

# ZEPHYR



Environment  
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Atmospheric Environment Service

May/June 1986

## 1985 had many severe weather events

The Canadian Climate Centre publication "Climatic Perspectives" has drawn up a summary of significant weather and climate events for 1985.

The year began with freezing rain in southern Ontario and southern Québec causing power outages, traffic accidents and airport closings. This was just a start, however.

Heavy snow and blizzards in Newfoundland and eastern Québec on January 27-28 caused schools and businesses to close, and roads to be impassable. Three persons were killed during a car-bus collision.

The East Coast faced numerous, often severe weather events including a major snowstorm and heavy sea ice on February 2-3 which forced drilling rigs to move and shipping and ferry services to be disrupted. Southern Ontario had heavy rain and flooding (February 23-24) causing ice jams on the lakes, inundations on farms and city streets and flooding in the tunnel under the Welland canal.

The Prince Edward Island ferry was disrupted when snow and freezing rain hit the Maritimes. The Welland Canal was hit again on April 6 when strong



Century-old farmhouse north of Shelburne, Ontario, wrecked during the powerful Barrie tornado, on May 31, 1985.

winds and heavy rain in Ontario's Niagara peninsula caused major flooding and an ice jam which closed the canal.

Winter persisted in the West during April 25-27. Major wind storms and heavy snow pounded northwest coastal British Columbia causing four fishing trawlers to sink and two persons to drown.

At the end of May some of the worst spring weather in many years assaulted northern Ontario. On May 30 a violent hailstorm struck this region, ruining crops and doing millions of dollars damage. The following day the "great Barrie Tornado" struck an area to the north and northwest of Toronto, killing 12 people, injuring hundreds of others and causing \$100 million property losses.

A week later a wind and duststorm attacked southern Saskatchewan and Manitoba causing heavy soil erosion and other major damage. Newly seeded crops were blown away causing losses of \$4 million.

A July drought struck British Columbia, Alberta and Saskatchewan. There were raging forest fires in B.C. and several communities were evacuated.

A late July severe thunderstorm with hail in Ontario and Québec caused power outages and \$3 million damage to farms. In addition five people were drowned.

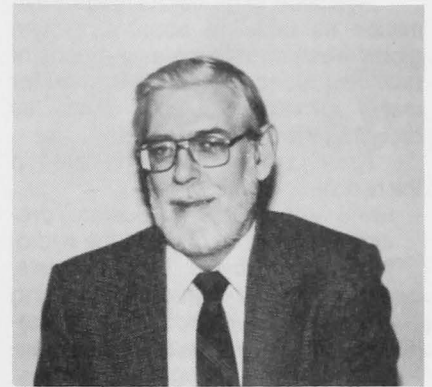
In early August it was southeast Saskatchewan's turn. Hail and torrential rain caused extensive flooding of fields and soil erosion. There was up to 350 mm of rain in an eight-hour period — probably a record east of the Rockies.

On August 26 a hailstorm inflicted heavy damage on southwest Ontario tobacco and tomato crops.

By October 8 winter was back in southern Manitoba and northwestern Ontario where heavy snow brought harvesting to a standstill.

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## New ADMA has wealth of AES experience



At the beginning of January, Howard Ferguson was appointed Assistant Deputy Minister of the Atmospheric Environment Service. He succeeded Jim Bruce who retired as Assistant Deputy Minister at the end of 1985.

Mr. Ferguson has served for more than 30 years with AES and its predecessor, the Meteorological Branch of the Department of Transport. During his career he has worked in all major components of the organization, starting out as meteorological officer/weather forecaster at RCAF Station Trenton in the 1950's. After obtaining his M.A. at the University of Toronto, Mr. Ferguson worked as a forecaster at Gander, Newfoundland for four and a half years.

Subsequently, he moved to Toronto and after a brief stint in the forecast office at the International Airport became an instructor in the Training Section where he taught applied meteorology.

In the late 1960's, he moved into hydrometeorology where he began to gain experience in bilateral and global programs through projects of the International Hydrological Decade and the

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Canada

## AES scientists praised on WMO Day

This year's theme for March 23 set by the World Meteorological Organization was Climate Variation, Drought and Desertification and it earned certain AES scientists some ministerial praise.

Environment Minister Tom McMillan said in a press release that Canadian scientists were experimenting with mathematical models, or snapshots, of the atmosphere and were uncovering possible clues to the process of world climate change.

"We need to gather as much information as possible about long-term global weather patterns as a means of providing an early warning system for major climate problems such as drought", the minister added.

Among other points highlighted in the minister's salute:

- using reports on soil moisture, precipitation, evaporation and the hydro-hydrological cycle, climatologists, meteorologists and others working under the WMO's World Climate Program have advanced the overall understanding of drought.
- as part of the Canadian Climate Program, scientists studying the effects of severe drought in Western Canada in 1961, 1980 and 1984 have set up computerized systems to aid farmers in foreseeing and preparing for impending droughts.
- agreements have been signed with the Prairie Provinces on drought research and reservoir construction designed to relieve the effects of future droughts.
- Canadians working on climate change on a world-wide basis include atmospheric scientists using the CRAY supercomputer in Dorval, Que. and researchers using satellites to track global weather systems and monitor drought and desertification patterns over the whole planet.

Each March 23, the WMO selects a special meteorological theme of world significance that is then publicized in more than 160 countries.

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**June 25, 1975** — A tornado swarm was spotted in southeastern Saskatchewan at Regina; the rainfall exceeded 150 mm over 8 hours. From the 25th to the 28th severe weather occurred across the eastern Prairies.

## Dr. McBean named vice-chairman of Climate Committee

Dr. Gordon McBean of the Canadian Climate Centre, currently doing ocean-atmosphere research at the Institute of Ocean Sciences at Pat Bay, Victoria, British Columbia has been named vice-chairman of the Joint Scientific Committee for the World Climate Research Program.

The appointment was announced following election of officers this March at a joint WMO/International Council for Scientific Unions meeting.

Dr. McBean has been very active with the WMO's World Climate Program and with other international bodies doing climate research work over the past five or six years. The new appointment places him within a major WMO steering group.

Among his many AES assignments Dr. McBean has been associated with the Automated Shipboard Aerological Program (ASAP).

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**June 23, 1980** — A tornado and hail-storm near Yorkton caused \$1.6 M in property losses including the skating rink at Francis Sask.

## ASAP now on three ships

The Automated Shipboard Aerological Programme (ASAP) has once again reached another milestone, with Canada's installation of the third container on the Norwegian ship *Skaulgran*. This is the sister ship of the *Skeena*, which also has an ASAP container, plying the north Pacific between Vancouver and Japan. This third ASAP is the first one commercially built from the specifications that Canada and the United States have been working on for almost a year. With this latest addition, the number of ASAPs operating in the Pacific totals three. Canada and the United States are presently working out the plans for a fourth one to be built by the late spring and available for operational use next fall, possibly between the West Coast and Alaska. If this plan works out, the proposed route will take it very near the old weather ship *Papa*.

From the March 1986 American Meteorological Society Newsletter



**Pictured are OIC, Jack Barron (left) and observer, Bill Scott of Dease Lake Weather Station with their recently presented Award for Excellence in observing. Their station's percentage of total errors, as reflected by the VERSA Program, has consistently been the lowest in the Region. This award recognizes the scrupulous attention to detail and the extra care and attention paid to observing procedures that were necessary to achieve this commendable level of performance. Dease Lake is located in northwestern B.C. west of the Cassiar Mountains.**

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**May 31, 1985** — The worst tornadic outbreak in 30 years occurred across Central Ontario in late afternoon. Three confirmed tornadoes struck communities of Barrie, Grand Valley, Orangeville and Tottenham — 12 deaths, 100s injured and 1000 buildings destroyed or damaged. Tornado was 3rd most damaging and had longest track (200 km) in Canadian history.

