

ZEPHYR



Environment
Canada

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Atmospheric Environment Service

JULY/AUGUST 1987

Environment Week a success

AES Staff, the Backbone of Downsview Open House

It was one of the largest government-staged Environment Week activities in the country. It was reported by the media, from Saskatchewan to Washington D.C., and was attended by teachers, science writers, environmentalists and government officials, but the AES Downsview Headquarters Open House, held June 5 to celebrate World Environment Day, will be remembered above all by AES staff.

Together, employees in the building mounted 17 different exhibits and presentations illustrating the general theme: "Measuring the Atmosphere as the Backbone of AES". In addition they put up stands and wall exhibits around the building, converted classrooms into living illustrations of

the atmosphere...the chemicals that fill it and the weather that shapes it.

Dozens more staff acted as guides, sign bearers, receptionists, media relations and "odd job people", doing everything from delivering messages to liaising with cafeteria staff. A few like Dr. Alex Chisholm and Dr. Wayne Evans of Atmospheric Processes Branch and Al Malinauskas of the Climate Centre held press conferences on major topics like the ozone hole, international agreements to protect the ozone layer or the impacts of Global Climate Change.

Senior AES staff gave major presentations and repeated them throughout the day to ensure that as many visitors as possible could attend the



Photo: Mike Duffy

Highlight of AES Downsview Open House was the launch of this ozone sonde balloon. Despite rain showers, a large crowd gathered to watch the send off.

Pope's visit puts Arctic Weather Centre on alert

Pope John Paul II is scheduled to visit Fort Simpson, N.W.T. on September 20, 1987 and this has prompted the AES Arctic Weather Centre in Edmonton to take some special steps to ensure the best possible accuracy of the weather forecast for that date.

Gary Schram, Officer-in-Charge, Arctic Weather Centre says that copies of the forecast will be supplied to the papal party three or four days prior to His Holiness's arrival at Fort Simpson for his visit. When the Pope tried to visit Fort Simpson in September 1984, his plane was prevented from landing due to heavy fog. Since then the Pope has been promising to return to Fort Simpson some day.

Mr. Schram says a forecaster in his office will spend some time in late summer assessing climatological information and forecast techniques applicable to the Southern Mackenzie Valley. Two or three days before the Papal visit, the forecaster will be on shift, with most duties devoted to forecasting the weather in the Fort Simpson area.

Is the Pope liable to be fogged in for a second time? Data from the Canadian Climate Centre reveals the probability of really bad weather at Fort Simpson at that time of year is quite low. "In any case", Mr. Schram adds, "we will be making our best efforts to forecast the weather, good or bad, as accurately as possible".

events. For example, Dr. Ray Hoff gave several hour-long presentations at the Chemicals in the Atmosphere Centre (Classroom #3) where he led his audience through a number of illustrated panels covering major environmental issues like acid rain, arctic haze, toxic chemicals, radioactive releases, greenhouse gases and ozone. Meanwhile in another classroom on the main floor Ken Daly of Training Branch and Stu McNair of Weather Services Directorate traced the development and preparation of the daily weather forecast, allowing visitors to analyze tomorrow's weather.

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Canada

Jim Bruce wins Patterson Medal

Former assistant deputy minister of AES Jim Bruce is this year's winner of the Patterson Medal, Canada's highest award for meteorology.

The medal was presented by the current ADM of AES, Howard Ferguson at a recent ceremony in Geneva, Switzerland, home of the World Meteorology Organization (WMO), a specialized agency of the United Nations (UN). The award took place at a reception at the residence of Alan Beesley the Canadian ambassador to the UN, for participants at the 10th WMO Congress. Mr. Ferguson is permanent representative of Canada with WMO. It is the first time that the Patterson Medal has been awarded outside of Canada. Mr. Bruce, who retired after five years as head of AES in December 1985 and is now serving as director of the Technical Cooperation Program of WMO, was unable to return to Canada to receive the award, usually given out at the Canadian Meteorological and Oceanographic Society's annual meeting.

Describing Mr. Bruce's "even-handed leadership" making him the "model of a public servant at his best", Mr. Ferguson outlined some of the highlights of Mr. Bruce's career. Starting as a weather forecaster, he later became a founding director of the Canadian Centre for Inland Waters. He was also assistant deputy minister of the Environmental Management Service, leading federal programs on water, lands, wildlife and forestry. He has an "enviable reputation" in the field of water resources, among other things negotiating the Great Lakes Water Quality Agreement, regarded as a model for bilateral environmental accords. He also served as Canadian co-chairman of the International Joint Commission's Research Advisory Board.

Referring to Jim Bruce's great love of meteorology, Mr. Ferguson mentioned the notable honor



Howard Ferguson, assistant deputy minister of AES, left, presents the Patterson Medal to former ADM Jim Bruce at a reception in Geneva, Switzerland.

of his serving as third vice president of WMO. He also praised Mr. Bruce in connection with his work on Acid Rain (he served as co-chairman of the executive body for the International Convention on Long-range Transboundary Air Pollution) which pledges countries to reduce sulphur emissions by 30 percent by 1993, and, lastly, he lauded Mr. Bruce for his expertise on Climate Change especially for his work as chairman of the Villach (Austria) meeting where representatives of 20 countries made recommendations regarding this global problem.

The Patterson Medal, Canada's most prestigious award for contributions by a Canadian to meteorology, is presented annually and is named after John Patterson, who directed the Canadian Meteorology Service from 1929 to 1946.

Dr. R. L. Kintanar, president of WMO added a few words about Mr. Bruce's international achievements.

tions including that of acting director general, Policy Directorate, Corporate Planning Group, DOE, (June 1986 - January 1987) and chief of Weather Services, AES, Quebec Region (May to October 1985). From 1971 to 1979 Mr. O'Donnell served as a meteorologist at the Toronto Weather Office. He has a BSc in physics and mathematics from Sir Wilfrid Laurier University, Ontario.

Mr. Pender has held the position of director of the Climatological Applications Branch at the Canadian Climate Centre (CCC), Downsview, since October 1984. While in this position Mr. Pender served five months as acting director general of the CCC.

In 1977 Mr. Pender became officer-in-charge of the Ontario Weather Centre. Subsequently he was project manager of the Canadian Forecast Systems review, evaluating the quality of Environment Canada forecasts at that time. He then served as acting director, first of Data Acquisition Services branch, then of the Air Quality Research branch.

Mr. Pender was born and educated in Ottawa and has extensive experience all over Canada as a forecaster. He joined the former Meteorological Branch of the Department of Transport in 1961.

Dr. Dawson has a BSc in Applied Physics from Brunel University, London, England and a PhD in Solid State Physics from Reading University. He has spent the past three years as AES regional director, Pacific Region. Before that he was director of AES Computing and Communications Service branch, Downsview. Among other things he was responsible for the procurement and installation of the CRAY super-computer at the Canadian Meteorological Centre.

Mr. Burns goes to this senior DOE position after 23 years service with AES. Before becoming AES regional director, Western region in 1981, he served for several years as chief of Data Acquisition in that region. He also served for a time at AES Downsview where he held several managerial positions.

Mr. Burns joined the old Meteorological Branch of the Department of Transport as a duty forecaster at Calgary in 1963 and later became senior forecaster for the Alberta and Arctic Weather Centres.

Both Dr. Dawson and Mr. Burns are currently serving as chairmen of the Committees of Regional Executives (CORE) in their regions.

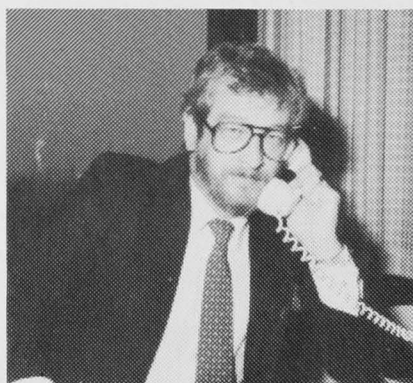
Two New AES Regional Directors Appointed



Brian O'Donnell

Brian O'Donnell and Patrick Pender have been appointed directors of AES Pacific and Western Regions respectively. They replace Dr. Kirk Dawson and Bev Burns who have been appointed regional directors general, Conservation and Protection, in the equivalent DOE regions.

Since October 1985 Mr. O'Donnell has served as director Policy Branch, Corporate Planning



Patrick Pender

Group, DOE (Ottawa) where among other things he provided corporate support for the minister's cabinet activities, and was involved in the management of departmental priority issues. For five years, beginning September 1980, Mr. O'Donnell was senior policy advisor, AES, Policy and Planning Directorate.

