

# ZEPHYR



Environment  
Canada

Environnement  
Canada

Atmospheric Environment Service  
Service de l'environnement  
atmosphérique

CHRISTMAS ISSUE 1989

Best Wishes for a Happy Holiday Season



## 150 Years of Canadian Weather Observations to be feted in 1990

AES is gearing up to celebrate a major anniversary — the start of 150 years of continuous climate observing in Canada.

An AES planning committee, backed by management, which has been meeting over the past six months, sees the anniversary as an important national event and an opportunity to publicize the fact that weather observing stations have ably fulfilled their role as keepers of long-term weather records, now a key part of Canada's climate data bank and of particular use to scientists researching global climate warming threats.

Among others, the event hopes to recognize the founding of official continuous weather observing stations in Toronto in 1840, in Quebec City in 1869, in Halifax and Montreal in 1871, in Victoria and Winnipeg in 1872, in St. John's (Newfoundland) in 1874, in Edmonton in 1880 and in Yellowknife (NWT) in 1942. (1990 also marks the centennial of the first Canadian Department of Agriculture weather observation station, in Ottawa).

Observations began in Toronto in 1840, long before there was an AES or even a Canadian weather service. Lieutenant Charles Riddell of the British Royal Artillery had come to Canada several months earlier to set up an experimental meteorological and magnetic observatory in Montreal but soon moved to Fort York in Toronto. By January he was taking daily temperature and precipitation readings on an experimental basis.

On September 5 the same year, Riddell, after moving his equipment a kilometre or so north to the grounds of King's College (now the University of Toronto), began daily climate readings on an operational basis. The observatory stayed on the university grounds for 68 years and by the mid 1850's was being run by academics not soldiers.

The sesquicentennial of continuous weather observing in Canada coincides with the 100th anniversary of the United States civilian weather service and the U.S. will be honoring long-term stations in many cities. The Canadian anniversary also coincides with the holding of the second World Climate Conference in Geneva, now being planned by former ADMA Howard Ferguson.

There are plans to introduce historical pageantry into some of the summer celebra-

tions. This might include the wearing of 19th century military and civilian uniforms or presentation of historic plaques by the Minister or his representatives to commemorate stations that have outstanding records of continuous weather observing.

Regional celebration of long-term weather observing is still in the planning stage, but will certainly include special salutes to Canada's many thousands of volunteer observers, whether working at company or institutional observatories, in family backyard stations, on board ship or tracking storms as severe weather watchers. There could be also be cele-



Lieutenant Riddell

brations in schools, weather offices, museums, science centres or aboard trains . . .

Anniversary events will take place during the summer of 1990 at dates convenient to each region's needs. The planning committee will soon be firming up a final agenda and will also prepare a series of publications saluting weather observing in various parts of Canada.

*The assistance of all AES personnel is being sought. You are asked to submit suggestions for events to commemorate long term climate observations anywhere in Canada. If you have any historic photographs or other weather memorabilia suitable for use in displays, please let us know. Material dating back to the 19th century would be especially welcome.*

*If you have any ideas on how to commemorate this important event, either regionally or nationally, please contact us by January 31 at the latest. Please write or phone: Gordon Black, editor of Zephyr, Communications Directorate, AES, 4905 Dufferin Street, Downsview, Ont. M3H 5T4 (416-739-4760). Your cooperation will be much appreciated.*

## Christmas Shifts "invented" back in 1839

by Leslie Buchanan

If you find yourself thinking about work at AES on Christmas day, don't worry. You may not be the completely over-stressed workaholic who has lost all grips on reality, that your family thinks you are. Christmas day is a special sort of anniversary for those of you who belong to the weather-wise family.

In all this hoopla over the 150th anniversary of the opening of the first weather observing station on September 5, 1840, I must say we are overlooking one clearly significant event. Christmas day 1839, was the first day that weather measurements were taken in Canada. I think Lieutenant (later Major-General) Charles James Buchanan Riddell would roll over in his grave if he ever found out that we were ignoring the hell he must have gone through to get this whole process rolling.

When you think about it, C.J. and his buddies spent 57 days in a boat coming across from England to set up Her Majesty's Magnetic and Meteorological Observatory. After an abortive attempt in Montreal, they came to Toronto. The city was much different than today's Metro.

For one thing, gaslit and sewer main streets would only be a vision for the next few decades.

For another thing the accommodation left a little to be desired. Riddell and company set up housekeeping in a hut and a small observatory at Fort York, near the bottom of Bathurst

Cont'd. page 3

Canada

## Assistance Program adds Toll-free Number

The Employee Assistance Program (EAP) which has been available to AES employees in several different parts of Canada over the past few years is now adding a toll-free "800" number as part of its expanded services to meet varied staff concerns.

By calling 1-800-387-4765, AES personnel will be speedily connected to highly trained counselling staff employed by Warren Shepell Consultants, who have been working on EAP for more than four years. AES people working in Toronto will also have access to a 24-hour helpline.

There are now 40 EAP locations in Ontario alone to assist AES employees on personal, family or work-related matters. Besides Toronto, these include Cornwall and Ottawa. In addition to the above, EAP is available to AES personnel in Saskatoon and to all employees across the country who are attached to the Canadian Forces Weather Service.

Judith McAlpine of Human Resources in Downsview, says that a new EAP newsletter, recently distributed in all pay cheques, is designed to reintroduce staff to EAP, to encourage them to use its confidential services and to inform them on health and safety issues. It also mentions upcoming EAP workshops dealing with such issues as office stress or the prevention of accidents.

Finally Judith adds that EAP is looking for suggestions to bring about further improvements in EAP services and asks employees to contact our Health and Welfare nurse Olga Leskiew at 416-739-4545.

## Dangers of spilled mercury

The Canada Safety Council advises anyone dealing with spilled mercury from broken thermometers, thermostats or other sources to immediately follow these procedures:

- contact a poison control centre
- obtain medical assistance as soon as possible
- if expert advice is not immediately available, spread zinc or sulphur powder on spilled mercury and brush into a sealed container
- call municipal authorities for waste disposal information

The warning is prompted by the case of a 14 year old Halifax boy diagnosed as having developed severe neuropathy

- a disease of the nerves and muscles
- after having vacuumed mercury spilled from a household thermostat.

The mercury, which is a highly toxic metal, was in this case vacuumed up and allowed to stay in the machine without the filter being changed. The mercury dispersed through the air every time the vacuum was turned on. The victim did not seek advice from a medical specialist until 6 weeks after the incident. The boy recovered in 6 months after being treated with a compound called chelaton which binds the mercury in the body so it can be excreted.

