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MSAT trial keeps watch for pirates on Lake Erie

A proposal to keep tabs on a sunken ship in Lake Erie is one of the more interesting applications for MSAT services that David Halayko, Chief, MSAT Trials Program, has received.

The application comes from the Heritage Branch of the Ontario Ministry of Culture and Communications which is interested in preventing salvagers from searching for treasure rumoured to be on board the *Atlantic*, a sidewheel steamboat that sank off the tip of Long Point in 1852.

It is one of 75 projects conducted by federal and provincial government organizations under the guidance of the MSAT Trials Office. Other trials include plans to provide communications links for fire fighting control and emergency situations involving police departments. "We supply radio equipment, satellite capacity, technical support and training to potential end-users to give them a chance to evaluate mobile satellite services," explains Halayko.

The location of the trial is also unusual, says Halayko. "Although it is located in the middle of the most populated part of Canada, the tip of Long Point is more than 20 km away from any telephone or hydro lines." The site is within the Toronto/Windsor corridor, only a short drive from the 401 highway.

At a live noontime public performance on Ottawa's Sparks Street Mall, Communications Canada premiered a brand new song and video celebrating Canada's 125th anniversary. *Listen to the Land/Rassemblez les coeurs*, composed by Vancouver's Paul Airey and Judy Harnett, was the winning entry in the 125 Gold song-writing contest and becomes the official song for Canada's birthday festivities this year.

At the shipwreck site, a commercial X-band marine radar for the detection of anchored vessels will be hooked up to a Supervisory Control and Data Acquisition (SCADA) terminal. In order to save energy, the radar is only active for a short period every five minutes. If it detects the presence of an anchored vessel in any two consecutive active periods, an alarm is activated and transmitted to Telesat Mobile's hub station in Ottawa. The hub station automatically relays the alarm to an OPP detachment near the shipwreck site.

Recycled paper

Inside

Reginald Fessenden

Canadian inventor was radio's first voice

As the Department gets ready to commemorate the life of Reginald Fessenden, Communications Express *thought it might be time to launch an investigation into the life of a Canadian inventor that few Canadians seem to have heard of.*

Gordon Pole is GTA's District Manager for Nova Scotia and a part-time historian with a fondness for the stories of early inventors. This is Gordon's account of the life of Reginald Fessenden.

It was Christmas Eve, December 1906. Aboard one of the United Fruit Company's ships a telegraph operator awaited the message that was to follow the 'CQ' 'CQ' 'CQ' signal that had just been heard.

Suddenly he heard the sound of a "voice" over his headset, followed by a violin and singing. He listened, barely believing what he was hearing, a voice! music! It was like having a telephone, but there were no wires far out at sea.

How did it happen that this man along with a few dedicated assistants was able to do what Marconi had not yet dreamed?

It certainly was remarkable. This was 1906. Marconi was still only able to send messages in one direction using Morse's telegraph code and yet this was unmistakably a voice by wireless "telegraph".

The voice those operators heard was not that of Marconi, nor any of his people. The singer was Reginald Fessenden, a remarkable Canadian inventor who at the time of his death in 1932 had accumulated over 500 patents to his credit.

This was the first time the sound of voice had been carried by wireless over any distance. People were still recovering from the shock that dots and dashes could be transmitted by wireless telegraph and even telegraph communication was still a scientific miracle in the minds of most. This was indeed "wonder upon wonder!"

Who was this man who changed the course of wireless communication from a series of dots and dashes between trained operators to the medium of broadcasting?

How did it happen that this man along with a few dedicated assistants was able to do what Marconi had not yet dreamed?

Reginald was born October 6, 1866 near Sherbrooke, Quebec. The Fessendens eventually spent some time living in Fergus, Ontario. His father was an Anglican minister and although living in the poverty that a cleric of that era was expected to deal with, he was able to give Reg a good education first at a military academy, followed by stints at Trinity College in Port Hope, Ontario and Bishop's College in Lennoxville, Quebec.