He has held several other management posi-

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Canadian appointments, conferences covered at WMO meeting

At the tenth Congress of the World Meteorological Organization (WMO) and the 39th session of the WMO Executive Council, held recently in Geneva, Switzerland, ADMA Howard Ferguson, Canada's permanent representative with WMO, convened a meeting of 20 experts from various international organizations to discuss the June 1988 conference on the Changing Atmosphere, Implications for Global Security, to be held in Toronto.

Financial support for this conference exceeds \$120,000 US to date, mostly to assist travel costs of organization representatives and participants from developing countries. Canada was named to be a member of the WMO financial advisory committee.

The Congress also decided that WMO will convene a second Global conference on Climate in late 1989 or 1990. Mr. Ferguson agreed to provide secretariat assistance for the preliminary planning, a logical follow-up to the work being done on the Toronto conference. The World Climate Conference director is considered likely to be a Canadian.

Mr. Ferguson and two other Canadians were appointed to WMO bodies. ADMA was one of the 26 representatives named to serve on the Executive Council (He was elected on the first ballot).

Mr. Ferguson was also appointed vice-chairman of the WMO working committee on

Accidental Release of Hazardous Materials and was appointed to the selection committee for the professor Vilho Vaisala Award.

In addition Dr. Doug Whelpdale of AES was appointed chairman of the Executive Council panel of experts for the working group on Environmental Pollution and Atmospheric Chemistry and Dr. R. G. Humphries of the Alberta Research Council was named a member of the panel of experts on Cloud Physics.

The Congress elected Zou Jingmeng of China as WMO president; John Zillman of Australia as first vice president, Salvador Alaimo of Argentina as second vice president and John Houghton of the United Kingdom as third vice president. These appointments are for four years. Dr. Obasi was unanimously re-elected as secretary general. It was also announced that deputy secretary general, Don Smith, formerly AES director general, Field Services, is stepping down.

Finally, Mr. Ferguson reports that several WMO resolutions have reflected increasing WMO involvement in environmental issues.

In addition to Mr. Ferguson, Dr. Ian Rutherford attended the Congress as alternate representative and Mr. John Côté as advisor. Mr. J. E. Slater of the Inland Waters Division, Conservation and Protection Service and Jim Elliott, Department of Fisheries and Oceans also attended for part of the conference.



Mr. Howard Ferguson is flanked, left by alternate delegate Dr. Ian Rutherford and by advisor M. Jean Côté, at the 15th World Meteorological Organization conference in Geneva, Switzerland.

AES Scientists win awards at CMOS

Three AES scientists were honored at the June 15-19 meeting of the Canadian Meteorology and Oceanographic Society (CMOS) held in St. John's, Newfoundland.

Dr. Norman McFarlane of the Numerical Modelling Division, Canadian Climate Centre, Downsview won the Dr. Andrew Thomson prize in Applied Meteorology for work on gravity wave drag parameterization.

Louis Garand of the Numerical Prediction Research Division, Dorval, Quebec, won the Graduate Student Prize for a thesis on automated recognition of oceanic cloud patterns and its application to remote sensing of meteorological

parameters.

Dr. Phil Merilees, director general, Atmospheric Research Directorate, Downsview was presented with a CMOS life membership for services to the association over a long period.

The Patterson Medal dinner was held at CMOS as usual, but this time the Patterson Medal was awarded to Jim Bruce, former AES ADM in Geneva, Switzerland. Bill Appleby, president of CMOS and director of Weather Services, AES Maritimes Region outlined the highlights of Mr. Bruce's career. The theme of this year's CMOS conference was Predictability of Weather and Oceans.

EDITORIAL

You may have noticed in some recent issues of Zephyr that articles originating at AES Downsview tend to outnumber articles originating in the AES Regions. This is because we simply don't receive that many contributions from AES staff working in the Regions. Of course if we could get around to seeing you more often, we might be able to persuade you to send in more home-based stories. Or we might do some regional coverage of our own. Unfortunately there are constraints on travel these days, so we have to rely on you to respond to this message and contribute items on your own initiative.

If you have anything in mind, an interesting office event, an unusual journey, an off-beat weather experience... please jot it down and send it to us.

If you wish to contribute, please send your material to Gordon Black, c/o Zephyr, Communications Directorate, 4905 Dufferin Street, Downsview, Ontario M3H 5T4 or telephone (416) 667-4551.

By hearing from you, we hope to keep Zephyr as the magazine of all AES employees.

In recognition of 20 years of service as volunteer weather observers two gatekeepers of Wasagaming (Riding Mountain National Park, Manitoba) have received an Award of Merit.

As volunteer weather observers, the gatekeepers keep daily records of temperature and precipitation as well as notes of the general character of the weather. These reports are submitted monthly to Environment Canada and are used in the compilation and study of climatological statistics.



Seen left, holding a certificate of Merit is gatekeeper Jewel Thoren. Holding a prize-winning copy of "A Day in the life of Canada" is gatekeepers' supervisor, Darlene Ball. The Environment Week ceremony was carried out June 4 by Richard McLaughlin, AES surface inspector.

Environment Week a success — Continued

Even though there were only 105 specially invited guests, the whole building buzzed with small groups of people led by sign-wielding volunteers scurrying to all floors, eager to see everything from radiosonde balloon launches in the basement courtyard to multi-screened doppler radar displays on the fourth floor.

Despite activities, spread out all over the building, it was the lobby and auditorium on the main floor that formed the crux of the Open House.

The auditorium with its 400 seats attracted some of the largest crowds. There was enough space to accommodate AES staff in contrast to some events in other parts of the building which risked being overcrowded if too many employees tagged along. Notices went up saying that AES staff were welcome in the auditorium.

One talk that drew the crowds was the opening address by Doug Tesch, an AES training manager from Cornwall, Ontario. Reviewing all the activities of AES from surface observation to cloud physics, Tesch told his audience that AES services cost the public around a dime a day for a family of four. He described AES as a "life force of 2400 clerks, technicians, scientists, managers and others at work every hour of every day in every part of Canada". He added, "If you look behind a rock or under a bridge you will likely come across someone

working for AES or at least an instrument that they have placed there". He drew some of the biggest laughs when he described the Downsview building as a locale for aliens from outer space...judging by



Doug Tesch starts off the Open House, AES Downsview.

the strange instruments on the roof and the bizarre, unearthly weather statue in the grounds.

Most of the audience in the auditorium stayed on for Dr. Evans' presentation of the ozone layer: "A Hole in the Sky". They then heard Dr. Alex Chisholm speak about Canada's leading role on the world stage in protecting the ozone layer.

An afternoon session in the auditorium, also open to AES staff, had Henry Hengeveld of the Canadian Climate Centre talking about the Global Greenhouse Experiment "unplanned, uncontrolled, uncertain". Finally AES personnel could attend a presentation on acid rain.

The main lobby, a proven AES exhibit area, was even busier. Three prominent displays struck visitors as they entered the building, one was a life-size Brewer spectrometer, used for measuring depletion of the ozone layer, the other was a MESONET station and the third was a balloon calibration booth showing diagrams of a dozen different balloons — from football-size to giant upper atmosphere sondes. On show in all its glory was a bright red tethersonde balloon adding to the banner-strewn ceiling's festival-like atmosphere. Off to the sides were further displays from the Multi-Purpose Display Station for modern weather office display of graphic weather data, to displays on AES careers and Agrometeorology.



AES Open House organizers and volunteers seated left to right; Ev Wilson, Brenda O'Connor, Ann Bishop, Liana Kreamer, Julie Young, Sue Milburn, Stu McNair, Pat McFarlane, standing left to right; Heather Mackey, Peter Scholefield, Don Scott, Terry Forget, Scott Somerville, Ken Daly, John McBride, Mike Duffy, Gordon Black, Brenda Smith, Gloria Korson, Mary-Anne Teeter.

The most spectacular event of the day was probably the launching of the giant ozone sonde balloon from the grass on the south side of the building. Twice postponed because of rain, the launch preceded by the pumping of helium gas into a spacious transparent skin, attracting a crowd of 200-300, many of them AES employees. It took four people to get the balloon from its slack prone position to its long, vertical launch shape, ready for ascent into the grey clouds above.

Other presentation experts included Dr. Jim Young (Air Quality); Cliff Crozier and Dr. Roy Stewart (Weather Radar); Tony Hilton (Radiosonde); Paul Shalapata (Data Acquisition Systems); Peter Scholefield (Long-Range Climate Predictions); Andrej Sausleja (Water Levels on the Great Lakes); Dr. Sam Daggupaty and Ev Wilson (Environmental Emergencies); Michael Newark (Tornado Hazards) and Dr. Al. Christie (Chernobyl, one year later).

