federal Crown's fiduciary obligations. As well, they seek an accounting by the Federal and Provincial Crown of all lands, interest in lands, and property retained by the Defendants from the former Michel Reserve and a declaration that this property is held for the use and benefit of, or in trust for, the Plaintiffs.

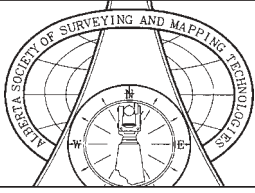
**Letter from L.L. Brown Special Assistant Indian Affairs to R. Thistlewaite Surveyor General December 20, 1957 Graham Affidavit AB 00161.**

In my opinion, it is absolutely clear that enfranchisement is a separate and self-standing method under the *Indian Act* by which a band may dispose of its land. Not even the most paternalistic interpretation of these sections would require that the voting process for "surrender" be superimposed as a secondary approval process, before a band could disburse land to its own members by enfranchisement. It would be totally illogical.

**Getting It Right  
Seminars will be held  
in Calgary and Grande  
Prairie in March 2007.**

*Watch for further information  
and registration forms.*





# assmt notes

by Wayne Latam, CST – Executive Manager

The standard opening for the column about the progress of the Society has been the changing seasons. I figured I'd start the same way. As the nights cool off and the leaves start to turn it reminds us, a beautiful summer is coming to a close. Why is it when a beautiful summer comes along, we are busier than ever?

These prosperous times create challenges for a volunteer organization like ours. We have, however, seen a continuing increase in membership with the increased activity in the profession. We thank those companies that continue to support our organization and encourage their employees to become certified.

The challenges were seen at our Annual General Meeting held on May 12 & 13, this year in Drumheller. Attendance was lower than expected primarily due to work schedules of our members. On the upside we had members who were extremely busy and still made time to attend our AGM. Members and guests made the event a success and goals of the meeting were fulfilled. Along with the business of an AGM, we took in the Royal Tyrell Museum and had dinner at the Last Chance Saloon in Wayne, AB.

At the AGM, we elected this year's Executive and Council. The new Executive and Council include members from across the province. I would like to thank the members for their dedication to the Society and mention the companies that support their involvement.

Barry Bleay, CST of Midwest Surveys Inc. in Calgary was elected as president. Barry has been involved in the Society at this level before and brings strong leadership to the group. We look forward to the year ahead with Barry at the helm. The past president is Ken Revoy, CST of Challenger Geomatics Ltd. in Calgary. He assumes the position

Our primary objective continues to be "to promote the knowledge, skill and proficiency of technicians and technologists involved in the field of surveying and mapping." ... it makes a difference.

after two years in the presidential position. Ken is one of those members who spent numerous hours despite a very full workload. Great job Ken!

Our new Vice President is Clint Johnson, CST of W. Pang Surveys Inc. in Calgary. Clint continues his involvement; he previously held a position on Council. Clint takes time out of a hectic work schedule as well as his busy soccer dad schedule.

Brian Ball, CST of Stewart, Weir & Co. Ltd. in Edmonton continues his second year of a two-year term on Council. Newly elected Council members include Kevin Laiss, CST of Baseline Geomatics Group Ltd. in Drayton Valley; Rob Cream, CST also of Baseline Geomatics Group Ltd.; Darryl Larson, CST of Athabaskan Resource Company based in Fort McMurray and Mike Spencer, CST of Mike Spencer Geometrics Ltd. in Lethbridge.

Other volunteers include Dwight Adams, CST of The Focus Surveys Limited Partnership in Calgary as the treasurer of the Society. One of our hardest working, long-term volunteers, Hugh Furber, CST retired from the City of Calgary, continues as our registrar.

The Alberta Land Surveyors' Association has provided support through our ALS advisors. Grant Cross, ALS ended his one-year term as our advisor in May. Tim Harding, ALS has succeeded him. Tim started his term by participating in our AGM. Both advisors have offered encouragement and support for the objectives of the Society and it is a pleasure working with them.

Our next AGM will be held in May 2007 in Kananaskis Alberta.