## ZEPHYR

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Please address correspondence or article contributions to: ZEPHYR, Atmospheric Environment Service, 4905 Dufferin Street, Downsview, Ontario M3H 5T4.

Editor: Gordon Black  
Phone: (416) 667-4551



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# Fouad Fanaki named Zephyr Contributor of the year

Dr. Fouad Fanaki has been named Zephyr Contributor of the year for a long series of hard-hitting cartoons published in the AES employee magazine and stretching back nearly a decade.

First person to receive such an award, Dr. Fanaki was honoured at a short ceremony held this February at the Communications Directorate Office at AES Downsview headquarters. ADMA, Howard Ferguson presented Fouad with a certificate recognizing his work as a cartoonist for Zephyr. At the same time he offered Fouad a large paper strip with the words "Top Drawer" printed on it. Before an audience of research scientists, information people and "friends of Zephyr" Mr. Ferguson outlined Fouad's other achievements, not forgetting to add that he had himself been head of Air Quality Branch while Fouad had conducted several major scientific experiments there. He also mentioned Fanaki's work as an illustra-



**Fouad Fanaki, left, receives certificate from ADMA Howard Ferguson, saluting him as Zephyr contributor of the year.**

tor of AES papers and logos, as a designer of the front pages of university-published books and as a person who thought nothing of auctioning off one of his paintings to raise \$600 for the AES Day Care Centre or \$400 for the Society for Deaf Children.

Despite the above, Fouad modestly describes himself as a weekend artist. Actually he has been president of the Thornhill Artists Club, has been a painter since his students days at the University of Western Ontario, has held several art exhibitions, and has dabbled in many styles from woodcuts to landscapes, from avant-gard designs to cartoon murals. His house in Thornhill, particularly the basement, is aptly described as an "art gallery".

Citing painting as his major hobby, Fouad says he is now turning increasingly to portraiture, since this work involves a great deal of human psychology. For Fouad this is much more real than landscape painting and much closer to cartooning too.

Although he describes art as a hobby, he does not regard it as particularly relaxing. "It has always been a struggle", he says, recalling his university days while doing science studies when he made many attempts to succeed and finally broke in with off-beat drawings for the university magazine. Now Fouad likes to combine scientific journeys he makes to remote parts of Canada with some painting or sketching. For example, he recently spent some of his lunch hours while at Inuvik near the Beaufort Sea sketching native people from a restaurant table.

Overall, Fanaki gives the impression of being a "Renaissance Man" or at least a very well-rounded scientist. In addition to painting, Fanaki now designs stage sets for the Newmarket Town Theatre. An example of his thoroughness, occurred when a play



**Taking a rest from hard hitting cartoons, Fouad Fanaki shows how a meteorologist feels when fine weather returns.**

having the inside of a castle as one of its scenes, and needing portraits on its walls, was supplied with Fanaki originals. Besides all this he plays the guitar, swims, plays volleyball and soccer.

A long-time colleague of his, Dr. Hans Martin (LLO) says Fouad has a great eye, observes more and in greater detail than anyone else he knows. He recalls a cartoon mural that Fouad did for Air Quality Branch when Dr. John Reed left a year ago. "The face of every participant had remarkable, individual, humorous and very human traits. Fouad is a great artist, he is one of those people who has made a successful go of both art and science."

## Canada's oldest weather volunteer dead at 94

Vernon Tuck, Canada's oldest volunteer weather observer has died. Mr. Tuck who carried out temperature and precipitation observations from the backyard of his Grimsby, Ontario home, passed away last fall in his 95th year.

Mr. Tuck faithfully recorded climate statistics for the weather service for nearly 41 years. For much of that time,

he also worked as a local optometrist.

Due to his long and dedicated volunteer service, Mr. Tuck received many awards including a Morley Thomas award for 25 years individual service. In 1983 Mr. Tuck was invited to AES Downsview headquarters on the occasion of the World Meteorological Organization Day, at that time honoring weather

observers. Along with another weather observer from Saskatchewan, Mr. Tuck was given a special welcome by the then ADMA Jim Bruce, and by other AES officials. He also received nationwide TV and newspaper publicity including a front page article in the Toronto Globe and Mail.

# Chinese Meteorologists Visit West

Over the past six months Chinese meteorologists have been taking an increasing interest in Western Canadian meteorological installations.

First a group of ten Chinese scholars headed by meteorologist Fan Jin Peng made a tour of Alberta Weather Centre. Later Peng sat in and did a little meteorology with the Centre's staff. After, the group sponsored by the Canadian International Development Agency dispersed to do post-graduate work in various universities across Canada.

But Peng later returned for another look at the Weather Centre. He is an engineer with the Chinese Meteorological Administration in Beijing and works at instrument development. His return to the Centre was welcomed by regional director, Bev Burns. Jim Wilson toured Peng through Data Acquisition Division and, after lunch, John Bullas showed him through the satellite section. Finally a more general tour of the Centre was conducted by Ivan Rosens and Dave Burnett.

And from Peng, Alberta Weather Centre learned something about Chinese meteorology which apparently is very advanced. For example, the satellite arm of the State Meteorological Administration is planning a new weather satellite from the ground up including the necessary rocket booster and guidance system.

Peng invited Alberta Weather Centre staff to visit him in Beijing where his wife teaches Chinese to foreign students. (She says that Canadians have no difficulty learning Chinese). Weather Centre people are all fired up to go, if and when.

Then between February 3 and March 7 Chinese meteorologist, Mr. Fei Qing-pei, spent the final five weeks of a one-year stay in Canada with AES's Central Region in Winnipeg. Mr. Fei was a participant in the China/Canada Human Development Training Program of the World University Service of Canada



**Left to right: Mike Balshaw (Regional Director), Dale Henry (A/OIC, Prairie Weather Centre), Garry Schaefer (Chief, Scientific Services) and Fei Qing-pei (wearing a genuine Central Region weather cap).**

(WUSC). Most of his year was spent with the Saskatchewan Research Council in Saskatoon. However, he finally got a chance to obtain an overview of the scope of Canada's operational weather service.

While in Central Region Mr. Fei visited field installations such as the Vivian radar, the McCreary CAPMoN station and the Brandon Weather Office. In Winnipeg he was familiarized with programs and activities in Weather Services, in the Prairie Weather Centre and in Scientific Services. Since his particular interest was in agrometeorology a visit to the Canadian Wheat Board's Weather and Crop Surveillance Unit was included.

A farewell gathering on March 7 featured an exchange of gifts followed by a multi-course Chinese luncheon. In his parting remarks Pei made note of the evident role of technology in AES's operations by quoting a Chinese saying: "a scholar knows everything without going out". He indicated that it is now coming true. Upon his return to China, Pei will transfer from the Wuxi Meteorological Station to the Zhen Jiang Institute of Agrometeorology where he will teach and continue doing research.

## Howard Ferguson Continued

International Field Year for the Great Lakes.

He served as a Division Chief in Hydrometeorology first in the Central Services Directorate and later in the Atmospheric Research Directorate.

In the late 1970's, Mr. Ferguson was asked to serve in Ottawa as Scientific Advisor to the new ADM, Dr. Collin. After two and a half years in that role, he was appointed Director of the Air Quality and Inter-Environmental Research Branch.

In 1980 he was invited to serve the Department as Regional Director General, Ontario Region for a four-month period and he again took on that role from 1982 to 1984. One of the major responsibilities of that position was the management of the Great Lakes Water Quality Program and co-chairmanship of the Great Lakes Water Quality Board under the International Joint Commission. At one point, Mr. Ferguson was at the same time also a member of the IJC's Air Quality Board, which he later co-chaired.