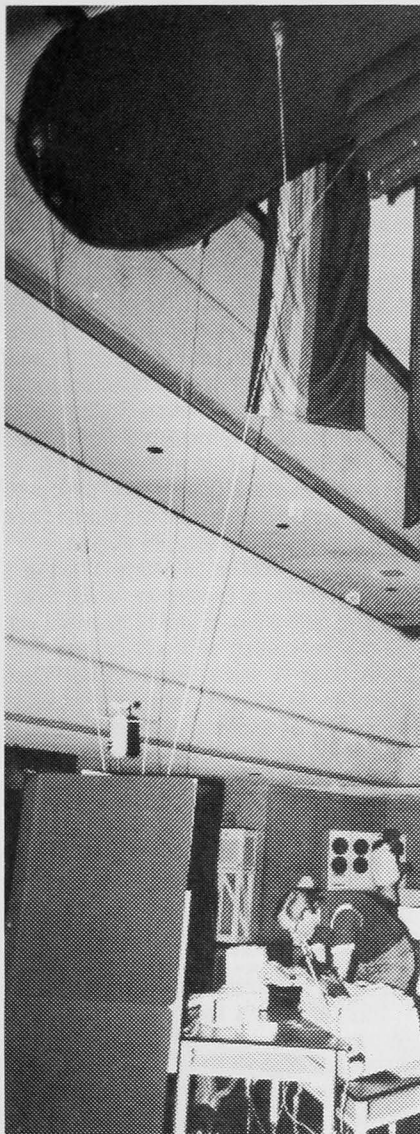
At a meeting held after the Open House for organizers and volunteers, many speakers made the point that the Open House and the preparations leading up to it had done much to raise AES



Dr. Paul Joe, contract employee, demonstrates weather radar at a multi-screened display unit.



Wes Kobelka of ARQM, centre, gives the air quality monitoring presentation assisted by Armond Gaudenzi, right. The three other people are guests.



A popular exhibit in the AES Downsview lobby was this tether sonde balloon attached to a balloon calibration unit below.

employees' morale. Some speakers went as far as to suggest that at any future open houses, an extra day be added to allow staff and their families to see the displays and demonstrations.

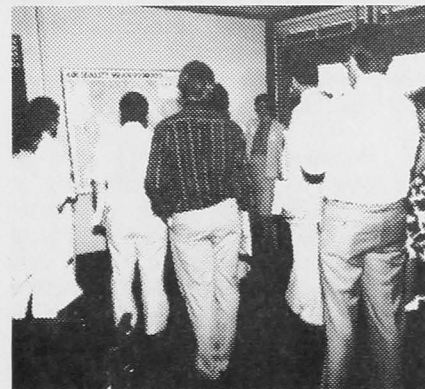
An occasion that was designed to attract a limited number of invited guests, who in turn would inform their own publics (eg. readers, students) of what AES had to offer, by chance became an event that would remain memorable to most AES Downsview staff.

In a letter sent out to all participating staff after the event, ADMA Howard Ferguson wrote, "I am impressed with the reports I have received on the enthusiasm and dedication by each participant during the planning, preparation and presentation of the Open House events".

He added, "Your involvement has contributed to the achievement of the Environment Week objectives of increasing the public awareness of environmental issues in general and for AES, promoting a general awareness of our services to the public".



Training Branch instructor, Ken Daly, teaches science writer Penny Johnston how to forecast weather at the AES forecasting classroom.



Dr. M. Phillips, facing audience, welcomes visitors to the large "Chemicals in the Atmosphere" classroom. Several presentations were given during the day by Dr. R. Hoff.

AES Part of Other Environment Week events

The Downsview headquarters Open House was not the only Environment Week event with AES participation. Here is a brief round-up of other activities in which AES had a heavy involvement.

The other large AES Open House was held in the Prince George, B.C. weather office, also on June 5. Some 82 visitors attended and the main display items set up for viewing were the DIGI-CORA upper air system and the Pacific Weather Centre's Marine Display System. There were also posters, videos and satellite weather displays. The specially invited guest list included school science teachers, media, climate observers, elected representatives and members of provincial organizations and government agencies. A total of 18 organizations were represented and there were several members of the public.

Tom Gigliotti of Pacific Weather Centre said the entire weather office staff did an excellent job, a number coming in on their day off to act as tour guides. All invitees received a new AES Information Kit.



Left to right, AES's Ken Daly, Don Scott and Steve Hopwood prepare a Stevenson Screen for the Kortright Centre for Conservation's "Weather Walk". The event was a prominent Environment Week event in the Toronto area.

Meteorological staff from AES Downsview Headquarters helped set up a "Weather Walk" at the Kortright Centre for Conservation north west of Toronto. Instruments supplied by AES combined with others already on the trail aimed to show visitors how weather forecasting fitted into the complete environmental picture. For example, demonstrations of temperature readings from a Stevenson screen were interspersed with a display of a CAPMoN (acid precipitation monitoring network) sensor. Similarly, an AES-implemented rain gauge contrasted with large solar energy collectors en route. Lastly a Patterson anemometer installed by the meteorologists complemented Kortright's own sundial.

The AES meteorologists led the public in the walk and explained how Environment Canada monitors and forecasts weather, the impact of human activities on the atmosphere and how the individual can foretell weather using natural signs and lore. The walk was backed up by a series of films on weather, display of satellite photographs, weather maps, fact sheets and other hand-outs.

Poor weather on the day (Sunday June 7) reduced the number of visitors to the hundreds rather than the several thousand expected had the weather been fine.

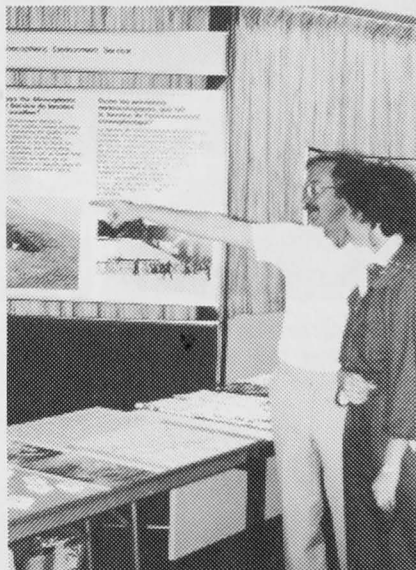
In Edmonton the city parks department hosted a "Picnic in the Park" on Sunday June 7. AES contributed by displaying sample weather office products and working charts along with information pamphlets. A similar function was held at Calgary's Shannon Terrace Environmental Education Centre on the same day.

In Yellowknife, N.W.T., AES had a display at the Northern Heritage Centre throughout the week (see photo). The exhibit included radiosonde equipment. In the Yukon, The Yukon Weather Centre contributed to a travelling Environment Week display.

The Sault Ste. Marie weather office held an Open House on June 2. On June 4 they participated with Environment Canada Parks and with the Coast Guard in an educational waterside program.

In Quebec weatheradio displays/kiosks were set up at a number of Environment Canada parks.

Live radio programs and TV interviews with AES staff participating were held in many other centres. Some TV weather forecasters wore green Environment Week baseball caps. Taped messages on weather and environment were also aired. Other offices gave out awards during the week to volunteer climate observers. Large amounts of AES promotional literature were also distributed.



The picture shows Dennis Malchuk, supervisor, observing and presenting programs at the Yellowknife Weather Office (N.W.T.) pointing to the AES Environment Week display at the Prince of Wales Northern Heritage Centre as a visitor looks on.

LETTERS

Thank you for publishing the article in your April/May issue titled "Scientific advisor receives Chernobyl award".

However, I think it is important to note that the outstanding work accomplished by AES during this period is basically due to close cooperation between highly qualified working teams in Montreal, Ottawa-Hull and Downsview. I would like in particular to mention the collaboration of Quebec Region of the Canadian Meteorological Centre and of the Numerical Prediction Research Division which produced the excellent models put into use. In addition I should mention the AES team in Ottawa-Hull which maintained official links with other government departments and the staff of the Research Directorate at Downsview which assumed a co-ordinating role. I would also like to emphasize the part played by all the AES regions, above all by the weather offices which had the task of answering many thousands of extra questions.

It is an honor to be the one who actually receives the prize, but like in the Stanley Cup, the winning captain at the final game receives the trophy on behalf of the whole team.