## Pictures of the new ADM

### FORMAL



*Elizabeth Dowdeswell, who became assistant deputy minister of AES on July 31, 1989 is seen at work at her desk in the Downsview Headquarters Building.*

### INFORMAL



*In an effort to promote the 1989 AES United Way Campaign, Ms. Dowdeswell is seen serving chili to the staff in the Downsview cafeteria wearing the appropriate T-shirt.*

## AES Building chosen to test NOx Controls

As part of an agreement by federal and provincial Environment ministers to develop a new national Nitrogen Oxide (NOx) control of emissions program, the AES Headquarters building in Downsview has been chosen as the site for installation of an experimental flue gas recirculation burner.

P.G. Finlay, chairperson, Task Force for Federal Industrial Boiler Emission Control (FIBEC), reporting to Environment Canada's Conservation and Protection Service, says that the Department intends to set emission standards for industrial boilers by developing exemplary standards for federal facilities "which will be most useful in developing standards for Canadian provincial jurisdictions".

In order to demonstrate the effectiveness of "state of the art" NOx control technology on a federal facility boiler, Environment Canada has purchased a flue gas recirculation burner from a California company and has made a formal request to Public Works Canada to install the burner on one of the two 350 HP Cleaver Brook boilers currently in the building.

Installation of the burner should have taken place sometime in the fall and arrangements were made for an Environment Canada emissions monitoring team to be on site during the start-up period.

Mr. Finlay says that the Downsview installation is an opportunity to show federal leadership in NOx control as well as demonstrate energy savings. He added that NOx reductions of 50-70% are expected.

## Highlights

150 Years of Weather Observations	1
Pictures of the New ADM	2
I'm dreaming of a grey-blue-white Christmas	3
Atmosphere People — painting and weather	4
Safety First	5
Canadian Forces Weather Service Anniversary	6
Book Review: Earth Sciences	8
More Good News Letters	9
Staff Changes	10

## ZEPHYR

ZEPHYR is a staff magazine for employees of the Atmospheric Environment Service, Environment Canada, produced by the Communications Directorate of Environment Canada.

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

Editor: Gordon Black  
Editorial Assistant: Jean Schlenkrich  
Photo Assistant: Bill Kiely  
Phone: (416) 739-4760



Environment Canada    Environnement Canada

Atmospheric Environment Service    Service de l'environnement atmosphérique





JOHNSON/89

## I'm dreaming of a grey-blue-white Christmas

Quebec shares with Winnipeg the honor of being a Canadian city with a 100 percent chance of having a white Christmas. Back in 1968 the former city was so snowy, 91 centimetres of the white stuff covered sidewalks and parking lots on December 25. And there hadn't even been a blizzard! By way of contrast, Vancouver stands only a seven percent chance of having a white Christmas.

The warmest Christmas Day ever was recorded across southern and central Ontario in 1982. In Toronto the temperature rose to a balmy 17.2 degrees C, the warmest Yuletide reading in 150 years of record.

A rainstorm in Vancouver on Christmas Day 1972 broke the all-time 24-hour rainfall record of 89.4 mm. More than 50 precipitation stations in the Vancouver area recorded more than 100 mm during the storm.

Residents of the Ottawa Valley and southwestern Quebec awoke on Christmas morning 1986 to find that a severe ice storm had felled trees, snapped hydro wires and damaged property. One home in four was without power and many people had to make hurried alternate arrangements for Christmas dinner. The only compensation: beautiful ice coatings on the

branches turned forests into winter wonderlands.

Christmas 1968 was bitterly cold in Ontario and Quebec. Temperatures ranged between -25 and -40 degrees C and were accompanied by strong winds.

The coldest day in Winnipeg's 119-year recorded weather history occurred on Christmas Eve 1879. The temperature at Portage and Main reached -47 degrees C.

In 1872 Torontonians got a white Christmas, but not the one they were dreaming of. On December 25-26 the city received 58.4 cm of snow, the greatest two-day snowfall ever. Gale-force winds caused massive drifts and the temperature dipped to -18 degrees C.

In preparation for regular daily climate observations begun on the grounds of King's College, Toronto on September 5, 1840, British soldiers of the Royal Artillery took the city's first experimental readings at Fort York on Christmas Day 1839.

On Christmas Day 1958 Meteorological Branch employees stationed at Canada's High Arctic Weather stations, experienced some incredibly mild weather. For example, Eureka recorded a temperature of -1.1.

Street. However, military authority for plastering, adding double windows and other alterations applied only to the observatory and not to accommodations, so it was probably quite chilly. This must have been when government red tape was invented.

Things at the barracks were a little crowded with all the extra inhabitants. Additional soldiers had been brought to Toronto the previous year, because of the Upper Canada Rebellion. A radical bloke called William Lyon Mackenzie had tried to take the city by force by invading a pub at today's Yonge and Eglinton. Mackenzie escaped to the U.S. but two of his lieutenants were hung for treason. It's odd that he had until recently been Mayor of Toronto. Maybe our democratic system has improved just a tad in the past 150 years.

Since Riddell was without family in Toronto I hoped at the very least he would have taken time to read the local rag "The British Colonist". It surely would have been bulging with Christmas messages and would have helped to cheer up his day.

But, no luck there. I was browsing through the December 25, 1839 edition, and I can assure you that making the reader happy was the last thing the editor had in mind. Good sentence structure and high print quality were obviously not priorities either, nor were interesting, thought provoking content. Then again you're reading this aren't you?

Not one Christmas greeting was to be found and even the advertisements had a commercial rather than a yuletide flavor. Tales of the battles in parliament filled every page. One of the major issues, hold on to your seats, was taxation. The paper reported that "the plan of assessment at present in force should be altered without delay, so as to throw the burden chiefly on the rich, instead of, as it is in fact, being chiefly on the poor and the middle classes..." Sound familiar?

It was of major concern that cows be exempt from taxation altogether. The article claimed "in England where the tax-gatherer has laid his briar arm hands on almost everything that men can see or hear, eat, drink or wear, he has never taxes a farmer's cows." Well, they're probably getting around to rectifying that omission right now.

The newspaper showed no weather measurements, no forecasts and of course no announcement of the opening of the observatory. Thank goodness they have now invented communications people. However, a few days after Christmas the paper revealed the following hind-cast. "The weather for the last few days has been exceedingly cold and frosty with a heavy fall of snow. The snow is several feet deep and sleighing is likely to continue for some time."

And now one parting thought about Riddell: if he's remembered for nothing else, he'll probably go down in history as the inventor of the weatherman's Christmas Day shift.



# ATMOSPHERE PEOPLE

## Painting and Weather – a perfect blend for this Meteorologist

When not on shift duty at the Ontario Weather Centre, meteorologist Phil Chadwick, spends the winter months in the basement of his house in Schomberg, Ont., about 50 kilometres north of Toronto, painting large oil canvasses of memorable outdoor scenes he has sketched or photographed earlier in the year.