During the early 1980's, he served as Canadian co-chairman of one of the Technical Bilateral Working Groups under the Memorandum of Intent between Canada and U.S.A. on long range transport of air pollutants. He received a Public Service of Canada Merit Award for that work.

He has chaired technical Working Groups of WMO and UNESCO. For many years he provided post-graduate lectures at the University of Toronto and was a journal co-editor for the American Geophysical Union. As Mr. Ferguson says, he has served on "innumerable" interdepartmental and interdisciplinary committees.

In 1984, Mr. Ferguson was appointed Director General of the Canadian Climate Centre.

During his career Mr. Ferguson has found time to author or co-author more than 65 scientific publications. Besides contributing to various AES, WMO and UNESCO scientific series he has published in such journals as the Journal of Applied Meteorology, Meteorological Magazine, Atmosphere and the Bulletin of the International Association of Scientific Hydrology. His research reports have appeared in the published Proceedings of the International Association of Great Lakes Research and the American Water Resources Association. Mr. Ferguson has also contributed text and maps to the Hydrological Atlas of Canada and an article on acid rain in the Canadian Encyclopaedia.

In the next issue of Zephyr we will be publishing an interview with the new ADM.

## 1985 Climate Continued

November saw a cold wave in western Canada. It was the coldest November on record at many points in British Columbia and at prairie locations. With records dating back over 100 years it was the third coldest November there. Logging and construction was temporarily halted and even some ski resorts were forced to close. Many people were treated for frostbite. Meanwhile southern Ontario had the wettest November on record. In December, Lake Erie rose to an all-time

high, causing extensive flooding and property damage. Further east a barge ran aground spilling oil into the St. Lawrence River.

Commenting on the years' weather events, Mike Newark of the Monitoring and Prediction Division of the Canadian Climate Centre said that 1985 was certainly a year of many severe weather events, but it would be difficult to say whether there were more or less of these events compared to previous years.

# Busy day at the Forces forecast centre (part one)

by Gary Burke

6:48 am – Day shift at the Canadian Forces Forecast Centre (CFFC), Edmonton is about to begin. Forecasts for the office's area of responsibility have already been transmitted by the two meteorologists on the midnight shift. The military briefer, who started at 4:00 am has already been apprised of the situation and is now busily preparing for his squadron briefings. Now a second briefer, as well as the duty observer for the day join the two forecasters to listen to the morning shift-change briefing.

No major problems are anticipated on this pleasant, late spring day. Some early morning fog patches at Moose Jaw will hold up flying operations for a few hours, and a weak upper trough moving across the province later in the afternoon is expected to produce some thunderstorm activity as it passes. After a few more words about the numerical progs, the extended forecasts, and equipment status, the night shift departs and the day shift settles in.

7:30 am – Almost immediately a call is taken from the base parachute school. An air drop is scheduled for 9:00 am and because of the experience level of the students the surface winds can be no more than 13 knots. Since surface winds are currently hovering near 10 knots, the officer in charge of the drop wants to know whether or not this 13 knot limit will be exceeded. Referring to the latest upper-air data the forecaster decides that surface winds will probably exceed this limit as the early morning inversion breaks down, however, it doesn't appear as if this will happen until much later in the morning and so the caller is advised that winds will be within acceptable limits at 9:00 am. With that, the jump goes ahead as scheduled.

Forecasting responsibilities at Edmonton are normally divided between two positions. One meteorologist looks after CFB Edmonton and CFB Cold Lake, producing Terminal and Area Forecasts for the flying area around each base. The second meteorologist devotes his time to CFB Moose Jaw and to providing a warning service to the prairie radar sites which make up the military's "Pine Tree" line. In addition to these basic duties the office also produces forecast upper winds and temperatures for both Cold Lake and Moose Jaw, upper jet stream and turbulence forecasts, 12- and 24-hour Horizontal Weather Depiction charts for the Prairies, and Satellite Nephanalysis Charts.

Apart from these "daily" duties, the office is also asked to provide a number of specialized services, for example, support to the "Maple Flag" exercises held in Cold Lake each spring and fall. This is a combined American-Canadian effort with the occasional participation of the U.K. and Germany and involves dozens of fighter aircraft from each country. CFFC Edmonton provides meteorologists to work on-site for the duration of the exercise in order to provide up-to-date forecast and amendment services, required by the vast number of aircraft which are in flight at any one time.

In the past, forecasters have responded to such requests as: site forecasts for the Papal Mass held at Namao in September 1984; 24-hour public and aviation forecasts for CFB Wainwright and CFB Suffield in southeastern Alberta during the recent "Rendez-vous 85" exercise involving over 12,000 military personnel; and enroute and terminal forecasts over the western Arctic and the Cold Lake Air Weapons Range in support of Cruise Missile tests. As well, several years ago, during the recovery of the Russian *Cosmos 954* satellite in the Northwest Territories, the office dispatched observers with portable observing equipment, and provided 24-hour aviation forecasts for the recovery aircraft operating in that remote location.

8:00 am – The military briefer departs to deliver his squadron briefings. Every day at this time he goes "down the line" giving pre-arranged briefings to each of CFB Edmonton's four squadrons. Meanwhile the other briefer looks after unscheduled briefings and prepares the synoptic summary for the regularly scheduled "Search and Rescue" briefings.

CFB Edmonton maintains SAR crews on a 24-hour-a-day basis in order to respond to emergencies anywhere within its area of responsibility. This area, the largest in the country, covers northeastern British Columbia, the three prairie provinces, northwestern Ontario, as well as the Northwest Territories and the Yukon. On this particular day an ongoing search in northern Alberta elicits a call from the crew chief operating out of High Level. He wants to update the latest conditions and satellite data and to discuss the synoptic situation for the next few days.

10:00 am – The fog in Moose Jaw has slowly lifted into a low stratus ceiling and the terminal forecast must now be



**Aircraft such as the F-18 Hornet have long relied on forecasts put out by Canadian Forces Centres.**

changed in order to reflect the new situation. A quick call to the briefer confirms that the stratus is breaking up slowly and with this information in hand, the forecaster issues the amendment.

*To be continued.*

*Mr. Burke is a meteorologist at CFFC Edmonton*

## Instrument drop

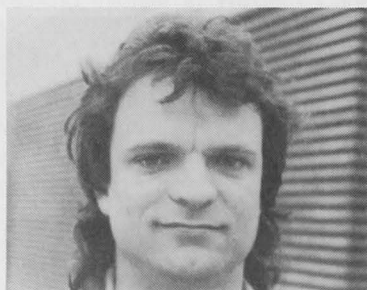
The U.S. National Weather Service has issued an appeal for return of reusable weather instruments that twice daily are lifted into the sky by balloons from about 100 stations coast-to-coast. They rise until, at a height of about 32 kilometres, outside pressure becomes so weak that the balloons burst. Paper parachutes then ease their descent.

During the past 40 years, 670,000 of the radiosondes have been returned, notably by citizens who spend much time in the open. This has saved the U.S. Government \$10 million. Nevertheless, according to Richard E. Hallgren, director of the service, "We don't know why, but we are getting back several thousand fewer than the 18,000 radiosondes normally returned each year."

Consequently, costs of the program have increased. The instrument packages, roughly the size of shoe boxes, contain instructions on return and prepaid mailbags.