Richard Gilbert

Editor's Note:

Zephyr agrees with Mr. Gilbert's remarks, and would especially like to emphasize the contribution made by Dr. Janusz Pudykiewicz who along with other scientists at the Division de la recherche en prévision numérique in Montreal and with meteorologists at the Canadian Meteorological Centre (CMC) conceived, tested and constructed the model and computer simulation that enabled the radioactive fall out cloud to be located and analyzed as it travelled over the northern hemisphere. An upgraded version of this long range transport of pollutants model is currently being set up at CMC and will form the basis of computerized systems set to deal with environmental emergencies, not only for Canada but for other countries through the World Meteorological Organization's Global Telecommunications Network.

July 1, 1974: Blinding sunlight delayed the start of the ball game between the Cubs and Expos for 20 minutes at Parc Jarry.

July 2, 1949: Vancouver recorded its lowest July temperature on record: 6.7° (48 yr).

July 5, 1937: Temperatures rose to 45° at Midale and Yellowgrass, highest ever recorded in Saskatchewan and Canada.

July 8, 1984: Violent thunderstorms, hail and tornadoes cut a swath of destruction across southern Manitoba. At St. Claude, a twister toppled a ferris wheel injuring 20 persons.

Canada Fit Week — The Perfect Fit

AES Downsview joined the nation in celebrating Canada Fit Week 22-31 May. Films were shown in the lunch break to create an awareness. Howard Ferguson, assistant deputy minister gave his approval to the event and delegated Gordon Shimizu, director general Central Services Directorate

and Dr. Phil Merilees, director general Atmospheric Research Directorate to respectively launch and close the event and support Mr. D. Dueck, president of the Recreation Association.

The Committee comprised of Dr. J. Padro, D. Blakey, M. Richling, V. Pubrat and G. Turner. Olga

Leskiw the succeeding nurse assisted Maudrie our outgoing nurse.

Snacks and prizes were donated by neighbouring stores and restaurants. AES cafeteria gave snacks to cyclists who rode from home on Cyclists' Day. Our neighbouring medical doctor and chiropractor joined us for some of the activities.



Oscar Koren sets the pace for runners, left to right, Louise Racine, Doug Blakey, Chris Stuart, Dr. Martin Cloth (M.D.), Dr. Sam Daggupaty, and Max Bacchus.



Peter Scholefield leads the pack as cyclists, right to left, Terry O'Connor, Mike Newark and Mike Richling, ride out on Cyclist's Day.

Running and the Research Mind

Every day at 12:30 p.m. a tightly bunched, lightning-fast group of AES employees in shorts and T-shirts moves monolithically through the scenery of Ross Lord conservation park on the south side of the AES Downsview Headquarters building.

Leisurely park strollers who spot the group, racing relentlessly towards the large reservoir lake at the park's southern extremity, probably take the "speed blur" for granted. They have little choice. At that speed it is difficult to pick out individuals let alone greet them or offer them encouragement. Perhaps the only thing the casual spectator can ask is: "What are these runner doing? Why are they so close together? Wouldn't it be better if they spread out a bit?"

Research scientist Dr. Neil Trivett who has been running with the "speed blur" since 1978 explains that the joggers or runners (he uses the term interchangeably) are having a conversation!

Neil adds that the group consists of a determined bunch of lunch-time runners more than half of whom happen to be research scientists. Jogging itself is not always that interesting, so it helps to have something to talk about. Since many "blur" members have similar jobs, their chats are often work-related.

Neil explains further: "Things get said about scientific research that don't often get said in the cafeteria or in the laboratory". The conversation isn't necessarily more inspired, but there's an added dimension, a keener insight, perhaps a greater sense of repartee".

Neil far prefers this social give and take on the hoof between 7 or 8 people to doing a solitary run. Of course he is forced to run by himself on weekends and at other times when away from the office. He claims he still benefits enormously from the run, but is just a little lonelier without the company.

Neil claims that research scientists have

always predominated on the runs. "I guess they were quick to adopt the contemporary lifestyle that jogging offers."

Neil claims that the daily work out which lasts 40 minutes, plus another 20 minutes for showering and changing, rescues him from job stress. "Research scientists have a bit more control over their time than shift workers." They can take an hour and 15 minutes for the whole operation including lunch everyday.

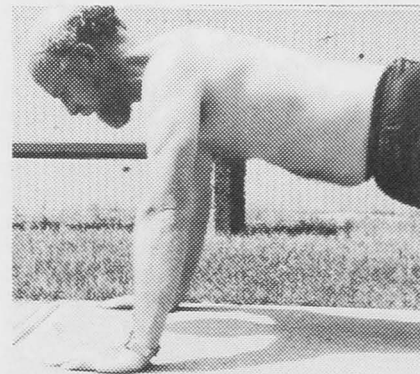
Like other runners Neil experiences a euphoric "high" just after completing the run and he rests to enjoy it before showering and lunching. Above all he will never let running cause him stress. If it does, he simply won't run. (He only runs competitively only once a year on Toronto Island for the Sunnybrook Hospital.)

One of the impressive things about Neil's running is that he does it in all weathers. At Downsview, he runs in snow, hail, fog, thunderstorms and blistering heat. Over the past two years Neil has been spending two or three months of the year at Alert, the world's most northerly weather station. His task has been to set up an air chemistry

monitoring laboratory only 600-700 kilometres from the North Pole. He pursues his running at Alert in comparative ease. "As long as the temperature stays above minus 35 degrees C. I'm ready to run." He adds that running in the winter-long polar night doesn't bother him, but he might think twice about running in strong winds or drifting snow. Running at Alert needn't be solitary either, there may not be many AES runners in the High Arctic but there are certainly Canadian service personnel to run with.

Neil is more likely to miss out on running while attending seminars in other cities. Once when visiting West Germany he missed out on running for two whole weeks because he had become separated from his running shoes.

Dr. Trivett says his early running days at AES were undertaken under rugged conditions. "There was an outdoor shower and no changing room." Nowadays facilities are available in the AES building. However he warns that there just isn't accommodations for everyone to run. "Right now the number (up to a dozen scientists) is just about right".



Contrasts in the working life of Dr. Neil Trivett. Left; seated serenely in his AES Downsview office, right; doing push-ups, though his favourite sport is running.

Requies-Cat in Pace

The crew of the AES weather station at Cape St. James, Queen Charlotte Islands, B.C. live in relative isolation. One of the consequences of this remoteness was the development of a very special relationship with the station cat.

In a letter dated April 16, 1987, Mr. B. Jensen, A/superintendent, Station Operations, Pacific region, asked Zephyr to print "in your excellent publication" an obituary that began — "It is with deep regret that we announce the passing of Mr. B. Lackie, of Cape St. James, Q.C.I. Mr. Lackie died on March 10 after a short illness. He was 42*..."

Mr. Jensen's letter was shortly followed by a letter (dated May 1) from James Derham-Reid, OIC, Cape St. James, insisting that a more protracted obituary be printed, as the brevity of Mr. Jensen's notice could not make sense to the many Zephyr readers — and Mr. Derham-Reid himself generously contributed the following heartfelt biography of Mr. B. Lackie.

"In the beginning, of course, he was just plain Blackie the Cat, son of Coco and Caliban, and the only one of his litter to remain at the Cape when his brothers and sisters went off to homes in Sandspit. For several years he lived a simple cat's life — much as cats live everywhere. Then "Crazy Bob", a Cape regular, came in to put in his annual tour of duty, and the world — Blackie's world — changed for ever."



"Crazy Bob" spent his idle hours going thro' the magazines and tearing out those little mail-in cards — you know the sort I mean: "Be a Locksmith," "Build Better Biceps," "Retro-Fit your home with Solar Technology," etc. Bob filled out all these cards in the name of Mr. B. Lackie, Cape St. James — and in no time at all, Mr. Lackie was on everyone's junk mail lists. Each time the helicopter came with food and mail, Mr. Lackie got most of the incoming letters, magazines and circulars. He had his own mailing stickers from the T.B. Vets. In response to a few dollars mailed-in, he became a 'sustaining member' of various political party organizations, and his plasticized membership cards went up on the bulletin board. Mr. Lackie had subscriptions to various magazines, among them Popular Science, and just before his death he started receiving copies of the Plain Truth. Was it due to a presentiment on his part? We shall never know.