Not surprisingly, Phil says one of his favorite artistic subjects is weather. "In painting, weather means portraying skies and clouds. In Canada there are so many fascinating types of weather to choose from". He adds that, among other things, he has painted fog, thunderstorms 'from the inside out'... snowsqualls, sunsets, weird or chaotic skies full of virga, anvil clouds, 'tadpoles' and half a dozen varieties of stratocumulus. He is particularly fond of deformation zones which remind him of "unstirred cream in a coffee cup."

Phil, born in Kingston, Ont., developed a passion for both science and art while in his early teens. He felt both were equally important for learning what was really going on in the world around him.

After graduating from high school, he went on to study nuclear physics at Queen's University, Kingston. But once he had obtained his B.Sc in 1976, he realized his best chance of landing a job was with AES. After taking the Met. Training Course, he was posted for two years to the Canadian Forces Base at Shearwater, N.S. He later served in both the Maritimes and Alberta Weather Centres, at the Canadian Forces Forecast Centre in North Bay, Ontario and with both Training Branch and the Weather Services Directorate at AES Downsview.

Wherever he went, Phil discovered new subjects for his paintings... landscapes, harbors, old dwellings, railways... and of course weather.

He says that painting gives him total relief from his job. He is somewhat of a perfectionist and completes only about half a dozen canvasses per season. "I continue on a particular painting", he adds, "until I feel I am beginning to

overwork it... when more detail looks like clutter and the colors become muddy." He paints "under the stairs" because his work gear takes up too much space and the oils and varnishes are messy and pungent." Ideally, he would like to attach a studio to his house.

Listening to boisterous music by such performers as Jimmy Buffet, John Cougar Mellancamp and Gordon Lightfoot while he paints, Phil has now completed enough paintings to



**Meteorologist Phil Chadwick with two of his recent skyscapes! "Rideau Depriation" (closest to him) is one of his favorites. The other one, "Stratocumulus" looks northwest from Schomberg at sunset, demonstrating that even the humblest of cloud types can be spectacular.**

cover every wall in his house. And this is after he had achieved a complete sell-out of his works at the Foyer Gallery in Edmonton a few years back. He has recently been selling limited edition prints of one of his favorite paintings.

One thing Phil insists on is that his paintings be accurate. "This does not mean that my works are photographic copies. I have been called everything from a surrealist to a realist. No matter how I am labelled, I am very conscious I am painting real places that people might well visit. They expect the objects in the painting to correspond with those in the real world."

Phil admits it is harder to paint "accurate weather". But he says his cloud configurations must ring true.

Throughout his career, he has managed to keep the artistic and scientific sides of his nature fairly separate. But because of his good grounding in physics, he thoroughly understands the scientific properties of light. In a two-part article in *Chinook*, (The Canadian Meteorological and Oceanographic Society magazine), he guides "budding meteorologists through the galleries of realistic art so that they may see the light — as it was meant to be — and understand why!" He then explains the meaning of such terms as attenuation, scattering and absorption and how they affect color and shading in land and waterscapes. Explaining some of these concepts, Phil writes: "Molecules scatter blue light best in all directions. Larger particles scatter red light best, mainly in the forward direction. Absorption increases as the surface approaches that of a black body and as the optical path-length in the medium increases."

Phil summarizes his situation by saying that when he is working his shift at the Ontario Weather Centre he is the pure scientist, but that when he is at work on a canvas, seated at his new, oaked "super-easel", given to him last year by his father as a Christmas present, he is the total artist.





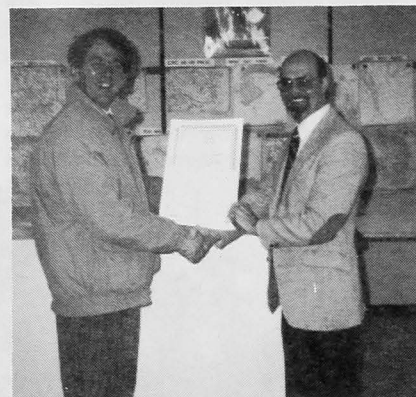


## St. John's WO4 and the Galivanting Gondola

The St. John's, Newfoundland Weather Office affair with the "Amazing Amphibious Dutch Gondola" has now been officially recognized. OIC Harold Janes recently received a large plaque certifying that his office had made an important contribution to achieving several transatlantic balloon records. Captain Hans Brink had made balloon flights in 1985 and 1986 from St. John's to Schiphol Airport in the Netherlands. This was when Janes had provided Brink and his two flight companions (his wife and Evert Louwman) with weather forecasting support right across the Atlantic.

The recognition certificate came with copies of four plaques Brink had received from the Federation Aeronautique Internationale and the Dutch Aeronautical Association spelling out various speed, distance and altitude records.

A detailed article by Janes appeared in the Christmas 1986 Zephyr in which he recounted the exploits of the FLYING DUTCHMAN and the DUTCH VIKING and mentioned the support the weather office was able to provide to ensure the speed and safety of the two historic balloon trips.



**OIC Harold Janes (right) receiving certificates of recognition from Henk Brinks for assisting him with weather forecasts for his historic Newfoundland-Netherlands balloon flights.**

The article was written too early to mention another unique transatlantic voyage made by the same gondola, this time in the form of a boat that Brink and Louwman had constructed and sailed across the stormy Atlantic from St. John's Harbor to England in the summer of 1988. Once again St. John's weather office was asked to supply weather information for the first few hundred kilometres of the sea journey.

But even this is not the end of the saga. Janes says he has heard that Brink has recently set off on yet another epic journey... this time a land trip across Europe and part of Asia.

Janes explains that this time Brink managed to transform the six metre long by two metre high fibreglass gondola (which had originally begun its career as a lifeboat) into a car or jeep. By doing this, he had created the world's first globe-trotting, land-sea-air-gondola.

## SAFETY FIRST

### Notes of an Occupational Health Nurse

Two questions I often get asked in the AES Downsview health unit are: "If you can't give out medications (eg. aspirins), what kind of a nurse are you anyhow?" and "What days are you here?", also known as "Did you have a nice holiday?"

I will try to explain the role of the Occupational Health Nurse (O.H.N.) within the Public Service. It is Treasury Board who designated Medical Services Branch of Health and Welfare Canada with the responsibility of developing and providing occupational or "Public Service Health" for you the federal employee. Like you, she is a public servant and her/his employer is Health and Welfare Canada.

What kind of nurses are we anyhow? Well, the role of the O.H.N. is constantly evolving to meet the demands of the work environment. We all bring with us a wide base of knowledge and skills, all are qualified registered nurses with added backgrounds in occupational health and all have extensive counselling skills through education and experience.

What DO we do if we can't give you medicines? This may be a hard pill for you to swallow, but the health unit is not an active treatment centre. We practice prevention through education. It might give you a clearer picture of the O.H.N.'s role in Public Service Health if I summarize a few items from the "Manual" (Personnel Management Manual, Vol. 12, TB-STD 3-8).