One high priority objective of the Society this year is the maintenance of our web site. The web site is our primary communication tool to keep our members and potential members informed of the activities of the Society. Please check out our site at [www.assmt.ab.ca](http://www.assmt.ab.ca). We include the latest events of the Society, job postings and a listing of members. As well, we have an application for membership to encourage those involved in the field of surveying and mapping to become certified.

Our primary objective continues to be "to promote the knowledge, skill and proficiency of technicians and technologists involved in the field of surveying and mapping." As one newly certified member said to me shortly after receiving her certificate for Senior Technologist, "I saw ASSMT certification as just a piece of paper but once you've got one (certificate), it makes a difference." Contact us with any questions you have about ASSMT. We look forward to hearing from you and, once again, thank you for your continued support.

## Upcoming Seminars

### Field Notes

Calgary - October 25, 2006

### GPS

Edmonton - November 2006

# a moment of silence

## Sutherland, Daniel Rae 1926–2006



Daniel Rae Sutherland was born on March 4, 1926 and was commissioned as Alberta Land Surveyor #165 on November 9, 1951 at the age of twenty-five years. Mr.

Sutherland remained an Alberta Land Surveyor for fifty-five years until his retirement in January 2006. D. Rae Sutherland passed away on July 13, 2006.

For those of you who knew Rae, you realize that such statistics don't begin to tell the story of who this man was. His company, Canadian Engineering and Surveys and its various incarnations was, at one time, one of the largest survey firms in Alberta involved in large pipeline and oilfield projects. Like any other company that has been in business for any length of time, there were good days and bad days. I remember David Thompson, ALS telling me one time that he used to work for CES and that his office was next to Rae's. During one of those bad periods, David had a steady lineup of people at his door submitting their resignation from CES. David tells me that, as he was receiving these resignation notices, he could hear Rae on the phone in the office next to his telling his caller that everything was just great and couldn't be better.

Rae was the quintessential entrepreneur. It seems like he had a hundred new ideas every day and he was always optimistic that, with enough funding and enough support, it was going to be the next biggest thing that would change the world. We knew that 99 out of these 100 ideas were bad (and sometimes very bad) but there was always that

feeling that there was going to be that one idea.

I met Rae late in his career but age certainly never seemed to affect his willingness or enthusiasm to support his next big idea. Rae always tried to flatter me by comparing me to the late Jack Holloway and encouraging me to be more like him and use my so-called influence to move the Association in a new direction; the direction in which Rae wanted to move.

A review of his membership file shows a number of letters to Council encouraging them to look at new initiative and new ideas. In 1998, he wrote a two-page letter to Council covering everything from RPRs to title insurance to a new role for practice review to the Association setting up its own research department. Just a few years ago, he suggested changing the name of the Alberta Land Surveyors' Association itself. I always had the sense that Rae always felt that, given enough time, he could convince you that his idea was the right one.

Throughout his career, D. Rae Sutherland articulated fourteen people, according to our records. This ties him for first place with Charlie Weir and George Walker for the most number of articling students in their career.

Rae Sutherland's ideas and initiatives meant that he sometimes ran afoul of the Association and the Discipline Committee. Shortly before he passed away, Rae asked me for a copy of a case in which there were discipline charges brought against him early in his career. I went through the file and found the record of the complaint from 1958. Rae replied that he was not looking for the 1958 discipline case but the 1963 discipline case against him. I don't think Rae thought of discipline as a bad thing but just the cost of doing business the way he thought it should be done.

Rae's ideas were not limited to land surveying. According to a 1978

newspaper report, "In 1961, Canadian Engineering Surveys was much involved in Thompson, Manitoba, installing the town's gas utility and building apartment accommodation for the growing population. Thompson was bound to flourish. Furthermore, cable television was just coming in. What better prospect could there be than supplying cable television for this isolated new community? So CESM-TV for Canadian Engineering Surveys Manitoba" was launched. The newspaper goes on to explain the problems that Rae had with CESM-TV and Rae summarized the whole idea as "the setting was inappropriate."

It is difficult to summarize a 55 year land surveying career in just a few sentences. Perhaps it is best it is best to leave the last words to D. Rae Sutherland himself in an article he seems to have prepared for his University of Alberta class reunion.