In this regard he was different from the classic "empirical" inventors of his era who learned by the seat of their pants. Although he never did get his degree at Bishop's, leaving at age 18, he did have the grounding in mechanical and electrical theory that others lacked.

He became interested in the study of electrical communication but a lack of money forced him into teaching and he became a principal at a high school in Bermuda. The teaching post was not to last and he soon found himself in New York City trying to secure a job with Edison. Early efforts failed but he finally got a job at Edison Electric first working with cable gangs laying wire under the streets. Then he was invited to work with the great man himself developing improvements to the lighting plant dynamos. One day Edison asked Fessenden if he knew anything of chemistry. When Reg said no, Edison replied, "Good, I want you to be a chemist!"

Eventually Fessenden became Chief Chemist for the Edison company. Unfortunately the economies of the period hovered between feast and famine and the Edison company found itself in financial trouble. Fessenden was only one among many who were out of a job because of the slowdown.

Now 24, he went to work for Westinghouse. This too was short-lived but George Westinghouse's influence was strong enough to enable Fessenden to

See page 5: Fessenden

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Program now available to help family members

The new enhanced Employee Assistance Program is not just for employees anymore. The program is now available to serve you and your immediate family members with professional and confidential advice and counselling services.

According to Wally Munro, EAP coordinator, the program also has a broader mandate than most people think. "The Employee Assistance Program is not just for work-related and career matters, there's a whole range of services that can help you deal with marital, legal, financial, emotional, childcare and eldercare issues," says Munro.

Caring for aging parents is one area where Munro sees a high demand for information. Because the EAP is a Canada-wide service, Munro says it can be extremely useful to employees who live a distance away from their parents. "If your mother lives in Vancouver it can be a struggle to find reliable information on the different types of care available to her in that city. The consultants at the EAP have done much of the footwork and can provide you with advice and referrals."

The service is paid for by the Department of Communications and is offered by a national firm, Corporate Health Consultants Ltd., which has over 300 associates across Canada. Its staff consists of experienced professionals including psychologists, social workers and addiction counsellors. Complete privacy is assured and counselling is available outside regular working hours. A toll-free number can put you in touch with a consultant 24 hours a 365 days a year. English-language service is available at 1-800-268-5211. French-speaking callers can dial 1-800-363-3872.

Corbeil-Robin takes top honours in Minister's Art Competition
ADMQ's Lise Corbeil-Robin (second from left) won first prize in this year's Art Competition for her painting *N'ayez crainte, jour et nuit ils veillent sur vous.* Also pictured, along with Perrin Beatty, are runners-up, Marie-Geneviève Mounier (left), Mireille Dalpé (second from right) and Michael Palfreyman (right).

Results just in from Human Resources Client Survey

Preliminary results from the Human Resources Client Satisfaction Survey commissioned by DGHR are now available and the news is encouraging! Overall, human resources clients indicated a positive level of satisfaction with the services they receive and offered a number of suggestions for ways in which improvements could be made.

The Client Satisfaction Survey is DGHR's response to the federal government's proposed new policy on consultation which requires all departments to consult their clients on the services they provide and to develop strategies for dealing with issues raised.

The survey consisted of a direct mail questionnaire sent to a representative sample of 377 DOC employees in February. It was carried out by Marcel Saint-Onge from the Department of the Secretary of State who also conducted a similar study for the Human Resources Branch of his own department.

Saint-Onge presented the preliminary survey results at the 1992 DOC Annual Human Resources Conference to an audience of DGHR employees, regional human resources managers and sector clients. The overall satisfaction rating was 4.04 on a scale of 6 which is considered good given the current climate of change and limited resources within the public service. The rating varied significantly by occupational category (with support staff the most satisfied) and by place of work (with the regions scoring highest in satisfaction).