EMPLOYEE EQUIPMENT

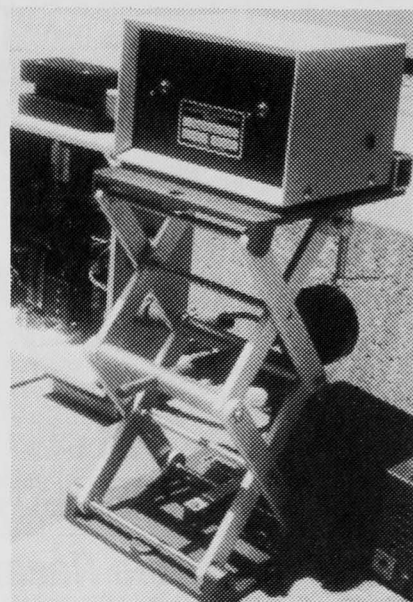


Bob Wilson

Data collected during the winter about the depth of snow lying on the ground is valuable to both climatology and hydrometeorology. So meteorological and climatological stations in Canada measure and record the depth of snow on the ground daily throughout winter. But this measuring is done manually with a snow ruler. With the rise of automated (unmanned) stations, snow depth data will be lost unless snow depth measurement is automated too. In AES, the development of a reliable automatic snow-height gauge was assigned to a four man team — Barry Goodison and John Metcalfe of the Hydrometeorology Division, and Ken Wu and Bob Wilson of the Measurement Technology Section. Zephyr collected the following information from Bob Wilson.

The snow-height is based on an acoustic echo technique. An electrostatic transducer (microphone) produces a sound wave which is sent down to the ground — in this case, to snow lying on the ground. When the sound wave hits the snow, it reflects back to the transducer as an echo — and the measurement of elapsed time from the transmission of the sound wave to the reception of its echo determines the height of snow above the ground. Of course, a fixed distance from the transducer to the actual (snow-free) ground is programmed in advance to deduce snow-depth. The loudspeaker, transducer, and electronic circuitry are housed in a metal box which is clamped to a sturdy metal arm extended horizontally outward

Mr. Lackie died in March after a few days of illness. John How buried him near the Operations Building, and has ordered-in a stone, which I shall see to the placement of. The new cat — NOT a replacement; nothing — after all — could replace Mr. Lackie — is merely a cat, nothing more.



Remote snow-height sensor

from a vertical pole rooted solidly in the ground — and the whole is set up in a judiciously selected spot, usually somewhere in an open field.

Bob Wilson and his three colleagues worked from an ultrasonic ranging kit commercially produced by the Polaroid Corporation. The kit represented potentially specific uses only. Bob had to adapt the kit's components into the model that became the snow-height gauge. Development of the gauge's acoustic technique was established during the winter of 1982-83. Two additional units were deployed for testing during the winter of 1983-84. There were bugs to be worked out. The speed of sound varies according to air temperature and there was a 2cm discrepancy between the gauge's measurements and the snow ruler's measurements. But these problems have all been solved and the snow-height gauge is now accurate and effective.

Bob Wilson is a 20 year veteran of AES. He served as an upper air technician in the Arctic for four years, then served four more years on the B.C. Coast weather ship *Quadra*. He also worked in Africa on the GATE (Garp Atlantic Tropical Experiment) project. Bob then took education leave for a two-year electronic engineering technology course at Fanshawe College, London, working during the summer in Downsview in the Technology Support Division. The following summer he made it permanent and has since worked on the snow-height sensor and other instruments.

"Ave atque vale Mr. Lackie...our rocky world is the poorer for your passing."

*The age of Mr. B. Lackie at death — 42 years old — as informed by Mr. Jensen is of course human-scale adjusted.

BOOK REVIEW

Canada in Space by Lydia Dotto. Paperback, Irwin Publishing, 371 pages, \$16.95.
Reviewed by Gordon Black

To get an emotional kick out of Canada's participation in space, you should see the film *The Dream is Alive* projected on to the giant Imax screen. Made by Canadian director Graham Ferguson, the movie depicts Canada's efforts in this innovative area clearly if fleetingly. There is a brief glimpse of Marc Garneau, our astronaut aboard the flight 41-G *Challenger* space shuttle and a considerably longer view of the much vaunted *Canadarm* manipulator sitting proudly front-centre with its maple-leaf-made-in-Canada sign prominently displayed. The Canadian-ness of the film is heightened by knowing that much of the footage, including shots of the earth seen from space as an exquisite turquoise jewel or glimpses of other astronauts floating about the cabin in zero gravity, were taken by Garneau himself.

To get a detailed, rational grasp of what it means for Canada to play a prominent role in the new space era you should read Lydia Dotto's book. It is well researched and pays tribute to just about every Canadian company that has any connection with the aerospace industry and to many more that have shown interest in testing products, medical or otherwise, in micro-gravity. The same goes for government agencies, university and scientific institutions, hospitals and communication agencies. This is all right because *Canada in Space* is the definitive book; though it is sometimes difficult to see the wood for the trees.

To simplify matters let's climb back aboard flight 41-G. Ms. Dotto tells us that the cargo bay

had a full complement of payloads and experimental equipment, mostly designed for remote sensing of the earth's climate and environment. One of the smaller of these experiments was sponsored by AES (and York University). It involved the use of the AES-made Sunphotometer, to measure solar radiation and to carry out atmospheric pollution studies. Giving the project the unlovely acronym SPEAM, the book devotes two thirds of a page telling how Garneau pointed the hand-held instrument at sunrises and sunsets to learn more about what effects dust clouds from the El Chichon volcano had upon world climate.

There were other major experiments aboard 41-G including the launching of the Earth Radiation Budget Satellite and the carrying out of a Stratospheric Aerosol Gas Experiment. Perhaps of more interest to readers was the information that there were more Canadian experiments aboard...bearing such acronyms as SASSE, VISET, OGLOW, and ACOMEX. Some of these had to do with orienting oneself to the movements of the *Canadarm* in the hard-to-fathom dynamics of zero gravity and in case you're wondering, the OGLOW experiment had to do with photographing a mysterious red glow appearing on the shuttle's tail.

The book is not all dry facts, however. Ms. Dotto tells the part about the selection of the six Canadian astronauts (out of 4400 initial applications) with verve and good humour. When the choice is finally narrowed down to 19 applications, she explains how Ray Dolan, personnel chief at the National Research Council undertook the task of phoning "finalist" to let them know their fate. When he phoned the six successful candidates he became rather flippant in his conversation and asked his respondents what the weather was like where they were. His talk kept these keyed-up people in suspense. Had they or hadn't they got the job? Ms. Dotto says that the astronauts should have known better. No personnel chief would have talked about such trivial topics as the weather if he was about to turn an applicant down.

The most exciting part of the book has to do with the *Canadarm* rescue of the Solar Max satellite. For several pages this is the stuff of high drama.

One of the most interesting parts is the news that Canada has sanctioned nearly \$800 million for its part in the upcoming multi-national space station, scheduled for launch in the mid-nineties. Ms. Dotto confirms that after much wrangling Canada won itself a contract to do much of the mobile repair and maintenance work aboard this highly scientific work station due to orbit the earth at an altitude of 400 km. It would also likely mean the more or less permanent stationing of a Canadian astronaut aboard the space station. What it all adds up to is a daring and innovative commitment by Canada to remain involved with the space program until well into the 21st century. Quite rightly she applauds a country with somewhat limited funding and technical resources for getting right into the thick of things.

It is interesting to note that space sciences and meteorology are now becoming contiguous disciplines. This follows a pattern set up in the early 19th century when meteorology and magnetism went hand in hand. This twinning of sciences was continued at the turn of the century when meteorology teamed up with astrology. (Until 1930 there was a large telescope on the roof of the Meteorological Services Building in Toronto.) Ms. Dotto's book amply confirms that meteorology, atmospheric sciences and space technology will henceforth be closely linked.

The book mentions just one sour note: the self-doubt and despair, both in the U.S. and Canada caused by the January 1986 *Challenger* disaster which resulted in the death of all seven members of the crew. Because of this tragedy any real progress in space exploration has been put on hold until at least mid-1988. All the exciting space projects dreamed up in the past few years must await a safety re-evaluation. But nobody in the space business, least of all Ms. Dotto, doubts that it is humanity's ultimate destiny to reach the stars.

Arctic rotation for budding Inuit cooks

George Bougard is the cooking instructor at Arctic College, Iqaluit (formerly called Frobisher Bay). In September, 1986, Mr. Bougard was conducting community training of young Inuits in the High Arctic at Resolute in such arts as cooking, baking, cleaning and menu preparation. Menus consist of soups, vegetables, roast beef, steak, Arctic char, lots of salads and fruits and other foods. AES makes sure its Arctic personnel are fed a healthy diet.

