

May/June 1985

ZEPHYR

International Youth Year
1985



Environment
Canada

Environnement
Canada

Canada

Barney Boville wins Patterson Medal

A former Director General of the Canadian Climate Centre and world renowned specialist on Numerical Weather Prediction (NWP) has become the thirtieth winner of the Patterson Medal, the highest award in Canadian Meteorology.

Dr. Bryan (Barney) Walter Boville received this honor at the Canadian Meteorological and Oceanographic Society (CMOS) banquet in Montreal this June.

Dr. Boville also served as Chairman of the Department of Meteorology at McGill University and since 1979 after retiring from AES he served the international Meteorological community through advising the Secretary General of WMO (World Meteorological Organization) on the World Climate Program.

He also worked on many WMO and UNEP (United Nations Environmental Program) committees.

In his presentation speech A/ADMA Howard Ferguson said that as a University researcher, Barney had made significant contributions to our understanding of the stratosphere, and had significantly enriched our knowledge of planetary scale circulation systems and of current techniques of Numerical Weather Prediction. Dr. Boville joined the Weather Service in 1942 after graduating with a BA from the University of Toronto.

He was a forecaster in various parts of Canada until 1958 when he received his M.Sc from McGill University, then his Ph.D in 1961. Leaving the Met. Branch then, he worked his way to head meteorological studies at McGill.

In 1972, he returned to AES to direct various research programmes on climate, the stratosphere, ozone, radiation, cloud physics and weather modification and finally in 1978 became the first Director General of the Canadian Climate Centre.

CMOS President's Prize to Boundary Layer scientists

For their work on modelling boundary layer flow in complex terrain Drs. Peter Taylor and John Walmsley of ARQL (AES, Downsview) have jointly won the prestigious CMOS President's Prize at the society's banquet in Montreal this June. Presenting them with their specially

Zephyr Highlights

News	2-5
Features	6-12
Polar bear beware	6
Native employment program takes off at AES	7
Employee/Equipment	8
A day in the life of a Weather Office OIC	9
Zephyr Breezes	10-11
Staff changes	13-14

Cover: This United Nations Emblem for International Youth Year 1985 reminds us that AES has long organized Canada-wide youth employment programs of interest to career-oriented young people. News of current programs and other youth interests of AES are on the opposite page.

Zephyr is a periodical publication for employees of the Atmospheric Environment Service, Environment Canada. It is produced for the Atmospheric Environment Service by the Information Directorate of Environment Canada.

Please address all correspondence regarding this publication to: Zephyr, 4905 Dufferin St., Downsview, Ont., M3H 5T4.

Editor, Gordon Black
(416) 667-4551



Environment Canada
Environnement Canada

Atmospheric Environment Service
Service de l'environnement atmosphérique

engraved plaques CMOS President Dr. Neil Campbell praised the AES scientists for their work over the past two to three years and their efforts to develop wind energy potential for future society.

Graeme Morrissey — Head of Satellite Meteorology at AES, also received a CMOS award, the Doctor Andrew Thomson prize for Applied Meteorology.

Ontario tornado cluster

The series of tornadoes that struck Southern Ontario on May the 31st has become one of the most thoroughly investigated weather events in Ontario Region's history. According to Walter Lawrynuik, OIC Ontario Weather Centre, twelve staff members were assigned to measure the length and width of the tornado tracks and to assess the damage done — and a four man team in eleven days put together a detailed

technical note of their findings which is now available to all AES personnel.

There were fourteen individual tornadoes that day. In an upcoming issue, Zephyr hopes to devote some major space to an account of this epic storm.

In the coming months Zephyr will be undergoing changes both in form and content. Since we would like to hear your views and suggestions, we are enclosing in this issue a yellow "letter to the editor" sheet. If you can spare the time, please spend a few moments telling us about your "likes and dislikes"; then mail the sheet back to us at Information Directorate, Atmospheric Environment Service, 4905 Dufferin Street, Downsview, Ont. M3H 5T4. We hope to publish a wide selection of your letters. Looking forward to hearing from you.

AES SALUTES YOUTH

Students plan careers

Among the skilled jobs being performed by summer students at AES this year are instruction classes for scientists and computer consultants on how to use personal computers. The lessons given by third year computer science students at AES headquarters in Downsview are a means of upgrading the research staff's data processing skills in a growing new area, even though they may have familiarity with large mainframe computers.

Altogether there are 110 students working at AES under the **Challenge '85** employment program sponsored jointly by the Department of Employment and Immigration and by various other government departments and services. AES has 37 students at work under the scheme in its Ontario Region and at Downsview headquarters and smaller numbers in action in the other AES regions. Although most of the **Challenge '85** students are computer-oriented, they are busy performing a wide range of tasks at AES. For example there is a student-technician spending his time testing meteorological sensors and building electronic circuits; there is a graphic artist producing display panels on marine weather for a regional office; there is a student working in a regional weather

centre verifying forestry forecasts and there is an apprentice librarian cataloging periodicals and scientific publications in yet another regional office.

In addition there are students doing public administration and personnel work or who are working in financial areas such as X budgets. Lastly there is a woman doing field studies and analysis of laboratory data in connection with the Long Range Transport of Pollutants (LRTAP) program.

Commenting on the program, Deedee Davies (AHRS) project coordinator for AES Ontario Region, says that the main object of **Challenge '85** is **career access**, the provision of opportunities that will assist students in their future vocations avoiding as far as possible the routine and the purely physical. All in all AES has obtained fewer students and less funding under the current program than it did in previous years. It has, however, achieved greater autonomy in its right to choose the positions it wants filled.

Training chiefs at Youth Fair

Several AES staff members working at the Meteorology Training Centre recently had the opportunity to contribute to the Canada Wide Youth Science Fair (CWSF) which this year was hosted by the

City of Cornwall, Ontario.

The 1985 Fair had an international flavour with Canadian participants joined by exhibitors from several African and Caribbean countries as part of the activities associated with International Youth Year.

The Fair promotes an interest in various areas of science through competition and awards. One of the prizes available was the Canadian Meteorological and Oceanography Society Prize for Meteorology and Oceanography. A dozen exhibits fit into this category ranging from snow fence design to acid rain. The judging was carried out by Ken Morris and Mike Hawkes of AES, along with Leo Quinn of Energy, Mines and Resources. The high calibre of the displays and the enthusiasm of the exhibitors made judging difficult but several projects were eventually selected for recognition: "Air Pollution" by Heather Campbell, "Solar Energy: A Water Heating Experiment" by Evelyn Lambe, "Acid Rain: Effects and Neutralization" by Christian Fielding and Keuri Tait and "Water, What is it?" by Luis Leon and David De Dlieger.