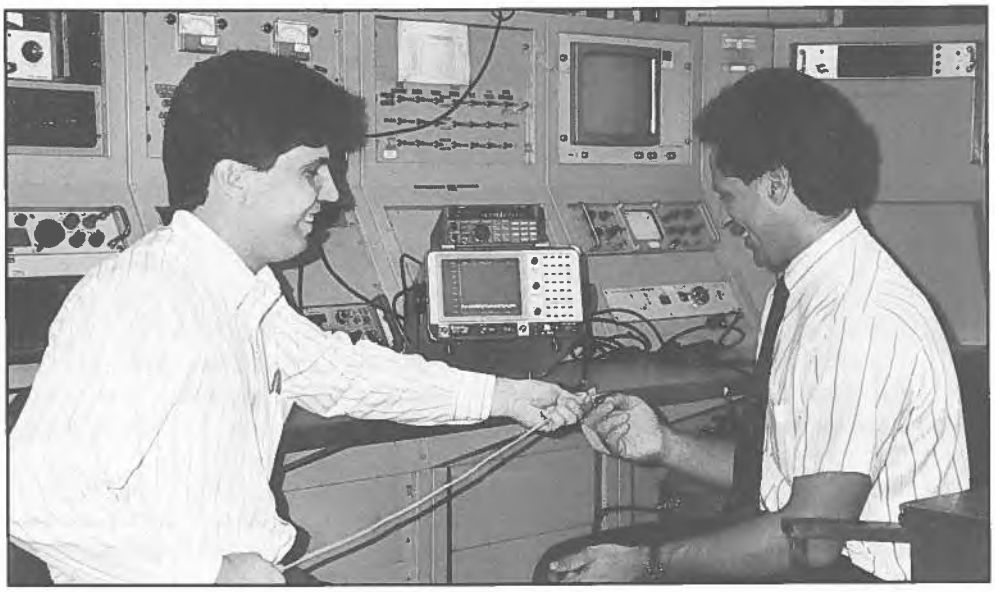
Respondents were asked to assess 11 human resources services: classification; employment equity; human resources planning; executive group services; official languages; pay and benefits; staffing; staff relations; training and development; employee assistance; and employee orientation. The level of satisfaction was highest for those services for which the Department has the greatest delegation and flexibility.

The data from the survey will be combined with results from such other activities as the second DOC All-Employee Survey, the work of the Anti-Bureaucracy Committee, the recent PSC comprehensive audit of human resources activities, the output from DGAT's work on the development of service standards for the Department and Treasury Board's project on Strategies for People. Subsequently, an action plan will be developed in consultation with both human resources staff and clients later this year.

Copies of the Saint-Onge report are available in both official languages from DGHR/DIRH (telephone 990-5497 or 990-6497; fax 952-7534).

District Office Profile

Toronto District: Innovation makes it work



Working in one of the most congested radio spectrum areas in Canada, Senior Inspector Tony Komljanec (left) and Authorization Manager Jack Holt are pictured here in the Spectrum Observation Centre.

By Sonya Verheyden

With the largest workload in the country, the most complex radio spectrum in the region to manage, and staff relocation to a distributed office in sight, innovation is part of daily life at the Toronto District Office.

The Toronto district is often chosen to test some of the newest technologies produced by the largest manufacturers. According to District Director **Mike Power**, "We are given the opportunity to experiment with new equipment, and new ways of doing the job. With the challenges facing the district in today's environment, providing people with the tools to improve and improvise is vital. Our five managers and their staff perform extremely well and through their combined efforts we have what I think is one of the best districts in the country."

Innovation is also responsible for a new position at the Toronto District Office. **Cathy Bolan** is the District Consultant for Communications and Culture. With increased regionalization of cultural programs, a decision was made to also provide service at the local level. "The idea is to have a front-line person readily available to assist clients," explains Bolan. Toronto is currently the only district office in the Ontario region to implement this, however plans are underway to place consultants in each district office.