"Her/his prime function within the Public Service is to provide a preventative health care program so that your health (and indirectly that of your family) can be maintained at an optimum level. The O.H.N. should also help control or minimize any possible adverse affects of the work or work environment on your health.

"The nurse provides confidential counselling to employees voluntarily seeking help and advice. Also at supervisors' request and in co-operation with the employee, she will counsel cases where poor health may be the cause of deteriorating work performance.

"The O.H.N. provides emergency nursing treatment in cases of illness or injury which occur at work, performs periodic health evaluations in accordance with Health and Welfare regulations.

She/he develops a thorough knowledge of the work environment and of the hazards encountered. Health evaluations, including lung testing and hearing assessments are performed as needed.

"By maintaining a wide range of contacts, the O.H.N. accumulates an up-to-date knowledge of medical resources and social agencies within the community".

Where am I when I'm not at the AES health unit? Please realize that in the Southern

Cont'd. page 7

# THE ENCASTING

In 1989 the Canadian Forces Weather Service celebrated 50 years of service to all branches of the Canadian military, at home and around the world. Official operations began just prior to World War II, but as this excerpt from a booklet called "The History of the CFWS" by W. G. Richardson shows, daily forecasts were provided to the Royal Flying Corps at Camp Borden, Ontario, as early as 1917.

Meteorology in the Canadian military predates World War II in the form of a small number of personnel in the Royal Canadian Air Force (RCAF) Met Observer Trade. Weather information, however, was provided to the military prior to this. As early as 1917, daily forecasts were provided to the Royal Flying Corps at Camp Borden for flight training. In the early 1920's, pilot balloon observations were done as a meteorological service for operational flying at several Air Force stations. The Department of National Defence was responsible for all civil as well as military aviation prior to 1936. For this

On 3 September 1939, Britain declared war on Germany and a week later Canada followed suit. A decade of discussions, experiments and suggestions between various departments of the Canadian government now had to become a real plan of operation. As meteorological information and weather forecasts were the responsibility of the Department of Transport, and the Department of National Defence had to acquire information and personnel from that source.

On 4 September 1939, a request was made for a forecast office at Halifax to serve the Eastern Air Command. At the same time, the British High Commissioner also requested Canada to provide weather services on the east coast to the Royal Navy. The Halifax office opened for operations on 11 September 1939 with a staff of eleven persons.

Also during September, the Trenton RCAF station established a meteorological training school. The course lasted six months with the students having to be high school graduates. These graduates were then sent to coastal operation stations to observe and to interpret



**The RCAF Lancaster bomber, now on display near the Canadian National Exhibition grounds, flew Canadian aircrews on bombing missions over Germany in the Second World War and relied on meteorological data provided by the Canadian Forces Weather Service.**

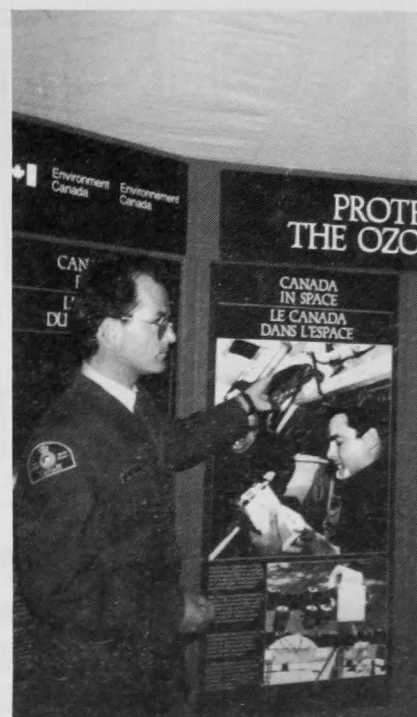
reason, it is difficult to ascertain if forecasts requested were for military or civilian use. The Department of National Defence did establish an aviation forecast office at St. Hubert, but it was cancelled after the crash of an R. 101 airship.

Prior to 1939, there was no organized meteorological service for the RCAF. The RCAF request, on 1 December 1938, for specific units to have meteorologists was not approved until 1 April 1939. It was not until that summer that the first meteorologist (forecaster) along with a meteorological assistant (observer) were sent to the RCAF station at Vancouver.

forecasts for air crew until meteorologists or meteorological assistants could be trained.

The Department of National Defence was in need of meteorological personnel at many of its stations across Canada. The demand for trained meteorologists and meteorological observers was even further strained with the signing of the British Commonwealth Air Training Plan in December of 1939. During the late months of 1939, Canada and Britain had worked out an agreement whereby the RAF aircrews would be trained at bases in Canada.

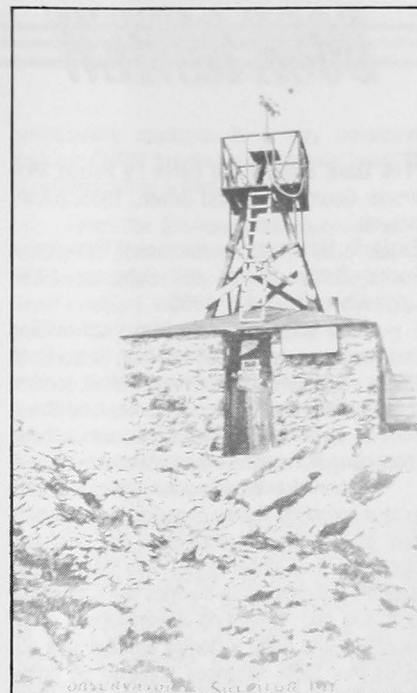
From the Department of National Defence  
Newsletter Update



**Environmental Partnership on many different levels . . . internationally, between public and private sectors in Canada, or simply between two services of the same federal government department, is an increasingly popular way of furthering common goals to protect the earth's fragile environment. Such partnerships were very evident at the "Our World" Summit on the Environment held at the Ontario Science Centre, Don Mills, September 10-17. Proceedings began with a video presentation by Madame Gro Harlem Brundtland, prime minister of Norway and chairman of the Brundtland Commission on Our Common Future. The Summit included more than a dozen addresses by politicians, decision makers and senior international environmentalists, as well as some 20 panel discussions on issues ranging from sustainable Development to Education and the Environment. AES mounted an ozone layer exhibit in the "tent city" in front of the Science Centre. The service shared part of a tent with National Parks. In the picture Michel Villeneuve, warden at Georgian Bay Islands National Park, holds a wetlands turtle over a photograph of Canadian astronaut Marc Garneau, seen doing ozone work aboard the space shuttle . . . an example of Environmental Partnership from the ground up!**

December 11, 1944: A severe storm swept southern Ontario and paralyzed transportation for days. At Toronto the 1-day snowfall of 48.3 cm was the greatest on record. A total of 57.2 cm fell on the 11th and 12th.