Following "judgment day" all CWSF participants were invited to an Open House at the Transport Canada Training Institute complex. Dave Roberts and Keith Grant coordinated the meteorology display which included current satellite imagery, hydrogen generating equipment and meteorological communications facilities. Staff were also on hand to brief visitors, answer questions and distribute environmental posters and buttons. The met exhibit proved to be one of the most popular areas of the Open House with several hundred Fair participants attending.

May 1979

Fredericton and Saint John reported their wettest May on record; at Saint John 279.1 mm fell, the rainiest month ever (108 yr).

June 21

1981 Last upper air weather flight from OWS Page at 1200 GMT.

Young computer grads help out with instruction



Two third year graduates in Computer Sciences, Howard Greisman of Ryerson Polytechnical Institute (Toronto) and Bruce Hollingshead of York University (Downsview) are seen here giving instruction on micro computers to their "students" — Raffi Garabedian, acting head of AES Computer consulting and training section (left) and Jim Low,

AES computer consultant. The two data processing specialists are experts in mainframe computers like the AS-6 in-house computer at Downsview but until now they have had very little experience of personal computers. Mr. Garabedian says that this is now changing and there will soon be a tremendous need to link up small and large computers in a single system to enable AES work to be carried out more efficiently and on a cost effective basis. He adds that he is delighted the **Challenge '85** students are available to teach not only himself but dozens of other skilled AES staff. Greisman and Hollingshead are pleased too because they are getting their first experience of working on computers in an "industrial" setting. They actually work for the AES Human Resources section and besides instructing manage to perform many other jobs around the personnel office including assembly of data banks on employee skills and standardization of human resource statistics. Around the building they have the reputation of being the super whiz kids.

AES volunteers honored during Environment Week

This year AES was fully represented at Environment Week celebrations. The theme of Environment Week (June 2-8) was Shared Responsibility and the work of all DOE volunteers was commemorated at events both in Ottawa and in five regions of Canada.

AES currently has an army of more than 2 500 volunteer climate observers coast to coast and several thousand more severe weather watchers. Many of the former group receive awards for excellence and long service and Environment Week provided an ideal occasion to give these hard working year-round volunteers still more official recognition.

A highlight of the Week was an award presentation in Ottawa on June 5 to two couples representing AES's climate volunteers. They were Frank and Beryl McLeod of Dilke, Saskatchewan, and Fernand and Audrey Poirier of Buctouche, New Brunswick.

Fernand Poirier is a tobacco farmer, 36 years old. He has been a volunteer for the past 20 years. In other words he began observing for the weather service at the early age of 16.

Frank McLeod is also a farmer with a farm at Dilke, about 75 km northeast of Regina. He is 58 years old and has been a

volunteer continuously since 1949. Frank picked up the climate observing habit from his father who became a volunteer in 1934. The McLeod family has therefore been feeding temperature and precipitation data into Central Region for 50 years.

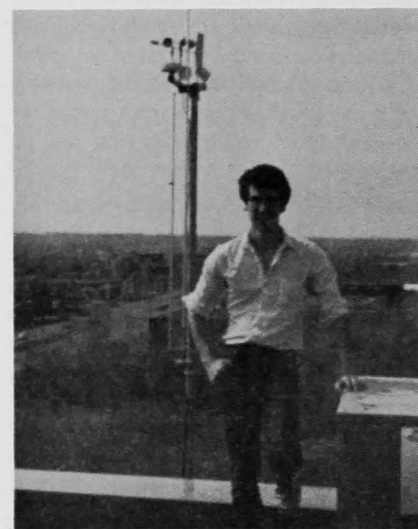
The McLeods and Poiriers were chosen as representatives of their 2 500 colleagues all over Canada, all of whom contribute essential statistics to Environment Canada's climate data base.

Their flights were met at the Ottawa airport by Ray King, OIC Ottawa Weather Office and the award winning observers were driven to the Ottawa Environment Week event. The Minister, Suzanne Blais-Grenier, gave a garden party where a climatological station complete with Stephenson screen and rain gauge was set up. The garden party, was attended by more than 100 people including A/ADMA Howard Ferguson. Unfortunately it rained, so the McLeods and the Poiriers received their award certificates aboard a tour boat on the Ottawa River.

There were many other activities on both the national and regional level. All in all, more recognition was probably given to AES climate observers during Environment Week 1985 than in several previous years combined.

maps from the U.S. Weather Bureau. But the U.S. weather maps were already dated when he received them by mail — and useless for weather forecasting. So he now decided to introduce himself at the Quebec Forecast Centre. He received a friendly welcome.

He found he was able to pick up the latest weather maps for ten cents a copy and AES personnel encouraged his hobby by making available to him all the weather data he wanted. His visits to the Centre became daily. He reviewed satellite photos and radar displays and became fluent in the special language of meteorology by conversing at length with AES forecasters. He was even allowed to sit in and do a little forecasting himself. When the call went out for severe weather watchers, Mike volunteered right away.



Mike Laws with self-made weather instruments on roof.

Severe weather watcher a law unto himself

Mike Laws is an AES volunteer severe weather watcher — of a very exceptional sort. He has developed into an advanced amateur meteorologist with his own weather station set up on the roof of his apartment building in Dollard des Ormeaux, near Montreal. His equipment includes teletype, barograph, anemometer, windvane and temperature sensor.

Mike is now 26 years old. He says "My interest in weather began when I was eleven, while attending summer camp at Woodstock, Vermont." There he read a book about the weather and weather forecasting. While reading his weather book, he applied its lessons to observing and

recording the actual weather events around him.

When he returned to Montreal, Mike delved further into the science of meteorology with such increasing interest that two months later he was posting basic weather forecasts on the kitchen wall. But the event that clinched his commitment to meteorology was the great blizzard of March 3 and 4, 1971. "It started me keeping hourly records of temperature, sky condition, wind speed and direction, visibility, relative humidity and precipitation." All that — at age 12!

Throughout his teens, Mike collected weather station equipment bought from his savings. He subscribed to weather

"By March, 1983," he says, "my observing site was set up in its present location (on the rooftop of the Dollard des Ormeaux apartment building) with a clear view of 80 km in all directions. Connections to teletype and weatherfax circuits from Environment Canada and the U.S. Weather Bureau are now included with printouts from the McGill weather radar. It is quite a comprehensive set-up."

Last December (1984), Mike established himself as a company called Met. Tech. Services to provide snow removal contractors with specialized forecasts and other data related to their industry. He expects to be doing some media work for Montreal radio station CJAD soon. He also has a job as an

(cont'd on page 5)

Experimental climate forecasts

A one-year experiment began March 1 which may eventually enable the Canadian public to obtain climate forecasts, consisting of monthly and seasonal outlooks of weather conditions.

In the initial test phase Environment Canada is supplying predictions in map form to about 100 public and private organizations: utilities, agricultural agencies, transportation departments, research companies and weather offices.