*BRIAN E. MUNDAY, EXECUTIVE DIRECTOR  
WITH ASSISTANCE FROM  
BERNIE RACHANSKY, ALS*

## The Experiences of a Lifetime

One way seems to intimate that I would relate just a few important experiences encountered in my lifetime. Whereas, taken the way I want it to be taken, is that my lifetime has been one grand experience, made up primarily of the meeting and associating with some of the finest people this old world has to offer. Without prejudice, this includes my family.

The first, and probably most important experience of my lifetime, was the meeting of my mother and father when I was born in Edmonton at the Royal Alec Hospital on the 4th of March 1926.

My father was born in 1876 in Pictou, Nova Scotia and his family eventually migrated to Brandon, Manitoba where he and his brothers commenced work on building the old Grand Trunk Railway (now

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CNR) through to Edmonton and, eventually, Vancouver.

My mother was born twenty years later in Fort Qu' Apelle while it was still in the North-West Territories and the experimental farm her father worked on was still trying to find out what would grow in what was to be known as Saskatchewan. Her family later returned to Winnipeg and then went back to Saskatchewan to homestead by Red River Oxcart pulled by an ox which almost became a part of her family.

Her father proved up a farm amid dramatic prairie fires and built a hotel in anticipation of the coming of the railroad my father was building. This was a fortunate decision for me as my mother met my father when he stayed at their hotel. It was nip and tuck for a while when my father left to build the railway on into Edmonton. But again, fortune took a hand and my father wired down to the hotel, "come up to Edmonton and let's get married." Eleven years later, I appeared on the scene and experienced Edmonton which was also in its infancy.

The experience of growing up, travelling back and forth to my relatives during holidays and returning to go to school in Garneau after having gone to a two-room, twelve grade farm school with my cousins for two weeks, when their school year started ahead of mine, was really an experience.

The farm boys were a pretty rowdy "I'm stronger than you" group while Garneau was made up of doctors, lawyers and professors' sons who said "excuse me" for just having rubbed shoulders. Talk about a culture shock.

As with most experiences, there is always an advantage to them. Mine came at the beginning of the war when the experience of having the best teachers a person could ask for in Garneau, led to a Mr. Innes calling for all the Grade 10 boys wanting to have a summer job surveying in the north and had experience with horses, please step forward.

I'm afraid my politeness slipped for a moment because I made it up

first and this experience set the direction of my future irrevocably in place.

I was fortunate enough to travel by pack horse all through the Pine Pass area before there ever was a road and see oil being drilled in a remote area where it took three years to drill a hole which now is done in thirty days. They even had a log school house for the drillers' children and close by, was a trapper who made more than the drillers did in those days.

This summer job brought the most important experience in my life. That was meeting the bridge champion of Canada and the senior surveyor for the Federal Department of Energy, Mines and Resources, Mr. Howard Spence, whom some of you may know.

For three summer seasons, we packed horses, lived in tents and triangulated from every mountain we could climb. One summer, we travelled to Great Bear Lake and used nothing but dog teams and canoes. Have you ever met a hungry husky for the first time who can sense you are scared stiff? That, in itself, is an experience. Eventually, the training I received in the rough country school environment enabled me to win the battle of wills with said Husky team leader. I must admit there was a bit more than wills being applied before he finally got the idea I was in charge and not him. We actually became quite good friends finally.

When I started, I said life was made up of experiences in meeting people. Let me correct myself, include dogs, horses and the entire animal kingdom as well, except for the odd grizzly bear that put me up a tree. It's an experience, but better done without.

There was finally the one summer I had to write exams and couldn't leave soon enough to go exploring with my friend Howard Spence. I had to take a labouring job in a new oil sands development in Fort McMurray which led to my first experience of riding the freight cars like a hobo with my best friend Murray Stewart, who wasn't keen at all in cuddling together to keep warm. After all, what are friends for?

Another benefit which came of this change was that Howard Spence carried on working in the newly developing mining areas and meetings the developers whom he quickly told didn't know anything about surveying and that they should use a good friend of his whom he had personally trained.