*This observatory on Sulphur Mountain near Banff, Alberta was erected at the turn of the century following a plan, instituted by weather service director Sir Frederick Stupart to carry out upper air and temperature inversion observations from elevated locations to aid weather forecasting. An observer called N.B. Sanson climbed 1,100 metres once a week to service recording instruments.*



*Sixteen members of the Surface Weather Observing and Maintenance Course graduated from the Meteorological Training Centre (TCTI), Cornwall on July 6 after having previously completed the Meteorological Technician Qualification Course. One of their instructors, Monique Lapalme, front row left, says that all the graduates are now working in the field as weather observers, some posted to the Arctic. The graduates are left to right, front row, Russ Letkeman, Barbara Martin, Gholom Alaie, Randy Henry, Stuart Mackay; second row, left to right, Mark Torgerson, Craig MacLaren, Wendell Wilson, Gail Pelletier and Wendy Sanford; third row, Mark Calvez, Russ Lacate, Myles McIntosh, George Karaganis and Jean Deveau. Instructor Robert Daoust is in the front row far right.*

#### Safety First cont'd.

Ontario Zone there are approximately 35,000 Public Service employees and only 14 O.H.N.s, so we all have large districts to cover. But home base for me is AES.

My hope for the future is that health education and health promotion programs will become an integral part of employees' work experiences, that wellness programs at AES will become synonymous with good morale, productivity, and performance. All this will re-

flect a new management style that shows care and concern for the well-being of the staff.

I hope some of your questions have been answered. Feel free to drop in on the health unit anytime, or phone: 416-739-4545. If you have any suggestions for future topics, I will welcome them. Yours in good health,

Olga

Olga Leskiw has been the Occupational Health Nurse at AES Downsview since 1986.



*One of several areas of the AES Downsview Headquarters building to have been recently spruced up is the cafeteria terrace — an often-sunny spot overlooking a pleasant, undulating landscape and a cosy place to enjoy a relaxing cup of coffee.*

## BOOK REVIEW

**The Dark Side of the Earth** by Robert Muir Wood; George Allen and Unwin, 1985, (cloth-bound).

**Earth in Upheaval** by Immanuel Velikovsky; Pocket Books, Simon and Schuster, 1988. Originally published in 1955.

As a little "light" pre-Christmas reading this reviewer has been dipping into Earth Sciences. Why Earth Sciences? Well, for one thing, serious environmental studies tend nowadays to cover the WHOLE Earth: atmosphere, biosphere, hydrosphere and lithosphere.

Robert Muir Wood's book presents a more or less complete history of geology, geophysics and other earth sciences over the past two centuries. It is global rather than Canadian in outlook. But as modern theories like continental drift, sea floor spreading, seismological chain reactions and plate tectonics emerge, it is obvious that Earth Sciences come to be dominated by one man: Ottawa-born John Tuzo Wilson, former professor of Geophysics at the University of Toronto and president of the International Union of Geodesy and Geophysics. (Later, chancellor of York University and chairman of the Ontario Science Centre.)

The reviewer once had the opportunity to meet Dr. Wilson at a banquet and was struck by the fact that he knew most of the key scientists and administrators at AES. Only later did the reason for this become clear: without the aid of meteorology/climatology, modern earth sciences could barely exist. If you specialize in continental drift and need to explain why Greenland possesses relics of tropical forests or Madagascar vestiges of the Ice Age, you must have a good knowledge of paleoclimatology.

The history of Earth Sciences since 1800 is so complex, it could not be summarized here, even if the reviewer understood all the baffling ins and outs. Conflicting views have always been aired by geologists, astronomers, geophysicists and oceanographers. For over a century there was a deep rift between still-earth "fixists" (mostly geologists) and the "expansionists". Until the 1940s most American scientists were fixists. Only the advent of modern seismic technology and the new deep-earth probes persuaded the Americans that the earth was constantly changing.

The reason early earth sciences sprouted so many rival theories, from vulcanism to neptunism, fluidism to crystalism, was that "inner space" scientists lacked an all-encompassing tool like the telescope to peer into the earth to see what was really happening.

Muir Wood's book covers the field very thoroughly and he manages to present the scientists as real flesh and blood human beings, with their foibles, ambitions and antagonism. He also describes the actions of these human "earthworms" with a sense of humor.

The real drama of the book concerns Alfred Wegener, German meteorologist and geophysicist and pioneer of the theory of continental drift in the 1920s. He became so obsessed with the idea that Greenland was moving rapidly westward across the Atlantic, he set off on several expeditions to the ice-capped island to see for himself. Sadly, during his last Greenland journey, he fell into a glacier and never returned.

In comparison with Muir Wood's "down to earth" book, Velikovsky's EARTH IN UPHEAVAL is so eccentric, it is usually found in the book-

stores in the New Sciences rather than the Geology section.

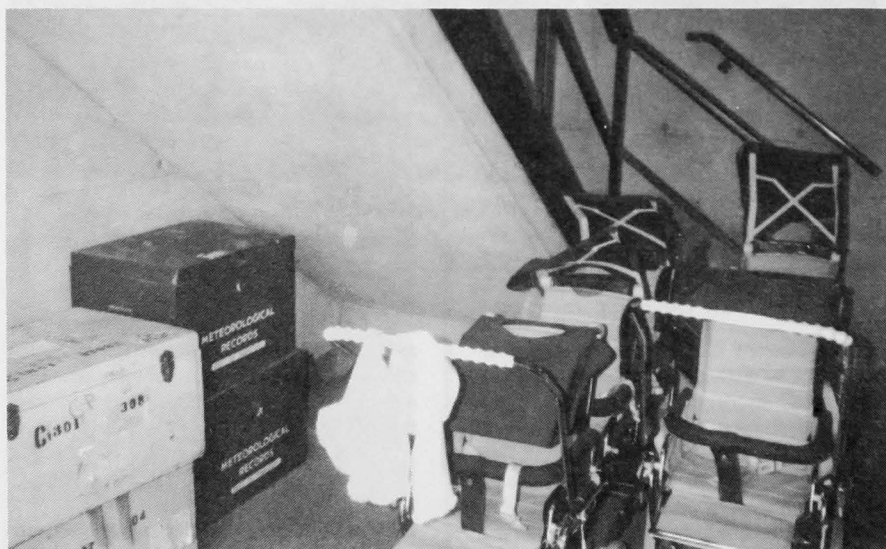
A sequel to Velikovsky's better known WORLDS IN COLLISION, the current work is the outpouring of a catastrophist. The author views almost every natural phenomenon on earth as being sudden, violent, extreme and in many cases surprisingly recent. For example, he says the Alps, the Andes and the Himalayas, three of the world's highest mountain ranges rose up out of the ground in historical times, probably within the last 3000 years.

For Velikovsky, there is no such thing as continental drift. It is continental deluge. Huge tidal waves sweep everything from tropical rhinoceroses to arctic seal into a common grave. The carcasses of gigantic whales end up on top of cloud-high mountains while tropical rain forests become buried several kilometres below Siberian glaciers or under the ocean.