Commenting on the new test program project leader Dr. Stan Woronko of the Canadian Climate Centre said that climate forecasting is a service requested by a wide cross-section of Canadians and would be a natural extension of Environment Canada's present short-range weather forecasts towards longer range outlooks.

The new test phase, being instituted under the Canadian Climate Program, will allow AES officials to effectively evaluate the usefulness and accuracy of a limited scale climate forecast program.

During the one-year phase, the selected organizations such as fisheries, municipalities, departments of tourism, etc. are being asked by Environment Canada to evaluate the format and usefulness of the experiment forecasts.

There are specially prepared kits to explain the new climate forecasts to participants and they will be kept informed of any change in procedures.

The forecasts will consist of maps of Canada showing areas of above or below normal temperature and above or below normal precipitation. The program will include both monthly and seasonal forecasts.

When the experiment is completed, Environment Canada climatologists will evaluate the overall accuracy and utility of the test program. If the results prove useful, the program will become a regular output of Environment Canada's weather service.

(cont'd from page 4)

electronics technician at Spar Aerospace in Montreal.

From his practical experience in Met. Tech. Services, he has helped AES upgrade Weatheradio Canada by contributing specific recommendations. Several of his recommendations have been implemented.

All this makes Mike an extremely valuable AES volunteer severe weather watcher.

May 7

1895 The Halifax NS temperature reached 32.2°, the earliest occurrence ever of unusually warm temperatures.

May 15

1888 The latest occurrence of a measurable amount of snowfall at Toronto: 0.3 cm (143 yr).

George McPherson goes out with a tornado

More than 100 people gathered in Toronto's Royal York Hotel on May 31 to honor George McPherson, Director AES Ontario Region, on the occasion of his retirement.

The date happened to coincide with Ontario's worst tornado in years — an onslaught that spread a wide swath of death and destruction across southern Ontario.

Despite the disturbance, and the early departure of some AES staff to assess the impact of the severe storm, proceedings unfolded normally. Howard Ferguson was MC and the ceremonies were also attended by ADMA Jim Bruce and by Ian Rutherford, director general Field Services Directorate. Also in attendance was Mr. McPherson's wife Anne and their five children. Old colleagues in attendance included Sid Buckler and Clarence Penner associates of Mr. McPherson's

while he served as Training Director.

Speeches were made praising Mr. McPherson's 19 years in training branch and his eight years as Regional Director. Among gifts received were a mantle clock and an illustrated book on birds. Lou Berthelot and Kathy Mowers also handed out gag gifts in a light hearted skit.

Mr. McPherson joined the Meteorological Branch in Vancouver about 35 years ago after completing meteorological studies at the universities of Saskatchewan and Toronto, graduating with a bachelor's and a master's degree respectively. He spent five years in the Whitehorse, Yukon weather office before transferring to Toronto in 1959 to become a training officer. During his years in training he rose to be director and was responsible for producing dozens of training manuals still in use.



George McPherson receives retirement gift from ADMA Jim Bruce.

Correction

On page 5 of the last issue of Zephyr in connection with a Merit Award presentation, the name of Mr. Eli Mukammal was spelled incorrectly. Also the heading should have read "Award for Biometeorology". Zephyr regrets these errors.

Polar bear beware!

Polar bears have now become so dangerous a nuisance around the High Arctic weather stations that a Polar Bear Deterrent Seminar was held in Central Regional Office in February. About 30 AES personnel, as well as two Parks Canada Bear Management experts attended. The main speaker was Paul Gray, Supervisor Habitat Management for the Government of the Northwest Territories.

John Keefe (Health/Safety, Downsview) also attended and delivered a written report.

Mr. Keefe's main concern is that polar bears are a protected species and killing them is prohibited. Unless a man is in immediate danger of being mauled, permission to kill a bear must be obtained from the N.W.T. government. The last bear shot near a weather station was in November 1983.

The question becomes — how to deter and drive away these bears? Some methods are more dangerous than others — such as the use of rubber or plastic bullets. "A person using the weapon," John Keefe reports, "would be exposed to a possibly very angry bear armed only with a non-lethal weapon of questionable accuracy and a range of 30 metres." And polar bears can run much faster than we suppose.

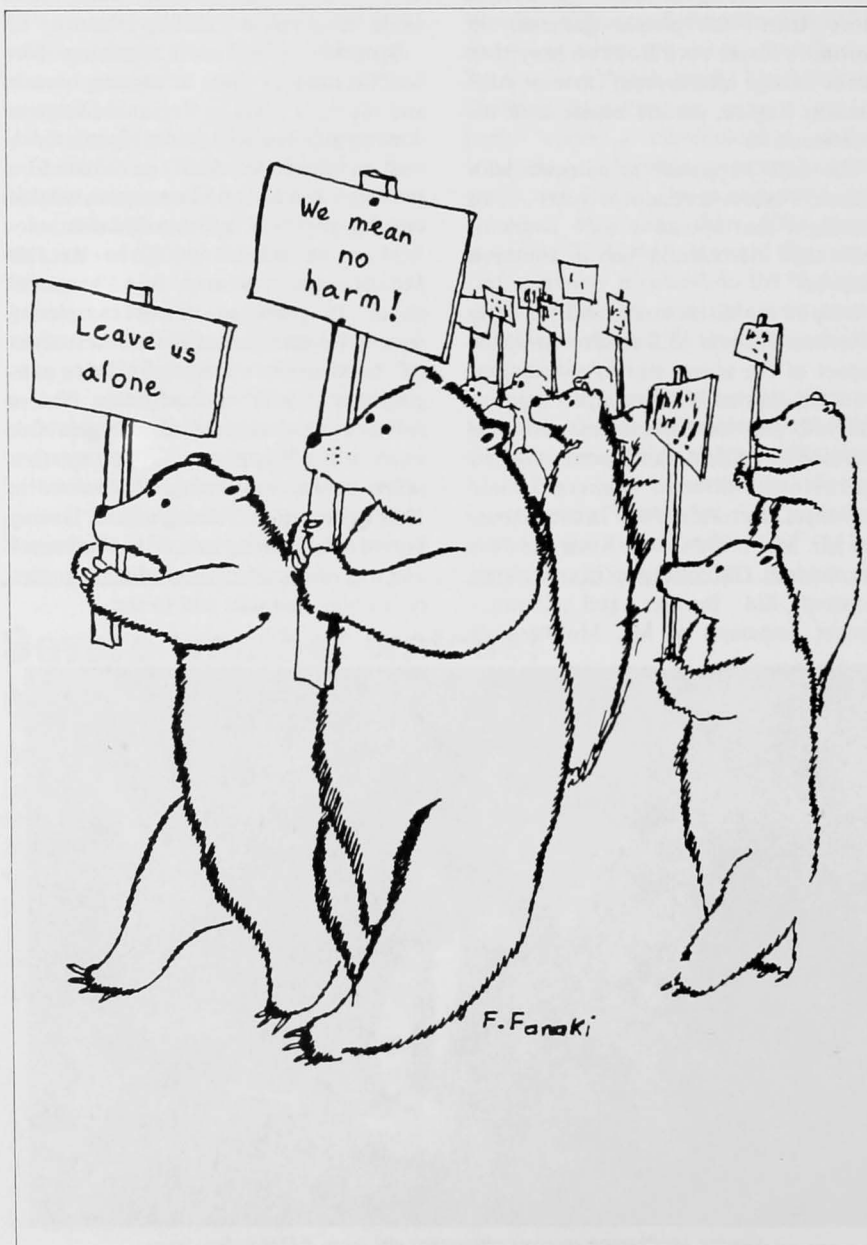
First, in order never to be taken by surprise, polar bears must be detected. According to Mr. Keefe "There are various methods of detecting the presence of a bear such as dogs, micro-wave motion detectors, trip wire systems, and infra-red detectors. The latter of these appears to be most effective. It is less prone to being activated by non-bear activity and can be mounted to scan a large area. The detector is triggered by the body heat of the bear."