This led to my becoming chief surveyor for Eldorado Mining and Refining in Lake Athabasca and eventually chief engineer in my third year of Engineering.

Who said the shortage of manpower during the war years made things tough. I got the greatest break a young engineer ever could have had because of it.

My friend Howard, still exploring new territories, found another and better opportunity to help a stumbling mining company with their surveying just, coincidentally, as I was graduating in 1948. You guessed it, he got me the chief engineer's job, but in taking it, I had to give up an opportunity to play with the Eskimos for the princely sum of \$600 a season. What is it they get today?

After attending the graduation dance with no less than our own Virginia, and saying goodbye to all the class in the dawn, standing at the crest of the outdoor club hill, I took off for the wilds of Montreal and Labrador. Which was the wildest, I have yet to decide.

It was an emotional leave taking because we had unique class of fellow students that even included a girl and a fellow who slept through most classes, copied our notes and still became a prominent engineer. He, I still remember seeing later, disembarked from an Air Canada flight with the then uniform of a Torontoite—dark suit, dark blue overcoat and scarf, plus a very formal homburg. I concluded Don had got in the habit of copying everything and if I too were to be successful, I should do the same.

Our class was made up of returning WWII veterans and young, green behind the ears, direct from high school, young un's like myself. The combination added missed youthfulness to those old pillars of propriety like Harry Newton, Jack

Flavin and Phil Dau, plus others we all remember, while at the same time adding some maturity to Gordy Greenwood, Al Walker, Gordon Coates, Ross Jefferies, Gord Brown and other, including myself. I can't list everyone, but you all know the cross-influence that existed and made our class a truly unique experience and of lasting benefit to all our lives.

Thankfully, many of us continued to interact in business and I received my first major pipeline survey contract through the influence of Gordy Brown Phil Dau.

With all the help I have had in getting work, it's a wonder I even knew how to apply for a job or a project.

Doing all this reminiscing, I am afraid that I am rambling, but as I probably will not be at the reunion, I won't have to take all your remarks, so suffer on.

The three years following graduation was certainly an experience of a lifetime as I was involved in locating and surveying railroads, dam sites, open pit mines, mapping photogrammetrically uncharted frontiers and meeting the rugged individualists who were responsible for opening these frontiers.

The Iron Ore Company required the building of the St. Lawrence Seaway and I had the good fortune of doing all the "joe" jobs of running projectors, serving drinks, and so on, for Jules Timmins who promoted the massive project and was lobbying the Prime Minister, his ministers, senators and senior bureaucrats. What an experience to see how major decisions are brought about in a country. I found that there is another kind of engineering other than what I had been prepared for. There should be courses in the ways of the wordly.

Speaking of becoming worldly, I spent all the winter months in Montreal and even went to see the famous Lily St. Cyr at the Gaiety Theatre which was something for a prairie lad who had never been in civilization during a summer holiday. The first time this happened, I was amazed at what people didn't wear. This was really a cultural experience.

Another experience was running to catch commuter trains to work and shocking the more sedate travellers as to how all of our group of westerners stirred things up and made conductors wipe their brows. This tomfoolery attracted one very pretty blond girl and when she said yes when I asked her to marry me just as my father had done with my mother.

I had left Montreal to return to Edmonton where I articulated as a professional land surveyor under our Dean, Bob Hardy, and lectured in surveying, giving Pat Bouthillier and Stu Sinclair a break from the tedium.

Once established, I, like my father, wired the pretty blonde and asked her to marry me, which she did after she came out and inspected the "wild" west. Lorna Pearce and I were married on Labour Day weekend in 1951.

Following the end of my lecturing, which I found really interesting and challenging because, unlike us, they had not taken the adding and subtracting exercises that we had taken in grade school. The result was that the answers on their tests were notably wrong which made me feel rather guilty as to my not having got my message properly across.

Upon deeper analysis, I found that their simple arithmetic was the problem which I corrected after Christmas by bringing in Grade 3 adding and subtracting exercise forms which they were timed in completing at the beginning of each lecture. Guess the reaction—I got over this. But surprise, surprise, their marks improved immeasurably on the next test. (I hope the Dean of Engineering takes note of this.)