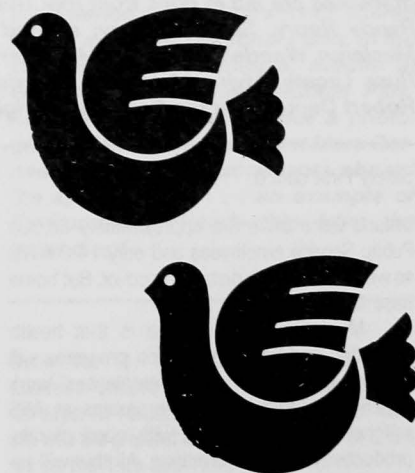
Velikovsky opposes any kind of gradualism. He attacks Darwin's claim that species originated in slow, orderly fashion over aeons of time. He attempts to show that many animals and plants appeared suddenly (and recently) probably due to extra-terrestrial cataclysms. It's a pity he does not give the precise cause of these disasters. They simply happen with sickening regularity.

Of course climate change is not omitted from the author's catastrophe list. Hurricanes, deluges, droughts, dust clouds and snowstorms are all extreme. The weather never changes gradually. The view will certainly appeal to modern environmentalists. Every disaster in Velikovsky's scenario is natural, but the author would surely be impressed if he were around today to hear of the dire consequences of the greenhouse effect or results of the destruction of the ozone layer. In the 1990s humanity itself is part of the cataclysm. Man-made climate change could occur with a rapidity and severity to eclipse even Velikovsky's catastrophes.

Gordon Black



*Old-style meteorological records dispatch boxes and modern "triplex" baby strollers belonging to the AES Sunburst Daycare Centre, meet under a stairway in the Downsview Headquarters Building. No, it's not a plot to give a quick course in meteorology to unsuspecting toddlers. The boxes actually contain blankets to keep promenading infants warm!*





## More Good News Letters

We publish a few more excerpts from letters originating outside the Service praising exceptional efforts by AES personnel to assist in a wide variety of initiatives:

From the Canadian Nature Federation: "This short note is to thank you for the support of the Atmospheric Environment Service regarding the public forum on the greenhouse effect organized by the Canadian Nature Federation in Calgary. A large part of the success of this event was due to the participation of Brian O'Donnell who did an excellent job placing the science behind this phenomenon into language that could be easily understood. By keeping things informal, he ensured active audience participation and helped to focus the discussion."

From the ADM, Marine, Transport Canada: "This is to pass to you the thanks of Captain Heinz Aye of the M.V. SOCIETY EXPLORER for the support which he received from the Atmospheric Environment Service during transit of the Northwest Passage. In particular Capt. Aye expresses gratitude for the fine contribution made

by Ice Forecasting Central in Ottawa which played a significant role in the transit of SOCIETY EXPLORER."

From the Vice-President, Arctic Sciences Ltd.: "I am taking this opportunity to express our sincere appreciation for the very high level of service provided to our company by Ice Forecasting Central. We particularly appreciate the services provided for our winter-spring research studies conducted from off Labrador and Newfoundland over the past five years. The ability to consult Ice Central seven days a week has proven invaluable in the safe and successful execution of our field operations. Without exception the individual forecasters have been very helpful."

From L.D. Pertus, Director General, Corporate Human Resource Management (CHRM), Environment Canada: "I have received a copy of the briefing note which you provided the Deputy Minister concerning your tremendously successful Native Research Program. This successful venture is a credit to AES and is an excellent example of the initiatives which your service

successfully manages in a very consistent fashion. CHRM honors you and your team for this outstanding achievement."

From the Environmental Coordinator of Husky Oil (East Coast Project): "The Maersk Vinlander is presently en route to Marystown, Newfoundland. With the completion of its three well drilling programs, no further drilling is anticipated by Husky Oil. I would like to take this opportunity to thank the personnel of AES Ice Branch for their cooperation and supply of ice data over the past five years. This information has been invaluable in attempting to understand the regional ice picture."

From the National Oceanic and Atmospheric Administration: "We wish to thank you for allowing Mr. Gordon Shimizu to attend the Environmental Satellite Benefits Showcase held in Washington, D.C. His presentation on the benefits of satellite direct readout services derived by Canada over the past 25 years was excellent and certainly one of the highlights of the program. His presence as Canada's representative on your behalf lent great prestige to this event."

## Weather That Changed History

It's not just the family picnic or the office golf day that may be spoiled by the weather. The fate of nations and the destiny of empires have also hinged on the fickleness of the elements. A sudden storm or a contrary wind has sometimes changed the course of history. Here are some notable, and not so notable, historic events in which weather has played a part.

- A century later, on November 5, 1688, the Dutch ruler, William of Orange, invaded England to support a Protestant revolution against England's Catholic king, James II. James' fate was sealed when strong easterly winds, instead of the usual southwesterlies, bottled up his fleet in harbour. Thanks to this "Protestant Wind," as it has been called ever since, William landed unopposed and James had to flee to France. Poor James never did have much luck with the weather. Two attempts to regain his throne ended when storms wrecked his invasion fleet. His son, James III, fared even worse. His invasion attempts were wrecked by storms on no less than three occasions.

- Russians often say that their most successful general is General Winter. More than once the deep snow and perishing cold of the Russian winter have brought disaster to an invading army. Such was the fate of Napoleon's Grande

Armée in the course of its retreat from Moscow in 1812. It was mild when the withdrawal began in mid-October, but the cold weather came early. By November 7, temperatures had plunged well below freezing and snow was falling. Exposed to extreme cold and harassed by Russian attacks, men and horses died by the thousands. Of the 100,000 men who left Moscow in October, only 4-5000 ragged survivors remained by early December. It was a turning point in Napoleon's career. Within another 2 years he had lost his empire and been sent into exile.

- Hitler tried his hand at invading Russia in 1941. Unwisely, he delayed his final thrust toward Moscow until the beginning of October. Heavy autumn rains soon turned the unpaved Russian roads into quagmires. Nevertheless, by the beginning of November, the German armies had pushed to within 100 km of the Russian capital. Then the "Napoleon weather" struck — early, frigid, and fierce, just as it had in 1812. The Germans were totally unprepared. Their troops had no winter uniforms, and many tanks were immobilized for lack of anti-freeze. By the end of the month, their attack had stalled. On December 6, the Soviets launched a counter-offensive and before the year was out had taken 800,000 prisoners.

- It's hard to think of Canadian history without Sir John A. Macdonald, but his career almost came to a premature end in a storm on Lake Huron in 1859. It was early July, and Macdonald was on an excursion to Sault Ste. Marie aboard the steamer Ploughboy when its engine broke down and it was struck by a gale. Helpless in the heavy seas, the steamer was driven towards the rocky shore. It was saved only at the last minute when its anchors finally caught hold. Had they not, the ship and its passengers would almost certainly have been lost, and Canadian history would have been deprived of its most famous figure.