*From the Globe and Mail. Please note that AES does not require return of its radiosondes, most of which come down in isolated Northern areas.*

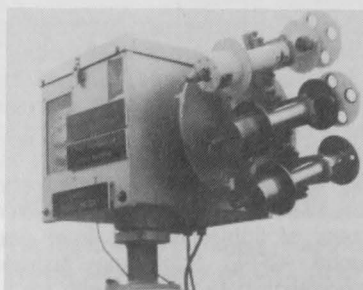
## EMPLOYEE EQUIPMENT



Prominent among the array of stratospheric equipment straddling the roof of the AES Downsview Headquarters Building is a device called a Sun Tracker. Basically it is a tall steel mounting providing firm support for three or more pyrheliometers or instruments for measuring direct solar radiation.

The Sun Tracker's main claim to fame is to be able to fix on the sun, even in deep cloud and track this celestial body right across the sky. The instrument, invented by Dr. D. Wardle of the Experimental Studies Division of the Atmospheric Research Directorate is one of AES's significant contributions to world-class weather technology.

While the pyrheliometer is measuring direct solar radiation, the motion of the tracking device is directed mathematically from a computer, usually a Commodore 64. The exact position of the sun in the sky is known at any given moment in terms of numbers representing longitude, latitude, and time of day. As a first step all these numbers are fed into the computer. The computer can now mechanically direct the pyrheliometer to look directly at the sun. More importantly the tracker can be set to move concurrently with the sun for several months or indeed years. It takes 18,000 individual steps to bring the



tracker round the 360 degrees.

Solar radiometers are in use in various industries in Canada. These instruments are sent to AES Downsview from time to time for testing and calibration. The Sun Tracker carries a special pyrheliometer which is used as a standard. In addition one or two others, which are being tested, can be attached beneath the standard pyrheliometers. The electrical signals from all three are recorded continuously on magnetic tape.

Pyrheliometer data is monitored and analysed by David Barton of ARPX. (photo above) David has a degree in computer science. He has worked on atmospheric radiation measurement and analysis for several years and has been on AES staff for three years. In addition to his monitoring work, David has worked on development of the Sun Tracker and its selection for manufacturing in Canadian industry. Already sales have been brisk in several countries, like in West Germany and Sweden.

In 1985, David took a pyrheliometer to New River, Arizona, and there, using facilities provided by a private company, he and other technologists set up their pyrheliometers and took direct radiation measurements. At the same time Dr. Wardle took a pyrheliometer

## Human Resources claims 15-million- word translation budget is justified

AES will require a 15-million-word translation budget during 1986-87, Avo Lepp, director, Human Resources, AES, Downsview, maintained in a memorandum to Réjean Laprade, director of Official Languages, DOE, Ottawa.

Mr. Lepp explains that automatic translation of weather data totals 14 million words alone. He adds that bulletins are translated "economically" by a mini-team of six translators assisted by a micro-computer. Bulletins translated include: public, marine, crop and ice forecasts as well as weather warnings. They are distributed throughout Canada on a 24-hour basis.

Noting that AES is by far the largest user of translation service in the entire federal government, Mr. Lepp says that weather warnings, public and marine forecasts are essential to the safety of Canadians and are important for the economic decisions and leisure activities of a large segment of the population.

He also notes that the method used to count automatic translation of words has changed during the past year: the new electronic counting artificially raised the production count by 25%, whereas it had actually increased only slightly with no additional cost.

Mr. Lepp calls for nearly one million words to be used for other translation purposes and concludes, "A grand total of 15 million words seems quite realistic".

to the South of France. The purpose of these journeys was to establish criteria for interpreting the published results of experiments conducted at various longitudes and latitudes through intercomparison of data.

## Weather Centre Man Loyal Scout

Eliol Humby, a thirty-five year veteran of the Newfoundland Weather Centre and a resident of Gander since 1949, has lived a rich community life as a Boy Scout leader. Twenty-two years ago, he showed up at a scout meeting to help a friend who had just started a group – and got "hooked". He's been an active member of the Boy Scout movement ever since. From some boys in a church group, he formed his first troop and got his first taste of camping under canvas and sleeping on a thin mattress on hard ground. Since 1965, in addition to working with boys, he has been a member of

the provincial training team who train others to become competent Scout leaders. In 1976, he was awarded the Warrant of Appointment by the Governor General of Canada. In 1979 he became District Commissioner and in 1982 received the Medal of Merit. At present, he is a member of the Newfoundland Provincial Council for Boys and in 1984 was appointed Regional Commissioner for Gander-Bonavista North which numbers about sixty groups. His wife has assisted him over the years. Four of his sons grew up in the movement and his daughter is a



Beaver leader. Eliol ascribes his fidelity to the Scouting movement to "love of the outdoors, working with kids (it's true, kids do say the darnedest things) and meeting people".

*Getting there was half the challenge*

## **ARDG gasps at AGASP**

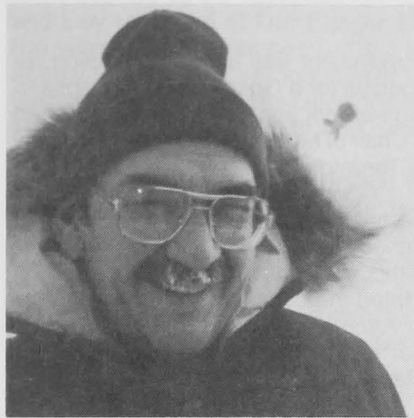
Arctic Haze is real, I have seen it and flown through it. Early in April 1986 I was invited by Dr. Neil Trivett, coordinator of the Arctic Gas and Aerosol Sampling Project (AGASP) to spend a few days at Canadian Forces Base Alert. This balmy spot is only 500 miles from the North Pole and is also the site of the world's northernmost weather station operated by the Department of the Environment. Arctic Haze pollution occurs at Alert and the AGASP scientists are making pollutant measurements to find out where it comes from and how it is formed.

Getting to Alert is just about as challenging as working there. It took about 8 hours of flying in a Canadian Forces *Hercules* from Trenton sharing cargo space with 13 other intrepid passengers and tons of crates. While the vibration and noise prevented any conversation, sign language, sleep and considerate service by the crew made it bearable. In spite of the massive amount of Arctic clothing that I had to tote, I was not quite prepared for the 40 below (Celsius or Fahrenheit, take your pick) which greeted us at 4 pm.

The people who met us were much warmer and it soon became obvious that the toughness in the Arctic conditions leads to friendly cooperation and closeness, a survival reaction.

The next few days were spent visiting with different scientists, watching them work, discussing their findings, sharing their frustrations with experimental equipment that also seemed to object to the cold. I also visited the AES Upper Air Station and learned how these hard-working people provide for the quality weather data that so many people take for granted.

A highlight of the trip was the opportunity to fly on the National Aeronautical Establishment's research aircraft, the *Twin Otter*. AES and NAE have collaborated in atmospheric research for many years and the aircraft is a fine-tuned research tool. The research flights make measurements of the pollutants which form Arctic Haze. As we flew in the area of Alert I could see exactly what the scientists and pilots were talking about. Layers of milky pollution extending up to about 1,200 feet. As we flew through it, AES instruments gobbled up samples of the pollutants and gave instant analyses of numbers of small pollution particles, num-



bers of large pollution particles, ozone and so on. While the digestion and distillation of this and the other data on the Arctic Haze will take much more time, it was clear that the scientists already know that the data is sensible and the experiment is going well.

I was impressed with the interest and cooperation of all the base personnel in the conduct of AGASP, but especially so with the staff of the Alert Weather Station.

**Phil Merilees ARDG**

## **A New Era in Media Relations in Quebec**

*by Guy O'Bomsawin*

The media are proving very receptive to information that will increase their understanding of weather forecasting. That is the lesson of an information and discussion day held at the Montreal Weather Office in March, with almost all radio and TV stations in the metropolitan area represented.