Naturally, a bear approaches a weather station expecting a rewarding experience. The main deterrent idea is to give him the opposite — a very bad scare or some other unpleasant experience. Once a bear is detected, the deterrent methods, besides rubber bullets, are "electric fences, chemical repellants, dogs, loud sounds such as horns, sirens or flares." The most effective method seems to be the use of a Random Pulse Generator which produces variable sounds a bear cannot tolerate. This method also warns people that a bear is around. But no method is 100% effective and with repeated use they tend to have less effect on the bear.

Continual squeamishness about encountering a bear may become nerve-racking and produce a detrimental undermining of the sense of security and morale of weather station staff.

The Seminar recommended that all personnel sent to the high north be given some training in the safe and effective use of firearms. The use of rubber or plastic bullets should be discouraged. An infra-red detection system and random pulse generator should be installed at Mould Bay to test the value of their deterrence.

Finally, Service and Regional Safety Officers and Regional Inspectors should take the 4-day trainers course offered by N.W.T. government to qualify them to train and advise field personnel.



Native employment program takes off at AES

AES is currently giving full attention to yet another under-represented group: the native citizens of Canada. At a rough estimate there are around 400 000 of them in Canada to-day. AES currently employs only about a dozen of this number even though the weather service has many weather stations and other installations throughout Canada. In April 1985 AES set up a Native Employment National Committee under the chairmanship of **Janis Pelletier**, Head of the Office of the Director General, Field Services Directorate (AFDH), AES Downsview. Ms. Pelletier was interviewed on the early stages of AES's involvement with the native employment program.

Why is Native Employment of concern right now?

The Federal Government is currently concerned about *all* under represented groups: women, the handicapped and native citizens . . . these are three major target groups that have been specifically identified.

What has Native Employment got to do with AES?

First we adhere to the policies of the Federal Government at large. We have many installations throughout the country — surface observation stations; upper air stations, contract stations, weather offices and so on. It so happens that there is a native labor force available in many of the more isolated northern communities. It is to our advantage to draw on it. Native citizens often wish to remain and work in their own communities, so it's an ideal mix.

What is AES doing about Native Employment?

Realizing the potential advantages of recruiting native employees, Senior Management asked Field Services Directorate to form an action-oriented committee to meet this challenge. They also wanted us to be creative and think up some novel approaches for recruiting and job training.

Can you give some examples of the creative approach?

Well, we would want to delve into possibilities for job sharing and part time work for native citizens. We should also encourage efforts to give them contract work. We would want to look at our recruitment and training standards and remove any artificial barriers.

Do you have any action programs right now?

Yes, we have a pilot project in Central Region involving three native participants. In addition we have a project to sensitize AES managers on the potential benefits of native employment. We can gain a lot from experience and we intend to follow up with further projects.

Who sits on the AES Native Employment National Committee?

We have succeeded in obtaining fairly broad representation from the AES regions. We also try to ensure that each AES directorate or headquarters administration unit is represented. Regional representation is very important since we predict that most native employment opportunities will likely occur in the regions.

Besides these projects what other action work does the Committee do?

Well, for one thing we encourage use of outside resources such as the Northern Careers Program of the Public Service Commission. Jens Lyberth, regional manager for the program at Frobisher Bay was the invited speaker at our last national meeting. He made a very strong case for hiring native citizens.

Do Native Employment Programs only apply to the North?

No, they apply to the mid-latitudes and the South also. However, it would be to the AES's advantage to be able to recruit and train a substantial number of employees from the North. We could realize substantial savings by not continually having to move personnel up from the South for limited periods to fill vacancies. We could potentially have a more stable local work force with community roots.

What is the over-all objective of the National Committee?

It is to increase the number of native employees in AES using the regular employment route, contracts or any other viable means.

How does the Native Employment situation within AES compare with that of women and the handicapped?

There are now comparable committees underway for all three under represented groups.

Is education a barrier in recruiting suitable native personnel?

Yes it is — but not an unsurmountable one. The subjects normally required, basic high school math and physics, are not fields that native citizens have studied to any extent. Those students who do graduate from high school tend to have chosen courses in humanities. The whole question of native education is a challenge. The Committee will have to re-examine the educational requirements for entry into the AES. It may be that the way to go will be to upgrade native skills through a year or two of on-the-job training.

(cont'd on page 8)



Janis Pelletier, third from left, was interviewed by Zephyr on Native Employment prospects at AES. Also seen at the recent National Committee meeting at AES Downsview was Brenda Smith (AFDH), Dennis Stossel, arctic coordinator (CAED) and Jens Lyberth, regional manager, Northern Careers Program, Public Service Commission.

FEATURES

(cont'd from page 7)

What is on-the-job training?

It occurs when an employee is specifically recruited as a trainee, then receives training in a real work setting, for example in a surface or upper air observing station. The skills learned are of course of a practical nature and in many ways are more beneficial than the more theoretical skills acquired at school or in a community college. By learning on the job recruits can receive individually tailored instruction, can belong to an office right from the start, and work together with other staff on a basis of equality. They can even demonstrate their "street smarts" — skills picked up in their own communities and applicable to AES operations.

But wouldn't some Native Citizens wish to work in the South?

Some certainly would and we will definitely attempt to create native employment opportunities anywhere in Canada. It is the committee's belief, however, that the majority of native employees would prefer to work in, or close to, their own community, wherever it is located.

How did you personally become involved with Native Employment?

It comes within the purview of my job as AFDH. I am required to provide functional guidance in the areas of human, financial and material resource management. Because of this I am aware of both AES Management requirements and of the potential labor pool available. I realize both the high potential within AES for native citizens and the practical advantages for AES in recruiting this group of workers.

Acting ADMA Howard Ferguson told your Committee to be imaginative and to strike out in new directions. How do you feel about this?