As Manager of Authorization, **Jack Holt** is responsible for the testing of radio operators and the granting of authorization for radio spectrum usage. Ten inspectors and two technical and administrative specialists provide the authorization services. Radio station licensing is a highly time-consuming process due to Toronto's congested radio frequency environment, and the frequency co-ordination process between Canada and the United States. Holt explains, "Our district's proximity to the United States means that much of what we do with our spectrum may affect theirs, and vice versa."

In Spectrum Control, Manager **Watson Reed** handles field activities such as interference, inspections, enforcement and compliance. The office has a high level of trainees who rotate between the Authorization and Spectrum Control sections. "It is a real challenge to balance workload with training to maintain our high quality of service to clients," says Reed.

John Baggio is the acting Section Head for Spectrum Development. The section assesses requests for additional or dedicated spectrum (spectrum allocated to specific services). "We work hard to accommodate as many users as possible while working within the limitations of acts, regulations and policies, however, spectrum is a limited resource," says Baggio. The section is also responsible for the district training requirements and maintains the emergency communications plan in co-operation with police, fire departments and municipalities.

The Support Services section consists of eight Technical and Administrative Assistants who provide technical, administrative and financial support for the district's program delivery. "Duties of staff range from data entry and word processing to serving clients at the counter, licensing of ship, amateur, and aircraft radio stations, and the collection of licensing revenues," explains **Yagoda Bulat**, Manager for Support Services. In the 1992-93 fiscal year, over $15 million in renewal fees were collected in the district.

Under the distributed office project, seven district staff members will transfer to a Burlington sub-office this September. The move will benefit many staff members, some of who commute as much as four hours a day. Staff will also have greater responsibility for program delivery.

(Sonya is a co-op student from the University of Waterloo, currently working with Public Affairs, Ontario Region.)

Challenges ahead for GTA Atlantic Region

Changes and new experiences have become a way of life these days in the Government Telecommunications Agency. Earlier this year, René Guerrette became acting regional director, GTA Atlantic Region. Guerrette started with the DOC as a Radio Inspector in Saint John in 1981. He has been with GTA in Moncton since 1990, where he was involved in data support and project management during the time of GTA's transition to an Special Operating Agency.

"Our challenge now means we need to be visionaries," says Guerrette. "We have to be able to see the big picture and stay a step ahead of the competition." There is heavy emphasis on the marketing function, reflected in such changes as business plans replacing operating plans. "Our emphasis now is to ensure that GTA is competitive with private industry," he says. "As a Special Operating Agency, we must market our offerings more vigorously and provide even more value-added services," says Guerrette.

René Guerrette

According to Norman Boudreau, GTA district manager for Prince Edward Island and New Brunswick, there will be a continual challenge for the agency to retain and expand its client base. "We're competing not only with the big players and resellers, but with smaller organizations trying to fill niche markets," says Boudreau.

Guerrette says GTA is looking at restructuring the client services end to focus on marketing. "By providing one-stop shopping while keeping overhead down, we will be aiming to keep our most valuable asset — the returning customer. Although we have the majority of the market in voice, there is a growing market on the data side that we have yet to capture," says Guerrette. "We have a totally digital network, and conditions are prime for the data side."

"GTA will have to provide a mixed bag of products and services, and take a proactive approach for the future," says Boudreau.

Guerrette sees the restructuring as a slow process. "The wheels in management may turn quickly, but as you go downward, things begin to move more slowly," he says. "It will take time." Internally, there has been constant revamping. "The transition and learning curves for the region are pretty steep," says Guerrette. "We also face an ever-changing external environment. We all need to learn to be more adaptable." (From *Atlantic InterComm*)

Fessenden continued from page 2

secure a position as Chairman of the Department of Electrical Engineering at the University of Pittsburg. He was rejected when he applied for a similar post at McGill. Fessenden was to remain there for the next seven years.

During this tenure he put his time to good use and was able to delve into the deep mysteries of wireless communications.

By 1906 he transmitted the first two-way broadcast of code across the Atlantic, and by a freak on nature received a message from a man in Scotland that had received fragmentary portions of his Christmas Eve broadcast.