- In the United States, weather was implicated in the first death of an American president in office. William Harrison died in March 1841 after catching pneumonia at his inauguration. It was chilly but not unseasonable on inauguration day. The temperature had climbed from 1 in the early morning to an afternoon high of 11, and winds were moderate. Harrison, however, refused to wear an overcoat for the parade or the swearing-in, and he added to the strain of the occasion by giving the longest inaugural address in American history.

With acknowledgements to the editors of the 1990 Weather Calendar.

# STAFF CHANGES / CHANGEMENT DE PERSONNEL

## Appointments/Promotions Nominations/Avancements

E. Dowdeswell (EX-5) ADM AES, ADMA, Downsview, Ont.

A. Simard (MT-7) Supt. Numerical Prediction/Surintendante Prévision Numérique, CMCO, Dorval, Que./Qc

K. Haase (EL-2) Electronics Tech./Électro-technicien, CAEO/E, Winnipeg, Man.

J. Desmarais (MT-7) Meteorologist/Météorologiste CMCF, Dorval, Que./Qc

L. Plaseski (OCE-3) Word Processor Operator/Opér. trait. de textes, ARMF, Downsview, Ont.

K. Haynes (OCE-3) Word Processor Operator/Opér. trait. de textes, ARMP, Downsview, Ont.

J. Dominic (CR-4) Clerk/Commis. ACPE, Downsview, Ont.

L. Hsing-Peng (CS-2) Systems Analyst/Analyste syst., ACPL, Downsview, Ont.

D. D'Silva (CS-2) Systems Analyst/Analyste syst., ACPL, Downsview, Ont.

R. Ouimet (EG-6) Met. Tech./Techn. en mét., Dorval, Que./Qc

F. Kawamoto (CR-4) Clerk/Commis. PAEMA, Vancouver, B.C./C.-B.

R. Lacate (EG-1) Met. Tech./Techn. en mét., Vancouver, B.C./C.-B.

M. Torgenson (EG-1) Met. Tech./Techn. en mét., Vancouver, B.C./C.-B.

G. Pelletier (EG-1) Met. Tech./Techn. en mét., WS3/SM3, Dease Lake, B.C./C.-B.

P. Greenwood (EG-7) Supv. Inspection & Standards/Sup. inspection et normes, PAEOI-I, Vancouver, B.C./C.-B.

W. Green (EG-7) Supv. Automated Systems/Sup. systèmes automatisés, PAEOI/A, Vancouver, B.C./C.-B.

J. Deveau (EG-1) Met. Tech./Techn. en mét., Pearson Int'l. Airport, Toronto, Ont.

A. MacFarlane (EG-3) Met. Tech./Techn. en mét., WS1/SM1, Sable Island, N.S./N.-É.

B. Martin (EG-1) Met. Tech./Techn. en mét., WS3/SM3, Churchill Falls, Nfld./T.-N.

W. Sanford (EG-1) Met. Tech./Techn. en mét., WS3/SM3, Churchill Falls, Nfld./T.-N.

D. De Beaumont (AS-1) Admin. Officer/Agent d'administration, AHRL, Downsview, Ont.

B. Hollingshead (CS-3) Co-ordinator/Coordinateur, AHRD, Downsview, Ont.

L. Vigneault (PE-3) Personnel Generalist/Généraliste en personnel, AHRS, Downsview, Ont.

M. Persaud (ST-SCY-2) Secretary/Secrétaire, AWSC, Downsview, Ont.

R. Lefebvre (MT-6) Meteorologist/Météorologiste, AWSC, Downsview, Ont.

A. Charpentier (EG-7) Dissemination Tech./Techn. en diffusion, AWSC, Downsview, Ont.

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

S. Craig (CR-3) Clerk/Commis, PWC, Vancouver, B.C./C.-B.

G. Myers (EG-6) OIC/Responsable, W04/BM4, Port Hardy, B.C./C.-B.

J. Beal (EG-5) Weather Services Specialist/Spéc. service mét., W04/BM4, Fort Nelson, B.C./C.-B.

J. Steele (EG-7) Supervisor/Chef de service, W03/BM3, Victoria, B.C./C.-B.

D. Lahn (EG-6) Weather Services Specialist/Spéc. service mét., W04/BM4, Kelowna, B.C./C.-B.

R. Klock (EG-6) Weather Services Specialist/Spéc. service mét., W04/BM4, Penticton, B.C./C.-B.

S. Payment (EG-4) OIC/Responsable, WS3/SM3, Lytton, B.C./C.-B.

M. Lavalee (CR-3) Clerk/Commis, PAEA, Vancouver, B.C./C.-B.

G. Gilbert (EL-4) Electronics Tech./Électro-technicien, W04/BM4, Thunder Bay, Ont.

D. Munson (EG-6) Weather Service Specialist/Spéc. service mét., Edmonton, Alta./Alb.

D. Schmidt (EG-6) Weather Service Specialist/Spéc. service mét., Edmonton, Alta./Alb.

R. Honch (MT-5) Meteorologist/Météorologiste, WAED, Edmonton, Alta./Alb.

T. Chan (CS-2) Programmer/Programmeur, WAED, Edmonton, Alta./Alb.

A. Lau (CS-2) Programmer/Programmeur, WAED, Edmonton, Alta./Alb.

C. Bevan (CR-3) Clerk/Commis, W04/BM4, Calgary, Alta./Alb.

M. Makowsky (MT-6) Meteorologist/Météorologiste, ALWC, Edmonton, Alta./Alb.

S. Liu (CR-3) Clerk/Commis, AWFH, Downsview, Ont.

C. Mathieu (MT-2) Met. Dev. Level/Niv. perf. mét., QAEM/CMQ, Saint-Laurent, Que./Qc

L. Traves Metcalf (CR-5) Office Manager/Gestionnaire, ACSF, Downsview, Ont.

J. Gagnon-Pacini (CR-4) Clerk/Commis, ACSO, Downsview, Ont.

D. Henry (EL-4) Electronics Tech./Électro-technicien, ACSO, Downsview, Ont.

R. Prior (EG-8) Basic Systems/Systèmes de base, ACSO, Downsview, Ont.

A. Shim (CS-3) Project Manager/Chef de projet, ACSI, Downsview, Ont.

G. Grieco (CS-2) Project Officer/Agent de projet, ACSI, Downsview, Ont.

A. Murji (CS-3) Project Leader/Chargé de projet, ACPL, Downsview, Ont.

## Transfers/Mutations

F. Kurmally (CR-4) Clerk/Commis, ARMI, Downsview, Ont.