In September, 1986, Environment minister Tom McMillan visited Resolute. Dennis Stossel, superintendent, Arctic Operations, noticed Mr. Bougard's Inuit students preparing and serving snacks in the community hall during the minister's media announcement about the Northern Ellesmere park reserve agreement with Inuit leaders. Dennis Stossel subsequently spoke with Mr. Bougard at Resolute's Narwahl Hotel, where cooking classes were being held. He learned that Mr. Bougard was scheduled to conduct further Inuit cooking lessons at Pond Inlet in October and at Clyde River in November. Mr. Bougard would then return to Arctic College to conduct a five month cooking course, beginning on January 5, 1987, for ten Inuit students



Annie Kootoo watches instructor George Bougard, cooking instructor, at the careers school Iqaluit, N.W.T.

coming in from Pond Inlet, Rankin Inlet, and Eskimo Point.

Dennis then had the original idea of introducing, into the program, a rotation of the students to Mould Bay and Eureka in the High Arctic to gain experience of cooking at a weather station. He arranged for Mr. Bougard to fly to Mould Bay and Eureka with the produce delivery flight to determine if their kitchen facilities were conducive to the training program; they were. Dennis then presented his idea to Ken McRury, regional executive director, Government of the North West Territories. His idea was accepted and implemented. The rotation begun

on the 18th of February when Ms. Martha Ukalik and Lily Quanaq (both of Pond Inlet) were flown to Mould Bay — and the rotation was completed on June 3. AES is responsible for board and lodging and the kitchen environment with supervision and tutoring provided by the station cook.

In addition, a cooking instructor was sent to Mould Bay to supervise the over-all student training. As the result of a competition, this instructor turned out to be George Bougard's son, Robert. George himself kept in touch with the Mould Bay project by satellite telephone. Results of the project were assessed by the Mould Bay OIC and the station cook on the basis of timeliness, conduct, food quality, tastiness, janitorial tasks, and so forth — and pronounced a success. In fact, when Robert Bougard had to fly to Montreal for medical reasons on April 25, Ms. Martha Ukalik returned to Mould Bay and capably replaced him as instructor.

The Inuit cook training program is part of the Native Field Training Project (NFTP). Dennis Stossel's Mould Bay and Eureka rotational scheme was new to AES. The Christmas 1986 issue of *Zephyr* contained an article about Inuit meteorological technicians called "Minnie and Tabitha spearhead Arctic weather revolution". The present article illustrates another important aspect of Native career possibilities in the Arctic.

ZEPHYR BREEZES

Our unofficial Great Lakes weather observer has had some poetic thoughts about this year's Southern Ontario spring:

"What is so rare as a perfect spring in Southern Ontario? It doesn't happen often, but it is one of the great wonders of the North Temperate Zone when it does happen — and it happened this year. It began to appear about mid-March, and it came on steadily, almost imperceptibly, day after day, without the usual bad-tempered relapses into sleet and snow. The early morning sun in a powder blue sky fell with a rich rosininess on rooftops and through the branches of winter trees. Early in April, the trees began one after another to break out into millions of yellow-green nodules. After another week or so, these nodules became tender yellow-green leaves. Then the forsythia bushes burst into yellow blossom. Forsythia is the gladdest of all blossoms because they are the first to announce that this indeed is spring, the real thing. It is as though the green-leaved forsythia bushes had burst into a fireworks display of yellow. Each blossom is like a tiny loudspeaker. Passing by, they seem to call out 'Hey you! Look at me! Look at my yellow! Have you ever seen anything yellower than me?'"

No, forsythia, we have never seen anything yellower than you."

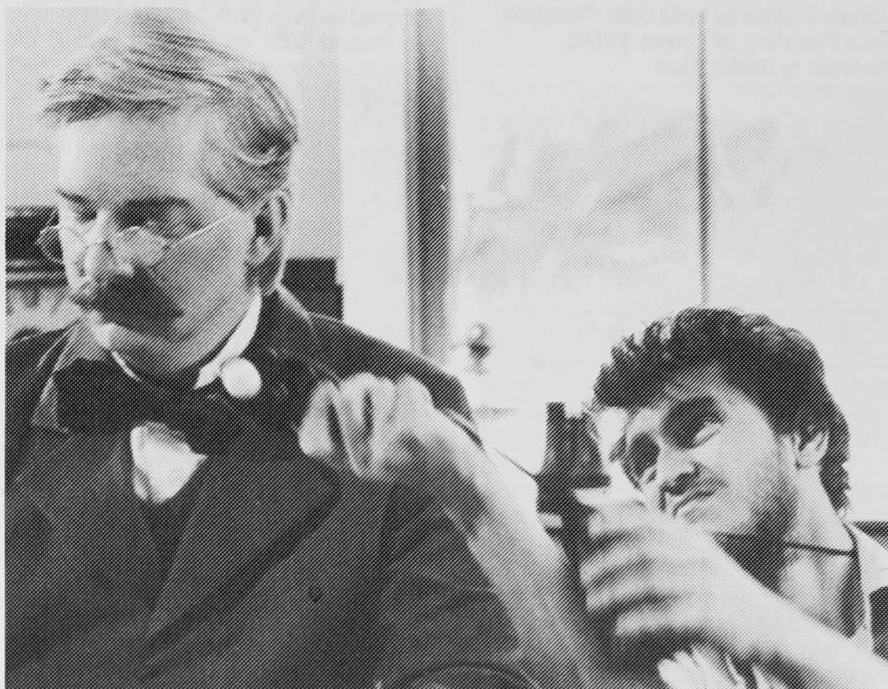
Bill Bourque, officer-in-charge of the Moncton Weather Office, has managed to become one of the best known faces in Atlantic Canada. This is because he makes a daily appearance as weather forecaster on the French-language, Moncton-based TV station, CBAFT.

Bourque says he tries to be more than a TV weatherman and to instill a little in-depth knowledge into his presentations. By using his professional skills, Bourque adds extra competence and credibility to his broadcasts.

Although he has worked in meteorology from the United States to Labrador, Bourque has been glad to spend the last dozen years or so in his native city.



Mr. Bill Appleby, left, chief of Forecast Operations for the Atlantic Region, presents a certificate of retirement to Eliot Humby, Newfoundland Weather Centre, on the occasion of his retirement after more than 37 years service. His services to the Scouting Movement were also noted.



David Phillips of the Canadian Climate Centre is seen playing the part of Sir Frederic Stupart, head of Canada's weather service, in the late 19th century. The scene, shot at the Old Town Hall, Newmarket, Ontario is part of a documentary film being made for Sudbury's Science North Science Centre as part of a series on the history of science in Canada. Lighting technician, Nick Kaminecky is seen at Phillips' side making a final lighting check.

Getting set to operate Canada's first meteorological station at Fort York, Toronto in December 1839 seems to have created the normal amount of problems, according to a letter sent by Lieut Charles Riddell, first director of the Meteorological Service, to the commander of the Royal Engineers.

"I have the honor to inform you that the following work will be required to set up the anemometer as requested in my letter of the 10th instant, viz., To make an opening in the ceiling large enough for a man to pass through to set up a light support about three feet high above the roof for a cylinder to rest on; to make two small openings in the roof, one about three, the other one inch in diameter, for the tubes to pass through, and to make the roof good around them. It may afterwards be found necessary to secure the vane with cross pieces."

Peter Learmonth of AES Ontario Region spotted this new way to spell *meteorological* on an addressed envelope:

Mr. Tom Rylett,
Meteor Lodge Co-Inspector,
3rd Floor,
25 St. Clair Ave. E.,
Toronto, Ontario
M4T 1M2

Letters continue to reach us despite carrying the weirdest of addresses. One from Tofino, B.C., directed to: "American Atmosphere and Environmental Centre, Downsview, Ontario" reads "I am writing a spy novel about possible stresses between Canada and the USA dealing with the dropping water table on the high plains of the USA and California. Also the possibility of a long-term weather pattern shift that would increase American interest in Canadian water. The book is fiction but needs a strong understanding of scientific facts. Would you send me any booklets or names of agencies and people that might be pertinent to the above statement."

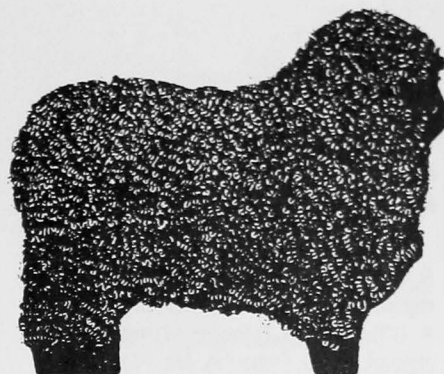
Newsletters are bursting out all over! Now it's the turn of the Sunburst Day Care Centre at AES Downsview. Apparently the newsletter came into being after a March directors' meeting when according to a letter to parents, signed by Heather Brighton, "it was unanimously agreed that a newsletter would benefit the daycare operations by providing a forum for better relations among the board, the parents and the teachers".