I have already spoken of our need to be creative, especially in our methods of recruiting and training native citizens. But I think it goes further than this. I personally feel a sense of excitement. It's an area where one can work from the heart as well as from the mind.

Employee Equipment



For the past three years TSOI-CHING YIP has been at work on the TIROS-N Operational Vertical Sounder (TOVS) processor at the Aerospace Meteorology Section, AES Downsview. She is responsible for software programs used for obtaining special upper air weather data from six daily orbits of the polar orbiting satellite 870 km above.

Her duties include finding out how TOVS data can be used to upgrade weather forecasting and obtaining data from the satellites for real time summer and winter experiments. For example, she supplies data on moisture and temperature to three Canadian weather centres after obtaining it from the TOVS hardware on the satellite. The data is retrievable on 20 levels from 115 to 1 600 millibars and is useful for forecasting severe weather in summer and freezing rain in winter.

Miss Yip's equipment consists of a video display unit, a joy stick and keyboard terminal. TOVS programs can be run in interactive mode enabling Miss Yip to "talk" to the computer.

The TOVS data has been well received by the weather centres and should directly benefit the Canadian public by improving the quality of the forecast.

Miss Yip says she likes the practical and shuns the purely academic. In fact she is glad she terminated her meteorological studies at the M.Sc level (at the University of Toronto) rather go on to the more theoretical Ph.D level. She subsequently became an AES weather forecaster at the Pacific and Ontario weather centres.

In general Miss Yip says she finds her work both varied and stimulating with just the right mix of maintenance and experimentation.

Getting down to earth again, do you have any more activities planned for the near future?

Our next national committee meeting is tentatively scheduled for October. We hope to combine this with some Native Employment awareness activity somewhat along the lines of the handicapped awareness days organized for Managers at AES Downsview last October.

Can the average AES employee assist in the furtherance of Native Employment?

Yes, at the moment he or she could assist us by sending in suggestions, ideas, papers or clippings from articles or publications dealing with native employment. They should write to the AES Native Employment National Committee, C/O AFDH, Field Services Directorate, Atmospheric Environment

(cont'd on page 14)

A day in the life of a . . .

Weather Office OIC

The officer-in-charge (OIC) drives into a medium sized airport, parks his car, and heads for the weather office underneath the control tower. He climbs a narrow flight of stairs and enters a room equipped with a telephone, a computer terminal, a microphone, and a sun-deck outside a back door.

He goes immediately to the computer terminal and activates it. The time is 5:20 am. Five minutes later, his colleague — a staff member — arrives. The OIC calls him Sam. The weather office will open for business at 6 am, so Sam and the OIC have half an hour to prepare.

The computer terminal is connected to the Regional Weather Centre. On its screen, the OIC raises weather information from all over North America. He checks succeeding panels of data against yesterday's weather maps. There are three, one above the other, tacked to a wall, representing the weather over a large chunk of the continent at three different times yesterday. Significant information on the maps is enhanced with bands of color. Regular daily visitors to the weather office are thus able to read the maps more easily.

Nothing unexpected has happened to the weather overnight and yesterday's forecast for today will probably hold true. Probability of precipitation is near zero and there will not likely be a cloud in the sky all day. There probably won't be any grumblers on the line about the accuracy of yesterday's forecast.

At 6 am while Sam makes the first of his hourly weather observations on the sundeck, the OIC stands at the microphone which projects from its electronic console like the mouthpiece of a saxophone, and in a mild, pleasant, slightly sing-song voice records the morning's weather report for the telephone answering service.

The morning now develops fairly routinely. There are three live radio broadcasts. In these, the weather dialogue between the OIC and the radio announcer goes out over the air. The nearest city to

the weather office is actually quite large and there are two smaller cities within a thirty mile radius. Another radio station asks frequently for the official AES temperature. A regular morning chore is briefing the local television weatherman. Also, a special weather forecast is taped for the area's considerable agribusiness. The city Works Department calls in wanting to be reassured that its work schedule will not run into any weather hitches and a daily newspaper wants the day's forecast highs for a number of North American metropolises. Manufacturing plants have various reasons for calling in and so do many ordinary citizens.

It sometimes happens that the weather during the course of the day takes an unpredicted turn, falsifying the morning's forecasts. In such cases, Sam and the OIC must immediately get in touch with the media — radio, television, newspapers — so that the public may be quickly informed of the change. But no such thing is likely to happen today. Weather-interested persons dart into the office, engage Sam or the OIC in an exchange, and then dart out again. At one point, the OIC is heard advising the pilot of a private plane that some think cloud cover may be expected later tomorrow afternoon.



Corner of typical weather office.

Besides taking part in the forecasting and dissemination of weather information, the OIC has other work to do. He is responsible for the effective distribution of weather products to the immediate public from 6 am to 9 pm every day. The office is manned by four staff members, including the OIC. In rotating shifts, two are on duty from 5:30 am to 1:30 pm and one of the other two from 1:30 pm to 9:30 pm. The OIC must find ways and means of keeping the office functioning if one or even two of the staff are away sick.

The OIC has administrative duties. He handles the monthly allotments of petty cash and he requisitions for office supplies. He must write replies to "climate letters" — letters that ask for a review of past weather. Lawyers, insurance companies, even the police, may request such information — in connection with a traffic accident or a crime, for example. Occasionally the OIC receives a subpoena to appear in court to testify in person about a certain day's weather. He is public-spirited. He teaches meteorology to college classes and to groups in the aviation industry. He gives lectures on meteorology to other interested groups, too, and sometimes gives a speech at a convention or at a service club. In many cases, he donates his time free of charge. His three staff members are equally willing to donate a little of their spare time to lecturing or taking part in a seminar.

May 1902

Banff and Lethbridge recorded their wettest month on record: 193.8 mm and 286.5 mm, respectively.

May 1973

Canada's greatest monthly sunshine total every — Eureka, NWT: 621 hr.

May 1981

Vancouver A had 24 days with measurable rain exceeding previous record of 17 days.

Zephyr Breezes * * *

The name of our magazine — Zephyr — creates the impression of balmy breezes in some pleasant semi-tropical climate. But really, it is nothing more than the Homeric Greek word for a wind from the north-west — as opposed to Euros, a wind from the south-east. During the six centuries when Greek was the lingua franca of the civilized world, every ship's captain spoke some Greek just as to-day he speaks sufficient English. As a north-west wind in the ancient Mediterranean was nautically very prosperous — it wafted Ulysses to within sight of his home in Ithaca before Euros blew him back up the Mediterranean — the word Zephyr, with its dreamy connotation of pleasant breezes and idyllic well-being, took root in every language. Of course, our Canadian north-west winds are climatologically and meteorologically of a quite different nature than the Mediterranean's — and very often carry anything but a balmy connotation. We wouldn't dream of calling them Zephyr.