Perhaps, because of this incident, Bob Hardy and Chic Thorsen asked me to join with them in forming R.M. Hardy and Associates.

I was very pleased at the confidence they showed in me but living up to their expectations of me was somewhat daunting, especially when I went out to do a soils survey for a large, heavy refinery cracking tower. I'll bet that was the most minutely surveyed foundation this country ever saw.

What brought things back into perspective was bringing the results into the Dean at his massive, file covered desk (which I now understand and emulate) and have him look at the report for about thirty seconds, after which, he picked up the phone and made his recommendations to the client. If it ever had fallen down, I would never have known if it was from my soils survey or his snap judgement.

The firms of R.M. Hardy and Canadian Engineering Surveys Ltd., which I had formed prior to being asked to join in forming Hardy and Associates, prospered extremely well in both engineering and surveying. With growth in both fields, it became obvious that the responsibility for running each company should be separated. Harold Morrison took on the management of Hardy and Associates and I took on that which I was better qualified for—surveying. It was a good decision.

The reason I am writing this on a Canadian Engineering & Surveys Inc. letterhead is that the history of myself and CES are synonymous from this point on and my experiences stem from the development of CES from 1954 until today.

The interesting part about surveying, which I found out only through experience, is that it is usually the first undertaking of any new development and the principals undertaking the development are acutely interested in the early appraisals of the surveyors. This leads to some interesting responsibilities and experiences beyond the normal scope of just surveying.

Initially, we undertook the location/legal and construction surveys for most of the major western pipelines, a few of which we did for Jack Flavin, Gordon Brown, Phil Dau and Gordon Walker, all of whom I am sure you know. Later, we carried out mining surveys for International Nickel in Thompson where we employed the first skidoos that Bombardier built.

Still later, we carried out aerial triangulation surveys using the first cubic autotape multiple range electronic distance measuring equipment. Again a first.



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Surveying was fast growing into a high technology challenge, far removed from the old transit and level of survey school. Imagination seems to be the only limiting factor to the expansion of this profession.

To complement surveying, computers first became an essential partner to the profession and CES formed the first technical computer service centre in Calgary. This, we later sold to enter into the first cable television station in Canada in Thompson, Manitoba.

As surveying moved into the offshore areas for oil exploration and hydrographic mapping, CES again applied current technology and imported the first GPS satellite surveying systems of use in the Canadian Arctic.

The challenge of the frontier is the most fulfilling and rewarding experience because you are not bound by traditional solutions. Your imagination can run freely and if the idea is reasonable, it usually is implemented without delay.

While all this tradition breaking is going on, Lorna and I had three girls, who, in their own way, are carrying on the challenge of defying tradition.

What does the future hold? A new technology, of course. An airship platform to replace communication satellites. Check your internet [www.skystation.com](http://www.skystation.com)

*D. RAE SUTHERLAND, ALS*

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### ***Councillor's Forum from page 7***

decade. My experience, however, tells me "that what goes up – must come down."

It is within our power to soften the downturn by continuing to explore new avenues for our expertise and to diversify our field of practice.

Recently, an interesting sidelight to this economy happened to the home inspection companies. Because of the fierce demand for homes in Alberta, people were unconditionally buying homes without a home inspection. Overnight these companies have virtually seen their work disappear.

Because of new airline restrictions, duty free shops have lost 80% of their business overnight.

The government could deregulate land surveying tomorrow, so that anyone with a GPS machine could survey a well site or prepare a Real Property Report.

As land surveyors we must continue to monitor and maintain our field of practice as well as exploring other areas that would lend themselves to our unique expertise.

We must protect our greatest asset, which is our personnel. The ALSA must continue to be proactive in order to ensure we do not have a repeat of the 1980s where we lost a generation of skilled people from our industry and failed to attract new students.

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### ***PDC Corner from page 38***

#### **Local Builders or Construction Associations**

Join these associations and go to the meetings. The subjects that are discussed at these meetings will often give insight into what is involved in other aspects of a project. In addition, municipalities often use these to introduce changes to procedures or requirements.