Right away the committee organized a name-the-newsletter contest. Entries included: *Sun-Days*, *Sunadae Scoops*, *All and Sundry*, *Sunburst Bulletin*, *Caretakers Chronical*, *A Ray of Sunshine*, *Sundialogue*, *The Sunburst Flash*, *Sunspots*, *Baby-Chatter*, *Baby Gab* and *the Sunbeam*. The winner, very convincingly was *Sunburst Newsburst*.



Jack Mushinski, operations technician, AES central region receives an award from ADMA Howard Ferguson on behalf of the Winnipeg Weather Office for outstanding work in forecasting the great November snow storm.

This New Zealand version of the Simpleton's weather forecast came across our desk the other day. It begins, "If your sheep's wool is warm and dry, then the weather will be mainly fine". Other conditions of the wool and their meteorological meaning go as follows: warmer and drier: continuing mainly fine; warm and damp: partly fine with morning fog; damp: low cloud, mist or drizzle; wet in patches: scattered showers; wet all over: showery outlook; soaking wet: rain persisting; covered in icicles: freezing rain; flat: some hail; white on top: snow down to 1 metre; standing on end: light, gusty winds. Finally if the sheep or the sheep's wool is missing it means gale force winds.



Weather services and the Environment

By George Whitfield

The assignment of AES — Canada's weather service — to an Environment Department, is, among international weather services, rare, if not unique. Of course, there is nothing rare about weather services. Among the nations of the world, they are as common as...rain! The World Meteorological Organization (WMO) has published a list of more than 150 national weather services together with their ministerial assignments. It's quite a hodge-podge. Weather services are scattered around in every department you can think of — Transport, Agriculture, Communications, Science & Technology, Education and Culture, Public Works, even Foreign Affairs (Fiji) — everywhere except in Environment.

It would be a tremendous undertaking to delve into the rationale behind more than 150 national weather service assignments, so Morely Thomas, AES historian, graphed the departmental evolution of four large-scale weather services — the United Kingdom, the U.S.A., Australia, and Canada.

There is no doubt about it, weather services originated in the United Kingdom. (See the article "Humboldt — Grandfather of Canadian Meteorology" March/April 1985 Zephyr), which shows clearly that meteorology is the offspring of geomagnetism. It was also geomagnetism which prompted the rush to the North and South Poles. The South Magnetic Pole was reached by the Shackleton expedition of 1907-8. Again see "Christmas at the South Pole" (in the Christmas 1986 edition of Zephyr). The weather service was nationalized in the United Kingdom, in 1854; in 1870 in the U.S.A., in 1871 in Canada and in 1909 in Australia. The introduction of weather services on a world-wide scale is a 20th century phenomenon.

As the Humboldt article shows, Great Britain set up combined magnetic-meteorological observatories in Ireland, Canada, St. Helena, Tasmania and South Africa during the years 1838-1840. And in 1854, meteorology left its geomagnetical home and became the autonomous Meteorological De-

partment of the U.K. Board of Trade. In 1867, the weather service was re-assigned to the Royal Society and changed its name to the Meteorological Office. Retaining this name, it was again re-assigned in 1905 to the Department of the Treasury and re-assigned once again in 1919 to the Air Ministry. Still called the Meteorological Office, it finally came to rest in the Air Force Department of the Defence Ministry — and there it is today.

How did it go in the United States? In 1870, the weather service was called the Signal Service assigned to the War Department. It was this Signal Service that sent out the tragic Greeley expedition to upper Ellesmere Island during the First International Polar Year in 1881. (See Book Review in the May/June 1986 Zephyr). The Signal Service was transferred into the Weather Bureau, Department of Agriculture in 1891, and was re-assigned to the Department of Commerce in 1940. In 1955, the Department of Commerce developed an Environmental Science Service to which the Weather Bureau became subsidiary. Finally, in 1970, the Weather Bureau became the National Weather Service of the National Oceanic and Atmospheric Administration of the Commerce Department. (The U.S. likes fancy names and configurations!)

In Australia, the weather service began in 1909 as the Bureau of Meteorology, Department of the Interior, had an unclear assignment during the early 1970s, and came to rest about 1978 in the Department of Science.

Judging by these three cases, weather services migrated from one ministry to another according to which area of the national economy a weather service seemed most appropriate. Could we say that departmental shifting around was caused by meteorology's evolution, from a pure science to a practical science?

Finally, let's recap the evolution of the Canadian weather service. We had a weather observatory as early as January 1840 but we had to wait until Confederation in 1867 to nationalize the service. In 1871, the weather service was

federally inaugurated (in the new-born Dominion) as the Meteorological Service of the Department of Marine & Fisheries. It remained contentedly there for 59 years, an era dominated by the pioneering Professor Kingston and his trained successors. In 1930, Marine separated from Fisheries and the Meteorological Service went with the former. A departmental upheaval occurred in 1936 from which emerged the Department of Transport with a subsidiary Air Services Division. The Meteorological Service became the Meteorological section of Air Services. This relationship continued until 1970 when the Meteorological Division was renamed the Canadian Weather Service. A year later — in 1971 — the Department of the Environment sprang fully armed, from the federal government, like Athene from the forehead of Zeus, and the Canadian Weather Service became AES within Environment Canada. High ranking scientists and officials of AES have been heard to extol the renaissance of Canada's weather service within an Environment Department as the most fortunate of events. They say that an Environment Department is exactly where AES should be. No, not in Transport, or Agriculture, or Commerce, or Fisheries, or any of those other departments national weather services are scattered around in — but in Environment Canada.

Weather services are, as we said, as common as rain but Environment Departments containing meteorological sections are rare. What other country has its weather service assigned to an Environment Department? Well the USSR has for one (Its weather service is assigned to the USSR State Committee for Hydrometeorology and Control of National Environment.) Is it a coincidence that the USSR and Canada are the two biggest countries in the world and that between them they "own" the Arctic? Both also have huge amounts of weather; but let's leave it there.

George Whitfield is a free-lance contributor.

STAFF CHANGES/CHANGEMENT DE PERSONNEL

Appointments/Promotions Nominations/Avancements

P. J. Pender (EX-2) Regional Director/Directeur régional, PAED, Vancouver, B.C./C.-B.

B. O'Donnell (EX-2) Regional Director/Directeur régional, WAED, Edmonton, Alta./Alb.

S. Ricketts (MT-6) Supervising Meteorologist/Météorologiste superviseur, WO1/BM1, Whitehorse, Y.T./Yuk.

J. Bendell (EG-7) Supt. Climate Services/Surint. Services climat., SSD, Winnipeg, Man.

B. Scott (EG-6) Met. Tech./Techn. en mét., Vancouver, B.C./C.-B.

C. Zell (CR-4) Clerk/Commis, AAL, Downsview, Ont.

M. Vallée (MT-2) Meteorologist/Météorologiste, CMQ-QAEM, St-Laurent, Que./Qc

D. Larochelle (MT-2) Meteorologist/Météorologiste, CMQ-QAEM, St-Laurent, Que./Qc

K. Lawrynuik (MT-2) Meteorologist/Météorologiste, CMQ-QAEM, St-Laurent, Que./Qc

L. Hamilton (CS-2) Systems Analyst/Analyste de systèmes, CMQ-QAEM, St-Laurent, Que./Qc

L. Ieropoli (CR-4) Clerk/Commis, AHRO, Downsview, Ont.

S. Jonvik (CS-2) Systems Analyst/Analyste de systèmes, Vancouver, B.C./C.-B.

W. Green (EG-6) Met. Inspector/Inspecteur, Vancouver, B.C./C.-B.

J. Power (CS-1) Programmer/Programmeur, ARPP, Downsview, Ont.

L. Poulin (PC-2) Physical Scientist/Scientiste, études physique, ARPX, Downsview, Ont.

M. Houde (MT-5) Head, Coordination and Development/Chef, Coordination et perfectionnement ACTT/H, Downsview, Ont.

E. Adamson (MT-5) Instructor/Instructeur, ACTP/T, Downsview, Ont.

B. Godding (CS-2) Production System Analyst/Analyste de système de production, OSD, Downsview, Ont.

K. Manchip (CS-1) Network Documentation Officer/Agent de documentation, du réseau, OSD, Downsview, Ont.

R. Park (CS-1) Communications Programmer/Programmeur, Communications, OSD, Downsview, Ont.

R. Gillespie (CS-2) Network Control Analyst/Analyste de gestion du réseau, OSD, Downsview, Ont.

M. Murphy (DA-PRO-5) Head, Production Control Unit/Chef, Services de production, OSD, Downsview, Ont.

J. Jenkins (DA-PRO-6) Shift Supervisor/Surveillant de quart, OSD, Downsview, Ont.

G. Chung (DA-PRO-6) Shift Supervisor/Surveillant de quart, OSD, Downsview, Ont.

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A. Webster (AS-4) Head, Management Information Section/Section de l'information en gestion, AWAC, Downsview, Ont.