J. Kit (CS-2) Systems Analyst/Analyste syst., ACPL, Downsview, Ont.

P. Hache (EG-1) Weather Observer/Observateur météorologique, WS3/SM3, Baie Comeau, Que./Qc

M. Sirois (EG-1) Weather Observer/Observateur météorologique, Dorval, Que./Qc

A. Deguire (EG-1) Weather Observer/Observateur météorologique, Dorval, Que./Qc

H. Lebel (EG-2) Weather Observer/Observateur météorologique, WS3/SM3, Cape Dyer, N.W.T./T.N.-O.

L. Beauchamp (EG-2) Weather Observer/Observateur météorologique, Dorval, Que./Qc

R. Rioux (EG-2) Weather Observer/Observateur météorologique, Saint-Laurent, Que./Qc

N. Draper (EG-4) U/A Tech./Techn. en aér., Port Hardy, B.C./C.-B.

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

J. Kirkpatrick (EG-8) Head Technician/Technicien en chef, OAED, Toronto, Ont.

W. Piercey (PE-3) Personnel Generalist/Généraliste en personnel, AHRC, Downsview, Ont.

D. Snow (CR-4) Clerk/Commis, AHRD, Downsview, Ont.

P. Kurchina (CS-2) Systems Analyst/Analyste syst., AWSC, Downsview, Ont.

L. Ang (CS-2) Systems Analyst/Analyste syst., AWAC, Downsview, Ont.

R. Lecotey (EG-4) U/A Tech./Techn. en aér., Port Hardy, B.C./C.-B.

L. Mainwaring (EG-2) Met. Tech./Techn. en mét., Vancouver, B.C./C.-B.

K. McKenzie (CR-4) Clerk/Commis, OAED, Toronto, Ont.



P. Smith (MT-2) Met. Dev. Level/Niv. perf. mét., Pearson Int'l. Airport, Toronto, Ont.  
 V. Symborski (CR-4) Clerk/Commis, WAED, Edmonton, Alta./Alb.  
 S. Blackwell (MT-6) Supervisor/Superviseur, ARWC, Edmonton, Alta./Alb.  
 A. Sevigny (MT-6) Superintendent/Surintendant, QAEMD, Saint-Laurent, Que./Qc  
 M. Glasgow (CS-3) DMETOC, Ottawa, Ont.

## **Temporary or Acting Positions/**

## **Postes temporaires ou intérimaires**

G. Lauzé (EG-6) Met. Tech./Techn. en mét., AWDH, Downsview, Ont.  
 J. Beaudry (EG-2) Weather Observer/Observateur météorologique, WS3/SM3, Chibougamau, Que./Qc  
 Z. Musson (CR-3) Clerk/Commis., AHRS, Downsview, Ont.  
 P. Rodrigues (ST-SCY-3) Secretary/Secrétaire, AHRD, Downsview, Ont.  
 M. Headley (AS-2) Admin. Officer/Agent d'administration, AWAC, Downsview, Ont.  
 C. Ivals (CS-2) Systems Analyst/Analyste syst., AWAC, Downsview, Ont.  
 R. Luy (CS-2) Systems Analyst/Analyste syst., AWSC, Downsview, Ont.  
 C. Anker (CR-3) Clerk/Commis, AWP, Downsview, Ont.  
 K. Kottick (AS-2) Admin. Officer/Agent d'administration, AWP, Downsview, Ont.  
 D. Reimer (EG-5) OIC/Responsable, WS3/SM3, Dease Lake, B.C./C.-B.  
 J. Sowiak (EG-6) OIC/Responsable, WS3/SM3, Fort Reliance, N.W.T./T.N.-O.  
 G. Teeter (EG-7) Project Manager/Chef de projet, CCDG Downsview, Ont.  
 S. Paquet (ST-SCY-2) Secretary/Secrétaire, QAEM/CMQ, Saint-Laurent, Que./Qc

M. Robitaille (CS-1) Programmer/Programmeur, QAEM, Saint-Laurent, Que./Qc  
 I. Cotte (ST-SCY-2) Secretary/Secrétaire, QAES, Saint-Laurent, Que./Qc  
 B. Harvey (EG-6) Surface Stations Inspector/Inspecteur stations surface, QAEO, Saint-Laurent, Que./Qc  
 J. Musil (ENG-5) Head, Engineering/Chef de l'ingénierie, ACSL, Downsview, Ont.  
 R. Van Cauwenberghe (EG-10) Head, Measurement Technology/Chef de la métrologie, ACSL, Downsview, Ont.  
 L. Wiggins (SM) Chief/Chef, ACSL, Downsview, Ont.  
 R. Lee (SM) Chief/Chef, ACSO, Downsview, Ont.  
 K. Henley (EL-6) Head, Operating and Maintenance Stand./Chef normes d'exploitation et d'entretien, ACSO, Downsview, Ont.  
 L. Razumic (CR-4) Clerk/Commis, ACSF, Downsview, Ont.

## **Departures/Départs**

M. L'Heureux, CMC, Dorval, Que./Qc, to/à Téléglobe Canada, Montréal, Que./Qc  
 R. Turna, Vancouver, B.C./C.-B.  
 D. Hebert, Pearson Int'l. Airport/aéroport international Pearson, Toronto, Ont.  
 B. Galipeau, AHRD, Downsview, Ont. to/à MOT/MDT  
 M. Costea, AHRL, Downsview, Ont. to/à DSS/MAS, Mississauga, Ont.  
 V. Quan, AWSC, Downsview, Ont.  
 M. LeBlanc, APEC, Downsview, Ont. to/à Parks/Parcs, Canada, Hull, Que./Qc  
 C. Hutchinson, ASPS, Downsview, Ont. to/à Secretary of State/Secrétariat d'État  
 A. Myles, WAED, Edmonton, Alta./Alb.  
 S. Hardman, WAED, Edmonton, Alta./Alb.  
 W. Dion, Edmonton, Alta./Alb.  
 M. MacLeod, AWPC, Downsview, Ont.  
 V. Persaud, ACPX, Downsview, Ont.

D. Larochelle, QAEM-CMQ, Saint-Laurent, Que./Qc  
 R. Ouimet, Dorval, Que./Qc

## **Leave of Absence/ Congés autorisés**

M. Turner, CAEAR, Winnipeg, Man.  
 K. Droy, OAED, Toronto, Ont.  
 K. Hedley, QAEM-CMQ, Saint-Laurent, Que./Qc

## **Retirements/Retraites**

M. Poznias, ACPD/IO, Downsview, Ont., June/juin, 1989  
 R. Waldorf, ACPD/OPS, Downsview, Ont., June/juin, 1989  
 R. Lortie, CMC, Dorval, Que./Qc, July/juillet, 1989  
 J. Carpick, CAEWR, Winnipeg, Man., July/juillet, 1989  
 A. Rice, ACPD/IO, Downsview, Ont., July/juillet, 1989  
 J. Barron, Dease Lake, B.C./C.-B., Sept./sept., 1989  
 W. Pawliwsky, Coronation, Alta./Alb., Sept./sept., 1989