Like similar workshops that have been held elsewhere in Canada, the point was to demystify meteorology and take the pulse of the media on matters meteorological. In this latter regard, it turned out that the media attach great importance to having an official weather terminology, and that they now agree that the basic content of forecast bulletins needs to be broadcast to the public.

They were also quick to grasp the importance of updating weather information, and of broadcasting warnings as soon as possible after they are issued.

The media are fully aware of their role as communicators and hope that AES will bring them together again to go into more detail about the approach they should be taking to improve the public's understanding of weather information.

Last fall in Sherbrooke, a cordial atmosphere was the order of the day when a similar meeting took place, organized by Paul-André Renaud, with representatives of the local media and the Sherbrooke Weather Office in attendance. In both cases, all participants benefitted: the media discovered the practical aspects of weather forecasting, as well as the imponderables that go into it, and AES people saw that the media do understand them and are ready to co-operate with them.

Workshops for the English media are planned for Québec City and Montreal. The meetings are part of a new approach being taken in Quebec Region. The guiding principle is that AES has an interest in reaching citizens through their own channels of information. To improve service to the public, Weather Services staff is therefore seeking greater co-operation with radio and TV.

The meetings that have been held so far should not be seen as isolated events. "Operation media" is the public manifestation of an internal operation that seeks to convert weather work from a specialized activity into a practical one. The meetings mark a new era in media relations in Québec Region, but they are only a beginning.



**The gleaming white radome on the roof of the big new Twin Atria building in Edmonton, indicates the approximate location of the AES Western Region offices. The building also houses DOE Western Region offices.**

## ***A Committee is a Committee is a ...***

AES historian Morley Thomas reminds us that committees have been part of the Canadian weather service since day 1, or even before. For example, when in the early 1850's weather telegraphy was introduced in Europe, Canada quickly followed suit. The matter was quickly proposed but the suggestion got bogged down in Committee.

In 1854, a committee was set up to investigate "the merits of the establishment of a system of simultaneous meteorological observations throughout British North America". The committee applied to the Smithsonian Institution in Washington for information about the American system. None was received by December 1854 and the committee then apparently disbanded. In 1856, Major R. Lachlan "again urged that networks of observing stations be set up". The response was that the

government was already providing resources for a Grammar School observing network and that it had established a Chair of Meteorology in the University of Toronto.

A committee was formed in 1856 to hasten the completion of this Grammar School network. Prof. George Kingston, director of the Toronto Observatory, invited the committee to meet with him in Toronto on January 7, 1857. There is no record that the meeting ever took place.

In 1856, another committee went out to visit the St. Martin Québec Observatory and was so impressed that it urged the government to enhance Dr. Smallwood's efforts with a grant. It is doubtful that the government complied and in 1863 Dr. Smallwood took his instruments to McGill University.

In 1857, Prof. Kingston proposed a

system of telegraph operators to transmit notices of gales along the lake and sea coast and a committee was again set up to promote it. The committee recommended that 20 telegraph stations from Windsor, Ontario to Halifax, N.S., be used to transmit weather observations. Several Boards of Trade and the government were invited to fund the project which invited insurance companies to oblige ships' captains to obtain weather information before sailing. Needless to say, nothing came of it.

After another dozen years or so, Prof. Kingston took direct action with the ministers and officials of the new federal government and at last obtained support for his "weather telegraphy scheme".

Based on an article by Morley Thomas.

## ***No need to dial Severe weather – it's right there in the phone book***

Saskatchewan residents who experience more than their fair share of severe weather over the year have been offered a unique counselling service – a comprehensive six-page Severe Storm Guide in their telephone directories.

The project which was in the planning stage for almost a year is a joint effort of AES, Emergency Planning Canada and the SaskTel provincial telephone company.

More than most telephone utilities SaskTel has offered space in its phone book to organizations providing essential services such as police, firefighters or hospitals. The pages were offered as a free public service to their subscribers.

About two years ago SaskTel approached Fraser Hunter, OIC, Regina Weather Office and told him they would like to donate a whole section to weather advice. When Hunter realized that SaskTel wanted to put a strong emphasis on emergency procedures as well as weather, he quickly summoned Emergency Planning Canada. Finally, Don Bauer, OIC Saskatoon Weather Office and DOE Information Officer for Saskatchewan, Sharon Dominik, joined the team.

The end-result of this varied expertise was an attractive, information-

packed weather manual starting on page 21 of the phone book and chock-full of advice on how to fill your emergency pack, or prepare your underground shelter, what to do if you get caught in a severe summer storm or how to understand the various severe weather warnings and watches.

Hunter says he is pleased that the guide includes both summer and winter information since Saskatchewan is a province that faces year-round weather challenges. He believes the new section has actually raised the profile of the weather service because, besides giving practical advice on how to act if you get stranded in your car during a blizzard, it also includes a large map pinpointing all of Saskatchewan's 22 weather regions. In addition, there is a full-page complete with graphs explaining how to calculate the wind chill factor.

Fraser Hunter is also pleased that the project cost AES nothing and that the weather service had a major say on the use of graphics, which besides maps and charts, include clear illustrations on such topics as lightning, torrential rain, tornadoes and major windstorms.

Mike Balshaw, AES Director, Cen-

tral Region, says the SaskTel phone book guide is a unique opportunity to get severe storm information across to a wide public audience. He adds that the possibility of participating in a similar project in Manitoba is being investigated.



***Left to right: Don Bauer, Fraser Hunter and Mike Balshaw examine the Sasktel phone book severe weather pages.***



## Book Review

### *The Expeditions of the First International Polar Year, 1882-83*

By William Barr  
Department of Geography  
University of Saskatoon  
(The Arctic Institute of North America)

Man's growing dominion over the Arctic may be the greatest geographical epic in the history of mankind. And yet only in the scandal of its tragedies does news of it occasionally hit the streets.

So it was with the expeditions of the First International Polar Year. There were 12 expeditions to the Arctic including two American and two Russian ones. There was also a German, Danish, Norwegian, Austrian, Finnish, British, Dutch, and Swedish expedition, all with stations around the Arctic. And yet the voluminous scientific and geographic records produced by the Polar Year were obliterated from current events and from history by the tragedy that overtook the American expedition to northern Ellesmere Island.

William Barr describes all the expeditions in detail. For example, on the first and 15th of the month some expeditions read their magnetic variation instruments every five minutes for 23 hours, and every 20 seconds for the final hour of the day.

Disposing of the preliminaries and technicalities in the Introduction and Appendix, the author is free to "highlight the achievements, hardships, everyday life and weaknesses of all the expeditions involved". And Barr's book is full of wondrous incidents. Particularly epic is the string of food cairns, sometimes including a boat, left by earlier expeditions—anticipating expeditions to come like squirrels burying chestnuts. A human instinct?

The prime necessity for many of the expeditions was to secure themselves against extremes of weather and Barr describes the various shelters built in clear detail. The Austrian expedition on Jan Mayen Island east of Greenland, six or seven degrees above the Arctic Circle, put up a shelter in the shape of an overturned boat, its prow pointing, as it were, upstream against the prevailing flow of the wind. "The small volcanic island of Jan Mayen was dominated by the enormous volcanic cone of Beerenberg". In August 1882, a small party from the expedition tried to climb Beerenberg. "After an hour's travel ... they emerged from the fog to find the cone of Beerenberg glistening in the sun ahead and an endless undulating sea of cloud all around". They toiled upward all day in the perspiring heat, failed to reach the top, and returned downhill to find that a

howling snow storm had been raging all day at sea-level. Later in the year, when the sun sank below the horizon and the island lay in perpetual darkness, the cone of Beerenberg still gleamed in the rays of the sun.