#### **Planning Law and Practice in Alberta (Fredrick A. Laux, Q.C.)**

This is a very good reference book for going into detail on the Municipal Government Act. It goes through each section and gives practical examples and references for all aspects of subdivisions and development.

#### **Planning and Urban Design Standards (American Planning Association)**

This reference book explains in plain language how urban design standards are developed and how subdivisions and communities are designed.

#### **Conclusion**

Many surveyors in the past started out in civil engineering and then branched out into land surveying. At the turn of the century, these land surveyors tended to be responsible for works that were far re-

moved from the specific scope of practice described in the Land Surveyors Act. Now, as land surveying becomes more specialized, it is more important that land surveyors maintain an understanding of other professions that become involved in surveys. This will allow surveyors to continue to be the leading profession in the peaceful use and enjoyment of land.

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### ***Public Relations from page 41***

Once the results have been compiled, the ALSA will forward them to the individual schools. All students will receive a certificate; all students who receive a mark greater than a certain percentage will receive a certificate of achievement.

The top five scores province-wide will receive a cash prize (amount yet to be determined). An announcement will be posted on the ALSA website and a release will be sent to media outlets, related organizations, and schools.

The Trig-Alta contest will generate enthusiasm about land surveying and will provide a relatively inexpensive mechanism for the hands of the ALSA to reach out to the Alberta Land Surveyors of tomorrow.

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### ***Education News from page 42***

#### **GGE Hosts a BBQ**

The Department hosted a BBQ on 21 July for faculty, staff and students at Sue Nichols' house. Lots of food and fun was had by all. Thank you to Sylvia Whitaker for all of her hard work in organizing the event and the rest of the office staff for their help. Thank you to Sue Nichols for volunteering her home.

#### **Fifteen GGE Undergraduates Make the Dean's List**

Fifteen students from Geodesy and Geomatics Engineering have made the Dean's List for 2005-2006. The students who qualified for the list attained a sessional grade-point average of at least 3.7 or A- for the academic year.



# history

This is the eleventh in a series of articles on the history of the ALSA and its members. For more information, check out [www.landsurveyinghistory.ab.ca](http://www.landsurveyinghistory.ab.ca).

## 1926-1928 – Poor Attendance

During the next three years, the records of the Association are practically bare of any events that might interest us today. By 1927, the Council had managed to divest itself of the Association's interests in real estate, and was able to point with pride to viable assets in the amount of \$4,000.00, all invested in government bonds. In that year, Mr. P.N. Johnson succeeded Mr. Mitchell as Secretary-Treasurer and Registrar, and to the researcher trying to decipher the field notes of the meetings of that era, the change in handwriting is a distinct relief. Only two new members were registered during this period, while Mr. R.W. Cautley and one or two other old-timers retired from active practice. Each year and for many years thereafter, the Publications Committee reported that there was not sufficient material to warrant the publication of an annual report.

Meanwhile, the membership of the Association was dwindling and attendance at the annual meetings was poor, notwithstanding the facts that the Association as a body not only took care of the entire costs of the annual dinner and entertainment but also since 1924 had paid half the amount of any travelling costs in excess of \$5.00 that any member might incur in coming to the annual meeting from outside the city in which it was held. This indifference towards the affairs of the Association was a cause of concern to the Council, so much so that in his address to the 1928 Annual Meeting, the president suggested that any member who failed to attend ought to suffer a fine of \$15.00. This drastic proposal was apparently not taken too seriously, and beyond providing the inducements mentioned above, there appeared to be nothing much that the Council could do to improve matters.

### James Edward Gray

James Edward Gray, the son of William and Ellen Gray of Uxbridge, Ontario, was born October 12, 1880.

Mr. Gray received his primary and secondary education in the public and high schools in Uxbridge. He was in the 1909 class at the little red school house, School of Practical Science, University of Toronto. Following his graduation from the University of Toronto, he obtained his surveyor's certificate as a Dominion Land Surveyor, an Alberta Land Surveyor and a Saskatchewan Land Surveyor. It was to be sometime later that Mr. Gray decided to secure his commission to practice as an Ontario Land Surveyor, which he obtained in the year 1937.