He spent his life experimenting in wireless communications eventually winning a suit brought against the Marconi company for patent infringement.

He was the designer of the heterodyne circuit, he anticipated radar and sonar actually developing a system. He developed the use of radio detection for locating ships at sea.

The odds against him were great indeed. At the time Marconi thought that radio signals were carried through the air as a whiplash effect, Fessenden understood that they expanded like the ripples around a stone dropped in the water.

When Fessenden needed a machine that would generate 10,000 cycles per second he discovered that no such device existed. So he contracted for one (even though he did not have the money) using the turbine (which was also new) to drive the frequency generator. It was thought by many that such a machine would only suceed in exploding.

Fessenden never became rich from his inventions although toward the end of his life he enjoyed financial security. In his life he received patent rights to over 500 inventions — not bad for a Canadian that no one ever heard of.

CRC takes steps to improve access

Rolling Thunder, a theatre company made up of both disabled and able-bodied actors, brought their show to the CRC recently, during Communications Canada's Access Week.

by Deb Finn

People with disabilities have the right to government facilities and services.

At Shirleys Bay, a small but dedicated team of workers are ensuring that the Communications Research Centre becomes a friendlier place for the disabled. The group is led by Gerry Clement and his project officers are Dave Monfils and Rhoda Bellamy along with the help of Catherine Parker and Cam McQueen.

Rhoda Bellamy stressed that the work will be for the benefit of all. "You might never need to use recessed curbs to get into a building or an elevator to get from one floor to another," says Bellamy, "but then again, if you broke your leg tomorrow you would be very happy that these features existed."

Work has started with the areas where visitors to the site are most likely to go. The guard house is one of the first priorities. Parking space for people with disabilities has been assigned in front and the curb has been recessed to enable disabled visitors to enter the building and sign in. As well, part of the counter inside the guard house will be lowered to accommodate visitors in wheelchairs.

The other site locations seen by many CRC visitors are the cafeteria, library and the Canadian Space Agency's facilities. Accessibility studies have been completed for the Canadian Space Agency and the Defence Research Establishment Ottawa (also located at Shirleys Bay).

Hand rails are going to be installed in the tunnels running between the buildings. Doorknobs, hinges and door closers will be replaced. Washrooms will be renovated to make them more accessible and service counters, like the ones in the library and stockroom, will be lowered. Flooring will be looked at and replaced with safer, non-slip surfaces, especially in hallways and building entrances, on an on-going basis.

Once these high traffic areas have been improved, the rest of the site will be upgraded. This will happen over the next two years and the project will be completed by 1995.

The changes being implemented will benefit everyone who works at CRC, both disabled and non-disabled. The key word here is convenience. Making buildings accessible to people with disabilities increases their convenience for everyone.

CWARC plays host to TMI-92

In June the Canadian Workplace Automation Research Centre (CWARC) played host to the Fourth International Conference on Theoretical and Methodological Issues in Machine Translation (TMI-92), held in Montreal.

The conference attracted about 150 participants from Canada, the United States, Europe, and Japan, who were provided with a chance to debate topical issues in automated translation and bring themselves up to date on the latest scientific developments in the field.

Conference-goers were treated to a full schedule of presentations, including two memorable addresses delivered by Robert Mercer of IBM's Thomas J. Watson Research Center and Yorick Wilks of New Mexico State University. The event wrapped up with a debate featuring six highly respected figures in the field of automated translation: Margaret King of the University of Geneva, Geoffrey Sampson of Sussex University, Graeme Hirst of the University of Toronto, Kenneth Church of AT&T Bell Labs, and Ronald Kaplan and Martin Kay, both of XEROX PARC in California.

Overall, TMI-92 was a resounding success. It was completely sold out, beating all attendance records for previous TMI conferences. Participants' comments were unanimous: this was by far the best TMI yet!

Pierre Isabelle, Manager of CWARC's Computer Assisted Translation Program and chairman of the organizing committee for TMI-92.