The U.S. expedition set up its station, Fort Conger, on the east coast of Ellesmere Island, not far from the present AES station of Alert. Its 24-man team was led by Lt. Adolphus Greely and they remained at Fort Conger for two years, from September 1, 1881 to August 9, 1883, and set foot closer to the north pole than anyone before them. Their dog teams ranged far and wide over Ellesmere Island.

Fort Conger was a tricky place to reach by ship. Ice conditions or the audacity of a ship's captain, might determine whether or not the vessel would arrive. But the *Proteus* did get the expedition up there in the summer of 1881 - or the station would have been set up in a more accessible place. A supply ship was to reach Conger during the summer of 1882 - but failed to get through the ice. The expedition was to be shipped out and brought home during the summer of 1883. In the event that this ship could not reach Conger, the expedition had been instructed to close down the station by August 31 and make its way south overland until it reached the ship waiting for it in the open water of Smith Sound. With no ship there, Greely struck camp and in August he and the other 23 men marched southward—unaware that the

*Proteus* had been sunk in an ice crush.

By the time the news reached Washington, it was too late in the year to send up a rescue vessel - but three rescue vessels steamed northward in May 1884. Where was Greely and the expedition? The rescue parties looked in all the "logical" places - but to no avail. Whaling ships took part in the search, hoping to reap the large reward offered by the American government. Eventually a cairn was found with Greely's note in it, specifying the location of his camp. The note ended "All well" - but it was now eight months old. On June 22, Colwell in a steam launch from the ship *Thetis* moved shoreward towards the lone figure of a man standing at the water's edge.

Colwell shouted "Who are left?" "Seven left" was the chilling reply. Barr tells the story with great restraint and lets the awesomeness of the event speak for itself. Colwell went ashore and found the other six in their sleeping bags under a collapsed canvas, lying among their dead.

But Greely - one of the survivors - had caired his voluminous records of the polar year and he was able to bring them home. Barr points out that in the world-wide hullabaloo that followed in the Press, not one word was ever printed about the achievements of the Polar Year. As it says in the book, "These pages in the history of polar expeditions have remained blank for far too long".

**Jack Gubbins**



**AES employees celebrated a "double 25" in the auditorium of the AES Downsview Headquarters in February. 25 staff from all regions and directorates were there to receive their 25-year-plus long-service awards from ADMA Howard Ferguson. There were so many present, Mr. Ferguson apologized for not being able to comment on the careers of all those he had been fortunate to work with. In the photo can be seen, front row, left to right, Mike Newark, Bill Sullivan, Jean Tissot van Patot, Stu Brown, Johnny Lajoie, Jim McCulloch, Stan Lupack, Phil Aber, John Sandilands, John O'Reilly. Back Row: Ray Bourke, Ed Millar, Gerry Klein, Ray Sorokowski, Lloyd Berntsen, Paul Carlson, ADMA Howard Ferguson, Doug Fraser, Jean Guy Côté, Al Campbell, Bryan Adamson, John Lewis, Walter Getman, Gord Young, Ed Truhlar, Larry Morrison.**

# ZEPHYR BREEZES

If you happen to have a free half hour or so in the AES Downsview Headquarters Building you can always attend a Climate/Research lecture in the Auditorium or even watch an experimental radio-sonde launch. We were intrigued last month when an invitation came to attend yet another regular "open to everyone" event in the same building – a request to be present at the Climate Monitoring Division's weekly briefing in the chart room.

The room seems a little smaller than expected with barely space to seat a dozen people. The walls are certainly plastered with a wide array of climate charts, weather maps and graphs. There is also room for an overhead projector with pull-down screen as well as for newer micro-computer screens.

The invitation promised such topics as the "social and economic impact of the previous week's weather; the recent mean atmosphere circulation in the Northern Hemisphere and the long range forecast". Amir Shabbar, Alain Caillet and Andy Radomski, the three briefers, covered all this and more. Each in turn stepped smartly to the podium, pointer aloft and gave his presentation before a big map with near-military precision.

So briefings are all about disasters, climate extremes and paralysis of the economy? Wrong! This particular briefing happened to coincide with the marvellous spell of warm Easter weather that affected nearly the whole country in late March. Even during the briefing the warm Ontario sun still beamed down, contributing to maximum temperatures of 27°C in Windsor, Ontario. The fine weather seemed to dominate the briefing – even people's moods. There were distinct smiles on the faces of the briefers. Buried somewhere in the five-day extended weather forecast or the monthly climate forecast, was a subconscious wish for the fine weather to go on forever.

With balmy weather around there wasn't much to say about social and economic impacts, although Andy Radomski did mention some problems with the maple syrup crop though.

Mike Newark, head of Climate Monitoring and Prediction, says that the weekly briefings have been part of the work ever since the Climate Centre began. "Instead of just talking to ourselves, we thought it would be useful to share climate information.

Eight technologically-oriented grade 11 students from Waterloo, Ontario toured the weather satellite monitoring facilities of the AES Downsview Headquarters building last month. Their purpose was rather unusual: to learn all about how to build their own satellite receiving station.

Fred Veenhof, teacher at Waterloo-Oxford District Secondary School, said the students, all with a science background had chosen to build their receiving station, linked up to the NOAA Polar Orbiting Satellite, because it was "a relatively easy project" as far as do-it-yourself satellite tracking was concerned.

Veenhof explained that the students would be using automatic picture transmissions which did not, require the familiar parabolic dish. Instead they would build a low frequency station with analog signal using a straight-up jaggy antenna.

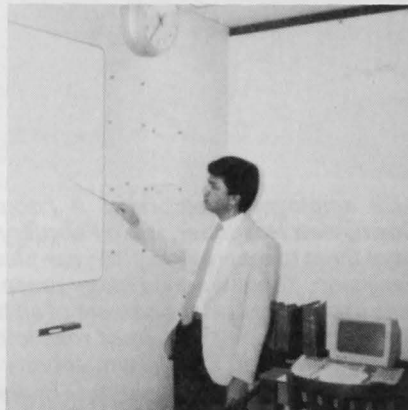
Alex Aldunate, of ARMA who gave the students their detailed tour, said this same kind of receiving station was being used in at least two locations in the Arctic.

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**Please note that the name of the Information Directorate (ID) has now been changed to the Communications Directorate (CD). This change was listed in the Communications Strategy approved by the Deputy Minister and the members of the Environment Management Committee.**

**The cooperation of all AES staff in using the new title would be appreciated.**

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**Pointer aloft, Amir Shabbar gives his climate briefing.**

Leaving the AES Headquarters Building one late April day, Maudrie Crichlow, the unit nurse, noticed the flag at half mast. As far as she knew no prominent Canadian had died and she began to wonder whether the flag's low position was simply due to "slippage". Then, suddenly it dawned on her: The Duchess of Windsor!

She has idolized this ultimate symbol of Romance since her childhood in Trinidad when she tearfully saw a newspaper headline, "The King abdicates while all the World waits", since then she has lived through the anguish, the romance, the dishonor and all the stigma attached to this woman. Adding that the Duke of Windsor, "Uncle David", was also a favorite of hers, Ms. Crichlow says she has always tried to keep abreast of developments in the lives of the couple who changed the course of British and Commonwealth history.

Praising AES's flag gesture, she concludes, "I am delighted that I am once more part of a group who cares enough to pay her the tribute she did not receive in her lifetime. Better late than never!"

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We have received quite a few favourable comments about the "new" Zephyr since its redesign last summer. For example, readers seem to like having the news printed on the front page. And many AES employees said they enjoyed the Christmas issue – the first all-out, holly-decked edition in years. If you missed getting an individual copy of the July-August, Christmas, or January-February issues, we might be able to supply you on a first come, first served basis. Currently we have a small surplus in all three issues. If you are interested in obtaining a back copy, please write to Communications Directorate, AES, 4905 Dufferin Street, Downsview M3H 5T4, phone (416) 667-4551, or simply drop in to our office.