The early part of Mr. Gray's surveying career was spent in the western part of Canada with both the Department of Interior and with Messrs. Murphy and Underwood, surveyors in Saskatoon. For twelve years prior to joining the Ontario Department of Highways in 1937, he was employed with the Canadian National Railways on survey and engineering work. Following his employment with the Ontario Department of Highways between the years 1937 - 1941, he started a small surveying practice in the western part of Toronto.

His later years were spent gardening, fruit farming and travelling in Florida and Mexico during the winter months.

Mr. Gray, a bachelor, was a strict vegetarian and this presented many problems to him when he was engaged in surveys in out-of-the-way places.

Mr. Gray died at St. Joseph's Hospital in Toronto on June 17, 1964.

*SOURCE: ASSOCIATION OF ONTARIO LAND SURVEYORS*

### Austin Cumming

Austin L. Cumming, former superintendent of the Northwest Territories and Yukon Bureau of the Department of Mines and Resources, died on Monday, May 9th, 1949 after a lengthy illness. He was 66 years of age.

Mr. Cumming, widely-known in oil and mining circles throughout Western Canada, served with Mines and Resources at The Pas Manitoba, and Fort Smith, NWT.

Born at Cornwall, he was the son of the late Mr. and Mrs. Hugh F. Cumming. He was educated at the separate and high schools in Cornwall and later attended Queen's University, from which he was graduated in 1905.

He served with the Topographical Survey Branch for eight years, becoming an Alberta Land Surveyor in 1912. In 1914, he enlisted in the Canadian Army at Edmonton and went overseas with the Canadian Engineers in 1916. During the War, he was wounded and was retired after the Armistice with the rank of captain.

*CANADIAN SURVEYOR, JULY 1949*

### Edgar Carl Brown

The late Edgar Carl Brown was born at Regina, NWT, on November 28th, 1886, the son of Thomas Brown and Annie Wynstanley Measfield, both of Macclesfield, Cheshire, England.

He was educated in the public, high and normal schools at Regina, graduating from the latter institution in April 1905.

Mr. Brown taught school during the year 1906 at Parkbeg, Saskatchewan. He was employed as clerk in charge of the organization of school districts, Department of Education, Regina, from January to May 1907, leaving there to take the position of assistant to W.T. Thompson, DLS,

MSC, district surveyor and engineer, Yorkton District, Department of Highways, Saskatchewan.

In May, Mr. Brown wrote the preliminary DLS examination under A.O. Wheeler, DLS, at Calgary and forthwith became articulated as pupil in surveying to Mr. Thompson. On the completion of the three-year term of articles, he wrote the final examination for DLS in May 1911, at Regina under F.J. Robinson, DLS, and the following month was commissioned a Dominion Land Surveyor, subsequently obtaining on examination the Saskatchewan Land Surveyor commission.

Mr. Brown continued with Mr. W.T. Thompson as assistant until

September 1911, leaving then to enter the service of the Grand Trunk Pacific Railway as land surveyor.

He was commissioned as an Alberta Land Surveyor in June 1912, and the same month given charge of all right-of-way and townsite surveys for the GTP Railway in the prairie provinces. He continued in that position until the amalgamation of the GTP Railway and the Canadian National Railways in October 1920. Upon the organization of the Land Surveys Department the following spring, with A.S. Weekes, DLS, as chief land surveyor, Mr. Brown became surveyor for the Saskatchewan district, but continued to cover the

prairie provinces on right-of-way, townsite and miscellaneous surveys.

Mr. Brown was commissioned a Manitoba Land Surveyor in April 1926. In addition to membership in the Manitoba, Saskatchewan and Alberta Associations he was also a member of the Canadian Institute of Surveying and the Town Planning Institute of Canada.

Mr. Brown's largest undertaking was the complete survey in 1915-1926 of all the GTR. Railway right-of-way in Saskatchewan, approximately 1,200 miles of track.

Mr. Brown passed away in Winnipeg on August 1st, 1945.

*CANADIAN SURVEYOR, JANUARY 1946*