M. Williams (ST-OCE-2) Office Equip. Operator/Préposé au matériel de bureau, AWPA, Downsview, Ont.

A. Roy (EG-3) U/A Tech./Techn. en aér., QAEQU, WS2/SM2, Kuujuaq, Que./Qc

D. Viau (EL-4) Electronics Tech./Électronicien, QAEQE, St-Laurent, Que./Qc

J. F. Landry (EL-4) Electronics Tech./Électronicien, QAEQE, St-Laurent, Que./Qu

M. Geast (CS-2) Computer Scientist/Scientifique en informatique, CCAS, Downsview, Ont.

Transfers/Mutations

C. Holmberg (EG-5) Pres. Tech./Techn. en prés., ARWC, Edmonton, Alta./Alb.

D. Millar (EG-5) Pres. Techn./Techn. en prés., WO1/BM1, Whitehorse, Y.T./Yuk.

M. Strange (EG-5) Pres. Tech./Techn. en prés., WO4/BM4, Banff, Alta./Alb.

R. Peterson (MT-2) Meteorologist/Météorologiste, ALWC, Edmonton, Alta./Alb.

N. Ek (MT-2) Meteorologist/Météorologiste, ARWC, Edmonton, Alta./Alb.

B. McNaughton (EG-5) Pres. Tech./Techn. en prés., WO4/BM4, Edmonton Municipal Airport, Edmonton, Alta./Alb.

R. Simpson (EG-4) U/A Tech./Techn. en aér., WS2/SM2, Inuvik, N.W.T./T.W.N.-O.

P. Kleinmeyer (PE-2) Personnel Officer/Agent du personnel WAED, Edmonton, Alta./Alb.

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J. Pottier (MT-2) Meteorologist/Météorologiste, PWC, Vancouver, B.C./C.-B.

R. Cripps (MT-2) Meteorologist/Météorologiste, PWC, Vancouver, B.C./C.-B.

R. Harvey (MT-2) Meteorologist/Météorologiste, PWC, Vancouver, B.C./C.-B.

P. Schwarzhoff (MT-2) Meteorologist/Météorologiste, PWC, Vancouver, B.C./C.-B.

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

N. Hameer (ST-SCY 2) Secretary/Secrétaire, AWPC, Downsview, Ont.

C. Brennan (EG-6) Met. Tech./Techn. en mét., WO4/BM4, Charlottetown, P.E.I./Î.-P.-E.

J. C. Mayo (A/EG-5) Pres. Tech./Techn. en prés., NWC, Gander, Nfld./T.-N.

C. Marchand (MT-2) Meteorologist/Météorologiste, MWC, Bedford, N.S./N.-É.

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J. Allen (EG-6) Weather Serv. Specialist/Spécialiste, Services météo, Vancouver, B.C./C.-B.

D. House (EG-1) Met. Tech./Techn. en mét., WS3/SM3, Cape St. James, B.C./C.-B.

C. Powell (EG-2) Met. Tech./Techn. en mét., WS3/SM3, Cape St. James, B.C./C.-B.

G. Sasaki (EG-2) Met. Tech./Techn. en mét., WS3/SM3, Port Alberni, B.C./C.-B.

C. Cote (MT-2) Meteorologist/Météorologiste, MAEN, Gander, Nfld./T.-N.

D. Ouellet (MT-2) Meteorologist/Météorologiste, MAEN, Gander, Nfld./T.-N.

G. Roy (MT-2) Meteorologist/Météorologiste, MAEN, Gander, Nfld./T.-N.

K. Ayotte (MT-2) Meteorologist/Météorologiste, MAEM, Belford, N.S./N.-É.

T. Robinsons (MT-2) Meteorologist/Météorologiste, MAEN, Gander, Nfld./T.-N.

C. Old (MT-2) Meteorologist/Météorologiste, MAEN, Gander, Nfld./T.-N.

Y. Sivret (EG-4) U/A Tech./Techn. en aér., WS1/SM1, Sable Island, N.S./N.-É.

S. Stokes (EG-6) Met. Tech./Techn. en mét., CCAS, Downsview, Ont.

H. Auld (MT-6) Meteorologist/Météorologiste, OWC, Toronto, Ont.

O. Koren (MT-7) Major Projects Coordinator/Co-ordonnateur des grands projets, AWSC, Downsview, Ont.

Temporary or Acting Positions/ Postes temporaires ou intérimaires

L. E. Skelding (CR-4) Clerk/Commis, PAED, Vancouver, B.C./C.-B.

P. Chadwick (MT-6) Meteorologist/Météorologiste, AWSC, Downsview, Ont.

M. Leblanc (MT-6) Meteorologist/Météorologiste, AWPC, Downsview, Ont.

R. Van Cauwenberghe (EG-9) Head, Measurement Technology Section/Chef, Section de métrologie, ACSL/M, Downsview, Ont.

W. L. Wiggins (MT-7) Head, Engineering Service Section/Chef, Section du génie ACSL/E, Downsview, Ont.

C. Olsen (EG-5) Supervisor Climate Services/Superviseur, Services climatologiques, Vancouver, B.C./C.-B.

D. Watson (EG-8) A/Supt. Station Operations/Surintendant p.i., Opérations des stations, Vancouver, B.C./C.-B.

J. Durham-Reid (EG-4 A/OIC/Responsable p.i., Vancouver Harbour Wea. Stn. Vancouver, B.C./C.-B.

J. Beal (EG-4) U/A Tech./Techn. en aér., WS2/SM2, Port Hardy, B.C./C.-P.

C. Midwinter (EL-6) Electronics Tech./Electronicien, ARPX, Downsview, Ont.

S. Belisle (CR-4) Clerk/Commis, ACTD/AS, Downsview, Ont.

S. Bain-Bourque (CS-3) Computer Consultant/Consultant en informatique, OSD, Downsview, Ont.

D. Hung (CS-2) Computer Specialist/Spécialiste en informatique, OSD, Downsview, Ont.

Z. Velshi (CS-2) Computer Consultant/Consultant en informatique, OSD, Downsview, Ont.

Y. Gervais (EG-6) Pres. Tech./Techn. en prés., QAEWR, WO4/BM4, Val d'Or, Que./Qc

Departures/Départs

M. Boulay, W.C. 1, ALWC, Edmonton, Alta./Alb.

J. Romero, ACPS, Downsview, Ont. to Transport Canada, Pearson Int'l. Airport/à Transports Canada, Aéroport intern. Pearson, Toronto, Ont.

E. Campeau, AAM, Downsview, Ont.

L. Beatty, QAEP, St-Laurent, Que./Qc, to/pour EIC, Montréal, Que./Qc

K. C. Hamel, AHRD, Downsview, Ont. to Ministry of Correctional Services/pour le ministère des Services correctionnels, Scarborough, Ont.

R. Moore, PAEP, Vancouver, B.C./C.-B.

M. Labrie, AEQU, La Grande IV, Que./Qc

J. J. Crevier, QAEOU, Maniwaki, Que./Qc

L. Foucault, QAEM-CMQ, St-Laurent, Que./Qc

Leave of Absence/Congés autorisés

R. Gilbert, QAES, St-Laurent, Que./Qc — Météglobe Inc.

L. Cheng, ACPO/OPS, Downsview, Ont.

Retirements/Retraites

L. Blaquière, QAEM CMQ, St-Laurent, Que./Qc, May/mai, 1987

R. Maruk, Inspection Services/Services d'inspection, Vancouver, B.C./C.-B., May/mai, 1987

M. Crichlow, Nurse at AES/Infirmière, Downsview, Ont., June/juin, 1987

G. Ishii, AWAC, Downsview, Ont., June/ juin, 1987

J. Blackburn, CCAA/D, Downsview, Ont., July/juillet, 1987

Deaths/Décès

D. Barclay, WO4/BM4, Prince George, B.C./C.-B., April/avril, 1987

D. MacKay, ASMK, Downsview, Ont., July/juillet, 1987.