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**Correction:** In a January-February Zephyr Breezes item about the pitfalls of agreeing to be listed in remote and unfamiliar directories, Ms. Christine Stuart was wrongly quoted as saying that a percentage of busy administrators are intimidated by the inferred rush. She in fact wrote in her memorandum that a percentage of busy organizations are intimidated by the inferred rush.



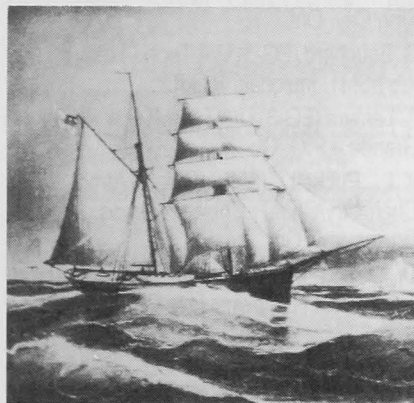
**Gerard Châtaigneau receives a suggestion award from Lloyd Bernstein, director of Training Branch, AES Downsview. Mr. Châtaigneau's suggestion had to do with the communication of translations to outside agencies.**

Here is one more miscellaneous Weather Trivia Calendar item, contributed by Jacques de Corby, OIC Sudbury Weather Office. To date his station has sold and delivered 92 calendars and was responsible for an order for 10 more from Headquarters. Hitting the century mark makes Sudbury the WO4 with the most calendar sales Canada-wide.

When kids write in to the Communications Directorate office at AES Downsview for "free" material (alas, there's very little of it around these days), they sometimes say and draw the cutest things. For example, Lisa Dalzell of Vernon B.C. sends us a drawing captioned "I love the weather ... rain or shine". The sketch shows a smiling (or grimacing) Lisa being threatened by lightning bolts and bombarded by heavy rain. Meanwhile on the side a benign-looking sun, wearing dark sun glasses rises triumphantly over a rainbow ... obviously Lisa's guardian angel!

**June 2, 1829** — A tornado raced through Guelph Ont levelling trees in every direction, downing fences, ripping roofs off and demolishing buildings. The town was inactive for 3 years afterwards.

For a week or so last February newspaper headlines downplayed their usual emphasis on acid rain and began to highlight another problem, promptly dubbed "acid train". The new term surfaced after a Canadian Pacific Rail train derailed near Parry Sound, Ontario dumping 15 tank cars full of sulphuric acid into an adjacent lake. We doubt that much  $H_2SO_4$  gets shipped by air but if ever that day comes, and by the remotest of chances there is a mishap, we can be sure the press won't be long in calling the airline *Acidair*.



**One of the more successful Polar Year expeditions was the German mission to Baffin Island. Their ship the Germania is seen en route to the site. (Please see Book Review page 9)**

Rick Berry, supervisor, Network Planning and Standards Division, Central Services Directorate, dropped into our office a couple of weeks ago and asked for copies of various articles that had appeared in this magazine over the years on the Remote Environmental Automatic Data Acquisition Concept (READAC), now completing its experimental stage. The search for relevant material on automatic weather stations took quite a while and it prompted us to take measures to fill a major gap in Zephyr's resources: the provision of a comprehensive index. This reference facility will be available in the near future and we hope it will allow us to serve you more rapidly and efficiently in the days to come.

## Iceberg

Seen first from crew-cab on the way to camp  
And looming large from lounge upon arrival,  
Its glinting, chiselled features bear the stamp  
Of long and painful struggle for survival.  
Up close a mound of green, translucent ice  
With fringing skirt of surf-like curling snow —  
A behemoth now 'bedded in a vice  
But born elsewhere, lo, eons long ago.  
What story, giant, do your features tell?  
What snows eternal spawned your massive base?  
Did early man your surface tread and yell  
Exultantly in fever of the chase  
Of caribou or mammoth? Plain to see  
How proud Titanic's ending came to be.

*Written by Dr. Terry Jolly, National Health and Welfare, Winnipeg, while visiting Eureka, N.W.T. with an AES inspection team this April.*



**The iceberg at Eureka that inspired the poem**

**June 30, 1912** — The most destructive tornado ever known on the Canadian prairies occurred at Regina about 4:50 pm. Known as the "Regina Cyclone" the storm killed 30, injured hundreds and inflicted \$4 M damage.

# STAFF CHANGES / CHANGEMENT DE PERSONNEL

## Promotions / Appointments Avancements / Nominations

S. Whitlow (CS-4) Chief, Informatics & Systems/Chef, systèmes informatiques PAEI Vancouver, B.C./C.-B.

J. Barron (EG-5) OIC/ Responsable, WS3 /SM3, Dease Lake, B.C./C.-B.

T.G. Brydges (REM-2) Science Advisor/Conseiller en affaires scient. LRTAP, Downsview, Ont.

M. Hannah (SCY-2) Secretary/ Secrétaire, LRTAP, Downsview, Ont.

B.A. Clarke (CS-3) Head, Data Acquisition Services/Chef, Services d'acq. de données, ACSD, Downsview Ont.

J. Slipec (EG-1) Wea. Observer/ Obs. météorologique, WS3/SM3, Estevan, Sask.

C. Stallard (EG-1) Wea. Observer/ Obs. météorologique, WS3/SM3, Island Lake, Man.

L. Palmer (EG-1) Wea. Observer/ Obs. météorologique, Winnipeg, Man.

B. McVean (AS-5) Chief Management Services/Chef services adm., Winnipeg, Man.

G. Lines (MT-5) Shift Super./Chef d'équipe METOC, Halifax, N.S./N.-E.

S. Johnson (MT-5) Shift Super./ Chef d'équipe METOC, Halifax, N.S./N.-É.

V. Quan (CS-2) Systems Analyst/ Analyste des systèmes CFFC, Trenton, Ont.

D. Dubé (EG-6) Inspector/Inspecteur, QAEOL, St. Laurent, P.Q./Qc

M. Lessard (EG-6) Inspector/Inspecteur, QAEOL, St. Laurent, P.Q./Qc

J. Reid (SM) Science Prog. Coordinator/Coordon, programmes scient. APDG, Ottawa, Ont.

B. Cole (EG) Met. Tech./Tech. en mét. WS3 /SM3, Fort Reliance, N.W.T./T.N.-O.

B. Funk (EG-6) Aviation Program Officer/ Agent, prog. pour l'aviation, WAED, Edmonton, Alta./Alb.

C. Martire (PE-3) Chief, Personnel/ Chef, personnel, OAED, Toronto, Ont.

J. Rosinski (CR-4) Clerk/Commis, OAED, Toronto, Ont.

J.W. Scott (ENG-4) Radar Electronics Engineer/Ingénieur électron. en radar ARPP, King City, Ont.

G. Bouchard (EG-3) U/A Tech./Tech. en aér. WS1/SM1, Inukjuak, P.Q./Qc

A. Lemyre (EG-3) U/A Tech./Tech. en aér. La Grande 4 P.Q./Qc

K.J. Puckett (SM) Chief Atmospheric Chemistry/Chef, Chimie atmos. ARQA, Downsview, Ont.