★ ★ ★ ★

The puzzling problem of the sudden extermination of the dinosaurs 60 million years ago has raised the question of what kinds of weather the Earth has had during the past 100 million years. A technique is being developed that may answer this question. It consists in analysing dust that lies buried deep beneath the ocean floor. This dust shows up in cores of mud and clay collected by deep sea oil drilling rigs. By studying the sizes of dust grains and measuring how far from land they travelled, researchers can determine the strength of ancient air currents. The chemical composition of the dust suggests where it came from and what kind of wind patterns brought it there. Also, the rate of dust accumulation implies wetness or dryness and gives a rough idea of how much vegetation covered ancient continents. It is expected this new technique will contribute valuable data to computer simulations of weather and help to forecast to what extent nuclear and industrial pollution may change our climate. And how suddenly!

Dr. David Wardle, Solar Radiation research Scientist (ARPX), has gone to the sunny South of France taking 500 kilos of suntracking equipment from off the Downsview roof with him and setting it up on the roof of the Centre Radiométrique de Serres, at Carpentras, under the authority of the Direction de la météorologie Française (France's equivalent of AES). Dr. Wardle, who left on May 23 is remaining there for six weeks, comparing his solar radiation readings with those of the French instruments. He is a physics graduate of Trinity College, Cambridge, and wrote his Ph.D thesis on Measuring of Atmospheric Ozone at Night in 1965.

★ ★ ★ ★



Back in October, 1983, Dr. John Walmsley, Boundary-Layer Research Division (ARQL), sent a memorandum to the Incentive Award Coordinator (AABD) suggesting a change in the procedure of signing telex messages. The signing procedure was "Bruce ADMA". The originator of the message was left to identify himself in the body or message with some such device as "Dr. ----- sends his regards." Dr. Walmsley maintained that this is wasteful of time and money and that telex messages should be signed by the sender. Last October, Dr. Walmsley received a letter from Jenny Hadad, AES Incentive Awards Coordinator, stating the suggestion had been accepted and that Dr. Walmsley would receive a \$50 award. Jim Bruce announced the change a month later.

Canataup Iqqanaijartulirijingit kinatuinnarnik piviqaqtitti-nasuasuumnguvut iqqanaijarnirgmut.

The above is a translation from the Inuktitut script. It means "The Public Service of Canada is an equal opportunity employer."

It appears on all correspondence sent out by Jens Angaahgaq Lyberth, Regional Manager, Northern Careers Program, Public Service Commission. Mr. Lyberth attended a meeting and gave a presentation at Downsview of the AES Native Employment Committee on June the 13.

★ ★ ★ ★

Jim Low (ACPT) is the editor of Heuristics, formerly Computing Centre News. The first issue came out in June 1980 and described the new AS/6 computer which was just then about to be installed at AES Downsview. During the past five years, Heuristics has published information about activities, services and changes within the Computer Centre. In the most recent issue, Ian Findleton discussed current undertakings to replace the AS/6. "Major changes are coming at the Centre," says Jim, "and Heuristics will publish the details in future issues." Zephyr salutes this very competent news letter on its fifth anniversary.

★ ★ ★ ★

The weather offices at Castlegar, Prince George and Terrace in the Pacific Region have just presented the Region's satellite meteorologists with a trophy of appreciation for the new satellite technology being delivered to their offices. Since February 1985, the three weather offices have been receiving up to 78 data transmissions a day, providing comprehensive satellite coverage during daylight hours and a weather watch capability overnight. In the picture centre L to R, satellite meteorologists Laurie Neil, Kelsey Spring, and Larry Funk display their trophy.

Zephyr Breezes * * *

On June the 13, 1985, the Toronto Star published a picture of the tornado that devastated Barrie on May 31. It was allegedly shot by a fourteen year old boy with a 35 millimetre camera. The picture, clipped from the Star, was posted on our Downsview bulletin board. The picture fooled the Star — and it fooled many of us here at Downsview too. The boy shot the picture with his 35 millimetre camera all right — but from an Associated Press wirephoto original of the Utica, Ohio, Twister.

★ ★ ★ ★



In the photo above, L to R, William Bourque, OIC Moncton Weather Office, and Raymond St. Pierre, Edmond Guimond, and Martha Danks, of the Maritimes Weather Centre, stand with the medals and letters of appreciation presented to them by Dr. Des O'Neill, Regional Director, AES Atlantic, on behalf of the Quebec Corporation 1534-1984 for their assistance in the 1984 yacht races of the Labatt Canada Challenge Race and the Trans-Atlantic TAG-Quebec-Saint Malo Race.

★ ★ ★ ★

It may go down in history as Cloud Wars. In Almeria south-east Spain, the farmers complained that mysterious aeroplanes were chasing their storm clouds away. A few months ago, a meeting was held in the town of Pulpi attended by the governor and the mayors of several parishes where the matter was dismissed as eye wash. But now one mayor says he actually saw these cloud-chasing planes and "proof" of their

existence had been broadcast on Spanish television. Where do the planes come from? Nobody knows! The farmers say that the insurance companies are the culprits. By dispersing the clouds, they prevent the farmers from making insurance claims for storm damage. The perpetrators then apparently arrange for the planes to seed the clouds with silver dioxide and have the rain fall on the big tomato plantations along the coast. This ensures the tomato farmers can't claim for drought damage.

★ ★ ★ ★

As part of her work Maudrie Crichlow, public health nurse at AES Downsview needs to know about blood clotting. During her learning days she recalls she had difficulty absorbing the medical terms such as prothrombin, thrombinogen, thrombin, and fibrogen, so she sat down and wrote this romantic poem as a mnemonic:

Handsome was Prothrombin
Thrombinogen as Fair
They planned that they would marry
But Calcium was not there.

Thrombin and Fibrogen were to witness
Fibrin was there as well
But where was Parson Calcium?
No one dared tell.

Calcium being absent, for years they had to wait
Thrombinogen hoped, vowed, prayed,
even set the date.
Poor Prothrombin died of a Broken Heart
Thus sealed the Lovers fate.

May 1861

"The waters of the Red River have almost rolled in at our doors; and there is every indication that we are on the eve of a great flood . . . The unusually large winter snow has entirely disappeared within the last fortnight."

Norwestern Newspaper (Winnipeg).

May 23

1980 A severe windstorm likely accompanied by a tornado damaged the town of Hilda Alta near Medicine Hat Alta. Property damage totaled \$0.5 M — uprooted trees, crushed buildings and downed power lines; winds were reported at 111 km/h.

June 2

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

June 4

1980 Heavy rain over the west-central Alberta foothills caused floods, washouts and mudslides and isolated some communities. Some forestry stations near Edson received 130 to 160 mm from the 2nd to the 4th.

June 5

1979 Montreal Qué was hard hit by a violent thunderstorm with strong wind gusts and hail. The flooded sewer systems filled basements, trees were downed and power lines snapped. Losses were extensive at the Botanical Gardens.

June 13

1972 A rainfall of 150 to 200 mm, over the Peace River basin southwest of Grand Prairie, from the 11th to 13th, caused extensive flooding, washed away railway lines and bridges and devastated farmland. Damage was placed at \$10 M.

June 14

1919 A tornado skipping from Brandon to Winnipeg Man unroofed buildings and caused \$1 M in damage.

June 18

1897 Early June wet weather and a severe rainstorm from the 14th to the 17th produced record floods on the Bow River at Calgary Alta.

FEATURES

A DAY ON THE "ATMOSPHERIC" FARM

Although many things change at AES, the Station for Atmospheric Experiments, (SAE) known affectionately as "The Farm" at Woodbridge, Ontario, carries on with most of its scientific projects intact.

In fact there is a constant coming and going of scientists and

technicians between the 106 acre farm and AES headquarters in Downsview some 12 kilometres away.

The main change at the farm is the removal of the weather radar station to King City.



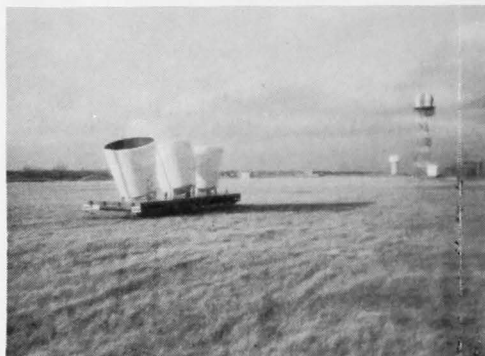
This 50 metre radar tower stands abandoned with an uncertain future. The small platform on the right was the original weather radar installation.



Still very active, however, is this solar radiation suntracker operated here by technician David Barton of Experimental Studies Division.



Equally farm-conscious are scientist from the Atmospheric Dispersion Division. This truck is fully equipped to do atmospheric probing of aerosol structures in the boundary layer. Standing beside the vehicle is F. Froude, electronics technician.



These large horns create an acoustic sounder system with the sound projected upwards and reflected back from clouds. The result is recorded and processed by a computer. The horns have been used on and off for environmental and pollution studies.



The SAE was once a real farm belonging to the Watson brothers and their family since 1870. Acquired by the Weather Service in 1963 the original farmhouse is still standing.



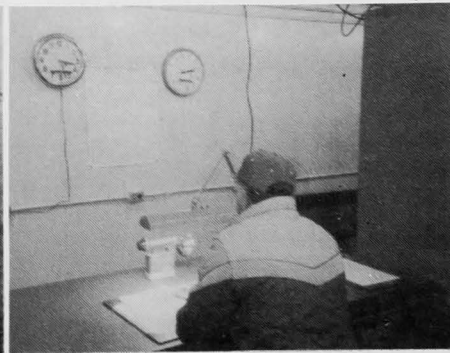
While the farm has no more cattle, one of the few "farm animals" is Lucky, the 7 year-old Labrador/German Shepherd dog, owned by farm manager Peter Chirka.



There is also Trina a grey cat and a good mouser and several thousand field mice. The latter are part of a five year research study conducted by the University of Toronto on small mammals to determine factors regulating the size of mouse populations. The picture shows their breeding pens.



Mr. Chirka also runs a Climate Station on the farm. He is seen here with a Nipher snow gauge that collects snow, which is then melted and measured in a graduate tube.



He also operates the underground instrument shelter and is seen here recording solar radiation data. The two clocks show Eastern Standard Time and Local Apparent Time (LAT) respectively.

STAFF CHANGES

Promotions/ Appointments

P.G. Aber (EX-2) Regional Director, OAED, Toronto, Ont.
W. Dnes (EG-6) Met. Tech., CCAI, Downsview, Ont.
D.A. Lane (RES-2) Research Scientist, ARQA, Downsview, Ont.
D.M. Whelpdale (RES-4) Research Scientist, ARQT, Downsview, Ont.
R.M. Hoff (RES-3) Research Scientist, ARQT, Downsview, Ont.
K. Anlauf (RES-3) Research Scientist, ARQA, Downsview, Ont.
M. Bucken (EG-1) Met. Tech., OAEW, Pearson Int'l. Airport, Toronto, Ont.
E. McGuire (PE-4) Chief of Personnel, QAEP, St. Laurent, Que.
U. Suesser (MT-2) Meteorologist, ARWC, Edmonton, Alta.
A. Laing (EG-4) Met. Tech., WS2, Ft. Smith, N.W.T.
P.S. Raczynski (EG-6) OIC, WS1, Big Trout Lake, Ont.
T. Lord (MT-3) Meteorologist, Toronto, Ont.
R. Lefebvre (MT-6) Meteorologist, CMQ, St. Laurent, Que.
R. Cabessa (DA-PRO-2) Equip. Operator, ACPO, Downsview, Ont.
R. Young (EL-4) Instrument Repair Tech., ACSS, Downsview, Ont.
G. Poulos (EL-4) Instrument Repair Tech., ACSS, Downsview, Ont.
J. Dominic (CR-2) Clerk, AAGR, Downsview, Ont.
D.A. Boehmer (PE-3) Chief, Personnel Svs. CAED, Winnipeg, Man.
L.F. Kozak (PE-2) Staffing/Class. Officer, CAED, Winnipeg, Man.
B.A. Chenkie (CR-4) Clerk, CAED, Winnipeg, Man.
G. Petrie (CR-4) Clerk, CAED, Winnipeg, Man.
M. Waterfield (CR-4) Clerk, CAED, Winnipeg, Man.
D.G. Schaefer (MT-7) Chief, Scientific Svs. CAED, Winnipeg, Man.
M.D. Rolla (PG-1) Supply Officer, CAED, Winnipeg, Man.
B.A. Bridgeman (CS-1) Programmer, CAED, Winnipeg, Man.
S.R. Knott (MT-2) Meteorologist, PRWC, Winnipeg, Man.
A.M. Palfreman (MT-2) Meteorologist, PRWC, Winnipeg, Man.
M. Fiebelkorn (EL-1) Electronic Tech., CAED, Winnipeg, Man.

G. Greer (EL-1) Electronic Tech., CAED, Winnipeg, Man.
S.R. Heaney (EG-6) Meteorological Instructor, CAED, Winnipeg, Man.
S. Witte (EG-3) U/A Tech., WS2, Mould Bay, N.W.T.
T.A. Gresiuk (EG-3) U/A Tech., WS1, Alert, N.W.T.
R. Simpson (EG-3) U/A Tech., WS1, Eureka, N.W.T.
J.D. Young (ST-OCE-2) Office Equipment Operator, APEC, Downsview, Ont.
C. Schmalz (ST-SCY-4) Secretary, ADMA, Downsview, Ont.
S. Morgan (EG-5) Met. Tech., WO4, Banff, Alta.
R. Mandeville (MT-6) Instructor, ACET, Downsview, Ont.
P. Chadwick (MT-6) Instructor, ACET, Downsview, Ont.
D. Houle (PE-4) Personnel Officer, AHRR, Downsview, Ont.
J. LeDrew (CR-3) Clerk, AAGR, Downsview, Ont.