D. Davies (AS-2) Admin. Officer/ Agent, admin. ACPN, Downsview, Ont.

## Transfers/Mutations

C. Dale (EG-2) Met. Tech./Tech. en mét. WS3/SM3, Hope, B.C./C.-B.

B. Lohnes (EG-2) Met. Tech./Tech. en mét. Vancouver, B.C./C.-B.

P. Clarabut (EG-1) Met. Tech./Tech. en mét. WS3/SM3, Cape St. James, B.C./C.-B.

J. Derham-Reid (EG-2) Met. Tech./Tech. en mét. WS3/SM3, Cape St. James, B.C./C.-B.

C. Powell (EG-1) Met. Tech./Tech. en mét. WS3/SM3, Lytton, B.C./C.-B.

J. Rousseau (MT-3) Meteorologist/ Météorologue, QAEM, QWC.CMQ, St-Laurent, P.Q./Qc

G. Morneau (MT-3) Meteorologist/ Météorologue, QAEM, QWC/CMQ, St-Laurent, P.Q./Qc

A. Rahill (MT-3) Meteorologist/Météorologue, QAEM, QWC.CMQ, St-Laurent, P.Q./Qc

J. Pelletier (EG-6) Pres. Tech./Tech. en prés., QAEWR. WO4/BM4, Frobisher Bay, N.W.T./T.N.-O.

M. Saumure (EG-5) Pres. Tech./ Tech. en prés., QAEWR. WO4/BM4, Sherbrooke, P.Q./Qc

L. Dussault (EG-4) U/A Tech./Tech. en aér., QAEOL, WS1/SM1, Maniwaki, P.Q./Qc

M.J. Élie (EG-2) Met Tech./Tech. en mét. QAEOL, WS3/SM3, Cape Dyer, N.W.T./T.N.-O.

M. Élie (EG-2) Met Tech./Tech. en mét. QAEOL, WS3/SM3, SteAgathe, P.Q./Qc

B. Flemming (CS-3) Computer Scientist/ Scientiste des services informatiques, ACRO, Downsview, Ont.

B. Proctor (MT-2) Met. Dev. Level/ Niv. perf. met., CFFC, Edmonton, Alta./Alb.

A. Morrison (MT-4) Staff Wea. Officer/Agent météorologique, North Bay, Ont.

M. Hawkes (MT-6) SSO Training and Devel. /Formation et perfectionnement DMETOC/ Ottawa, Ont.

S. Hopwood (EG-6) Training Devel. Tech. /Tech. au développement en formation, ACGH, Downsview, Ont.

J. Degaust (SCY) Secretary/Secrétaire, AIA, Downsview, Ont.

B. Snyder (MT-2) Meteorologist/ Météorologiste, Edmonton, Alta./ Alb.  
 H. Wilkinson (EG-2) Met. Obs./Obs. mét. WS3/SM3, Revelstoke, B.C./ C.-B.  
 G. Duguay (EG-2) Met. Tech./Tech. en mét. WS3/SM3, Churchill Falls, Nfld./T.-N.  
 S. Leger (EG-4) U/A Tech./Tech. en aér. WS1/SM1, Sable Island, N.S./ N.-E.  
 T. Canavan (MT-2) Meteorologist/ Météorologiste, METOC, Halifax, N.S./N.-E.  
 D. Morris (MT-2) Meteorologist/Météorologiste, METOC, Halifax, N.S./ N.-E.  
 P.A. Ladouceur (EG-6) Pres. Tech./Tech. en prés., QAEWR, Mirabel, P.Q./Qc  
 M.M. Savard (EG-6) Pres. Tech./Tech. en prés., QAEWR, Mirabel, P.Q./Qc  
 G. Brien (EG-6) Pres. Tech./Tech. en prés., WO4/BM4, Frobisher Bay, N.W.T./T.N.-O.  
 L. Leblanc (EG-2) Met. Tech./Tech. en mét., WS3/SM3, Clyde, N.W.T./ T.N.-O.  
 M. Patry (EG-2) Met. Tech./Tech. en mét., WS3/SM3, Baie Comeau, P.Q./Qc

**Temporary or Acting  
 Positions/Postes temporaires  
 ou intérimaires**

A. Schmiedel (EG-5) OIC/Responsable, WS3/SM3, Cape St. James, B.C./C.-B.  
 G. Bolduc (EG-6) Pres Tech./Tech. en prés., QAEWR, Dorval, P.Q./Qc  
 C. Labonne (AS-3) Admin. Officer/ Agent d'administration, MSRBPN, Dorval, P.Q./ Qc  
 L. Berthelot (AS-6) Program Development/ APEC, Downsview, Ont.  
 P. Coade (EG-8) A/OIC, Responsable, Toronto WO/ Toronto, Ont.

M. Hurlburt (CR-4) Clerk/Commis, AAM, Downsview, Ont.  
 M. George (CR-2) Clerk/Commis, AAGR, Downsview, Ont.  
 J. Gibson (CR-2) Clerk/Commis, AAGR, Downsview, Ont.  
 F. Boulay Racine (CR-4) Clerk/ Commis, AAL, Downsview, Ont.  
 J.C. Oates (CR-4) Clerk/Commis, AAL, Downsview, Ont.  
 B. Kuntz (LS-2) Cataloguer/Catalogueur, AAL, Downsview, Ont.  
 A. Lamont (MT-4) Instructor/Instructeur, CFS Met., Winnipeg, Man.  
 R. Home (MT-6) Policy Analyst/ Analyste des politiques, APDG, Ottawa, Ont.  
 S. Guzylak (CR-4) Clerk/Commis, OWC, Toronto, Ont.  
 K. Ford (AS-1) Admin. Officer/Agent d'administration, Downsview, Ont.  
 G. Rockwell (EG-6) Pres. Tech./ Tech. en prés., Halifax WO, Halifax, N.S./N.-É.  
 F. Guay (EG-7) OIC/Responsable, WO4/ BM4, Frobisher Bay, N.W.T./ T.N.-O.  
 J. Hadad (CR-4) Clerk/Commis, ACPA, Downsview, Ont.

**Leave of Absence/Congés  
 autorisés**

M. Cegelski, QAEM, QWC/CMQ, St-Laurent, P.Q./Qc  
 C.T. McElroy, ARPX, Downsview, Ont. to University/à l'université  
 R. Farrell, CFWS, METOC, Halifax, N.S./ N.-É.  
 B. Hicks, ADMA, Ottawa, Ont.

**Departures/Départs**

A. Henry, QAEOU, WS1/SM1, Maniwaki, P.Q./Qc  
 D. Bellows, MWC, Bedford, N.S./ N.-É.  
 H. El Khalidy, ARWC, Edmonton, Alta./ Alb.  
 M. Collins, WS3/SM3, Edson, Alta./ Alb.  
 L. Lanzillotta, OAEOE, Toronto, Ont.  
 T. Carrieres, ARMF, Downsview, Ont. to Ice Forecasting Central/ Centre de prévision des glaces., Ottawa, Ont.  
 J. Lehoullier, QAEOO, Ste-Agathe, P.Q./Qc  
 C. Filiatrault, QAEA, St-Laurent, P.Q./Qc to National Defence/au Ministère de la défense nationale

**Retirements/Retraites**

J.T. Van Patot, ACET, Downsview, Ont. Jan./janv. 1986  
 V. Dingle, PWC, Winnipeg, Man. Dec./déc. 1985  
 C. Bowering, NWC, Gander, Nfld./T.-N. Dec./déc. 1985  
 A. Plamondon, QAEOI, St. Laurent, P.Q./Qc Dec./déc. 1985  
 R. Clay Wheeler, WS1/SM1, Vernon, B.C./C.-B. Feb./févr. 1986  
 J. Smith, NWC, Gander, Nfld./T.-N. Dec./déc. 1985  
 E. Gagnon, CMC Communications, Dorval, P.Q./Qc March/mars 1986  
 P. MacKenzie, PWC, Vancouver, B.C./C.-B. April/avr. 1986