Transfers

D. Ristic (MT-5) Meteorologist, OWC, Pearson Int'l. Airport, Toronto, Ont.
P. Mallinson (MT-2) Meteorologist, ARWC, Edmonton, Alta.
J. Chapman (EG-5) Met. Tech., WO1, Whitehorse, Y.T.
G. Cormick (EG-6) Met. Tech., WO3, Yellowknife, N.W.T.
A.F. Wallace (MT-6) Meteorologist, MOP, AFWC, Downsview, Ont.
M. Stasyshyn (SCY-1) Secretary, ARQD, Downsview, Ont.
L. Couturier (MT-2) Meteorologist, CFOW, Trenton, Ont.
W. Whittaker (EG-2) Pres. Tech., OAEW, Pearson Int'l. Airport, Toronto, Ont.
M. Patry (EG-1), Met. Tech., QAEOO, Cape Dyer, N.W.T.
G. Coulombe (EG-4) U/A Tech., QAEOU, Nitchequon, Que.
M. Zavada (EG-4) U/A Tech., QAEOU, Sept-Iles, Que.
B. Brasnett (MT-2) Met. Dev. Level, Comox, B.C.
J. Archibald (MT-2) Met. Dev. Level, CFFC, Edmonton, Alta.
L. Richard (MT-2) Met. Dev. Level, Edmonton, Alta.
D. Fyffe (EG-6) Pres. Tech., WO4, Moncton, N.B.

C.N. Quinn (EG-5) OIC, WS1, Moosonee, Ont.
A. Radecki (EG-5) Pres. Tech., Toronto, Ont.
P. Saindon (MT-2) Meteorologist, Toronto, Ont.
A. Boisvert (EG-2) Met. Tech., Toronto, Ont.
D. Gosselin (MT-2) Meteorologist, METOC, Halifax, N.S.
M. Larocque (EG-2) Met. Tech., QAEOO, Clyde River, N.W.T.
E. Gola (EG-2) Met. Tech., QAEOO, Dorval, Que.
D. McDuff (CR-4) Clerk, QAEEA, St. Laurent, Que.
L. Lacasse (CR-4) Clerk, QAEP, St. Laurent, Que.
R. Stainer (EG-2) Met. Tech., WS3, Cape St. James, B.C.
R. Campbell (EG-2) Met. Tech., WS3, Revelstoke, B.C.
M. Law (EG-2) Met. Tech., WS3, Lytton, B.C.
W. Scott (EG-2) Met. Tech., WS3, Dease Lake, B.C.
A. Schmiedel (EG-2) Met. Tech., WS3, Hope, B.C.
P. Jackson (MT-2) Met. Dev. Level, PWC, Vancouver, B.C.
T.D. Charlton (EG-4) U/A Tech., WS2, Baker Lake, N.W.T.
D. Tidbury (EG-7) Met. Tech., TCTI, Cornwall, Ont.
Y. Sivret (EG-4) Met. Tech., MAED, Bedford, N.S.

Temporary or Acting Positions

C.D. Henry (SM-1) Chief, Weather Services, AFWC, Downsview, Ont.
B.E. Johnson (EG-6) Pres. Tech., WO3, Regina, Sask.
R.L. Lee (EG-6) Pres. Tech., CAED, Winnipeg, Man.
M. McMahon (EG-6) Pres. Tech., CAED, Winnipeg, Man.
B. Rabinovitch (SCY-3) Secretary, AABD, Downsview, Ont.
P. Gillard (SCY-2) Secretary, ACPC, Downsview, Ont.
G. Deschênes (EG-5) OIC, QAEOU, Kuujuaq, Que.
M. Dalcourt (EG-6) Pres. Tech., QAEDR, St. Hubert, Que.
D. Paquette (EG-6) Pres. Tech., QAEDR, St. Hubert, Que.

STAFF CHANGES

B. O'Donnell (SM) Chief, Meteorological Services, QAEW, St. Laurent, Que.

L. Foucreault (EG-7) OIC, QAEWR, Quebec, Que.

C. Diczno (MT-7) Meteorologist, APCE, Hull, Que.

A. Bunning (EG-2) Met. Tech., WS3, Ft. McMurray, Alta.

Secondment

T. White, ACGC, Downsview, Ont. to AFWC, Downsview, Ont.

D.M. Scott, AFWC, Downsview, Ont. to Information Directorate, Downsview, Ont.

Retirements

R. Dagenais, CMCFC, Dorval, Que., January, 1985.

M. Wilson, WO4, Lethbridge, Alta., March, 1985.

N. Gaskarth, WAED, Edmonton, Alta., March, 1985.

T. Moyer, Ontario Climate Centre, Pearson Int'l. Airport, Toronto, Ont., April, 1985.

R.M. Stautjesdyk, CMCFA, Dorval, Que., April, 1985.

E. Hope, SSC, Winnipeg, Man., April, 1985.

N. Gautreau, WO4, Moncton, N.B., May, 1985.

G. Wakelin, ACSM, Downsview, Ont., May, 1985.

H. Wilson, PWC, Winnipeg, Man., May, 1985.

L.E. Babijczuk, ACSQ, Downsview, Ont., June, 1985.

J.Z. Rautenberg, AAG, Downsview, Ont., July, 1985.

Leave of Absence

Y. Gervais, QAEOW, Kuujuaq, Que.

Deaths

J. Bureau, QAEW, Quebec, Que., April, 1985.

Departures

J. Beaudry, Mould Bay, N.W.T.

B. Middler, WS1, Eureka, N.W.T.

C. Henley, WS3, Slave Lake, Alta. — Education.

B. Jelley, APPA, Hull, Que. to Meteorological Service Lahr, West Germany.

K.W. Chan, ARQA, Downsview, Ont.

D. Ker, ARQL, Downsview, Ont.

(cont'd from page 8)

Service, 4905 Dufferin St., Downsview, Ontario. M3H 5T4, phone (416) 667-4693. All Managers are invited to consider

taking on a native employee prior to taking any other staffing action. I would be pleased to provide information on resources potentially available to them for this purpose, that is person years and funds for training, salary and general overhead.

You say Native Employment Programs are in their early stages at AES. At what stage would you consider the projects to have really taken off?

Our programs will really be in effect when we have native citizens working in the AES in proportion to their numbers in the Canadian population, and of course, at levels over and above initial entry levels only.

**LOOK OUT
FOR THE
NEW ZEPHYR
JULY — AUGUST
1985**